

BLM Lander Field Office
Attn: RMP Project Manager
1335 Main St.
Lander, WY 82520

December 5, 2011

**Re: Comments on the Draft Environmental Impact Statement for the BLM's
Lander Field Office Resource Management Plan Revision**

Dear Ms. Yannone:

Please accept these comments from the Wyoming Outdoor Council and the Greater Yellowstone Coalition regarding the above-referenced land use plan revision being pursued by the Bureau of Land Management (BLM) Lander Field Office. The Wyoming Outdoor Council is Wyoming's oldest statewide environmental interest group and has a forty-seven year history of advocating for sound public lands management. The Greater Yellowstone Coalition works to ensure that a thoughtful and holistic approach is taken to managing the national and wildlife resources in the Greater Yellowstone area and is a pioneer in defining and promoting the concept of ecosystem management.

These comments regarding the proposed resource management plan (RMP) are divided into the following parts. First we will address the important environmental values in four areas of special concern to us and the provisions in the proposed RMP that relate to protection of these areas. These four areas are the Sweetwater Watershed, Bridger Mountains, Upper Wind River Valley (hereinafter, "Dubois area"), and the Lander Front and Beaver Rim. These four iconic landscapes will be referred to as the "Priority Conservation Areas" henceforth.

The second part of our comments addresses specific provisions presented in chapter 2 of the draft environmental impact statement (DEIS) for the proposed RMP. This will involve a resource-by-resource review of provisions in the plan, with needed areas of improvement discussed. The third part of our comments addresses certain specific issues of interest, including needs related to the Bridger

Mountains, issues related to livestock grazing, and issues related to bentonite and phosphate mining. In the fourth part of these comments we will address certain other areas of concern, such as the definition of certain terms in the glossary, BLM's authority to regulate oil and gas development, and provisions related to best management practices (BMP).

PART 1—VALUES OF THE PRIORITY CONSERVATION AREAS AND MANAGEMENT NEEDS IN THESE AREAS.

In this part we will first describe the important conservation values and attributes of the Bridger Mountains, Sweetwater Watershed, the Lander Front and Beaver Rim, and the Dubois area, the Priority Conservation Areas. On the basis of these important and overarching values we will urge conservation of these four iconic areas under the terms of the Lander RMP. Second, we will review the provisions in BLM's proposed preferred alternative and evaluate whether the provisions meet the conservation needs of the Priority Conservation Areas. And last we will identify needed changes to the draft preferred alternative that would better meet the conservation needs of the Priority Conservation Areas. As will be discussed, the Bridger Mountains are something of a special case, and the conservation needs of this area will be discussed in Part 3.I of these comments.

I. Conservation Values of the Priority Conservation Areas.

A. Compact Disc Presenting the Priority Conservation Areas.

Enclosed is a compact diskette (disc) that maps and describes the Priority Conservation Areas. Exhibit 1. As can be seen, maps and descriptive information are provided for the Sweetwater Watershed, the Bridger Mountains, the Upper Wind River Valley (Dubois area), and the Lander Front and Beaver Rim. Also presented in Exhibit 1 is a map entitled "BLM's Lander Resource Management Plan" that describes our overall vision for management of BLM lands in the Lander Field Office.

The maps of the Priority Conservation Areas will serve as the basis for the discussion that follows. But before turning to those individual area discussions we will first discuss the overview map, "BLM's Lander Resource Management Plan—Balancing Conservation and Development." Exhibit 1.

The Lander Field Office is exceptional because it contains some of America's finest wildlife habitats, intact historic trails, dramatic open spaces, and

wildlands. It is a sanctuary for the greater sage-grouse.¹ The Lander Field Office attracts thousands of people every year who enjoy the Oregon, Mormon, Pony Express, and California National Historic Trails, as well as the unique Red Desert country found along the Continental Divide National Scenic Trail. These trails are part of the National Landscape Conservation System (NLCS), a BLM management priority. See http://www.blm.gov/wo/st/en/info/newsroom/2011/september/NR_09_30_2011.html (announcing BLM's 15-year management strategy for the NLCS).

For these reasons we believe a balanced RMP is required in the Lander Field office, one which would make the Priority Conservation Areas unavailable for energy development and other forms of industrial development, but which would allow development in other areas. Protecting the Priority Conservation Areas would implicate only 51 percent of the BLM-managed Federal mineral estate in the Lander Field Office, yet it would help support the diverse tourist, hunter, and outdoor enthusiast economies that have developed in towns like Lander and Dubois. Moreover, large areas would remain available for industrial development, particularly in the east-central part of the Field Office.

As can be seen on the maps in Exhibit 1, we propose four areas be made unavailable for industrial development. These are the Dubois area, the Bridger Mountains, and the contiguous Sweetwater Watershed and Lander and Beaver Rim areas. However, in addition, as the map entitled "Balancing Conservation and Development" shows, we would not object to making lands available for development—particularly for oil and gas, uranium, and wind development—in areas in the northeast part of the Field Office. In many other areas, development would also still be possible, but under the provisions of wildlife protective stipulations or in some cases a no surface occupancy (NSO) stipulation.

B. The Sweetwater Watershed.

The Sweetwater Watershed is shown on the map in Exhibit 1 of the same name. It is dominated by the Mormon, Oregon, Pony Express, and California National Historic Trails, The Continental Divide National Scenic Trail also crosses the area. And of course, the ecologically significant Sweetwater River

¹ According to the U.S. Fish and Wildlife Service, the Lander Field Office is one of the two most important "remaining areas of contiguous range essential for the long-term persistence of the species."

itself traverses the length of this area. As shown on the map entitled “World Class Wildlife Habitat,” the area is dominated by state-recognized core sage-grouse habitats and crucial winter range for elk, mule deer, and pronghorn. Elk calving areas are found in the Crooks and Green Mountain areas. Moose winter throughout the Sweetwater River drainage. A number of big game migration routes are found in this area.

As discussed in Exhibit 1, partly because of the National Historic Trails, this is a “landscape that endures today much as it was when pioneers traveled through 150 years ago.” And hikers on the Continental Divide National Scenic Trail “can experience a vast, unfragmented, and healthy sagebrush landscape as they stride toward the Wind River Mountains.” The critical importance of maintaining this area for conservation of sage-grouse has been recognized by the U.S. Fish and Wildlife Service. Many other species frequent this landscape, such as prairie dogs, badgers, ferruginous hawks, golden eagles, the occasional wolf, and numerous big game species. This area contains historic sites of national significance such Independence Rock, Martin’s Cove, and Atlantic and South Pass Cities. There are several BLM Wilderness Study Areas (WSA) located in this area, such as Sweetwater Canyon, Split Rock, and Savage Peak. DEIS Map 128.² A number of citizens’ proposed wilderness areas are also found here. Map 12.

For all these reasons this area should be made unavailable for industrial development, as we have proposed. Wind energy development might be a particular threat due to the occurrence of wind power classes 5-7 in this area, Map 96, but such development is incompatible with the National Historic and Scenic Trails. Consequently, BLM’s proposed decision to make most of this area a wind energy development exclusion or avoidance area, Map 100, is well advised. As will be discussed below, it appears that BLM’s proposed preferred alternative D would largely accomplish the protective needs for this area. Therefore, the BLM should adopt these measures as its management framework for the Sweetwater Watershed portion of the Lander Field Office, and we generally support the management direction proposed for this area.

² Hereinafter we will simply reference the Map number in the DEIS or the Record Number (Record #), and not make reference to the DEIS.

C. The Lander Front and Beaver Rim.

This remarkable area serves as the gateway from low lying deserts into the Wind River Mountains. As can be seen on the map entitled “The Lander Front and Beaver Rim—Public Lands Essential to the Local Quality of Life” in Exhibit 1, this area is characterized by a remarkable diversity of wildlife habitats for species from sage-grouse to bighorn sheep. The descent into Lander on Wyoming Route 28 presents travelers with stunning views of Red Canyon, and the Absaroka and Owl Creek Mountains beyond. Beaver Rim is an ecologically unique outcrop and the views from its rim of colorful sandstone outcrops, rugged canyons, and rolling hills, all sweeping up to the majestic Wind River Mountains, are remarkable. The Town of Lander is the center of human presence in this area, and unlike many towns it has thrived despite the recent economic downturn due to its diverse outdoor-oriented economic base that attracts young people. As noted in the compact disc, the viewsheds, high quality wildlife habitats, and world-class recreational resources in this area “are essential to the local community, its economy, and its quality of life.” Exhibit 1.

It is probably especially notable that the BLM proposes to make this area almost entirely closed to phosphate leasing, Map 41, and would put in place major constraints on oil and gas development in virtually all of this area, Map 32. We support these provisions because we believe they are necessary to protect the important resource values in this area. Development of a greater intensity can occur in the Designated Development Areas (DDA) that would be created pursuant to the proposed RMP. Map 134.

D. The Dubois Area.

This area is a wildlife sanctuary, as the map entitled “The Upper Wind River Valley—A Great American Wildlife Sanctuary” in Exhibit 1 makes clear. Besides vast areas of habitat for moose, mule deer, elk, and pronghorn, it also contains the United States’ premier habitat for Rocky Mountain bighorn sheep—the “mother herd.” Over 3,000 elk migrate into this area each winter to survive difficult winter conditions. These elk survive naturally; they are not fed at the feedground complexes prominent in other parts of Wyoming that artificially maintain these animals. In addition, rare species such as gray wolves, grizzly bears, and Canada lynx are found in this area. The entire valley lies in occupied grizzly bear habitat and is used by these animals in the spring after they emerge from hibernation to feed on green plants at lower elevations and winter-killed ungulates. The importance of this area for grizzly bears may only increase as

white bark pine at higher elevations face increasing threats due to insects and climate change.³

Wilderness quality lands are also prominent, with the presence of the Dubois Badlands and Whiskey Mountain WSAs, several citizens' proposed wilderness areas, and the Little Red Creek Complex of lands with wilderness characteristics. Maps 12, 14, and 128. This area sits at the foot of the vast Bridger, Fitzpatrick, Washakie, and Teton Wilderness Area complex and is largely undeveloped and wild in its own right. Lands that have yet to be designated as wilderness such as the Dunoir area are prominent. BLM managed surface estate in this area is somewhat scattered, but the BLM managed lands nevertheless encompasses about a third of this area. Map 1. Accordingly, it presents an important conservation opportunity that should not be missed.

Fortunately the BLM proposes to close this area to oil and gas leasing. Map 32. This may be the most significant decision in the proposed RMP and DEIS. We strongly support this decision and urge the BLM to adopt it in the final plan. This area has minimal oil and gas development potential, so making this area unavailable for development is appropriate. Maps 17 and 20. It also has few current leases. Map 33. Yet the area has undeniably great wildlife and recreation values. Managing this area to protect its wildlife would also serve to support the extensive State wildlife management area network that exists in this area.

E. The Bridger Mountains.

The Bridger Mountain area is portrayed on the map in Exhibit 1 entitled "The Bridger Mountains—Extraordinary Solitude, Geology, and Wildlife." This title certainly describes this remarkable area located in the northern part of the Field Office, largely in the BLM lands located in T39-40N and R89-94W. As the map shows, this area is home to sage-grouse core areas. And somewhat uniquely, this area contains large Key Nongame Wildlife Areas recognized by the Wyoming Game and Fish Department (WGFD). The historic Bridger Trail transects the area. It contains one BLM WSA, the Copper Mountain Area, and two citizens' proposed wilderness areas, Fuller Peak and Lysite Mountain. Maps 12 and 128. Significantly, the map in Exhibit 1 shows the area we recommend for protection is located north of existing producing oil and gas leases.

³ The white bark pine has been proposed by the U.S. Fish and Wildlife Service for listing pursuant to the Endangered Species Act.

This area may be one of the least known in the Lander Field Office. It is “one of few places where one is surprised to see another person.” But the recreational importance of this area is indicated by the narrow slot canyons that typify the Copper Mountain WSA. Clear streams and tranquil pools scoured in granite and badland topography typify the Fuller Peak and Lysite Mountain areas. These features create a refuge for hunters and other recreationists seeking remote experiences. The geology of this area is significant, with the late David Love, Wyoming’s most celebrated geologist, having said, “Lysite Mountain is one of the most significant areas in [Wyoming] because it is the only place where the late Cenozoic record is preserved.” A 1000-foot cross-section of Cenozoic sedimentary strata is presented in the Bridger Mountains.

Six rare plant species are found in this area—Porter’s sagebrush, Owl Creek miner’s candle, bun milkvetch, hairy princess plume, Watson’s prickly-flox, Hapeman’s sullivantia, and tomentose balsamroot. The WGFD designation of this area as a Key Nongame Wildlife Area recognizes the significant populations of bats and birds that use this area, such as the Townsend’s big-eared bat and the peregrine falcon. Jim Bridger led a rush of emigrants through this area on the trail named after him as a way to avoid attacks from Sioux Indians on the way to the Montana gold fields. Much of the area has a very high potential for potential fossil yields and most of the area is categorized as a fossil area. Map 70.

Given this array of special values, this area should be protected from development, particularly any oil and gas development. Significant oil and gas development is already occurring to the south of this area and more is planned, but this development should remain south of the Bridger Mountains. There is low potential for oil and gas in most of this area, and for that reason it is largely unleased, so it is appropriate to remove it from consideration for oil and gas development. Maps 17 and 33. We are asking the BLM to ensure in the Lander RMP that the scenic, wildland, wildlife, historic, geological, and recreational values of this area are protected for future generations.

Unfortunately, unlike in the Sweetwater Canyon, Lander Front and Beaver Rim, and the Dubois area, the BLM’s draft preferred alternative directs few specific management protections toward the Bridger Mountains. For example, most of the area would be subject to only moderate oil and gas leasing constraints. Map 32. Most of the visual resources in this striking area would be managed under the least protective VRM Class IV category and the rest would be marginally protected under a VRM Class III designation. Map 78. No special recreation management areas would be established in the Bridger Mountains. Map

93. Much of this area would be neither a wind energy avoidance or exclusion area even though there is an area of class 5-7 wind energy potential in the area. Maps 96 and 100. No ACECs would be established in the Bridger Mountains. Map 132. The oil and gas DDA area in the Moneta-Lysite area would intrude into the Bridger Mountains as we have defined it, at least somewhat. Map 134. Fortunately, an area north of Shoshoni that may implicate at least some of the Bridger Mountains area would be closed to leasing pursuant to the preferred alternative. Map 144.

Given these limitations, it is our view that the Lander RMP should be improved relative to its management direction for the Bridger Mountains. We believe more proactive management to protect the resources of this area is needed. Below in Part 3.I we will discuss needed improvements that the BLM should adopt in the final RMP. As will be seen in that discussion, we will focus our management recommendations on a somewhat modified area from that which is presented on the map in Exhibit 1 entitled “The Bridger Mountains—Extraordinary Solitude, Geology, and Wildlife.”

II. Provisions in the Lander RMP Draft Preferred Alternative that Meet the Conservation Needs of the Priority Conservation Areas.

We believe that our proposal presented in Exhibit 1 is largely consistent with the preferred alternative proposed in the Lander RMP DEIS. First and foremost, under the draft plan the Dubois area would be closed to oil and gas leasing, and much of the Lander Front, Beaver Rim, and Sweetwater Watershed areas would be available for leasing with “major constraints.” Map 32. The BLM would develop a master leasing plan (MLP) for the Beaver Rim area under the provisions of the preferred alternative, which would establish stringent controlled surface use (CSU) and NSO areas. Map 143. Similar important limitations on oil and gas development would also be put in place in the Green Mountain area. Map 144. Likewise, the Dubois area and the Lander Front, Beaver Rim, and Sweetwater Watershed areas would largely be closed to leasing for phosphate development. Map 41. Importantly, much of the Lander Front, Beaver Rim, and Sweetwater Watershed areas would be wind energy development exclusion areas, and this limitation would also be applied in the Dubois area. Map 100. Wind energy development avoidance areas would be established on the northern and southern perimeters of the National Historic and Scenic Trails. *Id.* A number of locatable mineral withdrawals, existing or proposed, would be maintained or pursued in the Sweetwater Watershed and the Dubois area. Map 24.

Maps in the DEIS confirm the extreme importance of habitat in the Priority Conservation Areas for supporting species such as bighorn sheep, moose, mule deer, elk, pronghorn, sage-grouse, and raptors. Maps 49-54, 62, 65-67. Under alternative D, the draft preferred alternative for the Lander RMP, the Dubois area would be managed as a visual resource management (VRM) Class II area, which provides for considerable protection. Map 78. Much of the Lander Front, Beaver Rim, and Sweetwater Watershed would also be managed as VRM Class II, although some of this area, as well as the Bridger Mountains, would be managed under a less protective VRM Class III framework. A number of recreation management areas, some with buffer zones, would be established, especially in the Lander Front, Beaver Rim, and Sweetwater Watershed areas, but also in the Dubois area. Maps 93, 120, 121. A Heritage Tourism and Recreation Corridor, with buffers, would be established along much of the course of the National Historic Trails and the Continental Divide National Scenic Trail. Map 127. Stretches of Baldwin Creek and the Sweetwater River would be recommended as suitable for designation as Wild and Scenic Rivers, and managed to preserve their outstandingly remarkable values. Map 129. Several Areas of Critical Environmental Concern (ACEC) would be established in the Priority Conservation Areas under alternative D. Map 132. And while the large Government Draw/Upper Sweetwater ACEC proposed under alternative B for the protection of sage-grouse would not be established under alternative D, the BLM does propose to establish the Government Draw/Upper Sweetwater Sage-Grouse Reference and Education Area pursuant to alternative D. Map 135. The proposed RMP would manage the Red Creek Complex adjacent to the Fitzpatrick Wilderness in the Dubois area to maintain its wilderness characteristics. Map 14.

And finally, under alternative D, several DDAs—first and foremost for oil and gas development—would be recognized. We note that the locations of these DDAs align very closely with the areas we recommend be made “available for development/developed.” *Compare* Map 134 *with* Exhibit 1 (map entitled “BLM’s Lander Resource Management Plan—Balancing Conservation and Development”). These DDAs correspond with areas with greater potential for conventional oil and gas and coalbed methane, as well as uranium development. Maps 15, 17, and 20. They also tend to already be leased. Map 33.

Given the correspondence between BLM’s proposed preferred alternative in the draft Lander RMP and the recommendations we have made for protecting the Priority Conservation Areas shown in Exhibit 1, we generally support BLM’s proposed preferred alternative and encourage the BLM to adopt it. Some areas of disagreement and recommendations for improvement in the draft plan will be

presented below in section III. In particular, unfortunately, the draft RMP is deficient in providing needed protections for the Bridger Mountains, an issue which will be discussed below in Part 3.I.

In addition to the overall management plan portrayed in the Maps, other provisions in the proposed RMP are supportive of the conservation needs in the Priority Conservation Areas. Many of these provisions apply to the Field Office as whole, but they would be beneficial for the Priority Conservation Areas as well. We will briefly highlight some of these additional protections, which will also be addressed in somewhat more detail in Part 2 below:

- The provision for developing the Beaver Rim MLP would be an important contribution to conservation in the Beaver Rim Priority Conservation Area. We particularly support the provisions in Record # 2027 that would limit surface disturbance to no more than 5 percent in a township, seek to co-locate new disturbance if possible, and which would require that new disturbance be at least 1.2 miles from existing disturbance. These provisions will help protect the highly significant wildlife, geologic, scenic, paleontological, and cultural resource values in the Beaver Rim area.
- As discussed in Parts 2.IX and 2.X below, we generally believe the wildlife protection provisions proposed for the Lander RMP are sound and will contribute toward the conservation needs in the Priority Conservation Areas, given their undeniably high wildlife values. We specifically support the provisions for managing fish and wildlife habitat as a priority in the Dubois, Red Canyon, Lander Slope, Green Mountain, and Sweetwater River areas. Record #s 4049 to 4051. We especially urge the BLM to adopt the provision stating that BLM will “utilize recommendations” found in the WGFD’s oil and gas development mitigation document and its wind energy wildlife protections document, both of which are extremely important and we congratulate BLM for including this provision. Record # 4051.
- Two other extremely important wildlife protection provisions that will support conservation in the Priority Conservation Areas are the following. First, BLM will seek to minimize the footprint of surface-disturbing activities “to the smallest practical” area in order to protect wildlife and

their habitats. Record # 4055.⁴ On page 34 we present a clarification of this provision we ask the BLM to consider. BLM will also apply seasonal restrictions for wildlife protection outside of DDAs “to maintenance and operations actions” if the activity is detrimental to wildlife, in addition to the limitation on development during actual construction activities. Record # 4056. This is a very important provision that we encourage the BLM to maintain. Ongoing activities after the construction phase can be as disruptive and detrimental to wildlife as the impacts during the construction period. And they may extend over far greater time periods.

- Under the preferred alternative BLM would not establish the Castle Gardens, Cedar Ridge, Sweetwater Rocks, Continental Divide National Scenic Trail, and Regional Historic Trails and Early Highways ACECs, all of which would be designated under alternative B. Record # 7040, Map 131. However, even though BLM does not propose to designate these ACECs these areas nevertheless will be “manage[d] to protect the identified relevant and important characteristics.” Record # 7040. This is a very important provision. The effect of it should be to ensure significant protection for all of these areas; areas the BLM recognizes meet the relevance and importance criteria for ACEC designation. *See* DEIS at 471-73 (presenting the proposed ACECs). Pursuant to this provision the BLM should ensure that it meets the management direction that it specifies for each of these ACECs. Record #s 7113 to 7140. This management direction presents requirements that would generally ensure BLM “manage[s] to protect the identified relevant and important characteristics” in these areas, as Record # 7040 provides for.
- We strongly support the provision in Record # 5034 stating that BLM will “Prohibit surface-disturbing activities within important scenic areas (VRM Class I and II visual resources).” Map 78. There is no doubt the WSAs as well as the Dubois, Lander, Beaver Rim, and Sweetwater Watershed Priority Conservation Areas (a significant portion of the VRM Class I and Class II areas) are all “important scenic areas.”

⁴ An equivalent provision is made in the “Special Status Species” section of the alternatives descriptions where it is provided that BLM will, “Reduce the footprint of development and facilities to the smallest practical to protect special status species and their habitat.” Record # 4074.

- We support the provision that would close the Bus at Baldwin Creek and the Johnny Behind the Rocks areas to motorized travel. Record # 6040. These are key recreation attractions in the Lander area and are of tremendous value and benefit to local citizens. Thus, these areas should be protected from the potentially destructive and disruptive disturbance that motorized vehicles and motorized vehicle use can cause.
- Provision is made for the consideration of “paced development” options for mineral and energy development so as to avoid adverse socioeconomic impacts. Record # 8014. This is a beneficial provision; however, it should be expanded to include avoiding impacts to natural resources and resource values, as well as socioeconomic conditions. BLM is a multiple use agency and its primary area of expertise relates to natural resources, not socioeconomic conditions, so it should focus attention on paced development as it relates to the impacts of mineral and energy development on natural resources, not just socioeconomic conditions. Paced (or phased) development has many potential benefits, such as ensuring that before new areas are disturbed previously disturbed areas are reclaimed, limiting the area of disturbance at any one time, and allowing for “adaptive management” as new information and techniques are gleaned from earlier development.

Again, we generally support BLM’s proposed preferred alternative and encourage the BLM to adopt it due to these and other provisions which will benefit conservation needs in the Priority Conservation Areas.

III. Needed Changes in the Draft Preferred Alternative that would Better Meet the Conservation Needs in the Priority Conservation Areas.

While the proposed RMP and the provisions in the DEIS generally meet the management needs and requirements of the Priority Conservation Areas, there are some shortcomings. Those shortcomings will be addressed in this section. Many of these issues will be addressed again in somewhat more detail in Part 2 below.

A. The BLM Should Designate the Entirety of the Priority Conservation Areas as NSO for Oil and Gas Leasing Purposes.

While map 32 indicates that much of the Sweetwater Watershed and the Lander Front and Beaver Rim would be available for oil and gas leasing subject to

“major” constraints, and we support that provision, we also have concerns with this provision. A major constraint means that an area will be subject to an NSO stipulation if it is leased, or potentially lesser protection through application of overlapping timing limitation stipulations (TLS), such as limitations related to protection of big game crucial winter ranges and sage-grouse leks or brood rearing areas. However, as can be seen from Exhibit 1, it is our view that the Priority Conservation Areas should be made subject to conditions that make these areas “unavailable for industrial development.” We believe an NSO stipulation will generally accomplish this need, but “major” constraints on leasing related to overlapping TLS may not meet this need.

It is our view that the entire area of the Priority Conservation Areas should only be made available for oil and gas leasing subject to an NSO stipulation. The resource values in these areas are simply too great to allow for physical disturbance in these areas. The NSO stipulation is appropriate when other mitigation is insufficient to adequately protect the public interest and it presents an option to a “no leasing” decision. DEIS at 1494 (presenting Appendix M—Wyoming Mitigation Guidelines for Surface-Disturbing and Disruptive Activities). We believe it is clear the public interest demands that the Priority Conservation Areas only be available for leasing subject to an NSO stipulation. We have described the incredible values worthy of protection in the Priority Conservation Areas above and Exhibit 1 makes these publically significant values even more apparent. Moreover, BLM’s proposed management direction in the Lander Slope and Beaver Rim and Sweetwater Watershed areas indicates that it too recognizes the important public interest concerns that are present in these areas. The numerous special recreation management areas, ACECs, the Heritage Tourism and Recreation Management Corridor, and the sage-grouse Reference and Education area, among other provisions, document that BLM has determined there are important public interest concerns in these areas, making an NSO stipulation, and not just overlapping TLS, an appropriate management decision.

We have been unable to determine just exactly how much of the “major” constraint areas shown in Map 32 would be subject to an NSO stipulation and how much would be subject to overlapping TLS. But the DEIS provides some indications. Some areas in the Beaver Rim MLP area and the Green Mountain area would be NSO. Maps 143 and 144. The area within 0.6 miles of the perimeter of a sage-grouse lek that occurs in a core area would be subject to a prohibition on surface disturbing activities or surface occupancy. Record # 4094, Map 65. Certain cultural sites would be NSO. Record # 5019. The designation of an area as VRM Class II is probably a virtual NSO provision. *See* Record # 5034

(in VRM Class I and Class II areas BLM will “Prohibit surface-disturbing activities . . .”), Map 78 (the majority of the Lander Front and Beaver Rim and Sweetwater Watershed areas would be VRM Class II). Many of the special recreation management areas would have significant limitations on oil and gas leasing, some including NSO stipulations. Many of the ACECs are NSO or are closed to leasing. The Heritage Tourism and Recreation Management Corridor will be managed as NSO from 0 to 3 miles on each side of the trails. Category 4 restrictions, which apply an NSO requirement to oil and gas activities, would apply to the 500 foot setback from riparian areas that the preferred alternative would establish. The effect of these numerous NSO provisions may be that the majority of the Lander Slope and Beaver Rim and Sweetwater Watershed areas are NSO, but that is somewhat uncertain.

Consequently, we request that the BLM state clearly just how much of these areas will be NSO. We again believe that the entirety of the Lander Front and Beaver Rim and the Sweetwater Watershed areas should be NSO. And if in fact the majority of these areas are NSO, or essentially NSO, as may be currently proposed, there would seem to be little barrier to simply designating the entirety of the areas NSO. We again believe the public interest would support this decision.⁵

But as to the Bridger Mountains, there is no doubt that much of the area would only be subject to “moderate” leasing constraints. Map 32. Like the other Priority Conservation Areas, we believe this area should be entirely NSO. We will return to this issue in Part 3.I below.

B. Uranium Development must be Carefully Managed and Avoided if Possible in the Priority Conservation Areas.

A goal of the draft Lander RMP relative to all mineral resource exploitation is to “Provide protections for resource values in areas of conflict with mineral exploration and development.” Goal MR: 3. This is an important goal and we think it should be implemented especially with respect to the development of uranium resources. As shown on Map 15, there are several uranium projects that impinge on the Sweetwater Watershed Priority Conservation Area. We believe

⁵ We also direct the BLM to the discussion at footnote 25 where the “reach” of directional drilling is discussed. As pointed out there, current technology allows directional drilling reaches of at least 4,877 feet. Thus, many areas could be NSO without preventing development.

the BLM should make provision in the RMP to ensure that any development of these uranium resources “Provide[s] protections for resource values” because these are “areas of conflict with mineral exploration and development.” As shown on several maps, these uranium projects impinge on VRM Class III and even VRM Class II areas, could impact the Green Mountain Extensive Recreation Management Area, impact recreation sites like Wild Horse and Cottonwood Campground, would affect the viewing experience on the Continental Divide National Scenic Trail, could impact the Green Mountain ACEC, and could affect the Heritage Tourism and Recreation Management Corridor. Maps 78, 93, 120, 121, 127, and 132. Thus, there is no doubt that these uranium projects could conflict with the other resource values found in the Sweetwater Watershed, and consequently the BLM should manage these uranium projects so as to “Provide protections for resource values.” Frankly, these uranium projects are inconsistent with the management needs of the Sweetwater Watershed and many of the management prescriptions BLM proposes for this area.

To reduce these potential impacts, the BLM should, at a minimum, fully implement the prescriptions in the DEIS that relate to soils, soil reclamation, water, grassland and shrubland communities, invasive species and pest management, riparian-wetland resources, and visual resources. DEIS at 62-63, 64-66, 67-70, 91-92, 93-95, and 124-125. The BLM should specifically make these provisions applicable to the uranium project and district areas shown on Map 15. In addition, the provisions related to wildlife protection and the special management areas mentioned above, such as ACECs and Extensive Recreation Management Areas, should be fully implemented and abided by in these uranium project areas. The RMP should so provide. And as discussed on page 26, the BLM should withdraw many of these areas from new mineral entry claims. This is necessary to ensure this inherently contradictory land use activity is as compatible as possible with the overall management thrust for the Sweetwater Watershed, and the goal of the RMP to “Provide protections for resource values in areas of conflict with mineral exploration and development.”

C. Wind Energy Development must be Avoided or Excluded in the Priority Conservation Areas.

The provisions for managing wind energy development stated in Record # 4060 should be carefully adhered to. However, this provision should be modified to make the following clear. The provision that wind energy development will be managed on a case-by-case basis relative to sage-grouse, raptor concentration areas, big game crucial winter ranges, migration corridors, and parturition areas

should be clarified to make it clear that the avoidance and exclusion areas depicted on Map 100 will be applied and required.⁶ These exclusion and avoidance areas largely correspond with the Priority Conservation Area boundaries. In many areas wind energy development is not permitted (exclusion areas) and in many other areas it is to be avoided. This should be the overarching guidance in these mapped areas, not management of wind energy development on a “case-by-case basis.” Thus, Record # 4060 should be modified to make it clear that, relative to wildlife protection, in exclusion areas wind energy development is not permitted and in avoidance areas any management on a “case-by-case basis” will be done in a manner that seeks to avoid the project from being constructed in the first place. Following this approach will help ensure protection of the Priority Conservation Areas from the potentially severe impacts of wind energy development.

D. The Entire Beaver Rim Area Should be Designated VRM Class II

Under the proposed preferred alternative, some of the Beaver Rim area is designated VRM Class II while some is VRM Class III. Map 78. We believe the BLM should designate the entire Beaver Rim MLP area VRM Class II. As can be seen on Map 78, the VRM Class III area essentially creates a gap in an otherwise large VRM Class II area. The BLM should reconsider whether it wants to be faced with this management inconsistency. It will make BLM’s management responsibilities that much more difficult. As shown in Maps 17 and 20, the conventional oil and gas and CBM development potential in this area is none to at most low. So putting in place more restrictive visual resource protection standards would be unlikely to significantly impede any development.

E. The Utility Corridor in the Jeffrey City Area should be Made as Narrow as Possible.

Under the proposed RMP, there would be a rather wide VRM Class III corridor that would be designated across the Sweetwater Watershed in the vicinity of Jeffrey City. Map 78. It appears to be at least 6 miles wide, maybe wider. We ask the BLM to reconsider whether a corridor of this width is needed. While we understand that there may be a need to provide for transmission lines to the Gas Hills and perhaps the Moneta/Lysite gas field, we are not convinced this corridor

⁶ The provision in Record # 4060 related to sage-grouse core areas will be discussed on pages 35-36 below.

needs to be 6 miles wide. That seems excessive to us. The BLM should designate the narrowest corridor possible through this visually and historically significant area. In this regard Record # 5037 may be important. It provides that intrusive (“out of scale with the surrounding landscape”) surface-disturbing activities “within view of the Congressionally Designated [Historic and Scenic] Trails will be evaluated based on VRM Class II standards.” By this standard, many powerlines that might be constructed across the Jeffrey City-area VRM Class III corridor shown on Map 78 would need to meet VRM Class II standards even though the corridor is designated VRM Class III. This emphasizes the need to designate the narrowest VRM Class III corridor possible.

F. A Recreation Area Similar to the Muskrat Basin Extensive Recreation Management Area Proposed Under Alternative B Should be Established.

Under alternative B the Muskrat Basin Extensive Recreation Management Area (located roughly in T32-33N R91-95W) would be designated. Map 91. This would not occur under alternative D. Map 93. This area is generally coextensive with the Beaver Rim area. *Compare* Map 91 *with* Maps 132 and 143. Given that BLM will put in place an MLP for the Beaver Rim area, we believe it would also be appropriate to designate a special recreation management area in this area. Likewise, since BLM plans to retain the Beaver Rim ACEC, designating a companion recreation area would be complimentary. Map 132. In the ACEC, BLM would work with the State of Wyoming and others to “to develop educational signage, driving loops, and kiosks regarding unique plant communities, unique geology, and visual resources.” Record # 7091. This type of activity in the ACEC is consistent with the designation of an Extensive Recreation Management Area. Given the numerous values and the undeniable appeal of this area to the public, the BLM should designate the Beaver Rim area as a special recreation management area pursuant to the Lander RMP, whether it is called the Muskrat Basin Extensive Recreation Management Area, or some other designation.

G. The Heritage Tourism and Recreation Management Corridor Should be NSO for Five Miles on Either Side of the Trails, in all Sections of the Management Area.

Record # 7008 provides that the lands one-quarter of a mile on each side of the Continental Divide National Scenic Trail Extensive Recreation Management Area will be managed as CSU relative to oil and gas leasing and that

the remainder of the Heritage Tourism and Recreation Management Corridor will be managed as NSO from 0 to 3 miles on each side of the trails and CSU from 3 to 5 miles on each side of the trail. We strongly support the application of NSO stipulations to this historically significant area and believe that the NSO requirement should be applied to the entire 5 mile buffer. In any event, in the CSU area (from 3 to 5 miles on each side of the trails) BLM states the CSU will “ensure that a project causes no more than a weak contrast upon the Trails” This provision should be carefully adhered to. Moreover, Record # 5034 provides that BLM will “Prohibit surface-disturbing activities” within VRM Class I and Class II areas.

Unfortunately, the BLM under the proposed RMP would designate the above-mentioned narrow one-quarter mile buffer along the Continental Divide Scenic Trail in what is referred to as the CDNST ERMA (“Continental Divide Scenic Trail Extensive Recreation Management Area”). Record # 7003. This buffer is far too narrow to protect the values and resources along this section of the Continental Divide National Scenic Trail. A 5 mile buffer with the related management provisions should be put in place along the entire length of this scenic hiking trail, as applies in other areas of the Heritage Tourism and Recreation Management Corridor. At a minimum the BLM should propose a management framework for the CDNST ERMA that corresponds with its stated goals for the Congressionally Designated Trails. A goal is that the Continental Divide Scenic Trail corridor will be maintained “to provide an opportunity to experience and reflect upon the wide variety of scenic, cultural, historic, and physiographic setting characteristics. . .” of the trail and adjacent lands. Goal SD: 2. To meet this goal the BLM should put in place a buffer around all of the Continental Divide Scenic Trail that is equivalent to the 5 mile buffer along other sections of the Heritage Tourism and Recreation Management Corridor.

H. The Beaver Rim and Green Mountain ACECs should be Established at their Maximum Size.

Under alternative D, the Beaver Rim ACEC would only be 6,421 acres whereas under alternative B it would be 20,254 acres. Record # 7087. We believe the expanded ACEC should be adopted by the BLM in the Lander RMP. This would compliment both the MLP that will be developed for this area and the special recreation management area we believe should be designated in this area. There is no doubt the Beaver Rim area contains an array of important resources, including unique plant communities, unique geology, and visual resources. The larger ACEC would better protect these important resource values.

Likewise we believe the 24,860 acre Green Mountain ACEC proposed under alternative B should be adopted in preference to the 21,389 acre ACEC proposed under alternative D. BLM recognizes in the DEIS that the relevance and importance values of this area include wildlife and plant communities. Given the threats this area faces related to mining and oil and gas development, BLM would be well advised to establish the larger ACEC so as to fully protect the relevance and importance values in the Green Mountain area.

I. The Sweetwater Rocks Area should be Protected Even if it is not Designated an ACEC.

This ACEC, which BLM proposes not to establish under the preferred alternative, would provide additional protection for the WSAs north of the Sweetwater River as well as citizens' proposed wilderness in this area. Maps 12 and 128. This ACEC would also be a compliment to the Heritage Tourism and Recreation Management Corridor, the Sweetwater Rocks Undeveloped Special Recreation Management Area, and the National Historic Trails Destination Special Recreation Management Area. Maps 93 and 127. Consequently, this is an important area, even if the BLM does not designate it as an ACEC. This emphasizes the importance of abiding by the requirement that the area be "manage[d] to protect the identified relevant and important characteristics." Record # 7040. The relevant and important characteristics BLM recognizes in this area include scenic values, geologic features, and cultural values. These values must be preserved by protecting the relevant and important characteristics of the Sweetwater Rocks area, even if it is not designated an ACEC. In this respect we support the management provision for the Sweetwater Rocks ACEC that would manage the area (outside of WSAs) as VRM Class II except for the area in the right-of-way corridor. Record # 7131. However, we are concerned by the provision that would manage this area relative to oil and gas leasing as "open," subject to CSU. Record # 7132. We believe this area should be NSO relative to oil and gas leasing in order to fully protect both the resources in the ACEC area and in the adjacent special management areas.

J. The Area in Roughly T27-28N R89-93W Should be a Wind Energy Development Exclusion or Avoidance Area and the Area should also be a Rights-of-Way Exclusion Area.

There is an area south of U.S. Highway 287 roughly in the area of T27-28N R89-93W that is designated as open to wind energy development. Map 100.

We believe this designation should be reconsidered and this area should be designated a wind-energy development exclusion or avoidance area. This area would have the Green Mountain ACEC located in it, and pursuant to the modifications to oil and gas management map, much of this area would be a controlled surface use area for oil and gas leases and some of it would be NSO. Maps 132 and 144. Designating this area as open to wind-energy development is inconsistent with this management direction. Map 104 indicates that this same area would be open to rights-of-way (ROW) corridors. We again think this should be reconsidered given the presence of the Green Mountain ACEC and the strong oil and gas development controls that will apply in this area.

K. The Bridger Mountains.

Our concerns about this area have been mentioned, and we will provide a detailed discussion of the management needs in this area below in Part 3.I.

PART 2—DISCUSSION OF LAND MANAGEMENT PROVISIONS PROPOSED IN THE LANDER RMP DEIS.

We will now turn to a discussion of the proposed management provisions for many of the resource areas or categories considered in the Lander RMP DEIS. This discussion will primarily be tied to the provisions presented in Chapter 2 of the DEIS, Resource Management Alternatives.

I. Air Quality.

The proposed plan states that, “In all project-level EISs and EAs, on a case-by-case basis . . . require quantitative air quality monitoring of industrial activities in order to determine the potential impacts of proposed emission sources and subsequent potential mitigation strategies.” Record # 1007. We support this provision and urge the BLM to adopt it. However, we want to highlight an issue for BLM’s consideration.

On June 23, 2011 the BLM entered into a Memorandum of Understanding (MOU) with the Environmental Protection Agency (EPA) and the Forest Service regarding how National Environmental Policy Act (NEPA) analyses relative to air quality will be conducted for oil and gas development activities. We have included that MOU as Exhibit 2. The Lander RMP should provide that all needed air quality NEPA analyses relative to oil and gas development, including those in this RMP, will abide by the provisions of this MOU. The MOU specifies when

modeling is required. The Lander RMP should provide that quantitative analysis will be conducted when these conditions are met, in addition to the provisions specified in Appendix F. *See* Exhibit 2 (providing in sections V.E.3.a-b that air quality modeling will be conducted when a proposed action will cause a substantial increase in emissions or contribute to adverse cumulative impacts, and the proposed action is in proximity to a Class I area, a non-attainment area, or the area is expected to exceed a National Ambient Air Quality Standard or a Prevention of Significant Deterioration increment). Appendix F should be revised to reflect the provisions in this MOU as to when quantitative modeling will be required. We also note that this MOU applies to this RMP as well as subsequent project level NEPA analyses, so compliance with it should be reflected in this RMP revision.

II. Soil.

Provisions are made in this section for authorization of soil disturbing activities in areas with Low Reclamation Potential (LRP), and for surface disturbing activities on steep slopes. Record #s 1013 and 1014. Under the preferred alternative, surface soil disturbing activities would be authorized in LRP areas, subject to Category 2 restrictions, but disturbance in LRP areas would be avoided “whenever possible,” and a detailed site analysis and reclamation plan would be required in LRP areas. Record # 1013. We believe this provision should be revised to make it clear that the default decision will be to avoid soil disturbance in LRP areas in all cases. There is an inherent contradiction in this record number, which states both that soil disturbing activities will be authorized in LRP areas and that they will be avoided “whenever possible.” This contradiction should be removed by making it clear that soil disturbance in LRP areas will be avoided if possible.

LRP is not a defined term in the glossary, but it seems obvious that these areas have a high potential to create serious soil erosion problems. This should be avoided. Consequently, the BLM should strongly consider applying more stringent restrictions than Category 2 restrictions in these areas. Under BLM’s Category Restrictions Key, Category 3 restrictions more often would put in place a requirement for avoidance than would Category 2 restrictions which invariably make the area “open.” *See* DEIS at 58 (making provisions for the 6 restriction categories). Avoidance under Category 3 restrictions would more closely correspond with the stated requirement to “Avoid” soil-disturbing activities “whenever possible.” We also note this: Record # 1013 states only that a “detailed site analysis and reclamation plan” will be required, yet Record # 1012 states that

“a very detailed” site analysis and reclamation plan will be required before development occurs in LRP areas. Record # 1012 (underline added). This oversight should be corrected, and Record # 1013 should require a “very detailed” site analysis and reclamation plan for LRP areas.

LRP areas are portrayed in Map 11. Many of these areas occur in the Dubois area and the Sweetwater Watershed, areas where stringent mitigation should be the norm. Moreover, many LRP areas occur in the area that would be a DDA near Moneta and Lysite. Map 134. While we are supportive of the DDA designation in this area, we do not believe oil and gas development activities should be excused from strong reclamation requirements in areas with inherent reclamation problems such as LRP areas. This emphasizes the need to ensure strong CSU provisions are put place that mandate effective protection of soil resources in the DDA areas. Stipulations or conditions of approval should be applied to oil and gas development in the DDAs to ensure soil resources are protected.

Relative to disturbance on steep slopes, under the preferred alternative, surface disturbing activities would be prohibited on slopes greater than 25 percent and Category 2 restrictions would be applied on slopes between 15 and 24 percent. Record # 1014. However, after stating that disturbance on slopes greater than 25 percent will be prohibited, Record # 1014 goes on to say “Mineral and realty actions in these areas are managed with Category 2 restrictions.” These are clearly inconsistent provisions. If surface disturbing activities are prohibited on slopes greater than 25 percent—as they should be due to the high potential for destructive soil erosion—they must be managed pursuant to more restrictive Categories. Any development on these steep slopes should be managed under Category 4-6 restrictions. *See* DEIS at 58 (Table 2.5) (providing that areas will be closed or excluded from development, or putting in place an NSO restriction under Categories 4-6). These are the restrictive categories consistent with prohibition of surface disturbing activities on slopes of 25 percent or more.

We note that many slopes of 25 percent or greater are found in the Bridger Mountains and in the Lander Front, and some are also found in the Dubois area and the Sweetwater Watershed. Map 10. This emphasizes the need to provide for strong protection on these steep slopes, so as to ensure the numerous high quality resource values in these Priority Conservation Areas are fully protected. Therefore, we support a prohibition on surface-disturbing activities on slopes greater than 25 percent and the imposition of more restrictive CSU provisions on

slopes of 15 to 24 percent (Category 3 restrictions should be applied on slopes of 15 to 24 percent).

III. Soil Reclamation.

In Table 2.9 of the Lander RMP DEIS the BLM proposes requirements to abide by the provisions in Appendices D and H of the DEIS relative to reclamation and the use of BMPs. We generally support the provisions in Appendix D, which establish interim and final reclamation standards for DDAs and non-DDAs. We also urge the BLM to apply the BMPs specified in Appendix H to all land disturbing activities in the Lander Field Office; however, as will be discussed below in Part 4.I, we believe there are additional BMPs that should be considered. Record # 1018 also mentions the application of Appendix G—“Example Detailed, Multi-phased, Reclamation Plan”—in situations with “extensive disturbance such as full-field oil and gas development.” The provisions in this appendix are important, and they should be applied to all significant soil disturbing activities, including uranium mining, large wind power developments, and phosphate or bentonite mining. The considerations and standards in Appendix G should be made part of the interim and final reclamation plan that is required under Record # 1018, and other provisions in Table 2.9.

While we support the provisions in Appendix D, we would suggest adding a requirement that the plant community that is created, particularly for final reclamation in non-DDAs, be closely in correspondence with the plant community in a nearby reference or control area. Achieving a plant community that closely resembles undisturbed plant communities in the area would best ensure that soil reclamation has been successful. Appendix G makes provision for selection of a reference area. Moreover, we urge the BLM to consider the following reclamation plan, which we believe could prove useful in the Lander Field Office. The provisions for reclamation found in the BLM’s Little Snake Field Office (Colorado) RMP Revision are quite strong and we believe potentially worthy of replication in the Lander Field Office. We ask the BLM to consider this plan. It is available at http://www.blm.gov/co/st/en/fo/lsfo/plans/rmp_revision.html. The BLM might also benefit from considering the reclamation efforts conducted by Encana Natural Gas in the Jonah natural gas field in the Pinedale Field Office, which are quite robust.

We support the provision in Record # 1019 for follow-up seeding as needed. We also support the provisions relative to Wyoming stormwater discharge requirements specified in Record # 1020, although this should perhaps

be clarified to state that any needed State permits will be acquired prior to disturbance. The provision in Record # 1021 is also important, and all unsuccessfully reclaimed areas should not be released from bonding requirements until successful reclamation is achieved.

As Maps 7 and 8 make clear, large areas of the Lander Field Office are subject to severe levels of wind and water erosion potential. This emphasizes the need to for strong measures to deal with the reclamation challenges these conditions will present.

IV. Water.

Sole source aquifers are tremendously important to people in rural areas and the protection of these water sources specified in Record # 1043 by using Category 3 restrictions should be implemented. Care in the use of pesticides, Record # 1044, is also warranted, but this limitation should be extended to also include herbicides, which can present threats as great as pesticides to water sources. However, allowing the use of these poisons in water source areas when “alternative methods are ineffective” is a vague standard and a clearer standard should be specified. We would suggest that pesticide and herbicide use in these aquifer areas should be prohibited where potential entry into the water is indicated. And in cases where contamination has been determined to have occurred, no further use of pesticides or herbicides should be allowed in those aquifer areas.

We believe the provision under alternative B relative to Record # 1045 is preferable to that specified for alternative D. We believe that actions that degrade ground and surface water should be prevented in all cases to the extent possible, not just on a “case-by-case basis.” This would be consistent with BLM’s obligations under the Clean Water Act, which include policies of restoring the chemical, physical, and biological integrity of our waters, eliminating the discharge of pollutants into navigable waters, providing for the protection and propagation of fish, shellfish, and wildlife, providing for recreation on the waters, and prohibiting the discharge of toxic pollutants in toxic amounts. 33 U.S.C. §§ 1251(a)(1)-(3). The vague and uncertain “case-by-case” standard should be revised to make it clear exactly when requirements to prevent degradation of ground and surface water will apply.

We support the provision under Record # 1046 relative to alternative D that permanent facilities in floodplains, riparian, and wetland areas will be

managed with NSO restrictions. These areas contain resources of such significance that physical intrusions into these areas should be prevented whenever possible. However we believe that the provision under alternative D allowing linear watercourse crossings “on a case-by-case basis” is too vague, and that the provision under alternative B requiring boring of linear underground facilities that cross watercourses is preferable and should be adopted.

As discussed in Part 4.IV, which considers the Moneta Divide area, BLM should fully consider prohibiting the discharge of produced water. Produced water discharges in the Beaver Creek area, for example, might contaminate the Little Wind River, and the sauger is becoming increasingly imperiled in the Wind River watershed, making it appropriate to limit produced water discharges.

V. Lands with Wilderness Characteristics.

We strongly support the provisions under both alternatives B and D pursuant to Record # 1048 to manage the Little Red Creek Complex as lands with wilderness characteristics. We also support the provision under Record # 1049 relative to alternative D to close the Little Red Creek Complex to motorized travel, and the provision under Record # 1050 to manage recreation in the area to maintain wilderness characteristics. However, we believe the provision under alternative B to designate a 5,490 acre land with wilderness characteristics is preferable to the 4,954 acre area that would be established under alternative D. The Little Red Creek Complex is immediately adjacent to the Forest Service Fitzpatrick Wilderness area, and it is a basic tenant of conservation biology that larger, contiguous areas provide more conservation value than smaller areas. Consequently, the BLM should not pass up this chance to designate a somewhat larger protected area that would be contiguous with an even larger protected area.

We will not bog these comments down with a detailed review of BLM’s Wild Lands Policy and the political theatrics that have accompanied it. But we note this: regardless of the Wild Lands Policy, the BLM has an ongoing affirmative duty under the Federal Land Policy and Management Act (FLPMA) to both inventory lands with wilderness characteristics and to make management decisions for those lands, which in some cases may lead to the protection of wilderness values in an area. *See Oregon Natural Desert Ass’n v. Bureau of Land Mgmt.*, 625 F.3d 1092 (9th Cir. 2008) (discussing the BLM’s obligations pursuant to FLPMA relative to lands with wilderness characteristics). Consequently, the BLM is well justified in protecting the Little Red Creek Complex regardless of the status of the Wild Lands Policy. *See generally* Memorandum from the

Secretary of the Interior to the Director of BLM (June 1, 2011), BLM Instruction Memoranda (IM) 2011-147 and -154 (addressing duties regarding lands with wilderness characteristics and establishing a program to identify areas with support for wilderness designation).

VI. Mineral Resources.

Our primary concerns relative to the mineral resources provisions presented in the Lander RMP DEIS relate to locatable minerals, oil and natural gas, and phosphate development. These will be discussed in turn.

A. Locatable Minerals.

We support the proposal to withdraw 42,855 acres from locatable mineral entry. Record # 2007. A majority of these withdrawals would occur in the Dubois area, with some occurring in the Sweetwater Watershed. Map 24. However, the BLM must consider whether additional withdrawals might be appropriate with respect protecting resource values in the four Priority Conservation Areas. The BLM should evaluate whether withdrawal from mineral entry would be appropriate and consistent with the management direction it is proposing for the ACECs, Recreation Management Areas, and Heritage Tourism and Recreation Management Corridor, for example. Where there could be a “conflict with mineral exploration and development,” the BLM should put in place “protections for resource values,” Goal MR: 3, and this should include withdrawals from mineral entry.

As we stated in our April 26, 2010 letter to the BLM Lander Field Office regarding the RMP revision, we believe the BLM should pursue withdrawal of the following areas: sage-grouse core areas, Green and Crooks Mountains, the Granite Mountains, the Lander Front, the Upper Wind River Valley, and the South Pass-Sweetwater watershed. We request again that BLM withdraw these areas from mineral entry due to the numerous important environmental and cultural values in these areas.

The Johnny Behind the Rocks and The Bus areas should also be withdrawn from mineral location entry. The provisions of Record # 6076 should be extended to these areas, which under Category 5 restrictions would require the BLM to “Pursue withdrawal.” DEIS at 58 (Table 2.5). It appears the Johnny Behind the Rocks areas would be withdrawn. Map 24.

Our primary concern with regard to locatable minerals relates to the potential for uranium development in recognized uranium project and district areas. Map 15. This issue was discussed above in Part 1.III.B where we asked BLM to ensure the goal specified for all minerals development, namely that BLM will “Provide protections for resource values in area of conflict with mineral exploration and development,” be fully adhered to in the Sweetwater Watershed where conflicts between uranium development and a number of resource values is present or likely. This could well include withdrawal from mineral entry.

Some issues related to bentonite mining will be considered in Part 3.III below.

B. Leasable Minerals—Oil and Gas.

While alternative D, the preferred alternative, would only close 110,014 acres to oil and gas leasing, Record # 2012, we are generally supportive of the oil and gas leasing direction in the preferred alternative because the Priority Conservation Areas would generally only be available for leasing with major constraints, and the Dubois area would be closed to oil and gas leasing. Map 32.

However, as we discussed above in Part 1.III.A, we believe the entire area of the Priority Conservation Areas should be NSO, not subject to just overlapping TLS (a type of major constraint), and the BLM should provide a clearer description of which areas will be NSO. The Dubois area would be closed to leasing, which is appropriate and strongly supported given its high wildlife values.⁷ However, we believe that more constraints should be imposed on leasing in the Bridger Mountains area, an issue which will be discussed in Part 3.I below.

We note that the conventional oil and gas development potential in the majority of the areas we are asking be made subject to NSO constraints is “none,” “very low,” or “low.” Map 17. While there is an area of “moderate” development potential south of Jeffrey City, none of these areas include “high” development potential areas. The coalbed methane (CBM) development potential in the Priority Conservation Areas is almost uniformly low to nonexistent. Map 20. So again, any oil and gas leasing in these areas should be made subject to NSO constraints.

⁷ See Record # 4108 (providing that the Dubois area is closed to oil and gas leasing and various other minerals exploitation activities so as to protect special status species and their habitats).

These restrictions are unlikely to impede development, which will almost certainly be focused in the DDAs.

In addition to the above oil and gas leasing provisions, the DEIS also specifies provisions for a master leasing plan (MLP) in the Beaver Rim area and makes allowance for DDAs. As we mentioned above, we generally support the designation of the DDAs. Map 134. They are consistent with the areas specified as “available for development/developed” presented in our report. Exhibit 1. But while the management direction in these areas will be focused on the development of minerals, we believe it is appropriate to nevertheless apply standard CSU and TLS stipulations in these areas, as the preferred alternative provides for.⁸ Record # 2018.

However, exceptions to these stipulations would be “routinely authorized.” We believe it is nevertheless critical that the provisions in Appendix E, which relate to the authorization of exceptions, modifications, and waivers to stipulated conditions, be carefully applied. The standards specified in this appendix must be met before exceptions are granted, and the proposed Lander RMP should be modified to so provide. The provision in Record # 2018 that would uniformly relieve operations in the DDAs from the restrictions of stipulations at the operations and maintenance stages of development should be rethought, and provision should be made for continued application of these restrictions if they do not significantly impair or impede the development activity, which might often be the case. We support the provision in Record # 2020 that would apply the provisions in Appendix D to reclamation activities, but as we discussed above in Part 2.III, the provisions in Appendices G and H should also be applied.

The DEIS makes extensive provisions relative to the Beaver Rim MLP. Map 143; DEIS at 78-82. We will not review all of these provisions in detail, but we generally support the management direction specified for this MLP. We particularly support the provisions in Record # 2027 that would limit surface disturbance to no more than 5 percent in a township, seek to co-locate new disturbance if possible, and which would require that new disturbance be at least

⁸ As the son of a ranching family in the Lysite area told us, “Just bear in mind this is a community and the residents have to live with the consequences of energy development every day. Adequate protections must be in place for them. Water, especially good potable quality, is hard to come by. Much of the gas in this area is sour and therefore hazardous.”

1.2 miles from existing disturbance. These provisions will help protect the highly significant wildlife, geologic, scenic, paleontological, and cultural resource values in the Beaver Rim area.

However, we note that some of the Beaver Rim area is designated VRM Class II while some is VRM Class III. Map 78. While significant mitigations are specified for both VRM categories, Record #s 2024 and 2025, we believe the BLM should consider designating the entire Beaver Rim MLP area VRM Class II. As can be seen on Map 78, the VRM Class III area essentially creates a rather large hole in an otherwise uniform VRM Class II donut. The BLM should reconsider whether it wants to be faced with this management inconsistency. It will make BLM's management responsibilities that much more difficult. As shown in Maps 17 and 20, the conventional oil and gas and CBM development potential in this area is none to at most low. So putting in place more restrictive visual resource protection standards would be unlikely to significantly impede any development.

We also note that a number of objectives are specified for the MLP area. *See* Objectives MR 3.1 to 3.6 (providing that management in the MLP area will prevent degradation of resources, protect the headwaters of the Sweetwater River, protect Native American sites, protect paleontological resources, and protect wild horses). We support these provisions and urge the BLM to maintain them so as to ensure protection of the significant resource values in the Beaver Rim area.

We support the provision to not re-offer oil and gas leases when they expire in areas that are closed to oil and gas leasing. Record # 2006. This is a compliment and supplement to the policy of closing an area to leasing, such as the Dubois area, reflecting a recognition that resource values in these areas are too significant to allow them to be threatened by oil and gas development.

C. Leasable Minerals—Phosphate.

Under BLM's proposed preferred alternative for the Lander RMP, a large area of the Field Office would be closed to phosphate leasing. Record # 2015, Map 41. We support this provision. As can be seen on Map 41, the majority of the Priority Conservation Areas would be closed to phosphate leasing, which is appropriate given the extraordinary resource values in these areas. Our concerns and recommendations relative to potential phosphate mining in the Bridger Mountains Priority Conservation Area will be discussed in Part 3.I below.

We must note for BLM the extreme environmental impacts that can attend phosphate mining. We ask the BLM to consider the situation and history relative to the large area of phosphate mining not so far away from the Lander Field Office, on Forest Service and BLM lands north of Soda Springs, Idaho. This area has been severely impacted by phosphate mining. Among other things, at least 13 Superfund hazardous substance remediation sites have been designated at mines in this area. The BLM should consider this history as it makes decisions regarding phosphate mining in the Lander Field Office, and it should take strong steps to ensure this unfortunate legacy in Idaho is not repeated in Wyoming.

D. Other Minerals Provisions.

Under the proposed RMP, areas within the NLCS would be closed to geothermal energy development. Record # 2003, Map 28. This is appropriate given that the NLCS is established to “conserve, protect, and restore nationally significant landscapes and places that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations.” *BLM, The National Landscape Conservation System, 15-Year Strategy, 2010-2025, The Geography of Hope*, at 1. Certainly the National Historic Trails component of the NLCS has these values, which warrant protection. However Map 28 makes it appear that the geothermal closure area would be quite narrow, and we believe the BLM should consider whether a larger buffer area is needed around the NLCS trails relative to geothermal development. The BLM should consider whether geothermal development would be consistent with the management direction evidenced by the numerous special recreation areas, ACECs, and trails management areas that would be established along the NLCS corridor. We do not believe geothermal energy development is consistent with these values, or the management direction that is evidenced in the proposed RMP.

The Dubois area would be closed to geothermal development, and much of the Sweetwater Watershed and Lander Front and Beaver Rim areas would be available with major constraints. This is appropriate, but again larger closure areas around the historic and scenic trails should be considered. Issues related to the Bridger Mountains, which are generally open to geothermal development with only moderate constraints, will be discussed below. We support the provision that geothermal constraints would replicate the constraints that apply to oil and gas leasing. Record # 2008.

VII. Fire and Fuels Management.

We recognize a need for fire suppression activities in the Wildland Urban Interface (WUI). Record # 3015. In areas outside the WUI, we do not believe that “full suppression” efforts should routinely be used, and thus the provision that “a full range of wildland fire suppression tactics are allowed throughout the planning area” area should be reconsidered and provision made that full fire suppression will only be used when resource conditions can tolerate such efforts and such tactics are in conformance with the management direction for the area. Modern firefighting can be an industrial scale onslaught of massive equipment which can tear up the land, with the use of great quantities of potentially toxic or fertilizing chemicals, and army scale human intrusions into an area. Such tactics should be reserved solely for situations where human life and property are threatened.

Many recommendations relative to fire management were contained in the letter we submitted to the BLM Lander Field Office on October 21, 2008. That letter is included as Exhibit 3. We continue to believe these recommendations have merit, and we again ask the BLM to consider adopting them as components of the Lander RMP.

VIII. Vegetation.

We will not offer detailed comments regarding this lengthy section of the proposed RMP. But relative to Forests and Woodlands, we continue to urge the BLM to consider the points we made in our October 21, 2008 letter regarding vegetation treatments and logging issues. Exhibit 3. We urge the BLM to consider adopting those provisions in the RMP. We believe we have articulated reasonable reasons for why these provisions should be adopted in the Lander RMP.

Relative to Grasslands and Shrublands, we believe the BLM should recognize the critical nature of protecting and preserving sagebrush habitat in the Lander Field Office. This is a critical component of sage-grouse and big game conservation, and in many ways the sagebrush community—ecosystem—defines the very essence of BLM lands in the Lander Field Office. The sagebrush community is a unique community not due to its rareness but due to its fundamental importance in ecological conditions and processes in the Lander Field Office. Accordingly it should be “manage[d] to protect, preserve, or enhance” its status. Record # 4017. Later, in the “Special Status Species” section, the BLM seems to recognize the need to give priority to maintenance of sagebrush habitats. There it is provided that a goal is to maintain the integrity of

the sagebrush biome so as to sustain sage-grouse and other species, and objectives include maintaining large patches of sagebrush habitat and maintaining connections between sagebrush habitats. Goal BR:13, Objectives BR: 13.1 and 13.2. *See also* Record # 4079 (providing that sagebrush understory diversity will be maintained). It is important that the sagebrush biome be recognized for its unique and important role in the ecological function of the Lander Field Office area, and we encourage the BLM to maintain these provisions.

Riparian-Wetland resources are also a critically important ecosystem and plant community in the Lander Field Office. We generally support the provisions in Record #s 4030 to 4034. That said, we believe the 500-foot setback distance specified for the preferred alternative, Record # 4033, should be reconsidered. Only two setback distances are considered—a 500-foot setback distance pursuant to alternatives A, C, and D (with some provisions for exceptions), and a 1,320-foot setback distance pursuant to alternative B. That is, one-tenth of a mile and one-quarter mile setbacks are considered. But alternative D is by definition intended to be something of an intermediate alternative falling somewhere between the maximum environmental protection alternative (B) and the maximum development alternative (C). Given this, it seems that an intermediate setback distance should be specified. We would suggest a distance of 15 percent to 20 percent of a mile, approximately 800 feet to 1000 feet. Since alternative D “balances the use and conservation of planning area resources,” DEIS at 52, this intermediate setback distance would be appropriate. Yet outside of DDAs, alternative D simply follows the prescriptions for alternative A; that is, current management. We believe that much has been learned about riparian area ecology and function since 1987 when the current management framework was put in place (i.e., alternative A), and given this improved knowledge and understanding a greater setback distance is warranted. We do, however, support the provision (stated for alternative A but apparently also applicable for alternative D) that mineral and reality actions within the setback distance be managed with Category 4 restrictions.

IX. Fish and Wildlife.

A. General Wildlife.

An objective is that BLM will “manage for no greater than a 10 percent net loss of big game crucial winter range and parturition habitat over the life of the plan.” Goal BR: 8.1. We support this provision, which we believe can help ensure that big game populations in the Lander Field Office are maintained even

if development activities occur. We also support the related goal of managing so that impacts to wildlife habitats are “such that no unnecessary or undue degradation results” from BLM authorized activities. Goal BR: 8. However, we would suggest that BLM commit to monitoring the scientific literature related to the impacts big game can withstand on crucial winter ranges and parturition areas and if the literature comes to make it apparent that net losses of less than 10 percent should be managed for, the Lander RMP should make provision for the adjustment of BR: 8.1 to allow for accommodation of this new information, without a need for an RMP amendment or maintenance action.

We also support the provision that would prohibit surface disturbing and disruptive activities on big game crucial winter ranges from November 15 to April 30 and within identified big game parturition areas from May 1 to June 30. Record # 4037, Maps 50-54. It is well established that big game crucial winter ranges are critical for supporting big game, so this provision is called for. In addition, the WGFD’s mitigation policy calls for the protection of these areas. We are concerned, however, that only Category 1 restrictions would apply in these areas relative to mineral and realty actions, with some (not clearly specified) exceptions. Category 1 restrictions do not limit mineral or realty actions, they open areas to these activities, subject only to stipulations. DEIS at 58 (Table 2.5). This provision seems to assume that stipulations will be in place to prohibit development during the specified time periods, but we believe the BLM should not make this assumption. It should prohibit development during the specified time periods in crucial winter ranges and parturition areas whether stipulations are in place or not. At least with respect to oil and gas development, BLM’s authority to put in place conditions of approval (COA) would allow for this action even if stipulations are not in place. This issue will be discussed in Part 4.II below. But accordingly, more stringent restrictions than Category 1 restrictions should be put in place.

We also support the provisions in Record #s 4049, 4050, and 4051. We believe it is especially important that the Dubois, Red Canyon, Lander Slope, Green Mountain, and Sweetwater River areas be priorities for the management of fish and wildlife habitat. Record # 4050. This is fully consistent with our recommended management of these areas as shown in Exhibit 1. All of these areas have extremely valuable wildlife resources and habitat, and this should be reflected in BLM’s management direction for these areas.

The provision stating that BLM will “utilize recommendations” found in the WGFD’s oil and gas development mitigation document and its wind energy

wildlife protections document is extremely important and we congratulate BLM for including it. Record # 4051. We have been encouraging the BLM in other RMP revision efforts to adopt a provision such as this, and this may be the first instance in which BLM has committed to utilizing these mitigation measures. So again, we strongly support this provision. The WGFD is the expert wildlife management agency, so attempting to adhere to its recommendations is fully justified, and needed. We urge the BLM to use the most current WGFD guidance documents since these are updated on a regular basis to include recommendations based on the best available science and best-known mitigation measures, and the RMP should make allowance for this.

Two extremely important provisions are made in the “General Wildlife” section. First, BLM will seek to minimize the footprint of surface-disturbing activities “to the smallest practical” area in order to protect wildlife and their habitats. Record # 4055.⁹ While this is an important provision, we encourage the BLM to consider changing the provision to the “smallest necessary” area. Application of the BMPs presented in Appendix 1, which be discussed in Part 4.I, as well as other BMPs, could greatly reduce the footprint of oil and gas development activities to a much smaller “necessary” level rather than a “practical” area.

But most importantly, the BLM would apply seasonal restrictions for wildlife protection outside of DDAs “to maintenance and operations actions” if the activity is detrimental to wildlife, in addition to the limitation on development during actual construction activities. Record # 4056. This is an extraordinary step forward. There has been a long-standing need to extend seasonal protection provisions beyond just the actual development phase to also include future operations. These activities can be as disruptive and detrimental to wildlife as the impacts during the construction period. And they may extend over far greater time periods. So this is an important provision and we urge the BLM to maintain it. As will be discussed below in Part 4.II, there is no doubt that BLM has the legal authority to require the continued application of these seasonal protections.

We also support the fencing provisions in Record # 4058. We particularly support the provision that fences will not be constructed in identified big game

⁹ An equivalent provision is made in the “Special Status Species” section of the alternatives descriptions where it is provided that BLM will, “Reduce the footprint of development and facilities to the smallest practical to protect special status species and their habitat.” Record # 4074.

migration corridors unless they are critical to a comprehensive grazing management strategy and project impacts are mitigated. However, we believe this provision should be expanded to include migration corridors that are identified for other species of wildlife besides big game. These species can also be harmed by encounters with fencing. The BLM should commit to engaging in an ongoing inventory and monitoring effort to determine the locations of migration corridors, for big game as well as other species, so that these provisions can be applied as effectively as possible. Record # 4083 also provides important provisions relative to fencing that will help protect the greater sage-grouse, and these provisions should be implemented. Likewise Record # 6066 provides for the removal or modification of fences where wildlife movement and management can be facilitated, which is a beneficial provision.

The provisions for managing wind energy development stated in Record # 4060 should be carefully adhered to. However, we suggest the following additions or modifications to these provisions. The provision that wind energy development will be managed on a case-by-case basis relative to sage-grouse, raptor concentration areas, big game crucial winter ranges, migration corridors, and parturition areas should be clarified to make it clear that the avoidance and exclusion areas depicted in Map 100 will be applied and required. In many areas wind energy development is not permitted (exclusion areas) and in many other areas it is to be avoided. This should be the overarching guidance, not management of wind energy development on a “case-by-case basis.” Thus, the guidance in Record # 4060 should be modified to make it clear that, relative to wildlife protection, in exclusion areas wind energy development is not permitted, and thus there is no need for management on a “case-by-case basis,” and that in avoidance areas any management on a “case-by-case basis” will be done in a manner that seeks to “stay clear of; shun.” THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 125 (4TH ed.) (defining avoid). This should be the overarching management direction in wind energy avoidance areas relative to wildlife protection—an effort to “keep from happening” the targeted activity—wind energy development. *Id.*

Record # 4060 makes special provisions relative to the sage-grouse and wind energy development pursuant to alternative D, the preferred alternative. The RMP would limit wind energy development in sage-grouse core areas to no more than once location per 640 acres and require that cumulative impacts from all disturbance not exceed 5 percent of the sagebrush habitat in the project area. It does not appear this provision complies with the State of Wyoming’s Executive Order (EO) for greater sage-grouse core area protection. EO 2011-5 (June 2,

2011). The EO provides that a specific stipulation (to be applied in addition to general stipulations) is that, “Wind development is not recommended in sage-grouse core areas, but will be reevaluated on a continuous basis as new science, information, and data emerges.” EO 2011-5 at 13. We request that Record # 4060 be modified to comply with this provision. We urge the BLM to fully abide by the sage-grouse conservation policy reflected in the EO.¹⁰

If this provision is not revised, we believe the BLM should carefully define what is meant by “one location per 640 acres.” In our view this provision should allow for no more than one wind turbine location per 640 acres, not some lesser standard such as permitting one wind farm per 640 acres or one wind farm per an average of 640 acres. These kinds of relaxed definitions of “one location per 640 acres” undermine the policies of the EO and threaten sage-grouse conservation. Additionally, and again, in the wind energy development exclusion areas shown on Map 100, no wind energy development locations should be permitted in a 640 acre area, and wind energy development cannot be limited to a 5 percent cumulative disturbance cap from all source in these areas, whether in or out of a core area, no surface disturbance due to wind energy development is permissible in exclusion areas. And in avoidance areas, the BLM should seek to “stay clear of” wind energy development, inside and outside of core areas, so again the numerical limits are of lesser significance in these areas—the first job is to avoid (“keep from happening”) the development, as Map 100 provides. It may also be worth noting that the wind energy exclusion and avoidance areas tend to correspond closely with sage-grouse core areas. *Compare* Map 65 *with* Map 100. Thus, wind energy development should not occur in sage-grouse core areas.

¹⁰ Relative to compliance with the EO with regard to wind energy development, the U.S. Fish and Wildlife Service’s July 7, 2009 letter to the WGFD must be noted. Exhibit 4. In this letter the Fish and Wildlife Service responded to requests for clarification of its policy regarding the EO and wind energy development. The Fish and Wildlife Service stated: “In summary, constructing wind farms in core areas, even for research purposes, prior to demonstrating it can be done with no impact to sage-grouse, negates the usefulness of the core area concept as a conservation strategy and brings into question whether adequate regulatory mechanisms are in place to protect the species.” As the Service also pointed out, “allowing impacts within core areas, for research or other reasons, destroys the function and value of the Strategy.” Consequently it is clear the BLM cannot allow wind energy development in core areas if it is to abide by the EO. Moreover, a failure to prevent wind energy development in core areas could well lead to a determination by the Fish and Wildlife Service that listing the sage-grouse under the Endangered Species Act is “warranted” when it next makes this determination in 2015 and 2016.

B. Big Game.

In Record # 4037, discussed above, the BLM provides that mineral and realty actions in big game crucial winter ranges and identified big parturition areas will be managed with Category 1 restrictions, “except as provided below.” Our review of the “Big Game” section of the alternatives discussion in Chapter 2 (DEIS at 100-101) does not indicate there is any presentation of exceptions to the Category 1 restriction provision. It would seem to us that if restrictions more stringent than Category 1 restrictions were to be provided for, we would find them here. This is the big game section of the alternatives discussion. As we discussed above, we believe that more stringent provisions should be provided for. We would suggest that the Category 1 restrictions should at least be modified to state that development activities during the specified times periods will not be permitted in big game crucial winter ranges and identified parturition areas even if “standard stipulations” are not in place.¹¹ See DEIS at 58 (Table 2.5) (presenting the Category Restriction Key and making reference to “standard stipulations” under Category 1 restrictions). Again, and as will be discussed in Part 4.II, there is no doubt the BLM has the authority to require these restrictions whether a stipulation is in place or not.

C. Raptors.

Record # 4066 provides for “setback” distances for the protection of raptors from surface disturbing and disruptive activities during various time periods. But it also provides that, “Distances and dates may vary based on raptor species, chick fledging, topography, and other pertinent factors.” We believe this is a significant clarification of the stated setback distances and prohibition dates— they are not fixed and absolute, they can be modified if circumstances or understanding dictate. We urge the BLM to commit to a continuing review of the scientific literature to determine if the stated setback distances and prohibition dates remain appropriate and to modify them if called for. We also urge the BLM to make setback determinations based on a site-specific analysis in all cases. And most importantly, we urge the BLM to explicitly include the above clarification (“Distances and dates may vary . . .”) in all stipulations that it attaches to land use authorization decisions, such as oil and gas leases. Without explicitly including

¹¹ This clarification should also be applied to Record # 4056, which makes these seasonal restrictions also applicable to “maintenance and operations actions.” These timing limitation requirements should be applied to the operations stage of development activities whether stipulations providing for such are in place or not.

this clarification in any stipulations that are attached to a land use authorization, there may be a question as to whether BLM can modify the setback distances or prohibitions dates. The BLM should avoid this possibility by explicitly including the exception language in any stipulations.

Given concerns expressed by the U.S. Fish and Wildlife Service over golden eagle population declines in the West¹² and given the sensitivity of this species to disturbance, we believe the BLM should prohibit surface-disturbing and disruptive activities under Alternative D within one mile of golden eagle nests as well as within one mile of ferruginous hawk nests. Maximizing setback distances from energy development activities for both golden eagles and ferruginous hawks will help to minimize local population declines of these sensitive raptors.

In addition to giving itself the option to modify raptor setback distances as circumstances or understanding dictate, we urge the BLM to develop and include larger setback distances in wind energy development areas. Setback buffers that are currently in use for raptors on BLM lands in Wyoming were designed to prevent disturbance to nesting birds from activities such as oil and gas drilling. These buffers were not designed to reduce collision-related fatalities (with wind turbine blades) to raptors that are foraging within their territories or are commuting to and from nest sites. Raptor nest buffers in wind energy development areas should be increased to reduce potential collisions of raptors with wind turbine blades as well as to reduce disturbances to nesting birds.

X. Special Status Species.

We support the provision in Record # 4104 that would prohibit surface-disturbing activities within 200 feet of occupied pygmy rabbit habitat. But as we have stated elsewhere, we believe the BLM should commit to continued monitoring of the scientific literature and the results from activities it approves to determine if this limitation remains well-founded. If the science or experience indicates a need for change, the BLM should be able to make changes in the prohibition distance as needed. The RMP should provide for these modifications based on improved understanding so that time-consuming maintenance or

¹² U.S. Fish and Wildlife Service. 2011. U.S. Fish and Wildlife Service Draft Land-Based Wind Energy Guidelines – Recommendations on measures to avoid, minimize, and compensate for effects to fish, wildlife, and their habitats. February 15, 2011. U.S. Fish and Wildlife Service. Department of the Interior. Washington, D.C. Page 14.

amendment actions are not needed. Perhaps this is an example of adaptive management.

We also support the provision requiring BLM to avoid surface disturbing activities in occupied white-tailed prairie dog colonies where possible. Record # 4105. That said, as discussed above, we believe that BLM should interpret what the requirement to “avoid” means in light of the normal dictionary definition of the word: to “stay clear of; shun” and to “keep from happening.” THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 125 (4TH ed.) (defining avoid). The need for BLM to define what avoid means as part of this RMP revision will be discussed further below in Part 4.III. We particularly urge the BLM to avoid permitting wind turbine construction in occupied white-tailed prairie dog colonies since such prey concentrations attract foraging raptors which are especially vulnerable to collisions with wind turbine blades.

We also support the provision relative to bat maternity roosts and hibernation areas. Record # 4106.

A. Sage Grouse

The management provisions that would apply to this special status species call for special discussion. The Lander Field Office of the BLM is frequently referred to as the “core of the core” since it has perhaps the most extensive and significant greater sage-grouse habitat in the core areas that Wyoming has designated to protect this iconic sagebrush species. Sustaining healthy populations of sage-grouse by protecting the sagebrush habitat on which the species depends is not only a critical responsibility of the Lander Field Office, but also of fundamental importance to the State of Wyoming, since healthy populations of grouse in this area will help to ensure that a listing of the species under the Endangered Species Act is unnecessary. We generally support the provisions focusing on sage-grouse management in the Lander RMP (Record #s 4093-4103) since these appear to be in compliance with the Governor’s Executive Order (EO) 2011-5 on sage-grouse. However, we would like to caution the BLM that certain issues regarding the *implementation* of the provisions outlined in the EO (and thereby the Lander RMP) could undermine sage-grouse protection in Wyoming. The BLM should be aware of these limitations (discussed below), should not entertain exceptions to its sage-grouse provisions, should consider its management prescriptions as minimally protective thresholds, and should provide stronger protections for sage-grouse whenever possible.

Although we acknowledge that the provisions provided for in Alternative B generally are more protective for the area's greater sage-grouse than those outlined in Alternative D, we recognize, as supporters of Wyoming's core area conservation strategy, that compromises have been made to allow development to go forward in less critical sage-grouse habitats in exchange for affording sage-grouse greater protections in more critical habitats. We therefore support the provisions outlined for Alternative D in Record #s 4093, 4094, 4095, and 4096. We particularly appreciate that the timing stipulation for surface-disturbing and/or disruptive activities would be initiated on March 1, in Alternative D instead of on March 15.

However, we remind the BLM that although disallowing surface-disturbing activities and/or disturbing activities and surface occupancy within 0.25 miles of occupied or undetermined leks outside core area is the accepted provision in the 2011-5 EO and this policy has been accepted by the WGFD, research has shown that this distance is inadequate for protecting sage-grouse populations.¹³ Outside of the core area, the BLM should evaluate proposed development on a case-by-case basis and not allow development 0.25 miles from leks that support robust numbers of grouse simply because they happen to occur outside of a core area boundary. Many core area boundaries are not based wholly on scientific research but rather reflect compromises that were made to accommodate energy development in Wyoming. We recommend that the BLM include a caveat similar to that included with the raptor nest buffer stipulations to the effect that setback distances included in Record #s 4094 and 4096 may be extended if necessary to protect particular leks. Doing so would give the BLM the option of affording greater protections for sage-grouse if needed during the life of the management plan.

In addition, we recommend that the BLM pay particular attention to the construction of roads and transmission lines in sage-grouse core areas. Exceptions already have been allowed to the road (no surface occupancy) and transmission stipulations provided for in the EO. If such exceptions continue to be allowed through the accommodating language of the EO and development projects repeatedly violate the stipulations that scientific research suggests are necessary

¹³ Holloran, M.J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. Ph.D. Dissertation. University of Wyoming, Laramie, WY. Walker, B. L., D. E. Naugle, and K. E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71(8):2644-2654.

for protecting grouse, the sage-grouse core area conservation strategy will be undermined and a “warranted” listing decision by the U. S. Fish and Wildlife Service will be more likely.¹⁴

Furthermore, although we generally support Record #s 4094, 4095, and 4096, we are concerned that implementing the provisions outlined in Record # 4097 actually may undermine rather than foster protections for sage-grouse populations. We are particularly concerned with the Density Disturbance Calculation Tool (DDCT) that has been developed to implement this provision. Record # 4097 stipulates that the density of disturbances will be limited to an average of one disturbance location per 640 acres. We presume that the BLM intends to use the DDCT to calculate allowable disturbance densities. To do so, four-mile buffers are drawn around leks that occur within four miles of the projected disturbance area when calculating the DDCT decision area (formerly the Project Impact Analysis Area). The analysis area is then the outermost boundary of the four mile project buffer and the four-mile buffers around associated leks. As a result, the more leks in or adjacent to a project area, the larger the potential analysis area. Since five percent of a bigger area is larger than five percent of a smaller area, the DDCT inadvertently allows larger development acreages in areas with higher number of sage-grouse leks, i.e., the best sage-grouse habitat. We do not believe that it was the intent of the sage-grouse core area strategy to enable larger development footprints in the best core area habitat and yet the DDCT appears to do just that. Thus, the BLM should avoid this potential outcome.

We are unclear whether managing core areas as subunits and ensuring that the cumulative unreclaimed disturbance average does not exceed five percent of the sagebrush habitat within the subunit will help to address this problem nor whether the research underlying the five percent disturbance criterion for energy development projects is applicable over the scale of core area subunits. However, we find it difficult to believe that allowing cumulative disturbance to five percent of the quality sagebrush habitats that occur in Lander Field Office core areas would not have adverse impacts on the area’s (and thereby the State’s) sage-

¹⁴ We note that under court order, the Fish and Wildlife Service will make its next initial determination of whether listing the sage-grouse under the Endangered Species Act is warranted by 2015 and must make a final determination by 2016. We also direct you again to Exhibit 4 where the Fish and Wildlife Service’s views regarding sage-grouse conservation and the EO are presented.

grouse populations. Although we support the BLM's adoption of provisions outlined in EO 2011-5, we believe the BLM should be aware of their limitations, and permit only developments that ensure that sage-grouse populations remain adequately protected.

We also would like to highlight concerns with the potential adverse impact of wind energy development on sage-grouse and the way in which such development may impact the provisions outlined in Record # 4097. EO 2011-5 states that, "Wind development is not recommended in sage-grouse core areas, but will be reevaluated on a continuous basis as new science, information and data emerges." EO 2011-5 at 13. Based on this provision, the BLM should not allow wind development in sage-grouse core areas, which would require amending Record #s 4060 and 4100. We support Alternative B in Record # 4100 ("Exclude wind-energy development in greater sage-grouse Core Area"). And we believe that Alternative D should be amended so that it is the same as Alternative B (as opposed to Alternative A). Given the Lander RMP's expected longevity as a planning document, the BLM could state for Alternative D that wind energy development is excluded from core areas *unless scientific research determines that wind energy development does not adversely affect greater sage-grouse*. Currently Alternative D states that wind energy development will be managed on a case-by-case basis in consideration of impacts to greater sage-grouse and its habitat, but in conformity with Record # 4097. We do not believe this provision is sufficiently restrictive to protect sage-grouse given the potential adverse impacts of wind energy development on grouse. If BLM does apply Record # 4097 to wind energy development in the Lander FO, we urge the agency to include the boundary of a wind farm when conducting analyses to determine project impacts rather than considering only the acreage of individual turbine footprints because sage-grouse may be displaced or disturbed by wind turbines, in addition to being subject to direct habitat loss. Adverse impacts of wind farms also are likely to extend beyond leks to nesting grouse.

Even if wind energy development is restricted to non-core areas, the BLM should be aware that such development still could have significant adverse impacts on core area sage-grouse populations. For example, the proponents of the proposed Chokecherry/Sierra Madre wind energy project have committed to constructing turbines only in non-core areas. Nevertheless, these areas are adjacent to core area and between 89,566 acres and 126,455 acres (depending on the alternative selected) of core area habitat would be within four miles of wind

turbines.¹⁵ Such a scenario is alarming since research suggests that energy development impacts on leks are discernable out to four miles and some leks within this distance have been extirpated as a result of such development.¹⁶ Furthermore, 74-80 percent of female sage-grouse typically nest within four miles of leks.¹⁷ Thus the BLM should be aware that even wind energy development in non-core areas could have significant adverse impacts on core-area sage-grouse and should permit wind energy development accordingly. Minimizing adverse impacts of wind energy development on sage-grouse through strategic placement of wind turbines will be critical to maintaining sustainable grouse populations in the important sage-grouse habitats that comprise the Lander Field Office.

We support Alternative D for Record #s 4098, 4099, 4101, and 4102 (although we prefer Alternative B for Record # 4099). However, we urge the BLM to add an additional provision to Record #s 4099 and 4102 stating that any newly permitted permanent, high-profile structures will be outfitted with raven deterrents. Ravens are notoriously opportunistic and readily initiate predation on nests from a wide array of human structures (including ladders on water tanks). Energy development in undeveloped sagebrush areas has been shown to facilitate increases in the abundance of breeding ravens,¹⁸ with concomitant negative effects on nest survival of greater sage-grouse.¹⁹ Raven predation on grouse nests

¹⁵Bureau of Land Management. 2011. Draft Visual Resource Management (VRM) Plan Amendment Draft Environmental Impact Statement (Volume I) and Chokecherry and Sierra Madre Wind Energy Project Draft Environmental Impact Statement (Volume II) . July 2011. High Desert District – Rawlins, Field Office, Rawlins, Wyoming. Page 4.15-15.

¹⁶ Holloran, M. J. 2005. Greater sage-grouse (*Centrocercus urophasianus*) population response to natural gas field development in western Wyoming. Ph.D. Dissertation. University of Wyoming, Laramie, WY. Walker, B. L., D. E. Naugle, and K. E. Doherty. 2007. Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71(8):2644-2654.

¹⁷ Moynahan, B. 2004. Landscape-scale factors affecting population dynamics of greater sage-grouse (*Centrocercus urophasianus*) in north-central Montana, 2001-2004. Ph. D. Dissertation. University of Montana. Missoula, MT. Holloran, M. J. and S. H. Anderson. 2005. Spatial distribution of greater sage-grouse nests in relatively contiguous sagebrush habitats. *Condor* 107:742-752.

¹⁸ See, e.g., Bui, T.-V. D., J. M. Marzluff, and B. Bedrosian. 2010. Common raven activity in relation to land use in western Wyoming: Implications for greater sage-grouse reproductive success. *Condor* 112:65-78.

¹⁹ Coates, P. S., and D. J. Delehanty. 2010. Nest predation of greater sage-grouse in relation to microhabitat factors and predators. *Journal of Wildlife Management* 74:240-248.

may have a significantly adverse impact on local grouse populations.²⁰ The WGFD recently summarized the significant threat that ravens that colonize anthropogenic development may pose to sage-grouse.²¹ The BLM therefore should ensure that energy companies and others with plans to erect any structures that might accommodate ravens in sage-grouse habitat take the necessary steps to prevent ravens from nesting on these structures.

Finally, we recommend that the BLM add an additional record number that states that any new rangeland fences will be outfitted with sage-grouse fence diverters/markers to reduce collisions-deaths of grouse. BLM also should commit to working with existing grazing allotment holders to install sage-grouse diverters on existing rangeland fences within two miles of sage-grouse leks. A study by the WGFD documented the severity of the threat posed to sage-grouse by rangeland fences and found that sage-grouse fence diverters reduced all bird fence collisions by 70 percent and sage-grouse fatalities by 61 percent.²² Given the robust populations of sage-grouse in the Lander planning area, reducing sage-grouse collisions with fencelines could significantly benefit the area's grouse populations and could help mitigate the impacts of other types of development in sage-grouse habitat. In Record # 4083, the BLM says it will "Increase the visibility of existing fences to reduce hazards to flying greater sage-grouse." However, we believe this recommendation merits greater specificity as suggested above and should be a separate record number that is included with the sage-grouse policies.

XI. Cultural Resources.

Record #s 5009 and 5010 provide general guidance for the protection of cultural resources. Record # 5010 states that appropriate viewshed protections will be imposed and that BLM will seek to limit degradation of cultural resources.

²⁰ Coates, P. S. 2007. Greater sage-grouse (*Centrocercus urophasianus*) nest predation and incubation behavior. Ph.D. Thesis, Idaho State University, Boise, ID. 191 pp.

²¹ Christiansen, T. 2011. Ravens and greater sage-grouse in Wyoming. A report compiled by the Wyoming Game and Fish Department. Wyoming Game and Fish Department, Cheyenne, WY.

²² Christiansen, T. 2009. Fence marking to reduce greater sage-grouse (*Centrocercus urophasianus*) collisions and mortality near Farson, Wyoming – Summary of interim results. Wyoming Game and Fish Department, Cheyenne, WY.

It also states BLM will continue to preserve and stabilize significant sites. However, these provisions do not seem to be accompanied by the requirement that BLM will seek “avoidance” of impacts to cultural resources that Record # 5009 provides for. We believe this should be corrected and that Record # 5010 should state that BLM will seek to avoid degradation (not limit it) and that “appropriate viewshed protections” will be accomplished through avoidance of the activity if possible. Furthermore, where cultural resources are associated with the important resource values associated with VRM management classifications, recreation management areas, wind energy avoidance and exclusion areas, oil and gas leasing closure and major constraint areas, the Heritage and Tourism Recreation Management Corridor, ACECs, and the Reference and Education Area, the management provisions that apply in those areas should govern how cultural resources are managed. Maps 32, 78, 93, 100, 127, 132, and 135. The RMP should so provide.

The provision in Record # 5011 that tribes will be consulted relative to cultural resources that are important to them is very important and should be fully implemented, as should the provision that tribally important sites, areas, and resource will be protected whenever possible.

XII. Visual Resources.

We strongly support the provision in Record # 5034 stating that BLM will “Prohibit surface-disturbing activities within important scenic areas (VRM Class I and II visual resources).” Map 78. There is no doubt the WSAs as well as the Dubois, Lander, Beaver Rim, and Sweetwater Watershed areas (a significant portion of the VRM Class I and Class II areas) are all “important scenic areas.” A VRM Class I management standard by definition requires BLM to “preserve the existing character of the landscape” and the level of change “will be very low.” And in VRM Class II areas the BLM must “retain the existing character of the landscape,” the level of change “will be low.” Given these mandatory management requirements, the BLM is right to prohibit surface disturbance in VRM Class I and Class II areas.

While we might prefer the greater acreage of VRM Class II management designation that would be provided for under alternative B, we believe that the visual resource management prescription under alternative D are sufficient to protect the Priority Conservation Areas. Record # 5036, Map 78. The Dubois area is entirely subject to a VRM Class II designation (and some VRM Class I). Much of the Lander Front and Beaver Rim and the Sweetwater Watershed are

designated VRM Class II. We believe these areas are sufficiently covered by VRM Class II designations to meet the management needs for these areas, as we have identified them in Exhibit 1. But we do want to make a couple of points.

First, there would be a rather wide VRM Class III corridor that would be designated across the Sweetwater Watershed in the vicinity of Jeffrey City. Map 78. It appears to be at least 6 miles wide, maybe wider. We ask the BLM to reconsider whether a corridor of this width is needed. While we understand that there may be a need to provide for transmission lines to the Gas Hills and perhaps the Moneta/Lysite gas field, we are not convinced this corridor needs to be 6 miles wide. That seems excessive to us. Numerous pipelines and powerlines could be accommodated in a 6 mile wide corridor, and we are not aware of any reason to expect that numerous power lines or pipelines will need to be constructed in this area. The BLM should designate the narrowest corridor possible through this visually and historically significant area.

In this regard Record # 5037 may be important. It provides that intrusive (“out of scale with the surrounding landscape”) surface-disturbing activities “within view of the Congressionally Designated [Historic and Scenic] Trails will be evaluated based on VRM Class II standards.” By this standard, many powerlines that might be constructed across the Jeffrey City-area VRM Class III corridor shown in Map 78 would need to meet VRM Class II standards even though the corridor is designated VRM Class III. This again emphasizes the need to designate the narrowest VRM Class III corridor possible, and we ask the BLM to ensure careful compliance with the provision in Record # 5037 relative to the Jeffrey City-area VRM corridor.

Finally, we note that much of the Bridger Mountains area as we have defined it is designated VRM Class III and some of it is designated VRM Class IV. Map 78. We believe this is insufficient protection for the stunning visual resources in this area. Management needs for the Bridger Mountains area will be discussed below in Part 3.I.

XIII. Renewable Energy.

We support the provision in Record # 6015 that would make 961,696 acres of the Lander Field Office wind-energy avoidance areas and 972,794 acres wind-energy exclusion areas. As can be seen on Map 100, these avoidance and exclusion areas correspond closely with our Priority Conservation Areas, and this

management direction is in correspondence with what we recommend for these areas. Exhibit 1.

The draft RMP provides that management prescriptions for wind-energy development as it relates to important wildlife habitat, VRM Class I and Class II areas, Recreation Management Zones, areas with cultural resources, and specially designated areas are to be found in the management prescriptions for those areas or resources. Record # 6010. While we appreciate that these sections of the alternatives discussion in the DEIS may provide some guidance for management direction for wind energy development in these areas, we believe the BLM should make it clear that in wind-energy avoidance and exclusion areas the management direction is to avoid wind-energy development or to exclude it. This should be recognized as the dominant management prescription in these areas or for these resources even if the specific discussion in, say, the wildlife habitat management section of Chapter 2 in the DEIS does not discuss particular wind-energy prescriptions.

There is an area south of U.S. Highway 287 roughly in the area of T27-28N R89-93W that is designated as open to wind energy development. Map 100. We believe this designation should be reconsidered and this area should be designated a wind energy development exclusion or avoidance area. This area would have the Green Mountain ACEC located in it, and pursuant to the modifications to oil and gas management map, much of this area would be a controlled surface use area for oil and gas leases and some of it would be NSO. Maps 132 and 144. Designating this area as open to wind-energy development is inconsistent with the management direction in other parts of the RMP. Moreover, this designation creates a narrow band of BLM lands open for wind energy development in what is otherwise a large, contiguous wind energy development exclusion or avoidance zone.

While some of the Bridger Mountain area is a wind-energy avoidance area, much of the area is open to wind-energy development. As will be discussed below, we believe the Bridger Mountains area as we have defined it in Exhibit 1 should be managed as a wind-energy development exclusion area, or at a minimum as a wind-energy development avoidance area.

XIV. Rights-of-Way and Corridors.

We generally support the rights-of-way (ROW) exclusion and avoidance areas shown in Map 104 and the ROW designated corridors and communications

sites shown in Map 108. Record #s 6020, 6022, and 6023. We support the provisions that new ROWs will be located in areas already disturbed by existing ROWs, requiring linear ROWs to be located along currently established road systems, limiting the width of designated ROW corridors to one-half mile with provision made for narrower corridors, and the requirement to locate other (non-designated) ROWs in existing disturbance areas. Record #s 6017, 6018, and 6020. We also support the provision that new communications sites will be co-located with existing communications sites under most circumstances. Record # 6021. We support these provisions because they are necessary to protect important resources and resource values in the Lander Field Office, particularly in the area of the National Historic and Scenic Trails.

We do ask the BLM to consider whether the Lost Creek, Lost Creek Spur, and Bairoil ROWs might be more consolidated in the Jeffrey City area. These ROWs could have significant impacts on the historic and scenic trails in this area, and an effort should be made to consolidate them. It appears to us that the Lost Creek and Lost Creek Spur ROWs could be consolidated in the area north of U.S. Highway 287 for at least 10-15 miles, and then they could diverge at that point, instead of south of Jeffrey City, in the historic and scenic trails area. As just discussed above in the Visual Resources section (Part 2.XII), we believe the rather wide VRM Class III corridor proposed in this area could be made more narrow, and we ask the BLM to consider this proposal to narrow the corridor width in the final RMP.

And as was true with renewable energy, Map 104 indicates that the area south of U.S. Highway 287 roughly in the area of T27-28N R89-93W would be open to ROW corridors. We again think this should be reconsidered given the presence of the Green Mountain ACEC and the strong oil and gas development controls that will apply in this area. This proposal creates an unneeded narrow corridor of lands available for ROWs in an otherwise large, contiguous area of ROW avoidance or exclusion.

XV. Comprehensive Trails and Travel Management and Wilderness Study Areas.

We support the provision that would close The Bus at Baldwin Creek and the Johnny Behind the Rocks areas to motorized travel. Record # 6040. These are key recreation attractions in the Lander area and are of tremendous value and benefit to local citizens. Thus, these areas should be protected from the potentially

destructive and disruptive disturbance that motorized vehicles and motorized travel can cause.

However, we believe the Whiskey Mountain area should be closed to motorized and mechanical travel in order to protect its extremely sensitive and valuable bighorn sheep herd, as alternative B provides for. Record # 6033. We do not believe the provision under alternative D that would open much of the Whiskey Mountain ACEC to motorized and mechanical travel on designated roads and trails would be protective enough of the bighorn sheep herd, which are very sensitive to human disturbance.

We are opposed to any provision that would allow the use of motorized vehicles in WSAs, even on designated roads and trails. Map 128. Pursuant to Record # 7022 several of the WSAs would be open to motorized travel on designated roads and trails. Motorized travel is almost completely banned in wilderness areas, so the BLM should not contribute toward building a perception that the use of motorized vehicles in these areas is "OK." If these areas were designated as wilderness, vehicular travel would almost certainly be prohibited. Consequently, the BLM should not contribute toward building an opposing sense of what is acceptable in these areas. Building this history and this expectation will only make BLM's management responsibilities that much more difficult should these areas be designated wilderness. We urge the BLM to ban motorized travel in all WSAs in the Lander Field Office pursuant to the Lander RMP. The BLM should also strongly consider prohibiting the use of mechanized travel in the WSAs because this form of transportation, for example mountain bikes, is also prohibited in wilderness areas. Vast areas of the Field Office would remain available for motorized and mechanized modes of travel and recreation even if they were prohibited in these areas.

We also believe that motorized travel should be prohibited in citizen proposed wilderness areas. Map 12. These areas contain numerous wilderness and other resource values. Therefore the BLM should seek to fully protect these values particularly since there is some chance they will be considered by Congress for wilderness designation, even if the BLM does not believe they meet the criteria for wilderness areas. So, for example, Record #s 6100 and 6101, which apply to the Sweetwater Rocks Undeveloped Special Recreation Management Area, should be modified to ensure that motorized travel is not permitted in citizens' proposed wilderness areas, which likely occur in this area. *Compare* Map 12 *with* Map 93. This prohibition should be replicated in all

citizens' proposed wilderness areas. Again, large areas will remain available for motorized forms of travel.

XVI. Livestock Grazing.

Issues related to livestock grazing will be discussed in Part 3.II below.

XVII. Recreation.

Under alternative D a number of recreation management areas would be designated. Map 93, Record #s 6076 to 6116. We generally support the establishment of these recreation management areas and the management direction specified for them.²³ We think there is little doubt that areas such as the Lander Slope, Red Canyon, the Lander Valley Community Special Recreation Management Area (Johnny Behind the Rocks and The Bus), the Continental Divide National Scenic Trail and National Historic Trails, the Green Mountain area, and the Sweetwater Rocks Undeveloped Special Recreation Management Area are extremely important to recreationists and management of these areas primarily to support recreational pursuits will pay numerous social and economic benefits.

We do have one concern relative to an area that would apparently not be designated a recreation area under the preferred alternative, alternative D. Under alternative B the Muskrat Basin Extensive Recreation Management Area (located roughly in T32-33N R91-95W) would be designated. Map 91. This would not occur under alternative D. Map 93. This area is generally coextensive with the Beaver Rim area. *Compare* Map 91 *with* Maps 132 and 143. Given that BLM will put in place an MLP for the Beaver Rim area, we believe it would also be appropriate to designate a special recreation management area in this area. Map 143. Likewise, since BLM plans to retain the Beaver Rim ACEC, designating a companion recreation area would be complimentary. Map 132. The BLM would put in place a number of restrictions in the MLP area intended to protect visual

²³ However, we note that Table 4.33 indicates that 1,653,961 acres of the planning area would have a recreation setting trending toward urban/industrialized. DEIS at 1020 (Table 4.33). We encourage the BLM to adopt management prescriptions that allow more of the recreation setting in the planning area to trend toward primitive, or at least to be maintained in the current setting. We do not believe the public is seeking to have such a large area of the Field Office becoming more recognizable as a urban or industrialized area than the "wide open spaces" experience that now characterizes most recreation settings in the Lander Field Office.

quality, provide for NSO in a considerable portion of the area, would seek to protect riparian resources and ensure reclamation, limit the amount of disturbance to no more than 5 percent of the surface area and make other provisions to limit disturbance, consult with Tribes regarding sites of interest, and seek to protect paleontological resources. Record #s 2023 to 2034. In the ACEC BLM would put in place a number of protective provisions, including working with the State of Wyoming and others “to develop educational signage, driving loops, and kiosks regarding unique plant communities, unique geology, and visual resources.” Record #s 7087 to 7093 (Record # 7091 makes the referenced statement).²⁴ As noted in the DEIS with respect to the Beaver Rim,

These lands contain Native American sacred sites and important visual resources. The topography of the area is such that surface disturbances such as oil and gas and other mineral development could be highly visible and would present a sharp contrast with the surrounding areas. The southern boundary is immediately to the north of the swath of land that makes up the visual setting for the NHTs. The importance of the visual resources in the area stems from the geologic features of the Rim (and the Native American concerns that arise because of the Rim's visual importance) and nearby setting of the NHTs. The area also lies within greater sage-grouse Core Area, as does all of the land on top of the Rim up to the Granite Mountains.

DEIS at 296. Given these numerous values and the undeniable appeal of this area to the public, the BLM should designate the Beaver Rim area, as a special recreation management area pursuant to the Lander RMP, whether denominated the Muskrat Basin Extensive Recreation Management Area or otherwise.

XVIII. Congressionally Designated Trails.

Proper management of the extensive length of Congressionally Designated Trails that are found in the Lander Field Office is crucial because these historically and recreationally remarkable paths are key components of the NLCS.

²⁴ The Objectives stated for the Beaver Rim ACEC are also noteworthy. DEIS at 187 (providing that objectives for this area include maintaining wildlife habitat especially for raptors, maintaining views in the area, maintaining sensitive plant species, protecting significant Tribal Cultural Properties, and protecting the geological resources of the Beaver Rim).

The key provisions that would be made for the protection of these trails is the establishment of the Heritage Tourism and Recreation Management Corridor covering the eastern and central part of the trails and the establishment of the South Pass Historic Landscape ACEC and several recreation management areas along the western part of the trails. Maps 93, 127, and 132. Record #s 7003, 7004, and 7005. The management proposed for these trails would generally be protective of the extremely important resources found along the trails or associated with them.

The Heritage Tourism and Recreation Management Corridor, including the 5 mile buffer surrounding it, would be managed as a VRM Class II area, although the utility corridor that traverses the area would be managed as VRM Class III. Record # 7006. As we discussed above, the BLM should strongly consider reducing the width of this utility corridor. Map 78. In any event, the BLM should ensure careful compliance with the standards for a VRM Class II area. We again note the provision at Record # 5037. As we discussed above, it provides that intrusive (“out of scale with the surrounding landscape”) surface-disturbing activities “within view of the Congressionally Designated [Historic and Scenic] Trails will be evaluated based on VRM Class II standards.” By this standard, many powerlines that might be constructed across the Jeffrey City-area VRM Class III corridor shown on Map 78 would need to meet VRM Class II standards even though the corridor is designated VRM Class III.

Intrusions through this utility corridor could include the Lost Creek Corridor, Lost Creek Lateral Corridor, and the Pathfinder Reservoir/Sinclair Corridor. Record # 7011. But as we discussed above in the Rights-of-Way and Corridors section, every effort should be made to reduce the width of these utility corridors in the vicinity of the trails; they should be combined and made as narrow as possible. We strongly support the provision in Record # 7011 that provides that projects in the utility corridor “shall employ every feasible practice to limit disturbance to as small an area as possible.”

Record # 7008 provides that the lands one-quarter of a mile on each side of the Continental Divide National Scenic Trail Extensive Recreation Management Area will be managed for CSU relative to oil and gas leasing (see further discussion of this issue below) and that the remainder of the Heritage Tourism and Recreation Management Corridor will be managed as NSO from 0 to 3 miles on each side of the trails and CSU from 3 to 5 miles on each side of the trails. We strongly support the application of NSO stipulations to this historically significant area and believe that the NSO requirement should be applied to the

entire 5 mile buffer. We urge the BLM to make a determination of the maximum horizontal reach for drill rigs that is possible today.²⁵ Moreover, the area of the Heritage Tourism and Recreation Management Corridor is almost entirely unleased currently, so the BLM has the option of making this corridor, including its full 5 mile buffer, NSO with little impact on industry. Maps 33 and 127. BLM could offer NSO leases in this area, and industry could choose to purchase them, or not.

In any event, in the CSU area (from 3 to 5 miles on each side of the trails) BLM states the CSU will “ensure that a project causes no more than a weak contrast upon the Trails . . .” with respect to oil and gas leasing. Record # 7008. This may or may not be the standard for a VRM Class II area; the BLM should ensure that if this CSU zone is maintained, the VRM Class II standards are met, as Record # 7006 provides.²⁶ *See, e.g.*, SD: 1.2 (presenting the standard for a VRM Class II area). And we note again that Record # 5034 provides that BLM will prohibit surface disturbing activities in VRM Class I and Class II areas.

We do have one significant concern with the provisions in the Congressionally Designated Trails section. And that is the narrow one-quarter mile buffer along the Continental Divide Scenic Trail in what is referred to as the CDNST ERMA (“Continental Divide Scenic Trail Extensive Recreation Management Area”). Record # 7003. This buffer is far too narrow to protect the values and resources along this section of the Continental Divide National Scenic Trail. A 5 mile buffer with the related management provisions should be put in place along the entire length of this scenic hiking trail, as is true elsewhere along the Heritage Tourism and Recreation Management Corridor. We are unclear as to

²⁵ Encana currently has extended the reach of directional drilling to 4,877 feet, nearly a mile. Exhibit 4. A reach of this length would allow much of even a 5 mile NSO buffer to be reached, since in many areas there are likely private or State lands where drilling could be conducted from.

²⁶ This same concern applies to Record # 7012. It provides that projects such as wind-energy development projects will be subject to a requirement that they will be authorized, even if outside of the 5 mile buffer, only “if the project causes no more than a weak contrast . . .” Again, we ask the BLM to ensure that it complies with the stated VRM Class II standards, not necessarily this standard. Under the VRM Class II standard BLM must ensure the existing character of the landscape is retained and that the level of change is “low” (which may or may not be same thing as “weak”). And again, the provision at Record # 5037 providing that intrusive surface-disturbing activities within view of the Congressionally Designated [Historic and Scenic] Trails will be evaluated based on VRM Class II standards should be adhered to, even if these projects are outside of the 5 mile buffer.

why BLM proposes this drastically scaled back protective buffer along this section of the Corridor.

Looking at Map 127, one is struck by the narrow “tail” this creates relative to the cohesive body of protected area elsewhere along the Heritage Tourism and Recreation Management Corridor. It may be the Happy Springs Oil Field explains this decision, but why that would be true is not clear. *See* Record # 7003 (stating that the narrow buffer applies from this oil field east to the Field Office boundary).²⁷ But even if the level of existing development makes this portion of the trail less pristine (it may be “more industrialized”), that is no reason for the BLM to continue that management direction or resource condition; it should seek to correct these incompatible land uses to the extent possible, or at least mitigate them.²⁸ Designating a wider buffer would help accomplish that.

At a minimum the BLM should propose a management framework for the CDNST ERMA that corresponds with its stated goals for the Congressionally Designated Trails. One goal is that the Continental Divide National Scenic Trail corridor will be maintained “to provide an opportunity to experience and reflect upon the wide variety of scenic, cultural, historic, and physiographic setting characteristics. . .” of the trail and adjacent lands. Goal SD: 2. To meet this goal the BLM should put in place a buffer around all of the Continental Divide National Scenic Trail that is equivalent to the buffer proposed elsewhere along the Heritage Tourism and Recreation Management Corridor, not a mere one-quarter mile wide buffer.

Record # 7013 provides that new audible and atmospheric effects will not exceed current levels in the vicinity of the trails. We urge the BLM to make clear that this provision also applies to night lighting. Maintaining dark night skies is an important component of the experience along both the historic trails and the

²⁷ *See also* DEIS at 446 (stating, “The portion of the CDNST in the planning areas travels through numerous differing landscapes. The trail enters south of Green Mountain and travels northwest towards Crooks Gap. In the Crooks Gap area the trail travels through a more industrialized zone with many resource uses including major pipeline ROWs, reclaimed uranium mining, major motorized travel routes, and an oil field on top of Crooks Mountain.”).

²⁸ Moreover, this “more industrialized” landscape only occurs “in the Crooks Gap area,” not the whole Continental Divide National Scenic Trail Extensive Recreation Management Area by the very terms of the DEIS. *See* DEIS at 446 (stating that the industrialized landscape only occurs “in the Crooks Gap area”). Thus, at most, only the segment of the trail in the Crooks Gap area should be subject to the narrow one-quarter mile buffer.

Continental Divide National Scenic Trail. It is also consistent with the direction and goals of the NLCS.

XIX. Wild and Scenic Rivers.

While we support the proposal pursuant to alternative D to recommend the Baldwin Creek and Sweetwater River units as suitable for inclusion in the National Wild and Scenic River System (NWSRS), it is our view that all nine of the eligible segments should be recommended as suitable for the NWSRS, as would occur under alternative B. As Table 4.42 in the DEIS shows, all nine segments contain a host of outstandingly remarkable values, such as scenic, recreational, wildlife, cultural, historical, and ecological merits. DEIS at 1058. Consequently, all nine segments should be nominated as suitable for inclusion in the NWSRS. BLM seems to largely be excluding rather small or short segments, such as Ice Slough and Rock Creek. Map 129. But the significance of these smaller reaches should not be underestimated. These streams can provide wild and scenic water-based refuges, a rarity because most riparian areas are owned by private parties and because riparian areas are by definition rare in this arid landscape. BLM should recognize the uniqueness of all NWSRS eligible segments that are found on its lands and make its recommendations accordingly. If this were done, all nine segments would be nominated for inclusion in the NWSRS.

Record # 7028 provides that the waterways recommended as suitable for inclusion in the NWSRS will be managed to “protect free flowing values, outstanding remarkable values, and ensure maintenance of eligible and suitable classifications.” This is certainly appropriate management direction for the remarkable Baldwin Creek and Sweetwater River segments that are recommended for inclusion in the NWSRS. A number of the subsequent Record Numbers provide specific management direction for the Baldwin Creek and Sweetwater River segments. We support those provisions, such as NSO for oil and gas leasing and management as VRM Class II in the Baldwin Creek area and VRM Class I in the Sweetwater River area. Record #s 7030 and 7035.

Record # 7036 provides that all nine eligible segments will be managed to “improve characteristics which would facilitate future suitability classification.” This is an important provision and we strongly support it. Even if BLM does not plan to currently recommend seven of the segments as suitable for inclusion in the NWSRS, it appears it will attempt to retain that option for the future. We support that provision and encourage the BLM to adopt it. Again, even small segments of

natural free-flowing rivers can have a tremendous value that is out of proportion to their short length. Consequently, maintaining the option of recommending these segments as suitable for NWSRS designation in the future is laudable. Table 4.42 in the DEIS makes it clear that all nine segments were found to be eligible for the NWSRS, stating on page 1058 that the table “lists the waterways found to be eligible for inclusion in the NWSRS” Therefore, the provision in Record # 7036 seems to apply to all nine segments, and should be implemented.²⁹

XX. Areas of Critical Environmental Concern.

BLM proposes to retain four ACECs (Lander Slope, Red Canyon, Whiskey Mountain, and Beaver Rim), to retain and expand two ACECs (East Fork and Green Mountain), and to designate a new South Pass Historical Landscape ACEC. Record # 7040, Map 132. Rather than establishing the proposed Government Draw/Upper Sweetwater Sage-Grouse ACEC, BLM would instead establish the Government Draw/Upper Sweetwater Sage-Grouse Reference and Education Area with an accompanying smaller ACEC, the Twin Creek ACEC. *Id.* The DEIS goes on to describe the management prescriptions for each of these ACECs and we generally support the proposed management direction. Of particular interest and concern to us are the prescriptions for VRM classifications and oil and gas leasing. The management proposed for each of these ACECs relative to these two management issues is as follows:

ACEC	VRM Classification	Oil and Gas Leasing Prescription	Other
Lander Slope	Class II	NSO	Closed to phosphate leasing.
Red Canyon	Class II	NSO	Closed to phosphate leasing.
Whiskey Mountain	Class II	Closed	Closed to phosphate leasing.
Beaver Rim	Class II	NSO	Managed pursuant to an MLP.

²⁹ Table 4.44 indicates one means by which this provision can be implemented, the provision for “other special designation management” that applies to a NWSRS segment. DEIS at 1061 (Table 4.44). In many instances an ACEC could also be designated that encompasses an NWSRS segment, and this would assist considerably in protecting the outstanding remarkable values of these streams.

East Fork	Not specified but probably Class II—See Map 78 and Record # 7064.	Closed	Closed to phosphate leasing.
Green Mountain	Class II	NSO	
South Pass Historical Landscape	Class II	NSO	Projects such as wind-energy development and transmission lines authorized outside of the 5 mile buffer only if they cause no more than a weak contrast. ³⁰
Twin Creek	Not specified ³¹	NSO	

³⁰ There is also a provision that in the area 0 to 5 miles on each side of the trails, “new audible and atmospheric effects will not exceed current levels.” Record # 7110. We support this provision, but as we discussed above we believe it should be made clear that this provision applies to protecting dark night skies from the effects of light pollution.

³¹ In our view both the Twin Creek ACEC and the Government Draw/Upper Sweetwater Sage-Grouse Reference and Education Area should be managed as VRM Class II. The Twin Creek ACEC may well fall within the VRM Class II area shown on Map 78. To the extent it extends into the Class III area, this should be corrected so that all of the Twin Creek ACEC is managed as VRM Class II. Some of the Reference and Education Area certainly extends into the VRM Class III area. Consequently Map 78 and the accompanying Record #s should be modified to make all of this area managed as VRM Class II. As recognized in the DEIS, “The proposed Twin Creek ACEC has the same values of concern as the proposed Government Draw/Upper Sweetwater Sage-Grouse ACEC,” which are issues related to the high presence of sage-grouse in this area. DEIS at 473. “There are 7 occupied and 1 unoccupied leks within the proposed boundary of the Twin Creek ACEC. The area has high bentonite potential that, if developed, would fragment greater sage-grouse habitat and connectivity in the area.” *Id.* Thus, this ACEC should be managed to protect its visual quality. The limitations associated with a VRM Class II designation would go far toward ensuring protection of sage-grouse in the area. Relative to the Reference and Education Area, the DEIS states “Alternative D VRM would include some lands in the Reference and Education Area managed as VRM III; therefore, more surface-disturbing and disruptive activities could be authorized than under Alternative B. However, beneficial impacts to greater sage-grouse values in the Reference and Education Area would likely be the same under these two alternatives because of the Reference and Education Area minerals and realty management discussed below.” DEIS at 1166. We believe it should not be assumed that minerals and realty limitations will necessarily mimic the requirements of VRM classifications and that the BLM should manage this

Government Draw/Upper Sweetwater Sage-Grouse Reference and Education Area	Not specified ³¹	NSO	“Additionally, Alternative D would require a Plan of Operations in the Twin Creek ACEC, an area of high to moderate potential for bentonite.” DEIS at 1166. This provision does not seem to appear in the provisions in Chapter 2 of the DEIS. This should be corrected.
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As can be seen, the management prescriptions for the eight ACECs and one special management area generally propose to manage these areas as VRM Class II and NSO or closed for purposes of oil and gas leasing. We support this management direction and urge the BLM to adopt it. This is necessary to protect the relevance and importance values in these areas, values which BLM recognizes. DEIS at 465-473. It will also contribute toward needed protection for the Priority Conservation Areas.

We do believe, however, that in two of the proposed ACECs a more protective management plan should be adopted. Under alternative D, the Beaver Rim ACEC would only be 6,421 acres whereas under alternative B it would be 20,254 acres. Record # 7087. We believe the expanded ACEC should be adopted by the BLM in the Lander RMP. As discussed above, BLM is also proposing a 143,448 acre MLP area on the Beaver Rim. Map 143. By putting in place an expanded ACEC the BLM could better ensure complimentary management direction and efforts with respect to both the ACEC area and the MLP area. And as also discussed above in Part 2.XVII, this would also compliment the special

entire area as VRM Class II so as to ensure adequate resource protection in this area. Moreover, the inconsistency of having some of the Reference and Education Area managed as VRM Class II and some it as Class III will create inherent and built in management conflict.

recreation management area (Muskrat Basin) that we feel should be designated in this area. There is no doubt the Beaver Rim area contains an array of important resources, including unique plant communities, unique geology, and visual resources. The larger ACEC would better protect these important resource values.

Likewise we believe the 24,860 acre Green Mountain ACEC proposed under alternative B should be adopted in preference to the 21,389 acre ACEC proposed under alternative D.³² BLM recognizes in the DEIS that the relevance and importance values of this area include wildlife and plant communities. “The area contains important elk winter range and constitutes almost all of the winter range for the Green Mountain elk herd. The important plant communities in this area are the riparian-wetland systems scattered throughout the ACEC, including wet meadow complexes formed by beaver dams.” DEIS at 469. This area is facing threats:

The primary management challenge for this area is energy development. Energy development activity could result in the loss or alteration of the elk crucial winter range, which could threaten the viability of the Green Mountain herd. The area has historically undergone intensive exploration and development for uranium and, to a lesser degree, oil and gas. The resurgence of the uranium market has resulted in renewed mining activity in the area. There has also been increased interest in wind-energy development and drilling for oil and gas in and surrounding the ACEC.

DEIS at 469-470. Given these threats to the important and relevant resource values in this area, BLM would be well advised to establish the larger ACEC. The BLM acknowledges that this expanded area “contains wildlife resources. In addition, the expansion area includes an elk parturition area near the top of Green Mountain. This portion of Green Mountain consists of open sagebrush surrounded by forested areas.” DEIS at 470. So again, expansion of the ACEC to the full 24,860 acres is advised so as to fully protect the relevant and important values BLM recognizes.

In addition to the ACECs BLM proposes to designate under the Lander RMP, it also proposes to not establish several ACECs. BLM would not establish

³² However, we support the provision in alternative D that would manage the area as VRM Class II whereas alternative B would manage some of the area as VRM Class II and some as VRM Class III. Record # 7098.

the Castle Gardens, Cedar Ridge, Sweetwater Rocks, Continental Divide National Scenic Trail, and Regional Historic Trails and Early Highways ACECs, all of which would be designated under alternative B. Record # 7040, Map 131. However, even though BLM does not propose to designate these ACECs these areas nevertheless will be “manage[d] to protect the identified relevant and important characteristics.” Record # 7040 (underline added). This is a very important provision. The effect of it should be to ensure significant protection for all of these areas, areas the BLM recognizes meet the relevance and importance criteria for ACEC designation. DEIS at 471-73.

Pursuant to this provision the BLM should ensure that it meets the management direction that it specifies for each of these ACECs. Record #s 7113 to 7140. This management direction—specified under the provisions for alternative D—presents the management requirements that would generally ensure BLM “manage[s] to protect the identified relevant and important characteristics,” as Record # 7040 provides for.

Of the ACECs not proposed for designation pursuant to the preferred alternative, we are particularly interested the Sweetwater Rocks ACEC. This ACEC would provide additional protection for the WSAs north of the Sweetwater River as well as citizens’ proposed wilderness in this area. Maps 12 and 128. This ACEC would also be a compliment to the Heritage Tourism and Recreation Management Corridor, the Sweetwater Rocks Undeveloped Special Recreation Management Area, and the National Historic Trails Destination Special Recreation Management Area. Maps 93 and 127. Consequently, this is an important area, even if the BLM does not designate it an ACEC. This emphasizes the importance of abiding by the requirement mentioned above, that the area be “manage[d] to protect the identified relevant and important characteristics.” Record # 7040. The relevant and important characteristics BLM recognizes in this area include scenic values, geologic features, and cultural values. BLM described these values:

The Granite Mountains-Sweetwater Rocks area represents a preserved landscape from Wyoming’s geologic past, unique in Wyoming for its mountain tops’ partial burial in upper Tertiary sedimentary deposits. Other mountain ranges in Wyoming have been almost entirely exhumed, and the Tertiary sedimentary record destroyed by erosion. The geologic history that caused this phenomenon has also resulted in uranium ore deposits and jade and agate occurrences. Scenic values in the area include large granite

spires, domes, and peaks, which the most recent VRI found to be one of the most scenic areas in the planning area. The Granite Mountains are a focal point for travelers along State Highways 220 and 287, where there are several rest areas, scenic pullouts, and interpretive facilities. Climbing in the Granite Mountain area is a rapidly increasing activity. Cultural values in the area include landmarks used during the historic western migration through this portion of Wyoming (e.g., Devil's Gate, Split Rock, Three Crossings, and Independence Rock).

DEIS at 465 (Table 3.61), 472. Thus, these values must be preserved by protecting the relevant and important characteristics of the Sweetwater Rocks area, even if it is not designated an ACEC.

But in addition we believe that management of this area should seek to compliment that in the above-mentioned, adjacent special recreation management areas. So, for example, this area should be managed to compliment the management direction in the Heritage Tourism and Recreation Management Corridor, which includes a goal to “Preserve and protect the historical remains and historical settings of the Oregon, Mormon Pioneer, California, and Pony Express [National Historic Trails] and their associated historic sites for public use and enjoyment.” Goal SD: 4. An objective is to “Manage the landscape (viewshed) associated with the [National Historic Trails] so that visitors continue to get a sense of how this landscape influenced emigrants along the trails.” Objective SD: 5.1. This direction would be a valuable compliment to other management direction for the Sweetwater Rocks area.

In this respect we support the management provision for the Sweetwater Rocks ACEC that would manage the area (outside of WSAs) as VRM Class II except for the area in the right-of-way corridor. Record # 7131. However, we are concerned by the provision that would manage this area relative to oil and gas leasing as “open,” subject to CSU. Record # 7132. We believe this area should be NSO relative to oil and gas leasing in order to fully protect both the resources in the ACEC area and in the adjacent special management areas we have mentioned.

XXI. Socioeconomic Resources.

We support the goal/objective that provides that “Bond amounts for uranium and other surface-disturbing and disruptive activities will be adequate to ensure reclamation of project areas to prevent any potential impacts to the health

and safety of the public.” Record # 8008. However, we believe this provision should be expanded to make it applicable to ensuring reestablishment of the ecological function of a site and the pre-disturbance plant community. Moreover, we believe that in addition to bonding for uranium projects, this provision, or another, should be explicitly targeted at oil and gas development. BLM requires bonding for oil and gas development and pursuant to BLM IMs and regulations it has authority to set the amount at a level that is adequate to ensure reclamation. We would also suggest that these provisions be included in the Soil Reclamation section as well as the Socioeconomic Resources section, because they are as relevant to reclamation activities as socioeconomic considerations.

Provision is also made for the consideration of “paced development” options for mineral and energy development so as to avoid adverse socioeconomic impacts. Record # 8014. This is a beneficial provision, however, it should be expanded to include avoiding impacts to natural resources and values, as well as socioeconomic conditions. BLM is a multiple use agency and its primary area of expertise relates to natural resources, not socioeconomics, so it should focus attention on paced development as it relates to the impacts of mineral and energy development on natural resources, not just socioeconomic conditions. We note that BLM rejected consideration of planning area-wide phased development as an alternative to be carried forward for detailed analysis. DEIS at 26. However, the need is not to prescribe in detail the requirements for paced development at the planning stage; rather the need is for the plan to specify that this consideration will be made when projects are proposed. Record # 8014 seems to accomplish that, at least relative to socioeconomic impacts. Paced (or phased) development has many potential benefits, such as ensuring that before new areas are disturbed previously disturbed areas are reclaimed, limiting the area of disturbance at any one time, and allowing for “adaptive management” as new information and techniques are gleaned from earlier development. Consequently this is a valuable addition to BLM’s “toolbox” relative to managing surface disturbance from mineral and energy development projects.

PART 3—MANAGEMENT NEEDS FOR THE BRIDGER MOUNTAINS PRIORITY CONSERVATION AREA, LIVESTOCK GRAZING, PHOSPHATE MINING, AND BENTONITE MINING.

I. Management Needs for the Bridger Mountains Priority Conservation Area.

A. Introduction.

As we have made clear throughout these comments, we believe the BLM should focus a greater level of resource protection on the Bridger Mountains area under the auspices of the Lander RMP. The proposed management of this area in the draft RMP is lacking relative to protections for this magnificent Priority Conservation Area. For example, much of this area would be open to oil and gas leasing with only moderate constraints. Map 32. The vast majority of the area is available for phosphate leasing. Map 41. Much of it is available for wind energy development. Map 100. The area is managed as VRM Class III or even Class IV. Map 78. Given this relative paucity of protective provisions, we believe the BLM should reconsider the management direction for this area, and in the following section we will propose management for this area that would help ensure its important resources and resource values are adequately protected.

B. Proposed Management Direction for the Bridger Mountains.

With superb opportunities for recreation, a diverse assemblage of native plants and wildlife, and a strong likelihood that significant new oil and gas development will occur nearby, we believe that the greater Copper Mountain area (GCMA) deserves management that will maintain or minimize impacts to scenic, recreational, and ecological values of this area. Below in Figure 1 we present a map of this area. This is a revision to the area presented in the map entitled “The Bridger Mountains—Extraordinary Solitude, Geology, and Wildlife” in Exhibit 1, and the reasons for this modification will be discussed below.

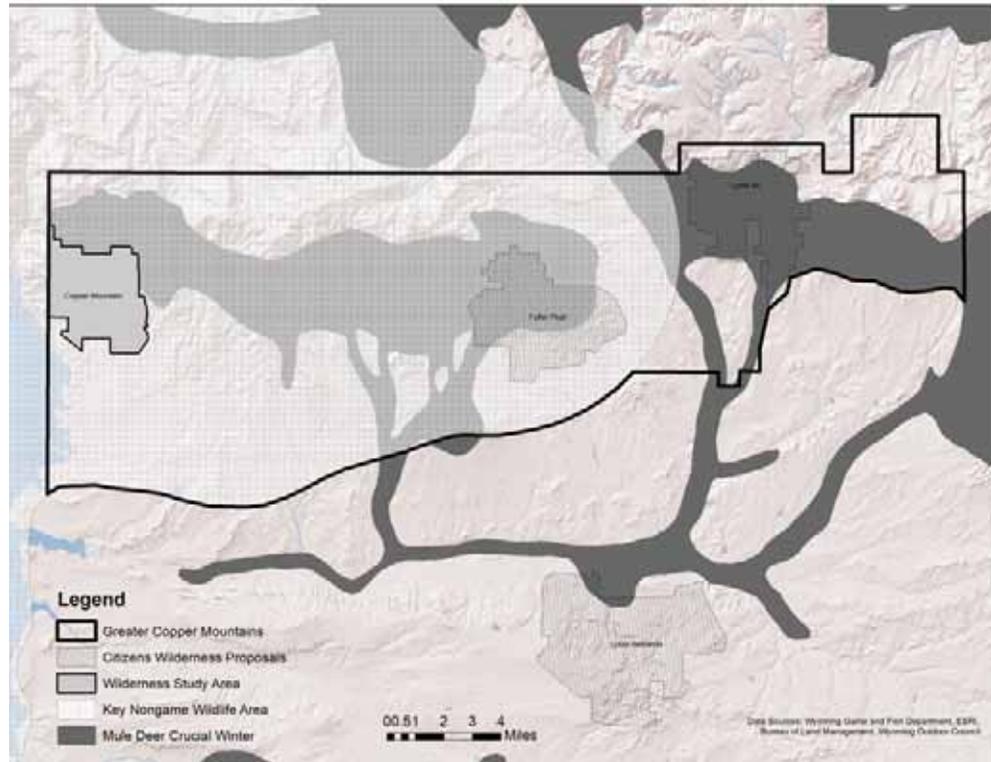


Figure 1. Map of the proposed greater Copper Mountain area (GCMA).

We propose that this area's setting and the recreational opportunities it affords be maintained by crafting management that provides quiet recreational experiences and limits or prevents ground disturbing activities. Furthermore, because the proposed Moneta Divide Natural Gas Project will likely affect wildlife habitat outside of the GCMA, especially winter habitat use by the Southwest Bighorn mule deer herd, we suggest that BLM consider establishing an off-site mitigation fund for development-related activities of the proposed Moneta Divide project that will likely affect wildlife within the GCMA. Finally, we urge BLM to consider implementing changes to its management of livestock grazing for this area to restore degraded riparian areas and prevent further cheatgrass invasion. In the paragraphs that follow we provide recommendations that we believe will help maintain the superb scenic, recreational, and ecological resources of the GCMA.

The area encompassed in the GCMA has been modified from the Wyoming Outdoor Council's earlier Bridger Mountains proposal, presented in the

map entitled “The Bridger Mountains” in Exhibit 1. The southern boundary has been modified to be consistent with the southern boundary of the WGFD’s Wind River Canyon Key Nongame Wildlife area (KNWA). The northern, eastern, southeastern, and eastern boundary of the GCMA is consistent with that of the earlier Bridger Mountains proposal. The southern boundary of the KNWA is a logical one, based upon the expertise and on-the-ground experience of the WGFD’s nongame biologists. It follows landscape features that separate the Copper Mountains and their foreground from the area to the south that will likely experience heavy development as part of the Moneta Divide project. Our on-the-ground observations confirm that this southern boundary of the KNWA is appropriate for the GCMA as it will maintain the setting and visual quality of the Copper Mountains and provide a buffer from the proposed development to the south. Furthermore, as with the earlier proposal, the southern boundary of the GCMA remains north of producing oil and gas leases. In addition to presenting the map of this area above, we have also included it as a shape file included with Exhibit 1.

As one of the best areas of the Lander planning area providing opportunities for quiet recreational pursuits, we hope BLM will implement management for the GCMA that maintains this area’s excellent opportunities for hunting, hiking, primitive camping, wildlife watching, and potentially, mountain biking. As the son of a ranching family in this area we have consulted with told us, “I want it to remain largely undeveloped and pristine.”

To achieve this, we propose that BLM implement “limited to designated routes only” management for motorized and mechanized travel throughout the GCMA. In addition, we feel that the Copper Mountain WSA should be closed to motorized and mechanized travel. Finally, because of the disruption that motorized vehicles cause to hunter experiences as well as elk and mule deer behavior, we urge BLM to implement a seasonal road closure that coincides with big game hunting seasons within the Fuller Peak and Lysite Mountain Citizen’s Proposed Wilderness (CWP) areas. We would be amenable to a strategy that would allow limited entry into these two CWPs, for the purpose of game retrieval. We believe that this strategy is warranted because “[e]lk are generally known to avoid roads that are open to vehicles.”³³ This strategy would also go far to

³³ Sawyer, H., R. M. Neilson, F. G. Lindzey, L. Keith, J. H. Powell, and A. A. Abraham. 2007. Habitat selection of elk in a nonforested environment. *Journal of Wildlife Management* 71(3):868–874.

provide and protect the primitive recreational experience for backcountry hunters, hunters who have few places where they can expect and find a primitive backcountry experience.

To maintain the integrity of the GCMA for recreational users and wildlife, we urge BLM to impose strong restrictions on development within the GCMA. We ask BLM to impose category 5 restrictions across the GCMA as well as within mule deer crucial winter ranges to the south of the GCMA that are important to the Southwest Bighorn mule deer herd. In addition, we ask BLM to require that activities associated with existing oil and gas leases minimize their effects on wintering mule deer within those mapped mule deer crucial winter ranges. Without adequate protections for wintering mule deer from oil and gas development, BLM should expect to see declining use of winter ranges by mule deer and a concomitant decrease of the local mule deer population, much like the trends observed in relation to development of the Pinedale Anticline natural gas field. As the son of the ranching family from this area mentioned above said to us, “Any such impacts [from oil and gas development or mineral extraction] should be minimal or effectively mitigated.”

We believe that a VRM class II management and category 5 restrictions are warranted for this area because of the area’s outstanding scenic, recreational, and ecological values. Especially relevant is the importance of this area demonstrated by its designation as a Key Nongame Wildlife Area by the WGFD, for roosting bats and foraging raptors. These species include the Townsend’s big-eared bat, peregrine falcon, and golden eagle. Because of the presence of a high concentration of these species, all of which are susceptible to wind energy facility induced mortality, we do not feel that wind energy development is appropriate within the GCMA. However, we feel that two exceptions to the category 5 restrictions are appropriate: the designation of the Shoshoni/Badwater and Westwide 79-216 right-of-way corridors. We do not believe that electrical transmission within these corridors is compatible with the values of this area, but we would not be opposed to new pipelines within these corridors so long as surface disturbances are properly reclaimed to prevent the spread of cheatgrass and halogeton. Because of the ongoing threat to the integrity of this area from mining, we believe that it should be withdrawn from locatable mineral entry because the natural values of this area outweigh any potential mineral development. Finally, we also believe that the natural values of this area far outweigh the limited economic opportunities associated with the marginal phosphate deposits, especially those found at Lysite Mountain.

The final issue of concern in the GCMA is the poor condition of certain upland and riparian areas as well as the presence of nonnative invasive plants, including cheatgrass, halogeton, Russian olive, and tamarisk. We suggest that BLM implement management that will restore riparian areas and prevent the spread of invasive plants. Russian olive and tamarisk can be observed throughout the lower reaches of riparian areas within the GCMA. We urge the BLM to analyze and incorporate vegetation treatments in the RMP to facilitate removal of these woody invasive species. Our groups would attempt to assist any effort BLM may undertake to remove these woody invaders

Recent research³⁴ has shown that cheatgrass invasion is facilitated primarily by stress. The author found that “[i]nherent differences in resilience driven by landscape orientation and soil properties create a mosaic of [plant] communities that differ substantially in the cattle grazing disturbance levels they can withstand before crossing a threshold to an alternative state.”³⁵ He goes on to note that “[c]ommunities located on coarser-textured soils, flat terrain or south-facing slopes are the least resilient to disturbance because of their lower productivity.”³⁶ The author recommended that cumulative stress be reduced because climate change is likely to increase heat and water stress.³⁷ In addition, “[r]educing cumulative cattle grazing intensities by altering utilization rates and/or seasons of use and other management strategies may be the only effective means” to reduce stress.³⁸

The current distribution of cheatgrass within the GCMA seems to confirm these findings, according to our anecdotal observations, because cheatgrass is found primarily in areas with south-facing aspects and coarse granitic soils. Because this already xeric area may experience warming and drying as a result of climate change, we support this scientist’s recommendation to alter utilization

³⁴ Michael D. Reisner, *Drivers of Plant Community Dynamics in Sagebrush Steppe Ecosystems: Cattle Grazing, Heat and Water Stress*. PhD Dissertation, Oregon State Univ. Corvallis, OR (Oct. 18, 2010).

³⁵ *Id.* at 223.

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

rates and seasons of use. In addition to cheatgrass invasion of upland plant communities, we also observed degradation of riparian areas within the GCMA. Figure 2, below, is an example of a small seep and associated mesic vegetation within the Fuller Peak CWP³⁹ that exhibits hummocks and very high livestock utilization. To remedy the upland and riparian degradation within the GCMA, we ask BLM to consider implementing a grazing strategy that reduces utilization and changes the seasons of use to give native bunch grasses adequate growing season rest. We also suggest that BLM consider excluding cattle from springs and seeps with wildlife friendly fencing to protect these fragile but important landscape features.



Figure 2. Hummocks and heavy utilization of a riparian area within the Fuller Peak CWP. Photo courtesy of Tony Furlisi.

II. Livestock Grazing Management.

Under the proposed preferred alternative, BLM would put in place a system that would allow range improvement projects only when necessary to

³⁹ The coordinates for this seep are: WGS 84 (NAD 83) UTM 13T 0272683, 4807103.

implement a comprehensive grazing management strategy that leads to improved rangeland health. Record # 6063. Range improvement projects would be avoided that would expand livestock grazing on the landscape unless there is clear link to a comprehensive grazing strategy. *Id.* Overall there would be a moderate forage utilization level (41 to 60 percent). Record # 6064. Virtually the entire Field Office would be open to livestock grazing. Record # 6060, Map 119. But over time there could be a reduction in the number of animal unit months (AUM) of grazing that is authorized.⁴⁰ DEIS at 56.

While tying the approval of range improvement projects to identified comprehensive grazing management strategies—presumably these will often be Allotment Management Plans (AMP)—will likely lead to improvements in livestock grazing management, we believe there is room for improvement in these requirements. A comprehensive grazing management strategy incorporates prescriptions relative to the timing and intensity of grazing. DEIS at 1320 (defining comprehensive grazing strategy). However, we believe such a strategy should also focus on the overall length of the grazing season. Grazing should not occur year-round, and plants must be given rest from grazing during their growing season and during the hot part of the year (July-September), especially in riparian areas. Grazing during the hot season has been demonstrated to be problematic for the maintenance of rangeland health.⁴¹ Areas that livestock congregate in must be given special attention relative to reducing the length of the grazing season because this concentrated level of use can be especially problematic for plant reproduction and growth. The definition of comprehensive grazing strategy in the glossary should be modified to include a statement that these prescriptions will also specify the length of the grazing season (based on a technical evaluation of what is appropriate and sustainable), and it should not exceed a timeframe that prevents achievement of rangeland health standards. As the BLM notes, “*how* livestock grazing will be managed is a planning area-wide issue.” DEIS at 24 (emphasis in original). Given this, regulating the length of the grazing system is needed pursuant to this RMP.

Generally the BLM should seek to avoid construction of range improvement projects if possible. These projects can have a number of significant

⁴⁰ The BLM estimates an overall reduction in actual AUMs of 18.4 percent, from 204,993 AUMs to 167,173 AUMs. DEIS at 1000 (Table 4.32).

⁴¹ See the PhD Dissertation cited at footnote 34.

environmental impacts. Before a range improvement project is authorized, the BLM should ensure compliance with this requirement: “Benefits associated with the projected improvement in rangeland health [due to the construction of the project] should exceed the adverse impacts associated with the project infrastructure.” Record # 6063. The BLM recognizes that range improvement projects “come[] with a price.” DEIS at 25. They can cause fragmentation of wildlife habitats, adverse effects on recreational values, “ever increasing volumes of fences” are problematic for wildlife, water projects can cause a redistribution of grazing pressure “in ways that are not always beneficial,” impacts on visual values occur due to fencing, and there is a nuisance factor for the public which can be forced to open and close numerous gates associated with range improvement projects. *Id.* Thus, before BLM authorizes a range improvement project it should ensure these adverse impacts do not exceed anticipated benefits from the project. Range improvement projects that occur without avoiding these kinds of impacts will not have a “clear link” to a valid comprehensive grazing strategy. Record # 6063.

In adopting this approach to approving range improvement projects, the BLM seems to be guided by competing concerns about fostering maximum levels of grazing through permitting range improvement projects (alternatives A and C) or ensuring greater levels of environmental protection by imposing more restrictions on range improvement projects (alternatives B and D). *See* DEIS at 23-26 (discussing closure of some areas to livestock grazing). By reducing the number of range improvement projects that will be approved, BLM anticipates that reductions in the number of AUMs authorized will be necessary to meet rangeland health standards. *Id.* at 24-25. This may prove to be true, the DEIS anticipates an 18.4 percent reduction in the actual AUMs. DEIS at 1000 (Table 4.32). But this reduction will likely be a gradual reduction, and operators will have time to make adjustments, such as by finding grazing opportunities on private ranges. Furthermore, the environmental benefits of a careful review of any proposed projects so as to ensure they are linked to a comprehensive grazing management strategy that improves rangeland health will make any reductions in grazing levels justified and well supported.

Reductions in livestock grazing use may not only be required because fewer range improvement projects are being built, reductions in grazing use may also be needed to meet the specified moderate forage utilization level (41 to 60 percent). BLM should monitor compliance with this requirement carefully and ensure that it is met. Since only “approximately 131,000 AUMs could be authorized in the planning area without resource conflicts,” DEIS at 24, the BLM

may need to manage grazing levels at more like the 41 percent level than the 60 percent level.⁴² It should take steps to determine what level of grazing is sustainable in each allotment, and levels which will allow rangeland health standards to be achieved, and not assume the 60 percent level is necessarily “moderate” and consistent with resource protection.

In terms of ensuring compliance with Record #s 6063 and 6064, we believe the Guidelines for Livestock Grazing Management presented in Appendix J have great value. These guidelines specify a number of the considerations that need to be incorporated into a comprehensive grazing management strategy in order to ensure it is in fact “comprehensive.” Record # 6063. Range improvement projects should be required to meet these guidelines before being approved—these provisions largely define what a comprehensive grazing strategy must consist of. The guidelines also specify many of the considerations that should be made in setting stocking rates, establishing utilization levels, and specifying the length of grazing seasons. Record # 6064. We recommend that the guidelines be specifically referenced and made operable in the descriptions presented for Record #s 6063 and 6064 and/or incorporated into the definition of comprehensive grazing management strategy. *See* DEIS at 1320 (defining “comprehensive grazing management strategy”). We request that BLM provide that these guidelines be incorporated into comprehensive grazing management strategies, and that until they are, range improvement projects should not be approved.

Finally, in addition to overall issues related to livestock grazing management, we think it is also worth noting one area that should be closed to grazing. That is the Sweetwater River Canyon area. This area is a remarkable recreational, scenic, wildlife and wilderness resource and livestock grazing in this narrow canyon is incompatible with these resource values. The impact of grazing on the riparian system, including the important and popular trout fishery in this canyon, is not sustainable and we do not believe it is consistent with rangeland health provisions and the grazing standards and guidelines. Alternative B would close the Sweetwater River Canyon to grazing. Map 118. We believe the preferred alternative should also make this provision so as to ensure the important

⁴² Since the BLM anticipates 167,173 actual AUMs will still be permitted when the RMP is implemented, “resource conflicts” will still exist. DEIS at 24, 1000 (Table 4.32). This emphasizes the need to make both careful determinations of what constitutes moderate forage utilization levels, and what range improvement projects are acceptable.

resource values in the Sweetwater Canyon are not degraded. The conflicts with the recreational values in this canyon for boaters, hikers, and fishers are just too great. To relieve any impact that closing this area to grazing might have on permittees, the BLM might assist them in finding grazing opportunities elsewhere, including on other BLM lands.

III. Bentonite Withdrawals.

Bentonite mining could have significant impacts if it were to occur in certain areas. We believe these areas should be withdrawn from entry for location of bentonite. Two of these areas include the Lander Slope and the Johnny Behind the Rocks area. It appears the Johnny Behind the Rocks area would be withdrawn from entry pursuant to the proposed preferred alternative. Map 24. We congratulate BLM for that proposed decision.⁴³ We believe consideration should also be given to withdrawal of the Lander Slope from bentonite mining activities. This activity would be incompatible with the residential nature of much of this area.

IV. Phosphate Mining in Red Canyon and Sinks Canyon State Park.

While much of the Lander Field Office would be close to phosphate leasing under the preferred alternative, Map 41, there are State lands in Red Canyon and Sinks Canyon State Park that might remain threatened by this activity. Map 1. We urge the BLM to investigate whether land exchanges could be made in these areas that would place these State lands under Federal control, with the State of course acquiring valuable lands elsewhere. Phosphate mining on these lands would be highly undesirable and would destroy the character of the Lander area. That should not be allowed to occur. As we discussed above, the history of phosphate mining in the Soda Springs, Idaho area stands as a testament to the extremely destructive nature of phosphate mining. And we do note this about State lands: while the State may have an obligation to maximize revenues

⁴³ However, there is an area just south of Johnny Behind the Rocks that should also be considered for withdrawal from bentonite mining. This area is roughly a township in size and is bounded by Twin Creek on the east and south, Wyoming Route 28 on the west, and U.S. Highway 287 on the north. This area compliments the adjacent Johnny Behind the Rocks and is important for wildlife, hiking, hunting, camping, horseback riding, and increasingly for mountain bike riding. The local bicycle club plans to build bike trails in this area.

from these lands for the benefit of the public schools, the State also has long-term trust responsibilities for these lands. Therefore, maximizing revenues in the short-term may not be in accord with its long-term trust responsibilities. Short-term exploitation of any phosphate deposits in Red Canyon and Sinks Canyon State Park might lead to long-term environmental degradation and economic loss, as the situation in Idaho indicates. The BLM should seek to avoid this.

PART 4—ADDITIONAL ISSUES AND CONCERNS REGARDING THE PROPOSED LANDER RMP.

I. Additional Best Management Practices should be Recognized.

Pursuant to numerous provisions in the proposed RMP, the Lander Field Office would require BMPs to be utilized to reduce the environmental impacts of many activities. Appendix H presents BMPs that might be utilized. However, BLM is clear that this is not an exclusive list and that other BMPs might be utilized. *See* DEIS at 1431 (providing in Appendix H that the purpose “is not to select certain practices or designs,” and these BMPs “are not to be considered as exclusive sources of information; rather, they should be used as a starting point . . .”). Below we will present several additional sources of BMPs that we ask the BLM to consider, and to adopt as potential sources for BMPs to be used in the Lander Field Office.

The Wyoming Outdoor Council has developed a number of BMPs that can be required of oil and gas development proposals. This report is included here as Appendix 1. As can be seen, a number of BMPs for the protection of wildlife, air quality, and water quality are presented. We ask the BLM to consider these BMPs and include them in the RMP as additional BMPs that can be considered when oil and gas development proposals are presented to the Field Office.

The Wyoming Outdoor Council has also developed a brochure that discusses BMPs for wind energy development projects. That brochure is included as Exhibit 6. We ask the BLM to consider these BMPs and to include them as possibilities recognized in the RMP.

Another important source of BMPs that is not recognized in Appendix H are the BMPs presented at the University of Colorado’s Intermountain Oil and Gas BMP Project website, available at <http://www.oilandgasbmps.org/>. This website has become one of the most, if not the most, comprehensive sources of BMPs that are potentially applicable in the Rocky Mountain West. Thus, the

BLM should carefully consider these options, and make reference to this important source of information in the Lander RMP.

Above we mentioned Record # 4051 where BLM commits to utilizing the recommendations in the WGFD's oil and gas development mitigation publication, and its wind energy development mitigation policy. These sources contain numerous important BMPs, and they should be recognized in Appendix H of the Lander RMP, as well as in Record # 4051.

II. BLM has Extensive Rights to Regulate Oil and Gas Development Proposals.

Generally in the proposed Lander RMP the BLM seems to recognize the extensive rights it maintains to regulate oil and gas development proposals, despite an area having been leased. This is reflected in the large areas where "major" constraints would be imposed on leases,⁴⁴ the provision to not re-offer existing leases when they expire in areas closed to leasing,⁴⁵ and the BLM's proposal to extend TLS to the operations phase of development and not just the construction or drilling phase.⁴⁶

However, there do seem to be exceptions, times when the BLM incorrectly seems to diminish its oversight and regulatory authority. For example, in Appendix N, BLM indicates that reasonable measures that might be imposed on oil and gas development activities cannot exceed the "200-meter 60-day rule" limits specified at 43 C.F.R. § 3101.1-2. *See* DEIS at 1495 (stating that reasonable measures "may require relocating proposed operations up to 200 meters, but not off leasehold, and prohibiting surface disturbance activities for up to 60 days."). Any suggestion that BLM's regulatory and oversight authority is constrained to this degree is incorrect and has no legal merit. Therefore, we will discuss some of BLM's extensive retained rights in areas it has leased in an effort to ensure that the BLM fully recognizes its continuing authority.

Enclosed as Exhibit 7 is a publication that a Wyoming Outdoor Council attorney prepared that discusses the legal basis for BLM's assertion of significant

⁴⁴ Map 32.

⁴⁵ Record # 2006.

⁴⁶ Record # 4056.

retained rights in areas that it has leased. Under applicable statutes, regulations, and other policy, the BLM has a great deal of authority to regulate the time, place, and manner of oil and gas development on its lands. An oil and gas lease is made “subject to” applicable laws (statutes), the terms and conditions of the lease and attached stipulations, BLM or Department of the Interior regulations or formal orders, and reasonable measures that may be specified to minimize adverse impacts.⁴⁷ These retained rights give the BLM a great deal of authority to regulate oil and gas development. Development can be conditioned by regulating the timing of operations, the siting and design of facilities, and specification of the rates of oil and gas development and production. The BLM also has authority to suspend oil and gas operations in the interest of conservation and can even prohibit development if impacts are substantially different or greater than normal. The BLM retains the right to prevent “adverse impacts” by requiring “reasonable measures,” which can be used to limit all types of environmental harm. These reasonable measures are by no means limited to just the limits mentioned in the 200-meter 60-day rule. The 3101.1-2 regulation itself states that the 200-meter 60-day measures are “a minimum” of what is consistent with lease rights, and when BLM adopted the 3101.1-2 regulation it stated, “the authority of the Bureau to prescribe ‘reasonable,’ but more stringent protection measures is not affected by the final rulemaking.” 53 Fed. Reg. 17,340, 17,341 (May 16, 1988). Accordingly, the BLM should not in any way suggest that the reasonable measures it might specify are limited to just those in the 200-meter 60-day rule.

An additional source of authority giving BLM broad latitude to regulate the conditions under which oil and gas development occurs relates to BLM’s obligation to “minimize” the environmental impacts of oil and gas development. An array of BLM regulations and other sources of authority require the BLM to “minimize” the environmental impact of oil and gas development. These include the following:

- Any rights granted in a lease are made “subject to” reasonable measures that may be required by the authorized officer, with such reasonable measures being as needed to “minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed.” 43 C.F.R. § 3101.1-2.

⁴⁷ See BLM Standard Lease Form (Form 3100-11) and 43 C.F.R. § 3101.1-2 (making the lease “subject to” these conditions).

- Section 6 of BLM’s standard lease form (form 3100-11) requires the lessee, under the direction of the BLM, to conduct operations in a manner that “minimizes” adverse impacts to a host of environmental resources.
- BLM’s regulations for leases, permits, and easements also require BLM to minimize environmental impacts. These regulations require that every land use authorization contain terms and conditions which shall “[m]inimize damage to scenic, cultural and aesthetic values, fish and wildlife habitat and otherwise protect the environment.” 43 C.F.R. §2920.7(b)(2).
- Another source of authority requiring BLM to minimize adverse environmental impacts from oil and gas operations is Onshore Oil and Gas Order No. 1. The Order requires that, “[t]he operator must conduct operations to minimize adverse effects to surface and subsurface resources, prevent unnecessary surface disturbance, and conform with currently available technology and practice.” Onshore Order No. 1 § IV. In approving an Application for Permit to Drill (APD), the BLM must attach conditions of approval that reflect necessary mitigation measures, including reasonable mitigation measures to ensure that operations “minimize adverse impacts to other resources” *Id.* § III.F.a.3.
- And while it is not a regulation, BLM’s Gold Book also makes it clear that environmental impacts must be minimized. Under the Gold Book, the BLM must minimize undesirable impacts to the environment, the long-term health and productivity of the land must be assured, and BLM and the operator must minimize long-term disruption of the surface resources and uses and promote successful reclamation. Gold Book at 2, 15. While the objective is to maximize oil and gas recovery, this is to be done “with minimum adverse effect on . . . other natural resources, and environmental quality.” *Id.* at 37. Design and construction techniques should “minimize surface disturbance and the associated effects of proposed operations and maintain the reclamation potential of the site.” *Id.* at 15.

The effect of all these provisions is that BLM is under an obligation to minimize the environmental impacts of any oil and gas development it approves. This should be borne in mind when interpreting what a “major” constraint on oil and gas leasing and development means.

Minimize means “[t]o reduce to the smallest possible amount, extent, size, or degree.” THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1119 (4TH ed.). Obviously this is a strong standard. And it is not an analytical or procedural requirement—it is not just a mandate to comply with NEPA. It is a *substantive* obligation—in order to meet the obligation to minimize impacts established by its regulations, the BLM must reduce adverse environmental impacts “to the smallest possible . . . degree.” Now we recognize that a somewhat more flexible view of the meaning of “minimize” may perhaps be permissible under some Supreme Court precedent. But not all Supreme Court precedent would allow a more flexible interpretation. Therefore, we believe “minimize” means something, and BLM should adhere to the normal meaning of the word as closely as possible.

If this is done, we think it is clear that BLM has both a great deal of latitude to regulate oil and gas development in a way that protects the environment, and in fact an obligation to do so. Consequently, we ask the BLM to review the Lander RMP and ensure that no statements or positions are put forward in the land use plan that would undermine BLM’s strong authority—and obligation—to regulate oil and gas development in order to protect the environment.

Recent precedent from the Interior Board of Land Appeals (IBLA) supports our view that BLM has strong authority to regulate oil and gas development, even if stipulations are not specifically in place allowing regulation of the activity. Discussing the 3101.1-2 regulation, the IBLA held that the regulation permits broad regulation: “[This] constrained interpretation of a ‘reasonable measure’ [that the appellant claimed would only allow imposition of the 200-meter 60-day limits] is at odds with the plain language of the regulation, which describes what measures ‘at a minimum’ are deemed consistent with lease rights, and does not purport to prohibit as unreasonable *per se* measures that are more stringent.” *Yates Petroleum Corp.*, 176 IBLA 144, 156 (2008). Given this, the IBLA held that BLM was allowed to impose COAs that protected the sage-grouse even though stipulations allowing regulation were not in place. The BLM’s ability to impose “reasonable measures” is broad, not limited—the 200-meter 60-day rule is a floor not a ceiling. We ask the BLM to recognize its broad authority to regulate the oil and gas industry in the Lander RMP, including through the imposition of needed COAs, even if lease stipulations are not in

place.⁴⁸ We specifically ask the BLM to recognize that it is not limited to just requiring protective measures that are in accord with the 200-meter 60-day “rule.”

III. Definition of Terms.

There are several terms used repeatedly in the DEIS that we believe call for definition in the Glossary or otherwise need to be explained. These terms are pervasive in the DEIS, and their importance is clear. Thus, they should be defined.

The first word that we believe should be defined in the Glossary is “avoid” or “avoidance.” This word is used repeatedly in the Maps and in the Chapter 2 descriptions of the provisions of the Lander RMP to describe the limitations that will be applied to activities in order to protect the resource under consideration. “Avoidance” areas are defined for wind energy development, for example. In our view this term should be defined using its normal dictionary meaning. Avoid means “To stay clear of; shun” or “To keep from happening.” THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 125 (4TH ed.). Thus, an appropriate definition of avoid might be: “an activity will not be permitted unless a site-specific analysis determines that the activity, with required mitigation applied, will not cause impacts that exceed the applicable standard(s).” In any event, BLM should define this term in the Lander RMP because its pervasive use means it will have ongoing significant impact on how the plan is implemented and interpreted. Defining the term will help ensure the land use plan is properly implemented in the way BLM envisions and will help avoid confusion when decisions need to be made regarding how to apply the restriction.

A second term that is used pervasively in the Lander RMP is “case-by-case basis.” Many decisions on whether to authorize an activity or not, or whether to take action, will be made on a “case-by-case basis.” For example, decisions about whether to remove or modify a fence or cattleguard will be made on a case-by-case basis. The BLM should provide specificity regarding what constitutes a “case.” Would case-by-case decision-making apply to an entire wind farm or individual turbines at a wind farm? Would decisions regarding travel management apply to an individual road or the collection of roads in an area of concern? We believe the BLM should define this term in a manner that ensures the overall

⁴⁸ The provision in Goal MR: 3 that BLM will “Provide protections for resource values in areas of conflict with mineral exploration and development” is appropriate and is the kind of assertion of authority that we believe is needed in the Lander RMP.

impact of concern, in its entirety, is addressed in any “case-by-case” analysis. Thus, a “case” might be defined to include “a category of related activities or impacts that have impacts or outcomes that should be considered collectively in order to ensure a comprehensive understanding of the action or impacts.”

This term should be approached, perhaps, through the lens of what constitutes cumulative impacts pursuant to NEPA: the incremental impact (or activity) when added to other past, present, and reasonably foreseeable impacts (or actions). *See* 40 C.F.R. § 1508.7 (defining cumulative impact). Approaching the definition of what constitutes a “case-by-case basis” in a manner that ensures the overall impacts are considered will help ensure the Lander RMP is implemented in a holistic, comprehensive manner.

Another term that is used a considerable number of times in the proposed Lander RMP is the requirement for an “acceptable plan for mitigation.” The use of this term is noteworthy in Appendix N. *See also* DEIS at 1320 (defining controlled surface use in the Glossary and making reference to “acceptable plan for mitigation”). It is often used in conjunction with stipulations applied to oil and gas leases—an activity is prohibited unless and until the operator and BLM arrive at an “acceptable plan for mitigation.” The BLM should elaborate on what constitutes an acceptable mitigation plan so it will have guidance moving forward with this RMP. For any mitigation plan to be acceptable it should be tied to complying with recognized standards or outcomes, and not be left completely to “case-by-case” determinations with little or no public involvement, oversight, or review, or even more significantly, RMP guidance. So, for example, before a proposal to allow development on a slope in excess of 25 percent could be found to be acceptable, there should be assurance that the soil, soil reclamation, and water standards specified in the RMP will be met or achieved. *See* DEIS at 1495 (making development on slopes in excess of 25 percent potentially permissible if there is an “acceptable plan for mitigation”), 62 to 70 (presenting the provisions and requirements for soil conservation, soil reclamation, and water resource protection).

We also note that the first choice in mitigation is to avoid the impact altogether. DEIS at 1326 (defining mitigation). *See also* 40 C.F.R. § 1508.20 (same). Thus, an “acceptable plan for mitigation” should include avoidance of the activity or impact as the first choice wherever possible.

The BLM must ensure that the determination of what constitutes an acceptable mitigation plan is not done completely behind closed doors with little

guidance as to what is acceptable. While we appreciate the professional judgment that BLM's professional land managers must exercise, decisions about what constitutes acceptable mitigation are significant enough that standards should be provided to help guide this decision-making.

Finally, we would like to mention a provision made in the proposed Bighorn Basin RMP that was released last summer and related provisions in the Pinedale RMP. We ask that the BLM consider these provisions and consider adding them to the Lander RMP. The proposed Bighorn Basin RMP provides that the BLM will "Protect important habitats, including in areas unavailable to leasing on existing leases . . . to the extent this restriction does not violate the leaseholder/operator lease rights, by applying an NSO restriction and prohibiting surface-disturbing activities." Bighorn Basin RMP DEIS at 2-53 (Record # 2007). The Pinedale RMP provides several times that, "Management actions on existing leases within Unavailable Areas will be designed to protect important habitats by excluding surface occupancy and/or disturbance to the extent this restriction does not violate the leaseholder's/operator's lease rights." Pinedale RMP Record of Decision at 2-47, 2-48, 2-51. We believe the BLM should adopt similar provisions in the Lander RMP. Provisions like these could be an important means to ensure the "vision" for areas made unavailable for leasing is fully implemented and realized. This would certainly apply in the Dubois area, and many areas in the Lander Front and Beaver Rim and Sweetwater Watershed areas are also effectively made unavailable for leasing. Given this direction, it would be appropriate to attempt to minimize the impacts of development of existing leases in these areas. *See* Map 33 (presenting locations of existing leases). And as discussed above in Part 4.II, there is no doubt the BLM has the legal authority, and responsibility, to pursue these kinds of restrictions on development of existing leases.

IV. Produced Water from Oil and Gas Development in the Moneta Divide Area must be Reinjecte

We have been advised that oil and gas development in the Moneta Divide area which is being proposed by Encana would generate copious amounts of produced water. Given the potentially severe impacts of releasing these quantities of water, we ask the BLM to require reinjection of this produced water. Poison and Badwater Creeks could be impacted by this produced water, and Boysen Reservoir is just downstream. Selenium appears to be of special concern, but other compounds could also contaminate this produced water. At a minimum, disclosure of the compounds in the produced water and their concentrations

should be required so that potential impacts on the ecology of these waters can be assessed and prevented. The Wind River below Boysen Reservoir is a world-class trout fishery that brings in numerous tourists and supports local businesses, so this resource cannot be threatened.

We believe putting in place such a requirement would be in accord with provisions in the proposed RMP. For example, the proposed Lander RMP provides that BLM will “Require the use of Best Management Practices and mitigation to reduce point and nonpoint source pollution.” Record # 1026. BLM would seek to implement management actions “on a case-by-case basis” that would “prevent degradation of ground and surface water quality.” Record # 1045. These provisions are sufficient to allow the BLM to put in place a requirement for the reinjection of produced water in the Moneta Divide area, and BLM should do so. Produced water production from this field appears to be a clearly defined and specific resource concern and issue, so it is appropriate to provide for its regulation and control in the Lander RMP, and not await project-level analysis. We also direct the BLM to our discussion of issues related to soils in the Moneta Divide LRP DDA on page 22 of these comments. These points also have relevance to this concern.

V. BLM can Implement Strong Environmental Protections in the Lander RMP without Running Afoul of Local Land Use Plans.

We understand that cooperating agencies have been given a formal role in the planning process through FLPMA, but we believe that the mandates of FLPMA and its implementing regulations regarding this role are perhaps misunderstood and exaggerated by some cooperating agency representatives. Consistent with the requirements of FLPMA and other Federal laws, BLM retains ample discretion to exercise authority as lead agency to ensure Federal law and policy is fully reflected in the Lander RMP. As discussed below, a survey of local land use plans indicates that adoption of alternative D and portions of alternative B in the final Lander RMP would be consistent with the State and local land use plans relevant to the Lander planning area.

BLM is required to consider local land use plans and policies during the RMP revision process.⁴⁹ However, FLPMA only requires that a BLM RMP be

⁴⁹ 43 U.S.C. § 1712(c)(9).

consistent with “officially adopted and approved”⁵⁰ local plans or policies and only when those local plans or policies are consistent with Federal law and policy.⁵¹ Obviously it would be impossible for the BLM to draft a plan that would be perfectly consistent with the plans and policies of Fremont County (not to mention Natrona, Carbon, Sweetwater, Hot Springs, and Teton Counties), three conservation districts, and the Wyoming Game and Fish Department. In addition, current Federal statutes, regulations, and policies do not provide BLM with the latitude to draft a management plan that would be consistent with the anti-regulation and anti-Federal government viewpoint that is sometimes espoused by some local cooperating agency representatives.

Moreover, to allow a cooperating agency representative to express oral or written desires that are not in accord with their officially adopted and approved plans or policies is in contravention of their role as an elected representatives of local citizens and is ostensibly what the “officially adopted and approved” language at 43 C.F.R. § 1610.3-1(d) was designed to guard against. Local cooperating agencies are given a heightened role in the BLM’s RMP revision process so that they may “represent their constituencies” because “[p]ublic involvement at the deliberative stage is gained through elected official representation.”⁵² Unless cooperating agency representatives present positions that stem from officially approved and adopted plans, policies, and programs, a danger exists for a focus on the desires of a select group of interests rather than the needs and desires of the local populace who have not participated at the deliberative stage. Wyoming law requires that local governments provide notice and an opportunity for public participation during the formation of local land use plans.⁵³ Advocacy of local representatives that lies outside the confines of their local plan is not appropriate and undermines the spirit of Wyoming law.

We believe that a discussion of “officially adopted and approved” state and local plans and policies is important. Below, we provide an analysis of provisions from local and State land use plans, relevant to the Lander planning area, that we think, generally contemplate a balanced approach to public lands management. We believe that BLM’s final land use plan, even with provisions

⁵⁰ 43 C.F.R. § 1610.3-1(d).

⁵¹ 43 U.S.C. § 1712(c)(9).

⁵² BLM Instruction Memorandum No. WY-2010-033.

⁵³ W.S. § 18-5-202(b).

from Alternative B, will generally be consistent with most of these State and local land use plans.

The Popo Agie Conservation District (PACD) created the Popo Agie Watershed Plan (PAWP) to allow local people to identify natural resource concerns, determine desired conditions, and formulate a plan to achieve those desired conditions.⁵⁴ Public meetings were held and the public was given 45 days to provide their comments on the draft plan.⁵⁵ Two goals, most relevant to the BLM's planning process, were “[t]o maintain ecosystems and resources capable of sustaining ecological, economic, and social values in which upland health is a fundamental component” and “[t]o maintain ecosystems and resources capable of sustaining ecological, economic, and social values in which riparian and wetland health is a fundamental component.”⁵⁶ The PACD does not adopt provisions that would be inconsistent with balanced management of BLM public land, management that limits certain activities in certain areas. These goals promote management of riparian and upland areas that are not inconsistent with what the BLM has proposed under alternative D, or even portions of Alternative B, because ecological and local economic and social values will be sustained through balanced management that limits some land uses because of their impact to these values.

We were unable to find a land use plan for the Lower Wind River conservation District and the Dubois-Crowheart Conservation District (DCD). However, the DCD's objective for recreation and wildlife states: “[r]ecognizing that a sustainable and healthy wildlife population is an important area asset, support carefully planned public and private land use proposals to minimize adverse impacts on critical wildlife habitat.”⁵⁷ We believe that the BLM's plan to protect the Upper Wind River Valley because of this area's world-class wildlife resource is consistent with the DCD's wildlife and recreation objective.

⁵⁴ 2005 Popo Agie Watershed Plan, Popo Agie Conservation District. <http://www.popoagie.org/Publications/PAWatershed%20Plan.pdf>, p. 1. (Accessed November 23, 2011).

⁵⁵ *Id.* at 6.

⁵⁶ *Id.* at 1-2.

⁵⁷ Dubois-Crowheart Conservation District Website. http://duboiscrowheart.org/index_files/Page1238.htm (Accessed November 23, 2011).

Fremont County's land use plan does not contain substantive provisions but does contain a number of policy pronouncements relevant to public lands.⁵⁸ In its plan, Fremont County defined "multiple use" which "means the sustained simultaneous use of public natural resources, both renewable and non-renewable, for the grazing of domestic livestock, wood harvesting, minerals extraction, hunting, fishing, commercial outfitting, motorized and non-motorized vehicle use, camping, hiking, horseback riding, shooting firearms, and/or other use that is customarily practiced and is integral to the economy and/or culture of the local citizenry."⁵⁹ Multiple use is a broad concept but "[i]f all the competing demands reflected in FLPMA were focused on one particular piece of public lands, in many instances only one set of demands could be satisfied. A parcel of land cannot be preserved in its natural character and mined... Accordingly, BLM's obligation to manage for multiple use does not mean that development must be allowed"⁶⁰ We think the 10th Circuit's interpretation of multiple use is authoritative and clearly recognizes BLM's longstanding responsibility to segment uses across the landscape even if such segmentation restricts some potential uses.

Fremont County's overarching goal is to "secure the right of use of the federally or State managed land on no more restricted level than is spelled out by the accompanying plan components for Water, Timber, Grazing, Mining and Minerals, Endangered Species, Recreation, and Transportation, and others."⁶¹ For grazing, the goal of the Fremont County plan is to "[p]romote healthy, sustainable rangeland supporting a viable livestock industry upon which Fremont County, our small communities, and our citizens depend for their custom, culture, economic viability, and social stability."⁶² BLM actions and plan decisions, including a reduction of authorized livestock use, that address the need to remedy degraded rangeland resources, especially within the Sweetwater Watershed, are necessary

⁵⁸ Fremont County, 2004 Fremont County Wyoming Land Use Plan, September 7, 2004. <http://fremontcountywy.org/wp-content/uploads/2010/01/Fremont-County-Land-Use-Plan.pdf> (Accessed November 23, 2011).

⁵⁹ *Id.* at 6. (emphasis added).

⁶⁰ *New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 710 (10th Cir. 2009) (quoting *Utah v. Andrus*, 486 F. Supp 995, 1003 (D. Utah 1979)).

⁶¹ Fremont County Land Use Plan, § 5.02.

⁶² *Id.* at § 8.02.

and not in contravention of Fremont County's laudable goal to "[p]romote healthy, sustainable rangeland."

Fremont County's goal for minerals and mining is to "[p]roduce and encourage development of any valuable mineral within Fremont County."⁶³ This goal is not consistent with Federal law and policy because FLPMA requires that BLM manage public lands "in a manner that will protect the quality of scientific, scenic, historic, ecological, environmental, air and atmospheric, water resource, and archeological values."⁶⁴ Proper management of many of these resources cannot be achieved by allowing development of "any valuable mineral" in Fremont County. Furthermore, because FLPMA states that the BLM "where appropriate, will preserve certain public lands in their natural condition," FLPMA's consistency provisions do not require that BLM adhere to Fremont County's goal of developing "any valuable mineral" within the county.

Finally, Fremont County's goal for recreation is to "[p]rotect for present and future generations of all citizens the right and privilege to recreate on federally or State managed lands and waters in Fremont County."⁶⁵ Recreation is a concept that encompasses the needs of citizens to find pleasure, solace, and escape from their daily lives. It is appropriate, in our view, to provide areas where a spectrum of recreational experiences can be found. Often, the recreational experience of one citizen can impact the actions of another citizen, and this is especially true when citizens who seek a quiet and primitive recreation experience have that experience disrupted by motorized recreationists. It is rarely true that those who seek quiet and primitive recreation disrupt the activities of others. Fremont County's focus, in its land use plan, on motorized recreation, fails to represent the diverse recreational experiences sought by Fremont County citizens. We believe that BLM actions and plan decisions, even those that limit motorized recreation, could not be construed to be an infringement upon the right and privilege of citizens to recreate on BLM lands, and thus would not contravene the Fremont County Land Use Plan.

The WGFD's Strategic Habitat Plan (SHP) was crafted to provide strategies to deal with "unprecedented impacts and land use changes" to terrestrial

⁶³ *Id.* at § 10.02. (emphasis added).

⁶⁴ 43 U.S.C. § 1701(a)(8).

⁶⁵ *Id.* at 11.01.

and aquatic ecosystems on both private and public lands.⁶⁶ Goal 1 of the SHP is to “[c]onserve and manage wildlife habitats that are crucial for maintaining terrestrial and aquatic wildlife populations for the present and future.”⁶⁷ One strategy that is integral to the implementation of Goal 1 is for the WGFD to participate in and provide expertise during Federal land planning processes.⁶⁸ An array of other strategies have been developed to achieve protection of terrestrial and aquatic habitats.⁶⁹ Toward this end the WGFD has selected “priority areas” that are “crucial to conserving and maintaining populations of terrestrial and aquatic wildlife for the present and future.”⁷⁰ The “crucial priority areas” have the “highest biological values, which should be protected and managed to maintain healthy, viable populations of terrestrial and aquatic wildlife.”⁷¹ According to WGFD’s map of the priority areas, it is notable the four Priority Conservation Areas we have proposed for heightened protection as well as BLM’s proposed plan to protect the Upper Wind River Valley, the Lander Front, Beaver Rim, South Pass, and the Sweetwater Watershed are remarkably consistent with WGFD’s crucial priority areas.⁷² Clearly, the adoption of strong provisions for the protection of wildlife in the final RMP would be consistent with the WGFD’s SHP.

After considering relevant local land use plans as well as Federal law and policy it is clear to us that BLM retains ample discretion and authority to move forward with the adoption of alternative D as well as adoption of provisions from alternative B, especially as applied to the Upper Wind River Valley, the Sweetwater Watershed, South Pass, Lander Front, Beaver Rim, and the Copper (Bridger) Mountains. We believe that such a plan would be consistent with all or

⁶⁶ Wyoming Game and Fish Department, Strategic Habitat Plan, p. 2. January 2009. http://gf.state.wy.us/downloads/pdf/SHP_Jan09.pdf (Accessed July 14, 2011).

⁶⁷ *Id.* at 12.

⁶⁸ *Id.* at 13.

⁶⁹ *Id.* at 12-22.

⁷⁰ *Id.* at 5.

⁷¹ *Id.*

⁷² See map at http://gf.state.wy.us/habitat/Narratives/Maps/Statewide_All_Crucial.pdf (Accessed July 14, 2011).

a significant portion of local land use plans. We believe that alternative D as well as adoption of select provisions from alternative B satisfies Federal law and policy and would generally be consistent with the various State and local land use plans. Even if BLM's final plan were construed to be inconsistent with State or local plans, BLM is well within its legal right to move forward with a plan of its choosing. The Federal District Court of New Mexico held that RMPs only need to be consistent with State and local plans as the "Secretary deems appropriate, given the multiple-use purposes of FLPMA and other requirements of federal law."⁷³ This court went on to say that the "agencies have the final say over the consistency issue, and only a clear, specific conflict between a federal land use plan and a specific State plan could possibly rise to the level of a statutory violation."⁷⁴ Recently, the 10th Circuit Court of Appeals noted that the Secretary has "discretion to determine the extent to which the agency's land use plans are consistent with State and local plans" and that "[i]n light of this discretion, it is doubtful that [§ 1712(c)(9)] was intended to, or could reasonably be construed as, creating a 'procedural right' enforceable by state or local government entities."⁷⁵ Even United States Supreme Court Justice Powell, after reviewing the legislative history of FLPMA, noted that "FLPMA only requires the Secretary to listen to the States, not obey them."⁷⁶ With these principles in mind we urge BLM to fully exercise its authority and finalize an RMP for the Lander Field Office that is in accord with Federal law and policy as well and the needs of all Americans.

PART 5—CONCLUSION.

We thank the BLM, particularly the Lander Field Office, for its consideration of these comments. We are hopeful that they will contribute toward the best possible final RMP. We believe that if the recommendations we have provided herein are adopted and implemented the Lander RMP would be improved and strengthened. We look forward to remaining involved in the Lander RMP revision process and please do not hesitate to contact us if we can be of any assistance.

⁷³ *New Mexico ex rel. Richardson v. Bureau of Land Management*, 459 F. Supp. 2d 1102, 1120 (D.N.M. 2006).

⁷⁴ *Id.*

⁷⁵ *Kane County Utah v. Salazar*, 562 F.3d 1077, 1088 (10th Cir. 2009).

⁷⁶ *California Coastal Com'n v. Granite Rock Co.*, 480 U.S. 572, 596 (1987).

Sincerely,

Bruce Pendery,
Wyoming Outdoor Council

And on Behalf of:

Mike Clark,
Greater Yellowstone Coalition

Enclosures

cc : Governor Matt Mead
Don Simpson, BLM
Bob Abbey, BLM
Michele Dhieux, EPA
(w/out Exhibits excepting Exhibit 1)

Appendix 1

Doing it Right: Designing Oil and Gas Development Projects to Safeguard Wyoming's Outdoor Heritage

Wyoming Outdoor Council

Bruce Pendery and Lisa McGee

Wyoming has world-class energy resources and world-class natural resources. To ensure the Wyoming we love remains an incredible place to live and visit, the Wyoming Outdoor Council has established a balanced, two-pronged approach when it comes to energy development on public lands and federally owned minerals. There are some areas that are too valuable to our state for recreation, wildlife habitat, or other sustainable uses to risk losing to industrial development. These areas, which we often refer to as Heritage Landscapes, are places where development should not occur. You can see the Heritage Landscapes on our website at

http://www.wyomingoutdoorcouncil.org/html/what_we_do/public_land/heritage_landscapes.shtml.

In areas where energy development is not inappropriate, it should be "done right." That means safeguards should be put in place to protect human health, our clear skies and clean water, open space, and wildlife habitat. This review deals with this second category of lands, lands where oil and gas development must be "done right." These represent the majority of the public lands and federally owned minerals in Wyoming.

This report focuses on practices that are designed to minimize the impacts oil and gas development can have. Each project and every landscape is unique, and this report is not intended to be a one-size-fits-all set of recommendations. Because new technologies and better science are being developed every day, this report is a starting point. And because one practice or technique may be appropriate in some places, but not in others, permitting agencies must tailor project design features appropriately in order to ensure development is "done right" every time.

There are several stages that precede an oil and gas development proposal on public land and federally owned minerals. Although many of our "doing it right" suggestions focus on practices and strategies agencies can require, and companies can undertake, at the drilling stage, there are two prior opportunities to condition development, and both are also critically important.

Land and Resource Management Plans

On public lands and federally owned mineral estates, the first opportunity citizens have to ensure oil and gas development is "done right" is during the planning stage. Both the Bureau of Land Management (BLM) and the Forest Service are required by law to develop overarching plans that guide land management decisions. Known as resource management plans on BLM lands and forest plans on National Forest lands, these documents are revised every fifteen years or so. Within plan revision processes, the public is asked to weigh in about appropriate uses on specific lands. An environmental impact statement, which considers a range of alternatives and the impacts associated with them, accompanies a land use plan.

Although BLM and National Forest lands are managed for multiple uses, not all uses can coexist on the same acreage. For this reason, plans designate areas suitable or unsuitable for

certain types of uses. An area of crucial moose winter range for example, or a popular recreation area, may be unsuitable and eventually determined to be unavailable for future oil and gas development. If lands are made available for oil and gas development, various stipulations and conditions may be recommended for certain parcels within available lands.⁷⁷ Depending on the values at stake, sometimes doing it right means not doing it at all.

Oil and Gas Leasing

Once lands are designated available for leasing, the BLM and the Forest Service may receive requests from interested companies or individuals to lease various parcels for oil and gas development.⁷⁸ The agencies will consider whether to lease (or in the Forest Service's case whether to consent to have the BLM lease) the parcels. If the agencies decide to lease, there is opportunity to prepare additional environmental analysis. The agencies will also determine what stipulations to attach to the lease at that time. Stipulations define the basic terms of the lease contract. Many of the suggestions discussed below can be incorporated at the leasing stage in the form of no surface occupancy stipulations, stipulations that limit the times of the year companies can access certain areas, or stipulations that control surface use in other ways like creating buffers around sensitive areas. Stipulations are not the only terms or restrictions placed on a leaseholder; all federal oil and gas leases are issued "subject to" the terms and conditions of lease (which include significant environmental protection provisions) and all state and federal statutes, regulations, and other formal orders.

⁷⁷ There is no mandate that the agencies must lease available lands. Plans are designed to be visionary, "big picture" documents that guide management actions; but they do not typically make final decisions themselves. However, it is most always the case that lands made unavailable for leasing within a plan will not be leased during the life of the plan. Agencies have the ability to amend plans if circumstances warrant. Further environmental analysis is needed to amend a plan.

⁷⁸ The BLM has adopted guidance for how it will conduct oil and gas leasing. This Instruction Memorandum puts in place a number of requirements to ensure environmental protection prior to leasing. One of the most important provisions requires the development of "Master Leasing Plans" if certain requirements are met, and an MLP must consider a number of ways to reduce the impacts of oil and gas development, including not developing the area.

Drilling Stage

After public lands are leased, a company must file an Application for Permit to Drill (APD) that outlines its plans to drill and to disturb the surface. There is usually site-specific environmental analysis at this time, which can result in the addition of conditions of approval. These are additional terms a company must comply with in order to be granted permission to drill. This stage of the oil and gas development process, the drilling stage, is the focus of this report.

Many of the “doing it right” suggestions below can be added as conditions of approval at the APD stage or as stipulations during earlier stages when lands are leased. Listed below are suggested actions and technologies that if implemented have the potential to minimize threats to wildlife, air and water quality, and human health.⁷⁹

Safeguarding Wyoming’s Wildlife

In Wyoming, we live in a place that still supports large, free-roaming wildlife populations. Wyoming’s wildlife is diverse and bountiful. Our outdoor heritage is rooted in our appreciation for wildlife, and the many opportunities we have to encounter wildlife. The Wyoming Outdoor Council’s goal is to ensure that if oil and gas development is authorized that it is conducted in a manner that safeguards wildlife to the greatest extent possible. Depending on the values at stake, sometimes doing it right might mean not leasing an area in the first place.

In addressing how best to conserve wildlife in places that are already leased and facing oil and gas development proposals, the Wyoming Game and Fish Department has developed

⁷⁹ Three additional sources of information about practices that can help reduce the impacts of oil and gas drilling are the University of Colorado’s website on oil and gas best management practices (BMPs), the EPA’s Natural Gas STAR Program website, and the Earthworks Oil and Gas Accountability Project’s website. These websites can be found at <http://www.oilandgasbmps.org/>, <http://www.epa.gov/gasstar/>, and <http://www.earthworksaction.org/bestpractices.cfm>.

recommendations, which are based on the following prioritized approach:

The approach recommended to protect and maintain important wildlife resources ... sets forth the following priority of actions: 1) avoid the impact; 2) minimize the impact through appropriate planning and management actions; 3) mitigate the impact by providing replacement or substitute resources; and 4) provide financial compensation only when no reasonable alternative is available to avoid, minimize or mitigate the impact.⁸⁰

We support attempting to avoid the impacts in the first place and minimizing impacts through appropriate planning and management action. That is why the planning and leasing stages are so important. But there is also much that can be done to condition development at the drilling stage in order to mitigate impacts. The following are practices that agencies may require and/or companies may voluntarily adopt in order to safeguard wildlife.

- 1) Wildlife:
 - a. Collect species-specific baseline data:
 - i. Collect sufficient baseline data on all species of concern prior to development so that there is a full understanding of the species' needs.
 - b. Reduce ground disturbance:
 - i. Maintain large tracts of undeveloped/roadless lands by clustering development/consolidating infrastructure;
 - ii. Drill multiple wells per pad;
 - iii. Phase development, i.e., no new well pads until other pads are reclaimed in part or in full;
 - iv. Construct irregularly shaped/contoured well pads that blend with the landscape;
 - v. Require interim reclamation of pads after drilling is completed;
 - vi. Consider alternative access points to ensure minimal roadbuilding, or require road building in less sensitive areas;

⁸⁰ Recommendations for Development of Oil and Gas Resources in Important Wildlife Habitats, Wyoming Game and Fish Department, Revised April 2010, at 4. This report can be found at <http://gf.state.wy.us/downloads/doc/O&G%20Recommendations%20April%202010%20with%20changes%20identified.pdf>

- vii. Gate single-purpose roads (i.e., new access roads) and close/reclaim all unnecessary roads;
- viii. If an area is particularly sensitive (e.g., steep slopes, unstable soil, roadless, etc.) require helicopter access instead of new road construction;
- ix. Require ancillary facilities (work camps, water treatment facilities, etc.) to be located off site in less sensitive areas.
- c. Avoid and/or provide adequate buffers for road or well pad construction in sensitive areas such as:
 - i. Known migration/stopover habitat;
 - ii. Big game crucial winter range;
 - iii. Sage-grouse core areas;
 - iv. Critical habitat for Endangered Species Act listed species or other agency-recognized sensitive species;
 - v. Key parturition areas;
 - vi. Den sites;
 - vii. Raptor nests and foraging areas; and
 - viii. Wetland and riparian areas.
- d. Implement timing limitations:
 - i. Prohibit access during key times of the year such as in parturition habitats, crucial wintering areas, denning sites, and migration/stopover times.
 - ii. To the extent possible, these timing limitations should be applied for the life of the project, not only during the drilling stage.
 - iii. Remote monitoring and/or shutting in wells for part of the year may be required.
 - iv. Timing of operations may be controlled and limited to periods of the day when wildlife are less active.
- e. Additional practices to minimize impacts to wildlife:
 - i. Prohibit open reserve fluid pits in favor of closed loop systems;
 - ii. Install mufflers or noise reduction devices on compressor stations and other mechanical equipment;
 - iii. Require workers to carpool to reduce truck traffic;
 - iv. Install a centralized liquids gathering system to reduce truck traffic;
 - v. Require training of employees about respectful and safe wildlife practices;

- vi. Prohibit workers from carrying firearms to prevent poaching;
- vii. Restrict the use of lighting, to be used at night only, to periods when people are present on the site and as required by safety regulations;
- viii. Bury pipelines and power lines.
- f. Monitoring, adaptive management and enforcement:
 - i. For species of concern, baseline data should be collected throughout the life of the project (drilling, production, and reclamation).
 - ii. Population thresholds or triggers should be established, and if met, pre-determined, specific management responses should be required.
 - iii. Clear consequences should be outlined and agreed to prior to drilling authorization if thresholds are exceeded. Consequences could include slowing the pace of development or disallowing new disturbances if warranted.
 - iv. Adequate oversight and an active presence by regulatory agencies are necessary to ensure all mitigation measures are being implemented.
- g. Mitigation:
 - i. Establish a mitigation plan for loss of habitat.
 - ii. Onsite mitigation is preferable to offsite mitigation.
- h. Reclamation:
 - i. Require interim (i.e., partial) reclamation of well pads as soon as possible.
 - ii. Require adequate bonding to ensure the protection of resources after the close of production.
 - iii. Clear standards should be set and enforced regarding the extent to which the surface area must be returned to its pre-development condition.
 - iv. Pre-disturbance ecological conditions should be reestablished.
 - v. Require the use of appropriate native plants for reseeding efforts.
 - vi. Monitor for several years after reseeding to determine whether reclamation was successful.

Protecting Wyoming's Air Quality

Historically Wyoming has enjoyed some of the cleanest air and clearest skies in the country. In fact, until recently, the air quality in Wyoming was said to be some of the best in the world—rivaling rural, mountainous countries like Tibet. In areas of the state with some of the most concentrated oil and gas developed, however, all of that has changed. The formerly clear skies and 100-mile mountaintop views from the Pinedale area are now often marred by haze. And, dangerous levels of ozone have been recorded, resulting in the state's recommendation to the Environmental Protection Agency (EPA) that some areas in the western part of the state are not in attainment of the national ambient air quality standards. In a 2009 technical report, the Air Quality Division of the Wyoming Department of Environmental Quality attributed high ozone levels in this part of the state to local oil and gas operations.⁸¹

The Wyoming Outdoor Council believes clean air and clear skies are essential components in keeping people in Wyoming healthy and providing for our high quality of life. State and federal agencies must do a better job of addressing air quality issues and ensuring air quality is something Wyoming can boast about again. Wyoming citizens should not have to sacrifice these values when there are practices and technologies agencies can require oil and gas companies to implement to ensure air quality is protected.

1) Air:

- a. Comply with existing laws, regulations and policies aimed to safeguard air quality:
 - i. In areas now facing violations of the Clean Air Act due to existing oil and gas development, it is reasonable to question whether new oil and gas drilling projects can and should be authorized.
 1. Denying or pacing development is an option within areas that are not meeting standards.
 - ii. In areas out of compliance with existing ozone standards, companies must adhere to Wyoming's state policy regarding offsets for nitrogen oxides (NOx) and volatile organic compounds (VOCs), precursors to the formation of ground-level ozone, a regulated air pollutant.

⁸¹ See <http://deq.state.wy.us/aqd/Ozone%20Main.asp> for access to this report and other information on high ozone levels in the Pinedale area.

- b. Accept additional safeguards to protect human health:
 - i. There could be stricter standards for ozone or NO_x and VOCs, or new regulations that may be designed to regulate all immobile oilfield equipment owned and/or operated by a single company as a single source.
 - ii. Companies should show a commitment to “doing it right.”
- c. Conduct air quality monitoring and prepare modeling of future impacts:
 - i. Monitor existing air quality to establish baseline data before new projects are authorized.
 - ii. Modeling should be prepared to assess whether new development will be likely to violate existing laws and regulations that control pollution and protect visibility.
 - 1. Specific project design features should be incorporated within the modeling.
 - iii. As a condition of project approval, monitoring throughout the life of the project should be conducted and established thresholds or triggers should be set with tangible consequences if exceeded.
 - 1. This can mean adjusting the rate, timing and places of development.
 - 2. Project design features and best management practices may be refined accordingly.
- d. Adhere to BLM’s “Best Management Practices” recommendations to protect air quality⁸² and the Forest Service’s techniques for reducing emissions from oil and gas activities.⁸³ These include:
 - i. Reducing tailpipe emissions and fugitive dust from truck traffic by:
 - 1. Directional drilling.
 - 2. Centralized water storage and delivery.
 - 3. Centralized fracturing (fracking) pads with “hard line frac pipes” that can serve multiple wells.
 - 4. Off site centralization of production.
 - 5. Use of liquids gathering systems.
 - 6. Remote monitoring and well automation.

⁸² Many of the following recommendations come from BLM’s May 9, 2011, Air Resource Best Management Practices for Fluid Mineral report at http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/bmps.Par.60203.File.dat/WO1_Air%20Resource_BMP_Slideshow%2005-09-2011.pdf.

⁸³ Emissions Reduction Techniques for Oil and Gas Activities. U. S. Forest Service. 2011. Available at <http://www.fs.fed.us/air/documents/EmissionReduction-072011x.pdf>.

7. Carpooling workers in vans.
 8. Applying water to dirt roads.
 9. Applying chemicals to dirt roads.
 10. Lowering speed limits.
 11. Preventing dust by chip seal/asphalt.
- ii. Reducing emissions during the drilling stage by:
1. Requiring Tier 4 diesel drill rigs or the equivalent (e.g., natural gas or electric drill rigs).
 2. Prohibiting venting and flaring of gases during drilling stage and requiring "green completions" to recapture emissions.
- iii. Reducing emissions during the production stage by:
1. Installing chemical pumps rather than pneumatic pumps.
 2. Monitoring of wells with remote telemetry.
 3. Using electricity, rather than diesel engines, to power compressor stations if the presence of overhead power lines doesn't pose a threat to wildlife or visual resources.
 4. Updating seals, hatches, and valves to minimize VOC fugitive emissions.
 5. Requiring the use of enclosed tanks rather than open pits to contain fugitive VOC emissions.
 6. Using "vapor recovery units" on oil, condensate, and produced water tanks to reduce fugitive VOC emissions.
 7. Optimizing glycol circulation in dehydrators to reduce methane emissions.
 8. Capture and recycle methane by installing "flash tank separators."⁸⁴

⁸⁴ For additional technical methods to reduce methane emissions see *Cost Effective Methane Emissions Reductions for Small and Midsize Natural Gas Producers*, Roger Fernandez, et al. published in the June 2005 issue of the Journal of Petroleum Technology. The report can be found at: <http://www.oilandgasbmps.org/docs/GEN07-Cost-EffectiveMethaneEmissionsReductionsforSmallandMidsizeNaturalGasProducers.pdf>.

9. Use "selective catalytic reduction" technology in compressor (and drill rig) engines.
 10. Replace "wet seals" with "dry seals" in centrifugal compressors.
 11. Replace compressor rod packing at frequent intervals.
 12. Replace "high-bleed" pneumatic devices with "low-bleed" devices and install retrofit bleed reduction kits on high bleed devices.
 13. Install "plunger lift systems" and "automated systems" in gas wells.
- iv. Monitoring at the well head:
1. Implement a "directed inspection and maintenance" and "infrared leak detection" program.
 - Leaks can be detected with infrared cameras, organic vapor analyzers, soap solutions, and ultrasonic leak detectors.
 - Leaks can be measured using calibrated bagging, rotameters, and high volume samplers.
- e. Adhere to Wyoming Department of Environmental Quality (DEQ) best available control technology (BACT) requirements for oil and gas development⁸⁵ and the offsets policy for ozone precursor emissions.⁸⁶ These provisions include:
- i. 98 percent control of emissions from tank flashing, dehydration units, pneumatic pumps, and produced water tanks in the Jonah/Pinedale Anticline Development Area (JPDA).
 - ii. Additional controls in the JPDA for pneumatic controllers, well completions, blow downs/venting, and truck loading.
 - iii. Similar controls are applicable in other parts of the state, especially in Concentrated Development Areas in the southwest quarter of the state.

⁸⁵ The DEQ's BACT requirements are available at <http://deq.state.wy.us/aqd/oilgas.asp>.

⁸⁶ The offsets policy is available at <http://deq.state.wy.us/aqd/Ozone%20NSR%20Policy.asp>.

- iv. Offsetting increases in NO_x emissions at a 1.1:1 ratio and increases in VOC emissions at a 1.5:1 ratio in Sublette County.

Safeguarding Wyoming's Clean Water and Protecting Water Reserves

Clean and abundant water is essential for the health of Wyoming residents, for our fish and wildlife populations, and for agricultural production. Oil and gas development can threaten the quality of surface waters and groundwater in several ways. Water contamination can occur through direct spills, leaking pits and tanks coupled with stormwater runoff, erosion and sedimentation, well blow-outs or underground migration of fluids and gases during drilling, and hydraulic fracturing ("fracking") operations. Although the stated goal in all development proposals is that contamination should not occur, human error and technical failure is not uncommon. For this reason, adherence to the highest operational standards is critical to prevent and remedy these serious problems.

Oil and gas development also requires vast quantities of water, and in the case of coalbed methane development, millions of gallons of groundwater are brought to the surface as a consequence of extracting natural gas. Depletion of aquifers is a concern to nearby landowners, whose water wells may be drawn down. In addition, the disposal of such large amounts of often salty water into streambeds can negatively affect water quality, fish and amphibians, and vegetation. Careful planning and siting as well as proper disposal methods for produced water should be incorporated into any oil and gas development proposal.

- 1) Water:
 - a. Comply with existing laws, regulations and policies aimed to safeguard water quality:
 - i. Adhere to voluntary agreements not to use diesel fuel in fracking fluids.⁸⁷
 - ii. Support proposed regulation of all injections of fracking fluids under safe drinking water law designed to protect underground sources of drinking water.
 - iii. Comply with the Wyoming Oil and Gas Conservation Commission's regulations regarding disclosure of fluids used in fracking.

⁸⁷ One such agreement can be found at http://www.epa.gov/ogwdw000/uic/pdfs/moa_uic_hyd-fract.pdf.

- iv. Rules regarding stormwater runoff and any needed Clean Water Act permitting should be adhered to.
- b. Information gathering:
 - i. Conduct groundwater/aquifer characterization, including areas (residential wells, springs, recharge areas) potentially affected within and down gradient of the project area.
 - ii. Based on characterization results:
 - 1. Groundwater modeling will be used to adjust drilling based on projected impacts to springs, surface water, and groundwater.
 - 2. Groundwater monitoring wells will be established.
 - 3. Pre-drilling groundwater sampling in key aquifers will be conducted to establish a baseline.
 - 4. Limits will be established on the number of supply water wells that will be drilled. Locations and depths will be based on the groundwater characterization study and will inform the decision regarding concentration of facilities/footprint.
 - 5. Provide nearby property owners with information prior to development identifying the recommended water testing parameters/constituents for their private wells, to assist in their water quantity and quality baseline testing, if they so choose.
 - A Water Well Mitigation Agreement should be offered to owners of wells and springs that could potentially be affected by drilling operations.⁸⁸
 - 6. Develop a groundwater pollution prevention and monitoring plan to be implemented during the life of the project through an agency-community team and with public review and comment.
 - 7. Monitor water wells throughout the life of the project.
 - iii. Acquire baseline data for surface water quality:
 - 1. Map wetlands, flood plains and riparian areas and include classification of streams and flows.
 - 2. As a result of the mapping,
 - Test surface water quality in any streams in the project area prior to any development.
 - Establish a storm water pollution prevention plan for construction, with runoff and erosion controls factored in. Adhere to best management practices in the plan.

⁸⁸ See Coalbed Methane Best Management Practices: A Handbook at 13, Western Governors' Association April 2006 at http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/_energy/oil_and_gas.Par.1132.File.dat/CoalBedMethane_WGA_2006.pdf.

- Monitor surface water quality for the life of the project.
- iv. Public disclosure of chemicals used:
1. Require full disclosure of all chemicals (using CAS numbers for identification) used in drilling and fracking operations.
 - Include disclosure of the ingredients,
 - Disclosure of the proportions of chemicals (i.e. the “formula”),
 - Made a certain length of time before fracturing operations are scheduled to begin (e.g., 90 days advance notice), and
 - Do not accept trade secret exemptions to the disclosure requirement.
 - * Or, if trade secret exemptions are made, allow disclosure of trade secrets to regulatory agencies and to health care professionals (whenever exposure has occurred) on as as-needed basis.
 - Require notification to affected landowners where drilling/ fracking is scheduled to occur.
- v. Project design features that can safeguard water resources:
1. Apply NSO stipulations (or don't lease areas) that overlie sole source aquifers or other important sources of drinking water.
 2. Require well pads to be sufficiently setback from all streams, riparian areas, wetlands, springs, groundwater wells and homes.
 - At least a 1/2 mile, or possibly 1-mile.
 3. Require back flow prevention devices to be installed and used on all water supply wells and locked to prevent unauthorized use.
 4. No open pits whatsoever should be allowed in favor of tanks and a closed loop system.
 5. All wastes should be gathered and disposed of in proper locations off-site.
 6. In coalbed methane production, produced water should be re-injected into the same aquifer or formation (or into an aquifer or formation of equal or lesser quality) to prevent degrading higher water quality and prevent surface water degradation.
 7. Development should be prohibited in areas of steep slopes or unstable soils.
 8. Require good well integrity.
 - Properly case, plug and abandon all wells no longer in use.
 - Properly case and screen all wells that are in current use.
 - Ensure that all water wells have good well integrity from top to bottom, to insure that excursions of fluids into those wells from other pressurized wells will not occur.

Supporting Communities and Our Small Town Quality of Life

In Wyoming, we treasure our small towns and safe, livable communities. An influx of temporary, non-resident workers—characteristic of oil and gas development—can have significant impacts on communities. Many towns around the state are experiencing increased crime and traffic, high housing costs, impacts to county and town roads and other infrastructure as well as overloaded services as a result of increased oil and gas development. Housing and non-energy related workforce shortages can be severe.

Although there is no easy solution to the societal consequences of oil and gas development, careful pacing of leasing and drilling may alleviate some of the adverse realities associated with a “boom and bust” economy. Phased development and proper long-range planning can help ensure that economic benefits of oil and gas development are realized into the future, not only for a short time. Special funding may also be required to maintain adequate social services, like law enforcement, medical clinics, and schools.

Special issues with Split Estate Lands

In Wyoming approximately 12.9 million acres of privately owned land (48 percent of all private land in Wyoming) is “split estate.” This means that the federal government owns and controls the minerals underlying a piece of ground while a private landowner, often a farmer or rancher, controls the surface. The federal government can and does lease many of these split estate lands for oil and gas development. Obviously this creates important and difficult land management issues.

While this more complicated legal situation comes into play when there is a split estate, the BLM is still permitted and even obligated to protect surface resources on a split estate when it approves oil land gas drilling. If there are sage-grouse leks, or crucial big winter ranges, or sensitive aquatic resources, the agency must still take steps to protect these resources. That is, the “doing it right” provisions listed above can and should be applied to split estates as a condition of federal approval for drilling operations.

That said, a surface owner of split estate lands has special rights and a special role. Generally speaking the oil and gas operating company must demonstrate it has arrived at a surface owner agreement, received a waiver from the surface owner for access to the leased lands, arrived at a compensation agreement for damages to crops or tangible improvements, or in lieu thereof, the BLM can ensure an adequate bond is posted, as required by the Stock Raising Homestead Act, which is the law that governs operations on many split estates. Moreover, the surface owner is entitled to participate in on-site visits to the

proposed drilling location, and this affords the landowner an opportunity to have input regarding surface use protection provisions and reclamation specifications. The BLM is sensitive to this landowner input. The surface owner of a split estate has a special opportunity to ensure oil and gas development is "done right" on his or her property.

Wyoming has a law that affords split estate owners additional rights. This law, the Wyoming Surface Owner Accommodation Act, W.S. § 30-5-401 *et seq.*, provides that:

- 30 days notice must be given prior to obtaining access to private lands to allow for negotiations that allow activities with the least impact.
- Requires fair compensation to landowners for economic losses, including lost land value.
- Requires oil and gas companies to negotiate with landowners to plan oil and gas activities that could affect their lands, including placement of roads, pipelines, well sites, traffic patterns, etc.
- Where agreement cannot be reached, provisions for bonding are provided.

This law opens up additional opportunities to ensure oil and gas development is "done right" on privately owned surface lands. The BLM should commit to abiding by this Wyoming law.

Conclusion

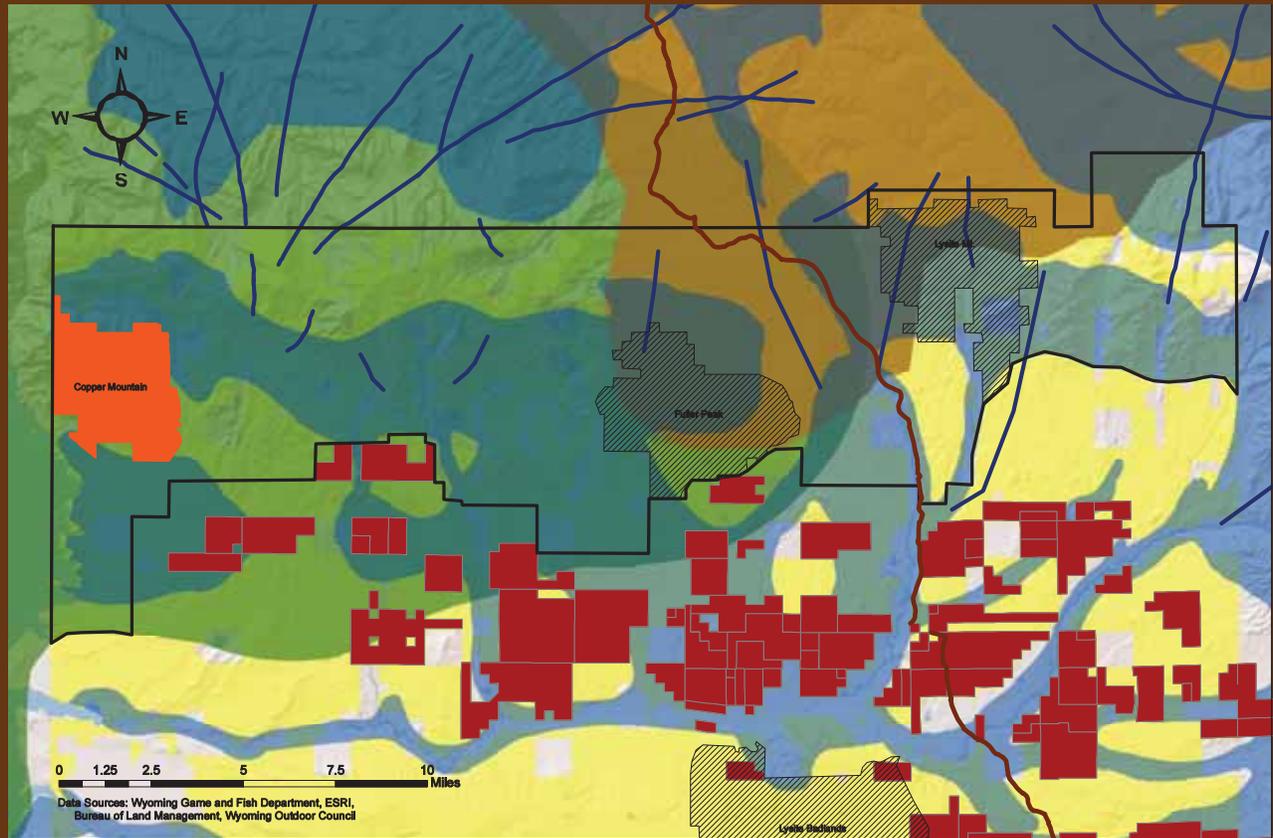
If the above practices and procedures were fully applied, oil and gas development could occur in many areas of Wyoming, and in a way that makes the social and environmental impact of this activity acceptable to many citizens. Consequently, the BLM and the Forest Service should require and fully implement these practices.⁸⁹ Requiring these procedures is a means to not only ensure needed environmental protections, but also to maintain

⁸⁹ Staff at the Wyoming Outdoor Council have developed a report that outlines the rights the agencies have to require these measures, and in fact their obligation to require them. See Bruce M. Pendery, *BLM's Retained Rights: How Requiring Environmental Protection Fulfills Oil and Gas Lease Obligations*, 40 ENVTL. L. 599 (2010). Available at: http://law.lclark.edu/law_reviews/environmental_law/past_issues/volume_40/40-2.php.

support for oil and natural gas development, and the oil and gas industry, among the citizens of Wyoming.

The Bridger Mountains

Extraordinary Solitude, Geology, and Wildlife



- Proposed Bridger Mountains Conservation Area
- Greater Sage-Grouse Core Area
- Key Nongame Wildlife Area
- Big Game Migration Route
- Elk, Deer, and Pronghorn Winter Range
- Historic Bridger Trail
- Wilderness Study Area
- Citizens' Proposed Wilderness
- Producing Oil and Gas Leases
- BLM Managed Federal Minerals



Nathan Maxon



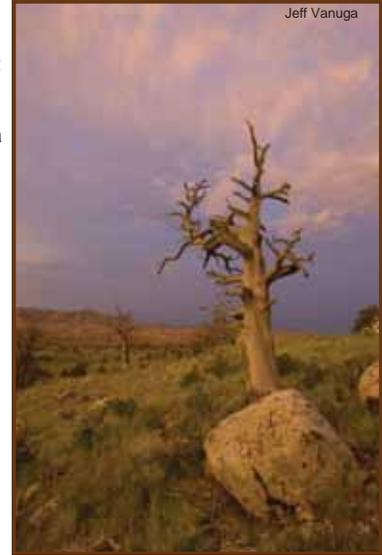
Tim Chestnut

The Bridger Mountains

- A place of solitude where backcountry hunters can pursue mule deer, elk, and pronghorn.
- A Wilderness Study Area and two Citizens' Proposed Wildernesses provide rare opportunities for solitude.
- Home to the most complete stratigraphic record in Wyoming of the Cenozoic epoch—a true geologic treasure.
- Home to six rare plant species and one of Wyoming's most important areas for roosting and hibernating bats.
- To avoid attacks from Sioux warriors along the Bozeman Trail, Jim Bridger led a rush of emigrants along the Bridger Trail through these mountains to Montana's gold fields in 1864.
- Expansion of adjacent oil and gas development would disturb the wild tranquility of this area.

A lonely, stark, and windswept mountainous uplift known only by a handful of hunters, cattlemen, and explorers rises above the vast arid sagebrush hills of Central Wyoming near Boysen Reservoir. With incredible opportunities for solitude, even for Wyoming, the Bridger Mountains are one of few places where one is surprised to see another person. A variety of habitats including sagebrush steppe, salt desert scrub, grasslands, juniper woodlands, and lush riparian corridors provide an important refuge for a number of sensitive species and big game.

The Wilderness Study Area (WSA) and two Citizens' Wilderness Proposals (CWP) that lie within this relatively small region are indicative of its wild nature. The Copper Mountain WSA is a stunning area of high topographical relief characterized by sheer cliff faces and narrow granite slot canyons that ensure seclusion and offer exceptional recreational challenges. East of the WSA lies the Fuller Peak CWP, which is a precipitous and jagged landscape drained by clear streams that over the eons have scoured deep tranquil pools into the granite. East of Fuller Peak sits the Lysite Mountain CWP, a rugged badland canyonland where one can find solitude, fascinating geology, beautiful displays of unusual wildflowers, and of course, a vast array of wildlife. The late David Love, Wyoming's most celebrated geologist, said "Lysite Mountain is one of the most significant areas in [Wyoming] because it is the only place where the late Cenozoic record is preserved." Within this tiger-striped mountain, lies a one-thousand foot cross-section of the Cenozoic sedimentary strata that once filled the Wind River and Bighorn basins before they were excavated by the Wind River and its tributaries.



Jeff Vanuga

A diverse assemblage of plants and animals provides a fitting complement to the incredible wild lands of the Bridger Mountains. At least six rare plant species are found here, including: Porter's sagebrush, Owl Creek miner's candle, bun milkvetch, hairy princes-plume, Watson's prickly-phlox, Hapeman's sullivantia, and tomentose balsamroot. The Wyoming Game and Fish Department has designated a substantial portion of this region as a Key Nongame Wildlife Area because of the area's importance to rare species of bats such as the Townsend's big-eared bat and birds including the peregrine falcon. Much of the area is also classified as crucial winter range for elk, mule deer, and pronghorn and as core or

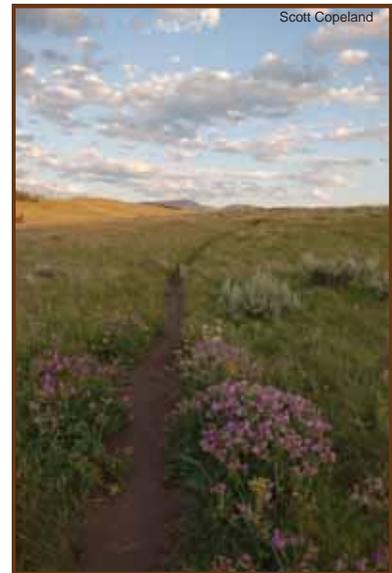
"priority" habitat for the Greater sage-grouse. The area also supports many common Wyoming species such as badgers, bobcats, foxes, coyotes, and golden eagles.

Ensuring Future Opportunities for Solitude

Significant oil and gas development is already occurring to the south of this area. We are asking for proactive management under the forthcoming Bureau of Land Management's Lander Resource Management Plan to ensure that the scenic, wildland, and wildlife values of this area are protected. According to the BLM, this relatively small area has low potential for conventional oil and gas resources. Because of this low potential and because most of this area remains unleased, we believe it should be administratively withdrawn from future leasing in the Lander RMP to protect its wildlife and its remarkable wild and scenic character.



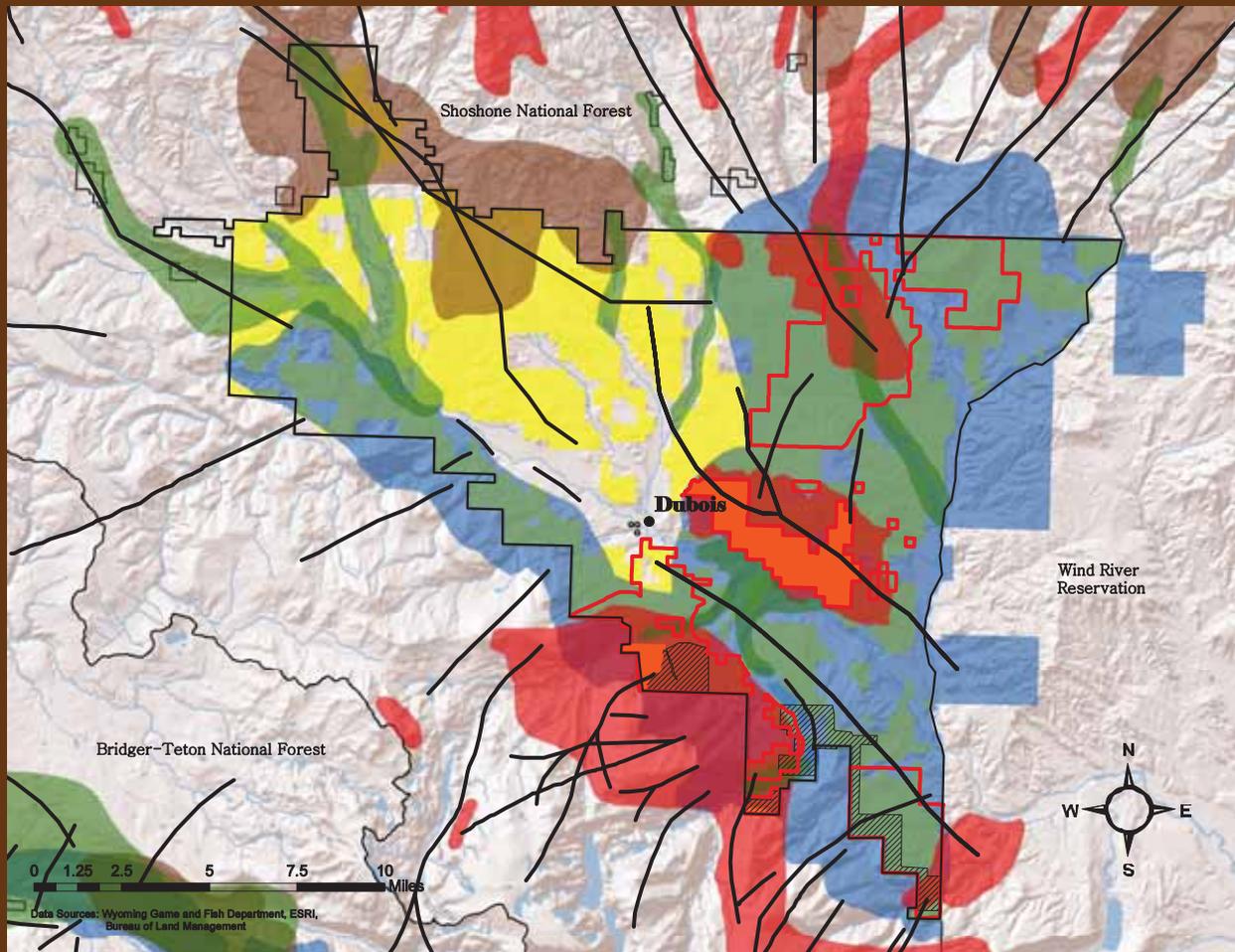
Jeff Vanuga



Scott Copeland

The Upper Wind River Valley

A Great American Wildlife Sanctuary



- Big Game Migration Route
- Elk Calving Area
- Moose Winter Range
- Bighorn Sheep Winter Range
- Elk, Deer, and Pronghorn Winter Range
- Citizens' Proposed Wilderness
- Wilderness Study Area
- Existing ACEC
- BLM Managed Federal Minerals



The Upper Wind River Valley is one of our nation's most spectacular landscapes and finest wildlife areas. Nestled between the high peaks of the Wind River, Absaroka, and Owl Creek ranges, these lands support a full array of native species, including grizzly bears, wolves, bighorn sheep, elk, peregrine falcons, bald eagles, and Yellowstone cutthroat trout. The iconic views, opportunities to see wildlife, and other nature-dependent recreational pursuits draw many visitors, who in turn support most of the businesses and residents of the Upper Wind River Valley.



The entire valley lies within occupied grizzly habitat and is used by the bears primarily after they emerge in the spring and move to lower-elevation lands to feed on green plants and winter-killed ungulates. With the devastating loss of so many high-elevation whitebark pines and their seed crops, an important food source for grizzlies, these lands may become increasingly important to foraging bears at other times of the year. Bighorn sheep, once found throughout the

Rocky Mountains, are still common in the Upper Wind River Valley, which encompasses both their winter range and their lambing grounds. The resident sheep herd, often referred to as the "mother herd," is robust enough to be used as a source population in efforts to re-establish native



sheep in other parts of the American West. Every fall, over three thousand elk from the surrounding mountains and Yellowstone and Grand Teton National Parks migrate into the valley to spend the winter. The native grasses that are

found on the windswept mid-elevation ridges and rolling terrain are key to the elk's survival during the long winter months. While elk in many parts of western Wyoming congregate unnaturally on artificial feed grounds, elk in the Upper



Wind River Valley are more dispersed and subsist on natural feed. Consequently these elk exhibit a low incidence of brucellosis infection. Natural winter ranges that

have lower concentrations of elk also may help to sustain the health of Yellowstone's herds by reducing the potential transmission of the virulent and devastating chronic wasting disease.



The Upper Wind River Valley

- The "Mother Herd" of bighorn sheep relies on BLM lands for winter and lambing habitat.
- More than 3,000 elk from Yellowstone and the surrounding mountains rely on the windswept natural winter ranges of this valley.
- Grizzly bears roam throughout this valley in the spring, but these lands may become more important to the bears with the continued loss of higher elevation whitebark pine trees and their seeds.
- Streams in this valley likely will become climate refugia for Yellowstone cutthroat trout as the climate warms.
- Oil and gas development is not compatible with this wild area and would undermine local tourism and the recreation-based economy.

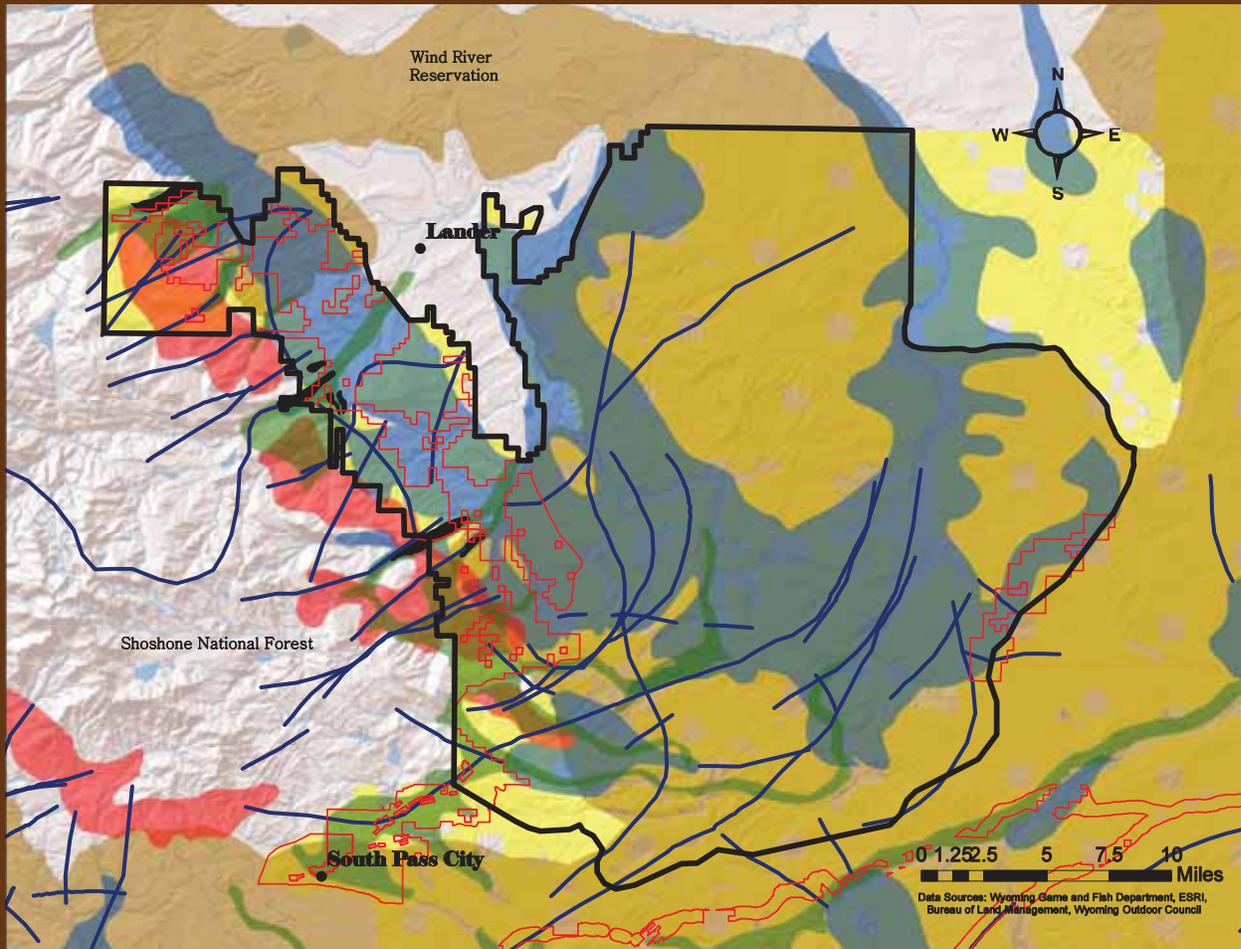


Honoring a Tradition of Conservation in the Upper Wind River Valley

For more than forty years, the BLM, U.S. Forest Service, Wyoming Game and Fish Department, and private landowners have invested a substantial amount of time and money to protect crucial wildlife habitats in the Upper Wind River Valley. With no or very low potential for oil and gas in this valley, habitat and recreation are the highest-value and best use of the valley's BLM lands, which should be conserved to ensure a vibrant and resilient Greater Yellowstone Ecosystem for future generations. We strongly believe that the only reasonable management strategy under the revised Lander Resource Management Plan is to protect the sustainable local economy and these wild and scenic treasures by administratively withdrawing this valley from oil and gas leasing.

The Lander Front and Beaver Rim

Public Lands Essential to the Local Quality of Life



-  LanderFront/BeaverCreek Conservation Area
-  Existing ACEC
-  Big Game Migration Route
-  Bighorn Sheep Winter Range
-  Moose Winter Range
-  Elk Calving Area
-  Elk, Deer, and Pronghorn Winter Range
-  Greater sage-grouse core area
-  BLM Managed Federal Minerals



The Lander Front and Beaver Rim encompass some of the most celebrated viewsheds in Wyoming. Descending from South Pass, travelers see a dramatic view of the colorful Red Canyon and the impressive Wind River Mountains. Looking west from atop Beaver Rim, residents and visitors are treated to an awe-inspiring panorama of colorful sandstone outcrops, rugged canyons, and rolling hills which support sagebrush shrublands, juniper woodlands, aspen groves, cottonwood gallery forests, and native grasslands. The diverse BLM lands within this landscape are critical for wildlife and loved by local residents for their outstanding recreational opportunities.



Jeff Vanuga



Andy Blair

This area is part of what the U.S. Fish and Wildlife Service identifies as “one of two remaining areas of contiguous range essential for the long-term persistence of the [greater sage-grouse].” Many sage-grouse that spend the summer and fall on the higher-elevation lands of the

Sweetwater Watershed and South Pass descend into this area to take advantage of important winter and spring habitat. Recent research indicates that sage-grouse winter concentration areas, like those found here, are essential to the species. BLM lands in this area also ensure the survival of thousands of wintering elk, mule deer, and pronghorn that subsist on a variety of natural vegetation.

The Lander Front and Beaver Rim

- This area provides critical winter and breeding habitat for greater-sage grouse and is one of the world’s most important areas for sage-grouse conservation.
- Thousands of elk and mule deer winter along the Lander Front and within the Beaver Creek watershed.
- BLM lands provide a diverse array of recreational opportunities for visitors and local residents.
- A growing and diverse local economy relies on nearby undeveloped open spaces.
- Additional energy development in this area would harm the local quality of life and disrupt a treasured landscape.



Scott Copeland

Despite the recent economic downturn, the town of Lander continues to grow new businesses and attract young people, in large part because of its proximity to undeveloped public lands and the wealth of recreational opportunities they provide. Residents and visitors prize these lands because they offer some of the state’s best hunting, hiking, biking, trail running, rock climbing, horseback riding, nordic skiing, and wildlife viewing opportunities. The undeveloped public lands in this area are a major economic asset to the local community and help create a quality of life that is the envy of much of Wyoming. The fact that these lands remain undeveloped continues to make the Lander area one of Wyoming’s top destinations for visitors, outdoors enthusiasts, new residents, and Wyoming retirees.

Conserving the Lander Front and the Beaver Creek Watershed

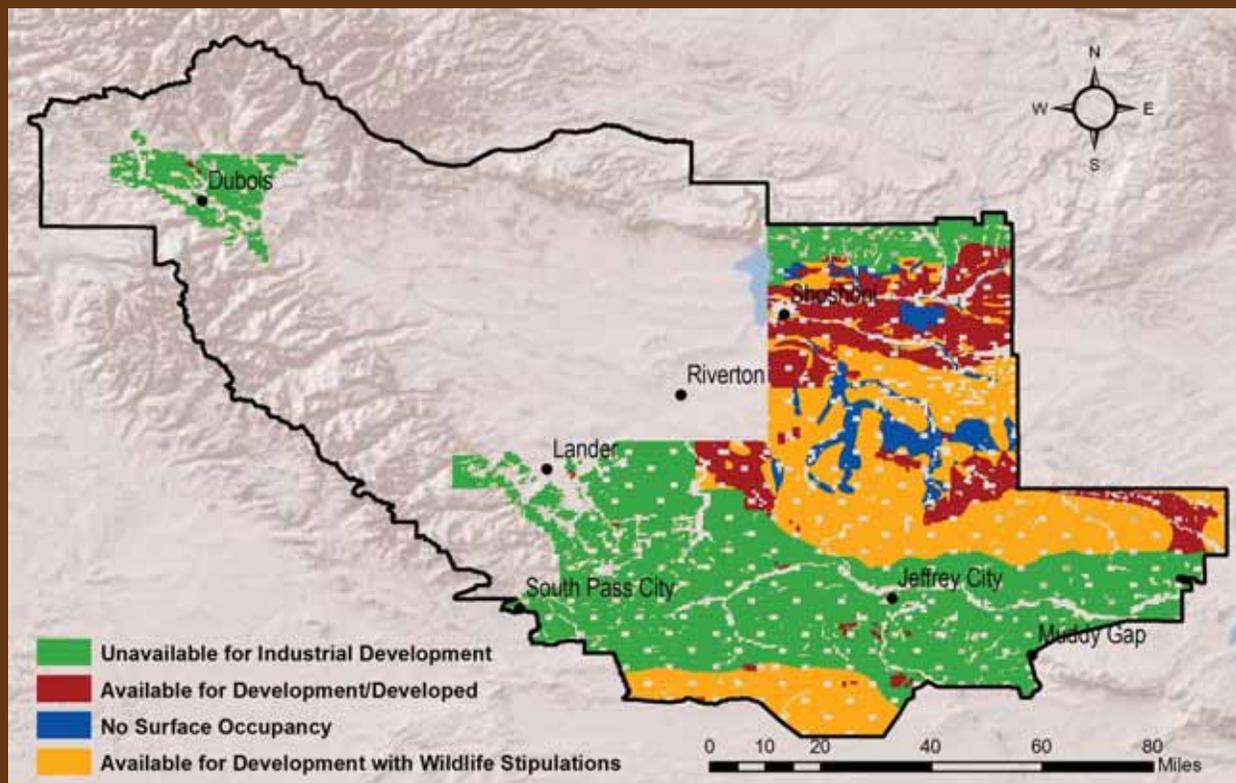
With such celebrated viewsheds, unspoiled crucial wildlife habitat, and world-class recreational resources—all of which are essential to the local community, its economy, and its quality of life—we believe the Lander Front and Beaver Rim area must be managed with great care. We believe the BLM should administratively withdraw this area from future oil, gas, and phosphate leasing in order to protect these valuable wildlife and recreational resources so they will continue to support the social and economic stability of this area.



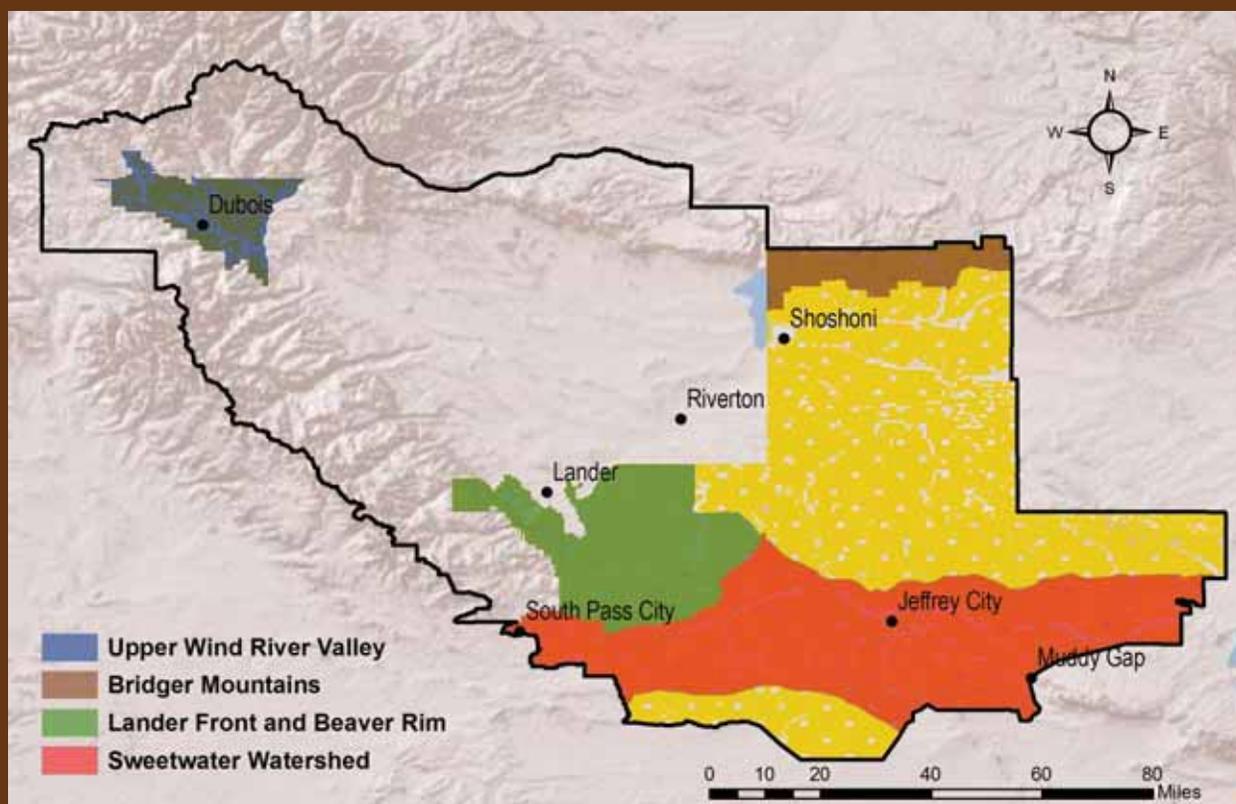
Ken Dumas

BLM's Lander Resource Management Plan

Balancing Conservation and Development



Special Landscapes that Deserve Protection



BLM lands in the Lander Field Office contain some of America's finest wildlife habitats, intact historic trails, dramatic open spaces, and wildlands. An array of landforms give rise to salt deserts, sagebrush steppe, native grasslands, shrublands, juniper woodlands, aspen stands, cottonwood and willow riparian corridors, and evergreen forests—nearly every habitat type found in Wyoming can be found in this field office. These habitats support mule deer, elk, pronghorn, moose, beaver, prairie dogs, golden eagles, bald eagles, and many other wild creatures, including large predators such as grizzly bears and wolves. One of the best known wild herds of bighorn sheep relies on some of these BLM lands. The southern portion of the Lander Field Office is home to one of the world's best remaining sanctuaries for the greater sage-grouse. The U.S. Fish and Wildlife Service described this area in 2010 as one of the two most important "remaining areas of contiguous range essential for the long-term persistence of the species."



Chris Merrill

Every year, thousands of visitors from across the nation travel to the Sweetwater Watershed to celebrate and commemorate 19th century pioneer journeys along the Oregon, Mormon, and California trails. Hikers can enjoy the unique high desert portions of the Continental Divide Scenic Trail on their way through the Red Desert. The historic and recreational trails in the Lander Field Office are nationally recognized and are some of Wyoming's finest contributions to the National Landscape Conservation System—a system that the Department of Interior has prioritized for special management.



Scott Capeland

This proposal envisions a balance between energy development and the protection of wildlife and special places. With so much of Wyoming already dedicated and available to energy development, we believe the BLM, through the Lander RMP, can and should ensure protection of some of Wyoming's most extraordinary, open, wild, and undeveloped landscapes. Even if the BLM were to ensure the protection of these treasured landscapes, a significant portion of the Lander Field Office—an area with oil, gas, uranium, and wind resources—could remain available for development. This is the very definition of balance. Towns such as Lander and Dubois have been growing even during the recent economic downturn because of their diversified economies that rely in part on the natural and recreational values that draw tourists and new residents. Providing protection to the landscapes that surround these towns and draw tourists, hunters and anglers, and outdoors enthusiasts to the region will not prevent economic development; in fact it would help to bolster continued diverse economic growth.

A Balanced Approach for Jobs, Wildlife, and Open Spaces

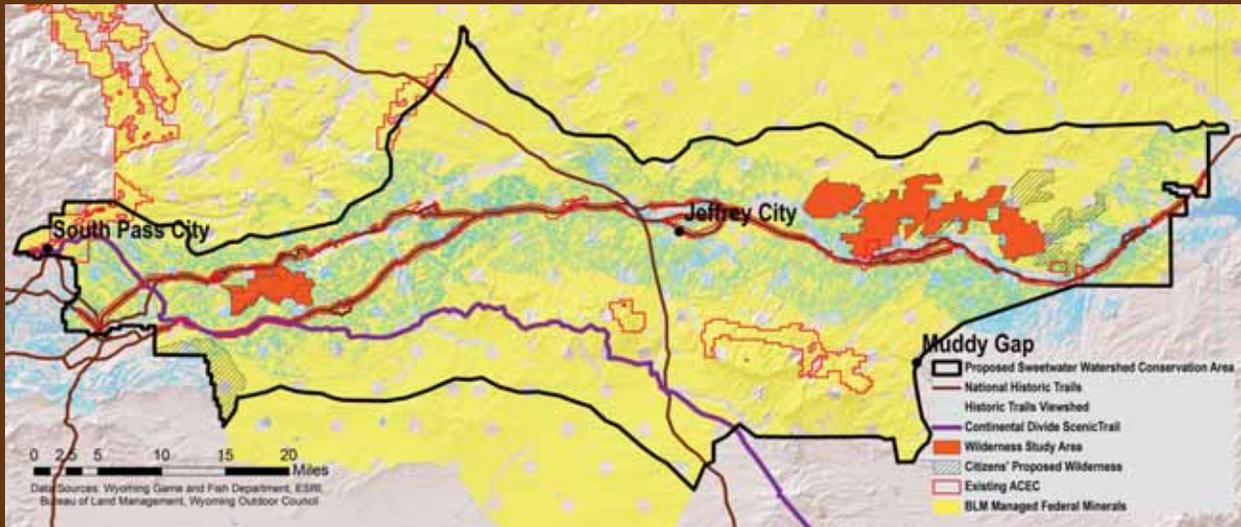
With this proposal we ask the BLM to protect four remarkable landscapes within the Lander Field Office. These landscapes—the Upper Wind River Valley, the Bridger Mountains, the Sweetwater Watershed, and the Lander Front—each have unique and priceless resources that are incompatible with industrial development and should be protected for current and future generations. We ask that these four areas, 51 percent of the BLM managed federal mineral estate within the Lander Field Office, be made administratively unavailable for industrial development throughout the life of the revised Lander RMP. The remaining 49 percent of the federal mineral estate in the field office—an area with oil, gas, uranium, and wind—would remain available for development. Because relatively few conflicts occur in the areas we propose for protection, the BLM can protect sensitive natural, historic, and recreational resources while also allowing the development of energy resources to help satisfy national energy needs.

The Lander Field Office

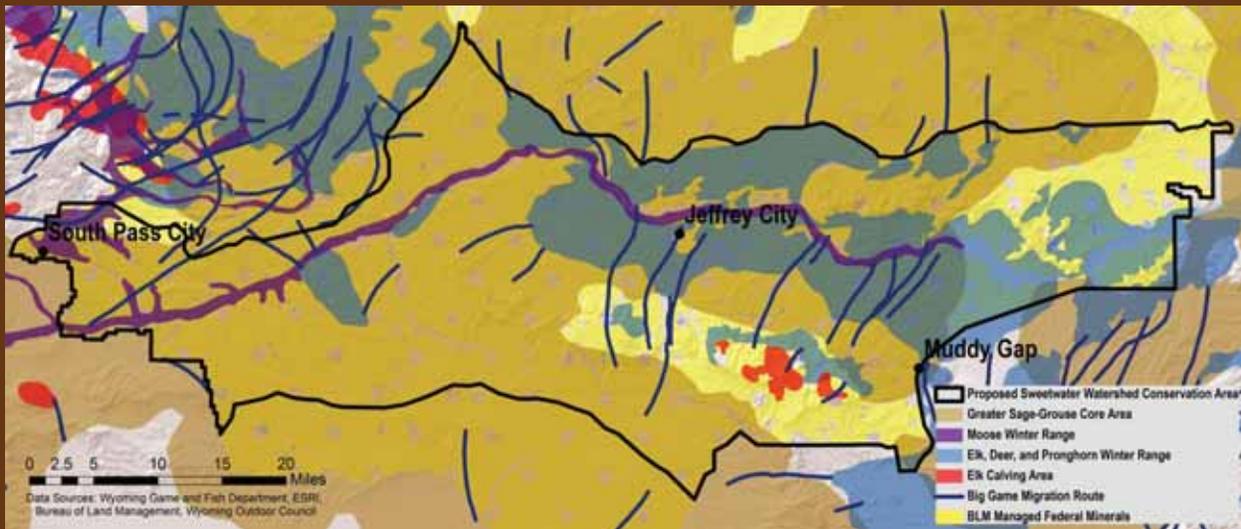
- A sanctuary for the greater sage-grouse.
- The Oregon, Mormon, and California National Historic trails draw visitors from across the nation.
- Rare species such as wolves, grizzly bears, and peregrine falcons continue to roam some of these BLM lands.
- Hikers experience the high desert as they pass through this area on the Continental Divide National Scenic Trail.
- Thousands of bighorn sheep, elk, mule deer, pronghorn, and moose range across these public lands throughout the year.
- A balance between energy development and conservation will maintain natural and recreational values and will continue to support diversified local economies.

The Sweetwater Watershed

History, Recreation, and Primitive Lands



World Class Wildlife Habitat





The Sweetwater Watershed

- Vast and unfragmented sagebrush habitats make this one the world's most important areas for the continued survival of the greater sage-grouse.
- The Oregon, Mormon and Pony Express National Historic Trails draw thousands of visitors to this landscape every year.
- The unique high-desert portion of the Continental Divide National Scenic Trail passes through this spectacular landscape.
- Several Wilderness Study Areas and Citizens Proposed Wilderness Areas provide some of Wyoming's finest opportunities for solitude.
- This landscape is a favorite of hikers, bikers, anglers, climbers, hunters, horsemen, and campers.
- The many priceless resources found throughout this landscape warrant protection in the Lander RMP and the National Landscape Conservation System.

The Sweetwater Watershed is home to some of the last, best, intact sections of the Oregon, Mormon, California, and Pony Express National Historic Trails. These trails traverse a vast and stunning landscape that is teeming with iconic western wildlife—a landscape that endures today much as it was when pioneers traveled through 150 years ago. Hikers on the Continental Divide National Scenic Trail can experience a vast, unfragmented, and healthy sagebrush landscape as they stride toward the Wind River Mountains. Recreationists appreciate this landscape for the opportunities to climb, hike, run, rock hound, fish, hunt, and explore in a seemingly boundless and untrammelled setting.

According to the U.S. Fish and Wildlife Service, this area's vast unbroken stands of sagebrush are "one of two remaining areas of contiguous range essential for the long-term persistence of the [greater sage-grouse]." These sagebrush uplands, riparian corridors, and scattered stands of aspen and pine also support robust populations of pronghorn, white-tailed prairie dogs, badgers, mule deer, abundant ferruginous hawks and golden eagles, and the occasional wolf and Shiras moose.

To cross through the formidable Rocky Mountains, pioneers followed the Sweetwater River

from Independence Rock up relatively gentle terrain to South Pass. Today, thousands of visitors flock to this area to learn about and sometimes reenact the heroic journeys that played out here over a century ago. The increasingly popular Continental Divide National Scenic trail provides an awe-inspiring passage from the southern Rockies to the northern Rockies for adventurous travelers.

This landscape's greatest economic values, are its world-class wildlife, fishing, hunting, hiking, climbing, and horseback riding. Several recreation enterprises that contribute consistently and substantially to the local economy—in a sustainable manner—rely on the unspoiled character of this landscape.

Conserving the Sweetwater Watershed

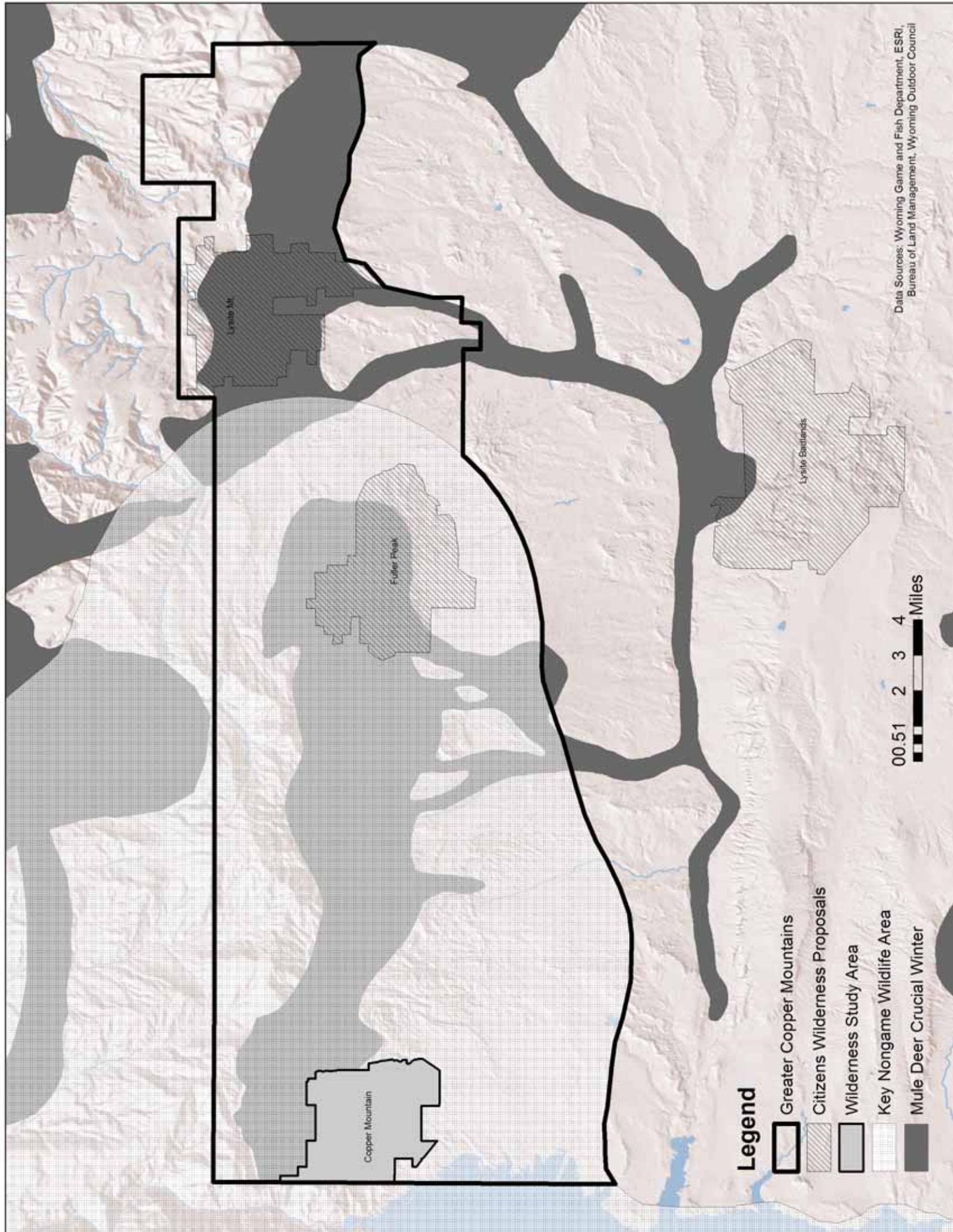
With so many irreplaceable national resources—whose integrity demands minimal human intervention—we believe that the ecological, historical, and recreational significance of this watershed should take priority over the relatively minor and short-lived benefits that oil and gas development would provide. We are deeply concerned about climate change and understand the pressing need to develop renewable energy sources, but because of this area's importance to greater sage-grouse and the sensitivity of historic and recreational resources, we believe that industrial-scale wind facilities and their associated, roads, activity, traffic, transmission lines, and collector lines are not appropriate in this landscape. Visionary stewardship by the Bureau of Land Management can and should seek to protect these last vestiges of our indispensable ecological, cultural, and recreational heritage.



Jeff Vanuga

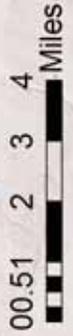


Jeff Vanuga



Legend

- Greater Copper Mountains
- Citizens Wilderness Proposals
- Wilderness Study Area
- Key Nongame Wildlife Area
- Mule Deer Crucial Winter



Data Sources: Wyoming Game and Fish Department, ESRI, Bureau of Land Management, Wyoming Outdoor Council

Appendix 1

Doing it Right: Designing Oil and Gas Development Projects to Safeguard Wyoming's Outdoor Heritage

Wyoming Outdoor Council

Bruce Pendery and Lisa McGee

Wyoming has world-class energy resources and world-class natural resources. To ensure the Wyoming we love remains an incredible place to live and visit, the Wyoming Outdoor Council has established a balanced, two-pronged approach when it comes to energy development on public lands and federally owned minerals. There are some areas that are too valuable to our state for recreation, wildlife habitat, or other sustainable uses to risk losing to industrial development. These areas, which we often refer to as Heritage Landscapes, are places where development should not occur. You can see the Heritage Landscapes on our website at http://www.wyomingoutdoorcouncil.org/html/what_we_do/public_land/heritage_landscapes.shtml.

In areas where energy development is not inappropriate, it should be “done right.” That means safeguards should be put in place to protect human health, our clear skies and clean water, open space, and wildlife habitat. This review deals with this second category of lands, lands where oil and gas development must be “done right.” These represent the majority of the public lands and federally owned minerals in Wyoming.

This report focuses on practices that are designed to minimize the impacts oil and gas development can have. Each project and every landscape is unique, and this report is not intended to be a one-size-fits-all set of recommendations. Because new technologies and better science are being developed every day, this report is a starting point. And because one practice or technique may be appropriate in some places, but not in others, permitting agencies must tailor project design features appropriately in order to ensure development is “done right” every time.

There are several stages that precede an oil and gas development proposal on public land and federally owned minerals. Although many of our “doing it right” suggestions focus on practices and strategies agencies can require, and companies can undertake, at the drilling stage, there are two prior opportunities to condition development, and both are also critically important.

Land and Resource Management Plans

On public lands and federally owned mineral estates, the first opportunity citizens have to ensure oil and gas development is “done right” is during the planning stage. Both the Bureau of Land Management (BLM) and the Forest Service are required by law to develop overarching plans that guide land management decisions. Known as resource management plans on BLM lands and forest plans on National Forest lands, these documents are revised every fifteen years or so. Within plan revision processes, the public is asked to weigh in about appropriate uses on

specific lands. An environmental impact statement, which considers a range of alternatives and the impacts associated with them, accompanies a land use plan.

Although BLM and National Forest lands are managed for multiple uses, not all uses can coexist on the same acreage. For this reason, plans designate areas suitable or unsuitable for certain types of uses. An area of crucial moose winter range for example, or a popular recreation area, may be unsuitable and eventually determined to be unavailable for future oil and gas development. If lands are made available for oil and gas development, various stipulations and conditions may be recommended for certain parcels within available lands.¹ Depending on the values at stake, sometimes doing it right means not doing it at all.

Oil and Gas Leasing

Once lands are designated available for leasing, the BLM and the Forest Service may receive requests from interested companies or individuals to lease various parcels for oil and gas development.² The agencies will consider whether to lease (or in the Forest Service's case whether to consent to have the BLM lease) the parcels. If the agencies decide to lease, there is opportunity to prepare additional environmental analysis. The agencies will also determine what stipulations to attach to the lease at that time. Stipulations define the basic terms of the lease contract. Many of the suggestions discussed below can be incorporated at the leasing stage in the form of no surface occupancy stipulations, stipulations that limit the times of the year companies can access certain areas, or stipulations that control surface use in other ways like creating buffers around sensitive areas. Stipulations are not the only terms or restrictions placed on a leaseholder; all federal oil and gas leases are issued "subject to" the terms and conditions of lease (which include significant environmental protection provisions) and all state and federal statutes, regulations, and other formal orders.

Drilling Stage

After public lands are leased, a company must file an Application for Permit to Drill (APD) that outlines its plans to drill and to disturb the surface. There is usually site-specific environmental analysis at this time, which can result in the addition of conditions of approval. These are additional terms a company must comply with in order to be granted permission to drill. This stage of the oil and gas development process, the drilling stage, is the focus of this report.

Many of the "doing it right" suggestions below can be added as conditions of approval at the APD stage or as stipulations during earlier stages when lands are leased. Listed below are

¹ There is no mandate that the agencies must lease available lands. Plans are designed to be visionary, "big picture" documents that guide management actions; but they do not typically make final decisions themselves. However, it is most always the case that lands made unavailable for leasing within a plan will not be leased during the life of the plan. Agencies have the ability to amend plans if circumstances warrant. Further environmental analysis is needed to amend a plan.

² The BLM has adopted guidance for how it will conduct oil and gas leasing. This Instruction Memorandum puts in place a number of requirements to ensure environmental protection prior to leasing. One of the most important provisions requires the development of "Master Leasing Plans" if certain requirements are met, and an MLP must consider a number of ways to reduce the impacts of oil and gas development, including not developing the area.

suggested actions and technologies that if implemented have the potential to minimize threats to wildlife, air and water quality, and human health.³

Safeguarding Wyoming's Wildlife

In Wyoming, we live in a place that still supports large, free-roaming wildlife populations. Wyoming's wildlife is diverse and bountiful. Our outdoor heritage is rooted in our appreciation for wildlife, and the many opportunities we have to encounter wildlife. The Wyoming Outdoor Council's goal is to ensure that if oil and gas development is authorized that it is conducted in a manner that safeguards wildlife to the greatest extent possible. Depending on the values at stake, sometimes doing it right might mean not leasing an area in the first place.

In addressing how best to conserve wildlife in places that are already leased and facing oil and gas development proposals, the Wyoming Game and Fish Department has developed recommendations, which are based on the following prioritized approach:

The approach recommended to protect and maintain important wildlife resources ... sets forth the following priority of actions: 1) avoid the impact; 2) minimize the impact through appropriate planning and management actions; 3) mitigate the impact by providing replacement or substitute resources; and 4) provide financial compensation only when no reasonable alternative is available to avoid, minimize or mitigate the impact.⁴

We support attempting to avoid the impacts in the first place and minimizing impacts through appropriate planning and management action. That is why the planning and leasing stages are so important. But there is also much that can be done to condition development at the drilling stage in order to mitigate impacts. The following are practices that agencies may require and/or companies may voluntarily adopt in order to safeguard wildlife.

- 1) Wildlife:
 - a. Collect species-specific baseline data:
 - i. Collect sufficient baseline data on all species of concern prior to development so that there is a full understanding of the species' needs.
 - b. Reduce ground disturbance:
 - i. Maintain large tracts of undeveloped/roadless lands by clustering development/consolidating infrastructure;
 - ii. Drill multiple wells per pad;
 - iii. Phase development, i.e., no new well pads until other pads are reclaimed in part or in full;

³ Three additional sources of information about practices that can help reduce the impacts of oil and gas drilling are the University of Colorado's website on oil and gas best management practices (BMPs), the EPA's Natural Gas STAR Program website, and the Earthworks Oil and Gas Accountability Project's website. These websites can be found at <http://www.oilandgasbmps.org/>, <http://www.epa.gov/gasstar/>, and <http://www.earthworksaction.org/bestpractices.cfm>.

⁴ Recommendations for Development of Oil and Gas Resources in Important Wildlife Habitats, Wyoming Game and Fish Department, Revised April 2010, at 4. This report can be found at <http://gf.state.wy.us/downloads/doc/O&G%20Recommendations%20April%202010%20with%20changes%20identified.pdf>

- iv. Construct irregularly shaped/contoured well pads that blend with the landscape;
 - v. Require interim reclamation of pads after drilling is completed;
 - vi. Consider alternative access points to ensure minimal roadbuilding, or require road building in less sensitive areas;
 - vii. Gate single-purpose roads (i.e., new access roads) and close/reclaim all unnecessary roads;
 - viii. If an area is particularly sensitive (e.g., steep slopes, unstable soil, roadless, etc.) require helicopter access instead of new road construction;
 - ix. Require ancillary facilities (work camps, water treatment facilities, etc.) to be located off site in less sensitive areas.
- c. Avoid and/or provide adequate buffers for road or well pad construction in sensitive areas such as:
- i. Known migration/stopover habitat;
 - ii. Big game crucial winter range;
 - iii. Sage-grouse core areas;
 - iv. Critical habitat for Endangered Species Act listed species or other agency-recognized sensitive species;
 - v. Key parturition areas;
 - vi. Den sites;
 - vii. Raptor nests and foraging areas; and
 - viii. Wetland and riparian areas.
- d. Implement timing limitations:
- i. Prohibit access during key times of the year such as in parturition habitats, crucial wintering areas, denning sites, and migration/stopover times.
 - ii. To the extent possible, these timing limitations should be applied for the life of the project, not only during the drilling stage.
 - iii. Remote monitoring and/or shutting in wells for part of the year may be required.
 - iv. Timing of operations may be controlled and limited to periods of the day when wildlife are less active.
- e. Additional practices to minimize impacts to wildlife:
- i. Prohibit open reserve fluid pits in favor of closed loop systems;
 - ii. Install mufflers or noise reduction devices on compressor stations and other mechanical equipment;
 - iii. Require workers to carpool to reduce truck traffic;
 - iv. Install a centralized liquids gathering system to reduce truck traffic;
 - v. Require training of employees about respectful and safe wildlife practices;
 - vi. Prohibit workers from carrying firearms to prevent poaching;
 - vii. Restrict the use of lighting, to be used at night only, to periods when people are present on the site and as required by safety regulations;
 - viii. Bury pipelines and power lines.
- f. Monitoring, adaptive management and enforcement:
- i. For species of concern, baseline data should be collected throughout the life of the project (drilling, production, and reclamation).

- ii. Population thresholds or triggers should be established, and if met, pre-determined, specific management responses should be required.
- iii. Clear consequences should be outlined and agreed to prior to drilling authorization if thresholds are exceeded. Consequences could include slowing the pace of development or disallowing new disturbances if warranted.
- iv. Adequate oversight and an active presence by regulatory agencies are necessary to ensure all mitigation measures are being implemented.
- g. Mitigation:
 - i. Establish a mitigation plan for loss of habitat.
 - ii. Onsite mitigation is preferable to offsite mitigation.
- h. Reclamation:
 - i. Require interim (i.e., partial) reclamation of well pads as soon as possible.
 - ii. Require adequate bonding to ensure the protection of resources after the close of production.
 - iii. Clear standards should be set and enforced regarding the extent to which the surface area must be returned to its pre-development condition.
 - iv. Pre-disturbance ecological conditions should be reestablished.
 - v. Require the use of appropriate native plants for reseeding efforts.
 - vi. Monitor for several years after reseeding to determine whether reclamation was successful.

Protecting Wyoming's Air Quality

Historically Wyoming has enjoyed some of the cleanest air and clearest skies in the country. In fact, until recently, the air quality in Wyoming was said to be some of the best in the world—rivaling rural, mountainous countries like Tibet. In areas of the state with some of the most concentrated oil and gas developed, however, all of that has changed. The formerly clear skies and 100-mile mountaintop views from the Pinedale area are now often marred by haze. And, dangerous levels of ozone have been recorded, resulting in the state's recommendation to the Environmental Protection Agency (EPA) that some areas in the western part of the state are not in attainment of the national ambient air quality standards. In a 2009 technical report, the Air Quality Division of the Wyoming Department of Environmental Quality attributed high ozone levels in this part of the state to local oil and gas operations.⁵

The Wyoming Outdoor Council believes clean air and clear skies are essential components in keeping people in Wyoming healthy and providing for our high quality of life. State and federal agencies must do a better job of addressing air quality issues and ensuring air quality is something Wyoming can boast about again. Wyoming citizens should not have to sacrifice these values when there are practices and technologies agencies can require oil and gas companies to implement to ensure air quality is protected.

1) Air:

⁵ See <http://deq.state.wy.us/aqd/Ozone%20Main.asp> for access to this report and other information on high ozone levels in the Pinedale area.

- a. Comply with existing laws, regulations and policies aimed to safeguard air quality:
 - i. In areas now facing violations of the Clean Air Act due to existing oil and gas development, it is reasonable to question whether new oil and gas drilling projects can and should be authorized.
 - 1. Denying or pacing development is an option within areas that are not meeting standards.
 - ii. In areas out of compliance with existing ozone standards, companies must adhere to Wyoming's state policy regarding offsets for nitrogen oxides (NOx) and volatile organic compounds (VOCs), precursors to the formation of ground-level ozone, a regulated air pollutant.
- b. Accept additional safeguards to protect human health:
 - i. There could be stricter standards for ozone or NOx and VOCs, or new regulations that may be designed to regulate all immobile oilfield equipment owned and/or operated by a single company as a single source.
 - ii. Companies should show a commitment to "doing it right."
- c. Conduct air quality monitoring and prepare modeling of future impacts:
 - i. Monitor existing air quality to establish baseline data before new projects are authorized.
 - ii. Modeling should be prepared to assess whether new development will be likely to violate existing laws and regulations that control pollution and protect visibility.
 - 1. Specific project design features should be incorporated within the modeling.
 - iii. As a condition of project approval, monitoring throughout the life of the project should be conducted and established thresholds or triggers should be set with tangible consequences if exceeded.
 - 1. This can mean adjusting the rate, timing and places of development.
 - 2. Project design features and best management practices may be refined accordingly.
- d. Adhere to BLM's "Best Management Practices" recommendations to protect air quality⁶ and the Forest Service's techniques for reducing emissions from oil and gas activities.⁷ These include:
 - i. Reducing tailpipe emissions and fugitive dust from truck traffic by:
 - 1. Directional drilling.
 - 2. Centralized water storage and delivery.
 - 3. Centralized fracturing (fracking) pads with "hard line frac pipes" that can serve multiple wells.
 - 4. Off site centralization of production.

⁶ Many of the following recommendations come from BLM's May 9, 2011, Air Resource Best Management Practices for Fluid Mineral report at http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/bmps.Par.60203.File.dat/WO1_Air%20Resource_BMP_Slideshow%2005-09-2011.pdf.

⁷ Emissions Reduction Techniques for Oil and Gas Activities. U. S. Forest Service. 2011. Available at <http://www.fs.fed.us/air/documents/EmissionReduction-072011x.pdf>.

5. Use of liquids gathering systems.
6. Remote monitoring and well automation.
7. Carpooling workers in vans.
8. Applying water to dirt roads.
9. Applying chemicals to dirt roads.
10. Lowering speed limits.
11. Preventing dust by chip seal/asphalt.
- ii. Reducing emissions during the drilling stage by:
 1. Requiring Tier 4 diesel drill rigs or the equivalent (e.g., natural gas or electric drill rigs).
 2. Prohibiting venting and flaring of gases during drilling stage and requiring “green completions” to recapture emissions.
- iii. Reducing emissions during the production stage by:
 1. Installing chemical pumps rather than pneumatic pumps.
 2. Monitoring of wells with remote telemetry.
 3. Using electricity, rather than diesel engines, to power compressor stations if the presence of overhead power lines doesn’t pose a threat to wildlife or visual resources.
 4. Updating seals, hatches, and valves to minimize VOC fugitive emissions.
 5. Requiring the use of enclosed tanks rather than open pits to contain fugitive VOC emissions.
 6. Using “vapor recovery units” on oil, condensate, and produced water tanks to reduce fugitive VOC emissions.
 7. Optimizing glycol circulation in dehydrators to reduce methane emissions.
 8. Capture and recycle methane by installing “flash tank separators.”⁸
 9. Use “selective catalytic reduction” technology in compressor (and drill rig) engines.
 10. Replace “wet seals” with “dry seals” in centrifugal compressors.
 11. Replace compressor rod packing at frequent intervals.
 12. Replace “high-bleed” pneumatic devices with “low-bleed” devices and install retrofit bleed reduction kits on high bleed devices.
 13. Install “plunger lift systems” and “automated systems” in gas wells.
- iv. Monitoring at the well head:
 1. Implement a “directed inspection and maintenance” and “infrared leak detection” program.

⁸ For additional technical methods to reduce methane emissions see *Cost Effective Methane Emissions Reductions for Small and Midsize Natural Gas Producers*, Roger Fernandez, et al. published in the June 2005 issue of the Journal of Petroleum Technology. The report can be found at: <http://www.oilandgasbmps.org/docs/GEN07-Cost-EffectiveMethaneEmissionsReductionsforSmallandMidsizeNaturalGasProducers.pdf>.

- Leaks can be detected with infrared cameras, organic vapor analyzers, soap solutions, and ultrasonic leak detectors.
 - Leaks can be measured using calibrated bagging, rotameters, and high volume samplers.
- e. Adhere to Wyoming Department of Environmental Quality (DEQ) best available control technology (BACT) requirements for oil and gas development⁹ and the offsets policy for ozone precursor emissions.¹⁰ These provisions include:
- i. 98 percent control of emissions from tank flashing, dehydration units, pneumatic pumps, and produced water tanks in the Jonah/Pinedale Anticline Development Area (JPDA).
 - ii. Additional controls in the JPDA for pneumatic controllers, well completions, blow downs/venting, and truck loading.
 - iii. Similar controls are applicable in other parts of the state, especially in Concentrated Development Areas in the southwest quarter of the state.
 - iv. Offsetting increases in NO_x emissions at a 1.1:1 ratio and increases in VOC emissions at a 1.5:1 ratio in Sublette County.

Safeguarding Wyoming’s Clean Water and Protecting Water Reserves

Clean and abundant water is essential for the health of Wyoming residents, for our fish and wildlife populations, and for agricultural production. Oil and gas development can threaten the quality of surface waters and groundwater in several ways. Water contamination can occur through direct spills, leaking pits and tanks coupled with stormwater runoff, erosion and sedimentation, well blow-outs or underground migration of fluids and gases during drilling, and hydraulic fracturing (“fracking”) operations. Although the stated goal in all development proposals is that contamination should not occur, human error and technical failure is not uncommon. For this reason, adherence to the highest operational standards is critical to prevent and remedy these serious problems.

Oil and gas development also requires vast quantities of water, and in the case of coalbed methane development, millions of gallons of groundwater are brought to the surface as a consequence of extracting natural gas. Depletion of aquifers is a concern to nearby landowners, whose water wells may be drawn down. In addition, the disposal of such large amounts of often salty water into streambeds can negatively affect water quality, fish and amphibians, and vegetation. Careful planning and siting as well as proper disposal methods for produced water should be incorporated into any oil and gas development proposal.

- 1) Water:
 - a. Comply with existing laws, regulations and policies aimed to safeguard water quality:
 - i. Adhere to voluntary agreements not to use diesel fuel in fracking fluids.¹¹

⁹ The DEQ’s BACT requirements are available at <http://deq.state.wy.us/aqd/oilgas.asp>.

¹⁰ The offsets policy is available at <http://deq.state.wy.us/aqd/Ozone%20NSR%20Policy.asp>.

¹¹ One such agreement can be found at http://www.epa.gov/ogwdw000/uic/pdfs/moa_uic_hyd-fract.pdf.

- ii. Support proposed regulation of all injections of fracking fluids under safe drinking water law designed to protect underground sources of drinking water.
 - iii. Comply with the Wyoming Oil and Gas Conservation Commission's regulations regarding disclosure of fluids used in fracking.
 - iv. Rules regarding stormwater runoff and any needed Clean Water Act permitting should be adhered to.
- b. Information gathering:
- i. Conduct groundwater/aquifer characterization, including areas (residential wells, springs, recharge areas) potentially affected within and down gradient of the project area.
 - ii. Based on characterization results:
 - 1. Groundwater modeling will be used to adjust drilling based on projected impacts to springs, surface water, and groundwater.
 - 2. Groundwater monitoring wells will be established.
 - 3. Pre-drilling groundwater sampling in key aquifers will be conducted to establish a baseline.
 - 4. Limits will be established on the number of supply water wells that will be drilled. Locations and depths will be based on the groundwater characterization study and will inform the decision regarding concentration of facilities/footprint.
 - 5. Provide nearby property owners with information prior to development identifying the recommended water testing parameters/constituents for their private wells, to assist in their water quantity and quality baseline testing, if they so choose.
 - A Water Well Mitigation Agreement should be offered to owners of wells and springs that could potentially be affected by drilling operations.¹²
 - 6. Develop a groundwater pollution prevention and monitoring plan to be implemented during the life of the project through an agency-community team and with public review and comment.
 - 7. Monitor water wells throughout the life of the project.
 - iii. Acquire baseline data for surface water quality:
 - 1. Map wetlands, flood plains and riparian areas and include classification of streams and flows.
 - 2. As a result of the mapping,
 - Test surface water quality in any streams in the project area prior to any development.
 - Establish a storm water pollution prevention plan for construction, with runoff and erosion controls factored in. Adhere to best management practices in the plan.

¹² See Coalbed Methane Best Management Practices: A Handbook at 13, Western Governors' Association April 2006 at http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/_energy/oil_and_gas.Par.1132.File.dat/CoalBedMethane_WGA_2006.pdf.

- Monitor surface water quality for the life of the project.
- iv. Public disclosure of chemicals used:
1. Require full disclosure of all chemicals (using CAS numbers for identification) used in drilling and fracking operations.
 - Include disclosure of the ingredients,
 - Disclosure of the proportions of chemicals (i.e. the “formula”),
 - Made a certain length of time before fracturing operations are scheduled to begin (e.g., 90 days advance notice), and
 - Do not accept trade secret exemptions to the disclosure requirement.
 - * Or, if trade secret exemptions are made, allow disclosure of trade secrets to regulatory agencies and to health care professionals (whenever exposure has occurred) on as as-needed basis.
 - Require notification to affected landowners where drilling/fracking is scheduled to occur.
- v. Project design features that can safeguard water resources:
1. Apply NSO stipulations (or don’t lease areas) that overlie sole source aquifers or other important sources of drinking water.
 2. Require well pads to be sufficiently setback from all streams, riparian areas, wetlands, springs, groundwater wells and homes.
 - At least a 1/2 mile, or possibly 1-mile.
 3. Require back flow prevention devices to be installed and used on all water supply wells and locked to prevent unauthorized use.
 4. No open pits whatsoever should be allowed in favor of tanks and a closed loop system.
 5. All wastes should be gathered and disposed of in proper locations off-site.
 6. In coalbed methane production, produced water should be re-injected into the same aquifer or formation (or into an aquifer or formation of equal or lesser quality) to prevent degrading higher water quality and prevent surface water degradation.
 7. Development should be prohibited in areas of steep slopes or unstable soils.
 8. Require good well integrity.
 - Properly case, plug and abandon all wells no longer in use.
 - Properly case and screen all wells that are in current use.
 - Ensure that all water wells have good well integrity from top to bottom, to insure that excursions of fluids into those wells from other pressurized wells will not occur.

Supporting Communities and Our Small Town Quality of Life

In Wyoming, we treasure our small towns and safe, livable communities. An influx of temporary, non-resident workers—characteristic of oil and gas development—can have significant impacts on communities. Many towns around the state are experiencing increased

crime and traffic, high housing costs, impacts to county and town roads and other infrastructure as well as overloaded services as a result of increased oil and gas development. Housing and non-energy related workforce shortages can be severe.

Although there is no easy solution to the societal consequences of oil and gas development, careful pacing of leasing and drilling may alleviate some of the adverse realities associated with a “boom and bust” economy. Phased development and proper long-range planning can help ensure that economic benefits of oil and gas development are realized into the future, not only for a short time. Special funding may also be required to maintain adequate social services, like law enforcement, medical clinics, and schools.

Special issues with Split Estate Lands

In Wyoming approximately 12.9 million acres of privately owned land (48 percent of all private land in Wyoming) is “split estate.” This means that the federal government owns and controls the minerals underlying a piece of ground while a private landowner, often a farmer or rancher, controls the surface. The federal government can and does lease many of these split estate lands for oil and gas development. Obviously this creates important and difficult land management issues.

While this more complicated legal situation comes into play when there is a split estate, the BLM is still permitted and even obligated to protect surface resources on a split estate when it approves oil and gas drilling. If there are sage-grouse leks, or crucial big winter ranges, or sensitive aquatic resources, the agency must still take steps to protect these resources. That is, the “doing it right” provisions listed above can and should be applied to split estates as a condition of federal approval for drilling operations.

That said, a surface owner of split estate lands has special rights and a special role. Generally speaking the oil and gas operating company must demonstrate it has arrived at a surface owner agreement, received a waiver from the surface owner for access to the leased lands, arrived at a compensation agreement for damages to crops or tangible improvements, or in lieu thereof, the BLM can ensure an adequate bond is posted, as required by the Stock Raising Homestead Act, which is the law that governs operations on many split estates. Moreover, the surface owner is entitled to participate in on-site visits to the proposed drilling location, and this affords the landowner an opportunity to have input regarding surface use protection provisions and reclamation specifications. The BLM is sensitive to this landowner input. The surface owner of a split estate has a special opportunity to ensure oil and gas development is “done right” on his or her property.

Wyoming has a law that affords split estate owners additional rights. This law, the Wyoming Surface Owner Accommodation Act, W.S. § 30-5-401 *et seq.*, provides that:

- 30 days notice must be given prior to obtaining access to private lands to allow for negotiations that allow activities with the least impact.
- Requires fair compensation to landowners for economic losses, including lost land value.
- Requires oil and gas companies to negotiate with landowners to plan oil and gas activities

that could affect their lands, including placement of roads, pipelines, well sites, traffic patterns, etc.

- Where agreement cannot be reached, provisions for bonding are provided.

This law opens up additional opportunities to ensure oil and gas development is “done right” on privately owned surface lands. The BLM should commit to abiding by this Wyoming law.

Conclusion

If the above practices and procedures were fully applied, oil and gas development could occur in many areas of Wyoming, and in a way that makes the social and environmental impact of this activity acceptable to many citizens. Consequently, the BLM and the Forest Service should require and fully implement these practices.¹³ Requiring these procedures is a means to not only ensure needed environmental protections, but also to maintain support for oil and natural gas development, and the oil and gas industry, among the citizens of Wyoming.

¹³ Staff at the Wyoming Outdoor Council have developed a report that outlines the rights the agencies have to require these measures, and in fact their obligation to require them. See Bruce M. Pendery, *BLM's Retained Rights: How Requiring Environmental Protection Fulfills Oil and Gas Lease Obligations*, 40 ENVTL. L. 599 (2010). Available at: http://law.lclark.edu/law_reviews/environmental_law/past_issues/volume_40/40-2.php.



**MEMORANDUM OF UNDERSTANDING
AMONG THE
U.S. DEPARTMENT OF AGRICULTURE,
U.S. DEPARTMENT OF THE INTERIOR,
AND
U.S. ENVIRONMENTAL PROTECTION AGENCY,
REGARDING AIR QUALITY ANALYSES AND MITIGATION
FOR FEDERAL OIL AND GAS DECISIONS THROUGH
THE NATIONAL ENVIRONMENTAL POLICY ACT PROCESS**

PREAMBLE

Safe and responsible domestic oil and gas production is vital to America's energy security. In facilitating oil and gas development, we must ensure that public health, safety, and environmental quality standards are met efficiently, transparently, and in a well-coordinated fashion. Through this Memorandum of Understanding (MOU), the U.S. Department of Agriculture (USDA), the U.S. Department of the Interior (DOI), and the U.S. Environmental Protection Agency (EPA) (Signatories) commit to a clearly defined, efficient approach to compliance with the National Environmental Policy Act (NEPA) regarding air quality and air quality related values (AQRVs), such as visibility, in connection with oil and gas development on Federal lands. The MOU charts a path to protect air quality and AQRVs as we move forward with responsible oil and gas development on Federal lands.

The Signatories expect this standardized approach—which builds on best practices learned from recent successful collaboration—will facilitate the completion of NEPA environmental analyses for Federal land use planning and oil and gas development decisions. The Signatories also expect it to lead to improved design and implementation of mitigation measures, including best management practices, that will both protect air quality and AQRVs, and provide opportunities for future oil and gas development.

In recent years, demand for development of oil and gas resources has increased, while at the same time air quality in some areas of intensive oil and gas development has correspondingly worsened, with some areas experiencing episodes of high levels of air pollution and negative impacts to AQRVs. Effectively addressing these issues requires clear lines of communication and close coordination among the various Federal agencies that have a role in issuing the environmental analyses associated with planning and development decisions. Specific to this process, authorities and requirements of different agencies inadvertently have contributed to heightened uncertainty for oil and gas companies proposing development on Federal lands regarding the NEPA process and have undermined prospects for timely

- Exhibit 2 -

I. PURPOSE

The USDA on behalf of the U.S. Forest Service (FS); the DOI on behalf of the Bureau of Land Management (BLM), the Fish and Wildlife Service (FWS), and the National Park Service (NPS); and the EPA enter into this MOU. The purpose of this MOU is to set forth expectations and agreements for addressing air quality analyses and mitigation measures through the NEPA process related to Federal oil and gas planning, leasing, or field development decisions.

Air quality is important to public health and the environment. Federal statutes, including the Clean Air Act (CAA) and Federal Land Policy and Management Act (FLPMA), provide authority for protecting and improving air resources. Additionally, the National Forest Management Act (NFMA) affords the FS the opportunity to consider sustainable management of National Forest System ecosystems and the interrelationships among air, plants, animals, soil, water, and other environmental factors. Further, the Agencies with Federal land management responsibilities acknowledge that air resources are important and merit protection within their respective legal authorities. Accordingly, the Agencies will strive to ensure, to the maximum extent practicable, that Federal decisions relating to oil and gas will not cause or contribute to exceedances of the NAAQS, nor adversely impact AQRVs in Class I Areas, or sensitive Class II Areas.

In recognition of the need to balance the national mandate to protect air quality and AQRVs, human health, and the environment with the Nation's ongoing demand for energy, the Signatories have come together to create a coordinated, consistent process to evaluate and mitigate adverse impacts to air quality and AQRVs from Federal decisions relating to oil and gas activities within the NEPA process. Additional goals for the MOU are to:

- Improve collaboration and respect in conducting analyses of impacts to air quality and AQRVs and mitigating those impacts;
- Provide greater certainty and transparency for the Agencies, project proponents, and the public regarding the conduct and review of analyses of impacts to air quality and AQRVs in the NEPA process, and the application of mitigation;
- Promote and support a regional perspective on air resources, and collaborative development of appropriate regional air quality assessments; and
- Encourage both integration of design features that reduce emissions and application of cost-effective mitigation measures in projects covered by this MOU.

The Signatories recognize that Federal land management agencies must consider multiple resources when authorizing activities, and, therefore, acknowledge that air quality and AQRVs are among the many resources that must be considered in the decisionmaking process.

responsibilities; or (b) diminish the Signatories' or the Agencies' interactions with State, local, or tribal governments.

8. The Signatories acknowledge there may be on-going efforts that address similar issues and working relationships. Those efforts are encouraged to follow the provisions of this MOU as appropriate.

B. Authority

The authority for the Signatories to enter into and carry out this MOU includes:

- The Clean Air Act, 42 U.S.C. 7401 *et seq.*
- The Energy Policy Act of 2005, Public Law 109-58
- The Federal Land Policy and Management Act of 1976, 43 U.S.C. 1701 *et seq.*
- The Federal Onshore Oil & Gas Leasing Reform Act of 1987, 30 U.S.C. 181 *et seq.*
- Mineral Leasing Act of 1920, as amended, 30 U.S.C. 181 *et seq.*
- National Environmental Policy Act, 42 U.S.C. 4321 *et seq.*
- National Forest Management Act, 16 U.S.C. 1600 *et seq.*
- National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee
- The National Park Service Organic Act of 1916, as amended, 16 U.S.C. 1 *et seq.*
- The Organic Administration Act of 1897, 16 U.S.C. 473-475, 477-482, 551
- Wilderness Act of 1964, 16 U.S.C. 1131 *et seq.*

III. DEFINITIONS

Terms defined in NEPA or CEQ regulations and used in this MOU have the meaning given them in NEPA or CEQ regulations. The following terms as used in this MOU are defined as:

“Adverse impacts” is used in the NEPA context. With respect to AQRVs, it does not refer to a formal determination of “adverse AQRV impacts” under the CAA.

“Agency” or “Agencies” – the EPA or the following Agencies or Bureaus of the Signatories: the U.S. Forest Service (FS) of the USDA; and the Bureau of Land Management (BLM), the U.S. Fish and Wildlife Service (FWS), and the National Park Service (NPS) of the DOI.

“Air quality or AQRVs analysis / analyses” consists of qualitative or quantitative methods for estimating impacts to the NAAQS, AQRVs, or resources, resulting from emissions as identified in the emissions inventory. Methods range from specific numerical air quality models to narrative description of physical, chemical, or transport processes.

“Air Quality Related Values (AQRVs)” – a resource, as identified by the Federal Land Manager for one or more Federal areas that may be adversely affected by a change in air

And Cumulative Effects Analysis For Oil and Gas Activities On Federal Lands In the Greater Rocky Mountain Region, dated June 2003.

“Sensitive Class II Area” – for purposes of this MOU is an area identified by the affected Agency on a case-by-case basis.

“Substantial Increase in Emissions” – as determined by the Lead Agency on a case-by-case basis after conferring with the other Agencies. In making its determination, the Lead Agency will consider:

- The Emissions Inventory prepared pursuant to Section V.E.3;
- Whether an increase in the emissions related to the proposed action, based on best professional judgment, may cause or contribute to exceedances of the NAAQS or adversely impact AQRVs in Class I areas or resources in sensitive Class II areas; and
- FLAG guidance or other guidance if applicable to the Lead Agency.

IV. ROLES AND RESPONSIBILITIES

A. Bureau of Land Management

The BLM administers more than 245 million surface acres in the National System of Public Lands and 700 million acres of Federal subsurface mineral estate underlying lands owned and managed by other entities, including other Federal agencies and state and private landowners. The BLM manages the public lands on the basis of the “multiple-use” and “sustained yield” mandate described in FLPMA, which directs the BLM to manage the public lands in a manner that will protect the quality of air and atmospheric values, among others. In addition, in developing land use plans, the BLM must provide for compliance with applicable state and Federal pollution control laws, including those addressing air (such as the CAA). Consistent with FLPMA, anyone using, occupying, or developing the public lands must comply with applicable state and Federal pollution control laws, including the CAA. The BLM has responsibility, under the CAA, for Class I Areas that it manages.

B. Environmental Protection Agency

The EPA is responsible for reviewing and commenting on NEPA documents, particularly EISs, pursuant to NEPA and the EPA’s specific authorities under Section 309 of the CAA. Additionally, the EPA administers the programmatic and regulatory aspects of the CAA. The EPA sets the NAAQS, develops and promulgates CAA implementing regulations, oversees State and tribal CAA regulatory programs, and issues CAA permits, where appropriate.

C. Forest Service

The FS is responsible for the surface management of 193 million acres of National Forest System lands, portions of which are covered by Federal oil and gas leases that grant exclusive rights for exploration and development. The FS also evaluates National Forest

2. If air quality or AQRVs are a concern, but will not be significantly impacted by a proposed action, the Lead Agency may convene a technical workgroup. Alternatively, an Agency may ask the Lead Agency to convene a technical workgroup in those circumstances.
 3. The Lead Agency may rely on an existing stakeholder group that complies with the Federal Advisory Committee Act (FACA), as appropriate, or include cooperating agencies in a technical workgroup, provided the technical workgroup meets the requirements established in Section V.C.1. above.
- D. Consistent with NEPA and its implementing regulations, the Lead Agency will complete and document supporting air quality and AQRVs analyses prior to Federal oil and gas planning, leasing, or field development decisions.
1. If the Lead Agency cannot complete necessary quantitative analyses (e.g., if a reasonably foreseeable number of wells cannot be determined, see V.E.1), it will include in the appropriate NEPA documents:
 - A qualitative narrative description of the air quality issues or impacts;
 - A statement of when more detailed information will likely be available; and
 - A commitment to complete the air quality and AQRVs analyses once the requisite information is available.
 2. If the Lead Agency encounters a situation involving incomplete or unavailable information as defined in 40 CFR §1502.22, it will follow that provision and its own NEPA procedures.

E. Procedures For Assessing Impacts to Air Quality and AQRVs

1. Early in the NEPA process, the Lead Agency will discuss with the Agencies:
 - a. Information about the affected environment to include in the baseline assessment;
 - b. Methodology, assumptions, and scale (e.g. local or regional) of the analyses;
 - c. Monitoring protocols and mitigation (see Section VI).

As early as possible in its planning process, the Lead Agency will identify the reasonably foreseeable number of oil or gas wells that can be expressed as a range, expected to be located within the planning area. Existing reasonably foreseeable development scenarios can be used to identify the number of wells.

2. Once the Lead Agency identifies the reasonably foreseeable number of oil or gas wells, it will prepare an Emissions Inventory of criteria pollutants and volatile organic

- The analysis can be used to assess the impacts of the proposed action.
5. If modeling is not required because either:
- The Section V.E.3 criteria above *have not been* met, or
 - one of the circumstances in Section V.E.4 above *has been* met,

the Lead Agency will document its decision not to model and include a qualitative narrative analysis of the impacts to air quality and AQRVs in the appropriate NEPA documents.

6. Additional Procedures for AQRVs

a. When the BLM is the Lead Agency, the BLM will apply:

1. The BLM threshold values and methodologies assessing impacts to AQRVs on BLM administered lands, unless otherwise determined by the BLM; and
2. The threshold values and methodology in the FLAG guidance assessing impacts to AQRVs on FS, FWS, NPS administered lands, or other guidance accepted by FS, FWS, or NPS.

b. When FWS, NPS, or FS is the Lead Agency, the Lead Agency will apply:

1. The threshold values and methodology in the FLAG guidance assessing impacts to AQRVs on FS, FWS, NPS administered lands, or other guidance accepted by FS, FWS, or NPS; and
2. The BLM threshold values and methodologies assessing impacts to AQRVs on BLM administered lands, unless otherwise requested by BLM.

c. The Lead Agency will identify, consider, and discuss in the body of the NEPA document:

1. Analysis results for the threshold values assessed, as stated in Section V.E.6 (a) and (b) above, to facilitate comparison of the results;
2. The Agencies' views about: (a) the nature of impacts to AQRVs on the affected Agencies' land and (b) potential mitigation measures.

F. The Agencies will comply with the General Conformity requirements under CAA Section 176 (42 U.S.C. § 7506) and the corresponding regulations at 40 CFR § 93.150, *et seq.*, where applicable.

G. For informational purposes, the Lead Agency will calculate, and disclose in the NEPA document, PSD increment consumption from the proposed action at Class I Areas.

- Take appropriate steps to retain the flexibility to implement additional reasonable mitigation and control measures and design features for permitted operations;
 - Work to implement additional reasonable mitigation and control measures and design features to reduce future emissions from permitted operations.
- E. The Lead Agency will consider adopting a monitoring and enforcement program to verify that mitigation and control measures and design features are achieving their intended purposes. Monitoring should be conducted in cooperation with stakeholders.
- F. If the Lead Agency determines that mitigation and control measures and design features are not achieving their intended purposes, it will take appropriate action, consistent with applicable law and lease rights and obligations.

VII. DISPUTE RESOLUTION

- A. The Signatories will resolve expeditiously all disputes related to this MOU. Disputes will be raised and resolved in a timely manner with due consideration to the projects or other activities impacted by the dispute.
- B. The Signatories encourage communication and joint problem solving to recognize and deal with disputes as they arise and to maintain constructive interagency relationships.
- C. Decisionmaking will occur at the lowest level possible by staff with specific knowledge and relevant experience. Unresolved issues will be elevated quickly to higher-level decisionmakers to apply a broader policy perspective as needed.
- D. The Agencies agree to the following dispute resolution process if a dispute arises between or among any of them relating to implementation of this MOU.
1. Level One: The Agency that seeks resolution will provide a written statement of the dispute to the involved Agencies' Level One contacts identified in Section IX. The written statement will include the following: a brief summary of the dispute, a brief statement of each issue that needs to be resolved or decided, up to three proposed solutions including the reasons these solutions are important, and supporting documentation. The Agencies involved in the dispute will engage in discussions and attempt to arrive at a consensus resolution of the dispute.
 2. Level Two: If resolution is not reached within 15 working days of receipt of the statement of dispute, the dispute may be elevated by written notice to the involved Agencies' Level Two contacts identified in Section IX. The written notice will include: a brief summary of the dispute, a brief statement of each issue that needs to be resolved or decided, a brief description of the Level One efforts to resolve the issue(s) and the reasons those efforts were unsuccessful, and the perspectives of the other Agencies on the dispute, outstanding issues, and previous efforts to reach a resolution. Each Agency involved in the dispute will prepare a brief paper describing the issue, background information, needs and concerns, and options from their perspective. The Level Two decision-makers will meet, discuss the issue(s), and seek

- F. Nothing in this MOU is intended or will be construed to restrict the Signatories or the Agencies from participating in similar activities or arrangements with other public or private agencies, organizations, or individuals.
- G. This MOU is not intended to, and does not, create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.
- H. Any information furnished between the Agencies under this MOU may be subject to the Freedom of Information Act, 5 U.S.C. § 552, *et seq.*, including provisions for interagency consultation with the originating agency before making a direct FOIA response.
- I. All press releases and public statements issued by the Signatories concerning or characterizing this MOU will be jointly reviewed and agreed to by delegated staff representing each of the undersigned Signatories.
- J. This MOU may be amended or modified only through written agreement among all of the Agencies, signed by the Secretaries and Administrator or their respective delegates. Other Federal and state agencies may become signatories to this MOU with the written consent of all the Agencies.
- K. In addition to the annual review in Section X.B, the Signatories will review this MOU at least every five (5) years for adequacy, effectiveness, and continuing need.
- L. The Agencies will comply with FACA (5 U.S.C. Appendix 2) to the extent it applies.

IX. PRINCIPAL CONTACTS

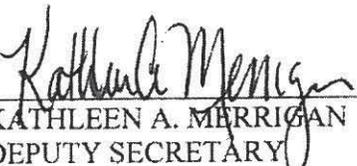
Each Signatory hereby designates the following Federal employees as the principal contacts regarding this MOU. The contacts may be changed through written notice to each Signatory.

	Level One	Level Two	Level Three
BLM	State Director	Bureau Director	Assistant Secretary
EPA	Regional Division Director	Regional Administrator	Assistant Administrator
FS	Regional Forester	Chief	Under Secretary
FWS	Associate Director	Bureau Director	Assistant Secretary
NPS	Associate Director	Bureau Director	Assistant Secretary

X. MOU TERM, IMPLEMENTATION, AND APPLICABILITY

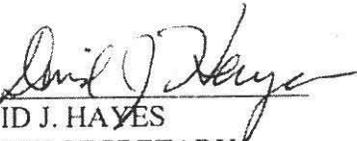
- A. *Effective Date and Term.* This MOU is effective on the date of the last approving Signatory's signature. This MOU will remain in effect unless amended or terminated.
- B. *Implementation.* Within 90 days of the effective date, BLM, EPA, FS, FWS, and NPS will coordinate to:

XI. SIGNATURES

By: 
KATHLEEN A. MERRIGAN
DEPUTY SECRETARY
DEPARTMENT OF AGRICULTURE

JUN 23 2011

Date: _____

By: 
DAVID J. HAYES
DEPUTY SECRETARY
DEPARTMENT OF THE INTERIOR

JUN 23 2011

Date: _____

By: 
BOB PERCIASEPE
DEPUTY ADMINISTRATOR
ENVIRONMENTAL PROTECTION
AGENCY

JUN 23 2011

Date: _____

Attachments:

Appendix:

- Modeling Approaches to Evaluate Air Quality for NEPA Decisions Regarding Federal Oil & Gas
- Modeling Approach Tables for Oil & Gas Development through the NEPA Process
- Overview Matrix Of Air Quality Model Characteristics

Concept Paper -- Overview and Example Design of a Reusable Modeling Framework for Air Quality Modeling

**APPENDIX TO MEMORANDUM OF UNDERSTANDING
AMONG THE U.S. DEPARTMENT OF AGRICULTURE, U.S. DEPARTMENT OF THE INTERIOR, AND
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGARDING AIR QUALITY ANALYSES AND
MITIGATION FOR FEDERAL OIL AND GAS DECISIONS THROUGH THE NEPA PROCESS
(06/20/11)**

**MODELING APPROACHES TO EVALUATE AIR QUALITY FOR
NEPA DECISIONS REGARDING FEDERAL OIL & GAS**

The purpose of this Appendix is to provide information when modeling is required by Section V.E.3.c of the Memorandum of Understanding (MOU). Section V.A of the MOU says "The analysis of impacts to air quality and AQRVs will be conducted in accordance with current technical standards, guidance, and practices and will be used to inform the decision-maker, Agencies [BLM, EPA, Forest Service, FWS, and NPS], and the public." Section V.D. of the MOU says "[c]onsistent with NEPA and its implementing regulations, the Lead Agency will complete and document supporting air quality and AQRVs analyses prior to Federal oil and gas planning, leasing, or field development decisions."

Modeling is required when criteria described in MOU Section V.E.3 are met. This appendix provides general direction on approaches, models, and underlying principles to accomplish technical tasks while encouraging and optimizing resource efficiencies. Initially some of the modeling efforts may require additional investments. However, the outlined approaches encourage, to the maximum extent practicable, the reuse of pre-existing major modeling components and data to reduce overall resource commitments over time.

The Appendix is comprised of this introduction, and these two additional components:

- Two tables (A and B) of general air quality analysis approaches for a variety of conditions (e.g., planning phase, data quantity/quality, and potential air quality impacts); and
- A matrix summarizing characteristics of currently available air quality models, applicability, and references (Overview Matrix Of Air Quality Model Characteristics).

Also attached is a concept paper describing a Reusable Modeling Framework, which provides an example of a complex air quality modeling system designed for multiple uses.

Consistent with the provisions of Section V. of the MOU, the Lead Agency selects the appropriate air quality models and technical approaches. Nevertheless, the Lead Agency must collaborate and engage the Agencies and technical workgroups, if convened, in selecting air quality models and technical approaches (see MOU Sections V.A., V.C. and V.E.1.). Early use of the approaches outlined in this Appendix will assist in making air quality modeling more efficient, effective, and save time and expense.

NOTES: (1) If the Lead Agency cannot complete necessary quantitative analyses (e.g. if a reasonably foreseeable number of wells cannot be determined, see MOU Section V.E.1), the Lead Agency should follow the procedures in MOU Section V.D. (2) This Appendix supports implementation of the MOU and does not supersede the provisions and process established in the MOU. (3) If disputes arise about application of the Appendix, follow the MOU dispute resolution provisions (Section VII). (4) This Appendix may be updated to reflect current knowledge and science as provided in the MOU.

The following tables describe various analysis approaches:

- Table A is used when the Lead Agency has determined a reasonably foreseeable number of wells utilizing limited or general information. The number of wells or associated emissions can be expressed as a range (e.g., low, medium, high).
- Table B is used when the Lead Agency has determined a reasonably foreseeable number of wells (e.g., specific number and location).

Table A. Consult this table when:

A reasonably foreseeable number of oil or gas wells and associated emission inventory has been developed, utilizing limited or general information; the reasonably foreseeable number of wells and associated emissions are expressed as a range (e.g., low, medium, high).

Long Range Transport Assessment Approach	'Add-on' Photochemical Approach	Local Assessment Approach
<p>When: Actions that contain single (or small group) source scenarios. Conductive to providing regional assessments of cumulative and incremental impacts. Transport distances greater than 50km.</p> <p>Description: Conduct modeling with estimates of emissions and estimated meteorological and geographic information for single or small groups of sources.</p> <p>This analysis may be used for new projects or proposals that lack specific development information but contain source scenarios that warrant additional review.</p> <p>This approach utilizes EPA guideline approved models for near (local) and far-field analysis. Models tend to be specific to an AQ pollutant, approved purpose, and regulatory application. Impact estimates are generated for ambient concentration, atmospheric deposition, and AQRVs.</p> <p>Note: Additional narrative may be necessary to describe how uncertainties affect air quality impact estimates.</p> <p>Models*: Long range transport models such as CALPUFF, SCIPUFF</p>	<p>When: Actions that contain large scale source scenarios. Conductive to providing regional assessments of cumulative and incremental impacts.</p> <p>Description: Conduct regional scale modeling with estimates of emissions and estimated meteorological and geographic information with complex photochemical processes.</p> <p>This analysis may be used for new projects or proposals that lack specific development information but contain large scale or complex photochemical source scenarios that warrant additional review.</p> <p>For this approach, reasonable estimates of incremental emissions are reentered into an existing photochemical modeling system to fully assess impacts based on reasonably foreseeable scenarios.</p> <p>Note: Additional narrative may be necessary to describe how uncertainties affect air quality impact estimates.</p> <p>Models*: Photochemical models such as CMAQ, CAMX</p>	<p>When: Actions likely to result in local air quality impacts. Transport distances less than 50km.</p> <p>Description: Conduct local scale modeling analysis with emission estimates, meteorological, and geographic information for single sources.</p> <p>May be used when local AQ impact potential is great. Must consider the uncertainties associated with running near-field models with limited or general information.</p> <p>Note: Additional narrative is likely to be needed to describe air quality issues, emission uncertainties, and their affects on estimated impacts. Commitment to complete additional analysis may be necessary when requisite information becomes available.</p> <p>Models*: AERMOD / AERSCREEN, VISCREEN, PLUVUE II, CALPUFF</p>
<p>Maximizing resources, time, and costs: Lead Agencies are encouraged to develop and utilize modeling methods that promote optimal resource efficiencies. Early planning often can result in datasets (meteorology, emissions, etc...), modeling systems, and analysis outputs that can be applied to a broad range of agency actions requiring air quality models. Reusing aspects of air quality modeling results in substantial time and cost savings, especially with repetitive similar applications. Early modeling considerations substantially reduce modeling development requirements in all subsequent project development phases. Modeling systems that evaluate varied growth patterns (expressed in the form of low, medium, and high) offers reuse potential for both results and modeling systems. An example of a Reusable Modeling Framework (RMF) with emphasis on growth patterns using a complex photochemical model is found in the RMF example attached to this Appendix. The RMF concept could be applied to additional models, domains, and agency actions. MOU Section V.E.4.b describes criteria to eliminate air quality modeling requirements based on availability of existing modeling.</p>		

*An overview of model characteristics can be found in the following Matrix of Air Quality Modeling Characteristics:

Table B: Consult this Table When

A reasonably foreseeable number of oil or gas wells (e.g., specific number and location) and associated emission inventory has been developed.

Dispersion Model Approach	'Add on' Photochemical Approach
<p>When: For criteria pollutants, toxics/HAPs, AQRVs (FLAG), small-medium scale & number of sources, EPA guideline (regulatory), screening & refined modeling options.</p> <p>Description: Conduct modeling with project specific emission, meteorological, and geographic information.</p> <p>This approach recommends EPA guideline models, or alternative models that meet Appendix W guidelines on model applications for near (local) and far-field analysis. Models tend to be specific to an AQ pollutant, approved purpose, and regulatory application. Impact estimates are generated for ambient concentration, atmospheric deposition, and AQRVs.</p> <p>Although these models make up the primary air quality modeling tool chest, most do not handle complex scenarios, advanced chemical reactivity, or large numbers of sources commonly associated with regional scale oil & gas development.</p> <p>This modeling approach is the current state-of-practice and is likely for most project specific AQ impact assessments. Re-use of domains, meteorology, and file configuration minimizes resources and costs.</p> <p>Models*: AERMOD /AERSCREEN, VISCSCREEN, PLUVUE II, CALPUFF, SCIPUFF</p>	<p>When: Projects or plans with large geographic extent, large number of sources, or present complex issues with ozone and secondary particulate impacts.</p> <p>Description: Conduct regional scale modeling with project specific emission, meteorological, and geographic information with complex photochemical processes.</p> <p>This approach utilizes a regional scale 'one atmosphere' simulation of a wide variety of AQ pollutants with a large geographic extent. Emissions are gridded, allow for chemical transformation, and offer a variety of transportation mechanisms to address near and far-field transport. Impact estimates are generated for ambient concentration, atmospheric deposition, and AQRVs.</p> <p>'Add on' means to insert project specific incremental emission estimates into an existing regional scale modeling system. Re-use of existing baseline inventories, meteorology, and model setup greatly reduce resources necessary for model application.</p> <p>The 'Add on' photochemical approach is anticipated to become the state-of-practice in coming years.</p> <p>Models*: CMAQ, CAMX</p>
<p>Maximizing resources, time, and costs: Lead Agencies are encouraged to develop and utilize modeling methods that promote optimal resource efficiencies. Early planning often can result in datasets (meteorology, emissions, etc...), modeling systems, and analysis outputs that can be applied to a broad range of agency actions requiring air quality models. Reusing aspects of air quality modeling results in substantial time and cost savings, especially with repetitive similar applications. Early modeling considerations substantially reduce modeling development requirements in all subsequent project development phases. Modeling systems that evaluate varied growth patterns (expressed in the form of low, medium, and high) offers reuse potential for both results and modeling systems. An example of a Reusable Modeling Framework (RMF) with emphasis on growth patterns using a complex photochemical model is found in the RMF example attached to this Appendix. The RMF concept could be applied to additional models, domains, and agency actions. MOU Section V.E.4.b describes criteria to eliminate air quality modeling requirements based on availability of existing modeling.</p>	

*An overview of model characteristics can be found in the following Matrix of Air Quality Modeling Characteristics.

OVERVIEW MATRIX OF AIR QUALITY MODEL CHARACTERISTICS

APPENDIX TO MOU (06/20/11)

Description	Near Field (<50km)			Long Range Transport (>50km) & Photochemical Models		
	AERSCREEN	VISCREEN/PLUVUE II	AERMOD	CALPUFF	SCIPUFF**	CHAO/CAMX
Advantages	Quick, easy to setup, and simple operation.	VISCREEN: Quick, easy operation and results. PLUVUE II: Complex blight analysis.	Most widely accepted regulatory model. Extensive documentation/guidance for appropriate use.	Ability to simulate pollutant transport that varies in time and space. Addition of simple chemistry and deposition.	Ability to simulate pollutant transport that varies in time and space. Addition of advanced chemistry.	Primary models for ozone and secondary particulate matter impact. Includes most realistic chemistry.
Disadvantages	Conservative modeling assumptions and results.	Single purpose models with lack of robust guidance.	Not suitable for ozone or AQRV impact analyses.	Numerous model control options, difficult validation, and long run times.	Not widely available and not extensively documented.	Complex setup and operation. Advanced computing requirements.
Required computer resources	Light (laptop)	Light (laptop)	Light/Moderate (PC)	Moderate (robust PC)	Moderate (robust PC)	Heavy (UNIX, cluster)
Required model Input data	Pre-set meteorology.	Pre-set meteorology or National Weather Service observations.	National Weather Service or on-site observations.	3-Dimension meteorology	3-Dimensional meteorology	3D meteorology, heavy emissions processing.
Range of costs*	In-house to minimal	In-house / \$10K - \$75K	\$10K - \$30K	\$10K - \$50K	\$10K - \$75K	\$50K - \$100K
Factors affecting costs	None	None/Multiple runs	runtime	Meteorology, runtime	Meteorology, runtime	Multiple inputs, runtime
Time to set up, run model	Minutes	Minutes / 1-2 weeks	1-2 Weeks	Days to weeks	Weeks	Weeks to months
Model Developer	EPA	EPA/EPA	EPA	TRC	Lakes Environmental	EPA/Environ
Background, references	40CFR51ApxxW	FLAG, 40CFR51ApxxW	40CFR51ApxxW	FLAG, 40CFR51ApxxW	Private	EPA SIP guidance

* Does not include development of baseline emissions (present or future), meteorological inputs, or contract management. Initial development costs may be more.
 ** SCIPUFF is considered an alternative model under 40 CFR 51 Apxx. W but may be considered for long range transport use on a case-by-case basis.



Wyoming Outdoor Council

wyomingoutdoorcouncil.org

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Lander, WY 82520

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October 21, 2008

Ms. Kristin Yannone
BLM Lander Field Office
1335 Main Street
P.O. Box 589
Lander, WY 82520-0589

Re: Comments on vegetation treatment and logging issues for consideration in the Lander RMP revision.

Dear Kristin:

Please consider the following comments from the Wyoming Outdoor Council regarding vegetation treatment and logging issues that we would like for you to consider as the Lander Resource Management Plan (RMP) undergoes revision.

Thin in forest types where it will be effective

Management actions should be specific to the actual hazardous fuel threat for each vegetation type, as all are different in terms of fire return interval, response to fire, and type of fires that occur. A 'one size fits all' policy should not be applied. Clearly, in some areas, thinning may be appropriate, but the Bureau of Land Management (BLM) must make sure that the solution fits the need and is specific to the forest type. To that end, we would like to see the BLM develop maps that show forest types, interval since last fire, proposed treatment method and a discussion of the effectiveness of each treatment method being employed in that forest type.

Concentrate thinning activities where they will do the most good

We request that thinning activities concentrate on where past experience and research demonstrates they will do the most good. Research shows that thinning to protect structures is most effective adjacent to the structure. For example, Cohen et al.'s Structure Ignition Assessment Model (SIAM) indicates that intense flame fronts (e.g. crown fires) will not ignite wooden walls at distances greater than 40 meters (approx. 130 feet) away. If the BLM concentrates its thinning activities adjacent to structures and private lands, it will by default provide a needed buffer between its management activities and lands and these private lands.

Trees to be thinned

In areas that could be suitable for thinning, we request that activities focus on thinning understory trees and removal of brush and fine fuels. Even in thinned areas, it is important that

- Exhibit 3

the BLM link treatments with a post-restoration prescribed fire program that removes surface fuels. We believe that where thinning is used, removal of smaller diameter material will most likely have a net remedial effect. Brush and small trees, along with fine dead fuels lying on top of the forest floor, constitute the most rapidly ignited component of dry forests.

In addition, removal of mature trees can increase fire intensity and severity. These trees provide “insurance” because they often survive surface fires and can speed post-fire recovery. Even if they are diseased, dying or dead, large old trees and snags are important to many wildlife species and ecosystem functions. We therefore request that when thinning is being considered that it be applied to portions of the forest structure where it will make the most ecological sense and where the public may realize the most benefits.

Insect and disease infestations

While some trees can and perhaps should be removed, we would also like the BLM also consider the benefits of dead snags for wildlife, as well as other ecological benefits related to soil holding and “nurse tree” characteristics. The RMP should explain how any projects will provide for adequate snag retention to ensure these benefits.

In order to help the public to understand the problem related to insect and disease issues, it is important that the BLM provide stand inventory maps which delineate distribution of forest types by age class and stand density. These maps, in conjunction with an identification of the location of current pockets of beetle mortality or other target insect and diseases would serve as critical data necessary to understand current and future insect populations and disease threats.

Sanitation/salvage of dead and dying trees

We ask that the BLM to pay careful attention to which trees it classifies as “dying,” since in the past we feel it has sometimes used a broader interpretation of “dying” trees than is warranted. Because drought is the main driver in insect outbreaks and older trees are the most fire-resistant component of the forest, it does not make sense to us to remove trees just because they are old and therefore potentially susceptible to bug kill if the drought persists. Older age class trees provide critical habitat components in the forest. We therefore ask the BLM to be specific about what it regards as “dying,” and that that definition not include trees which it may classify simply as vulnerable to disease, bugs or fire.

The Wyoming Outdoor Council supports and advocates for healthy forests. Old growth forests, the presence of threatened, endangered and sensitive species and healthy streams and fisheries are all indicators of healthy forests. It is clear that the presence of dead and dying trees is not an indication of unhealthy forests, unless the BLM is merely looking at this issue from a commodity production standpoint, which we feel is an unduly narrow view under BLM’s multiple use obligations.

We would like the BLM to develop an alternative that maximizes the overall ecological health of the planning area, measured by retention of habitat security and old growth trees and maintenance of habitat conditions that are most likely to benefit sensitive, threatened and endangered species, as well as water quality and roadless values.

Threatened and endangered species and special status species

Please provide an analysis of the likely impacts of any forestry projects on threatened and endangered species and special status species, especially Canada lynx, other forest carnivores such as wolverine, and raptors that use forested habitats. Please insure that proper consultation with the U.S. Fish and Wildlife Service and coordination with the Wyoming Game and Fish Department is initiated and completed.

Cumulative impacts analysis

Please assess the cumulative impacts of any potential or proposed vegetation treatment or forestry projects on forest resources in conjunction with other past and present projects and projects in the reasonably foreseeable future.

Water quality and fisheries

Please ensure that best management practices are implemented, including appropriate setbacks from riparian areas, to prevent sedimentation and other impacts to fisheries and water quality.

Roadless and Wilderness Characteristics

We would ask that the BLM not propose or pursue mechanical treatments or road building in any roadless areas. We would like for the BLM to assure the public that the roadless and wilderness characteristics within the planning area are maintained throughout the lifetime of the plan. Please take account of areas slated for treatment that may be in close proximity to roadless areas so that the roadless and wildlife characteristics and values in those adjacent areas are retained.

Noxious weeds

We are concerned about the potential spread of noxious weeds in a post-treatment environment. Please provide a plan that will minimize introduction of noxious weeds into treated areas. In addition, most noxious weeds are introduced through human causes. Therefore, we specifically request a plan that will address human access issues, both motorized and non-motorized, that will minimize the spread of noxious weeds onto the vulnerable post-treatment landscape.

Travel management

We ask that the BLM develop a plan that recognizes the potential for illegal user created motorized routes to be created and that proposes mitigation to reduce these routes and minimizes their impacts. The BLM should decommission user created motorized routes as part of this plan.

Grazing

We ask that the BLM identify how it proposes to adjust domestic livestock stocking rates within forestry or vegetation treatment areas to minimize domestic livestock grazing effects on plant and tree regeneration.

Visuals

The scenic qualities of proposed or potential project areas should be fully considered and protected to the maximum extent possible. Please develop a plan to maintain the scenic qualities in areas proposed for forestry or vegetation treatments.

On behalf of the Wyoming Outdoor Council, we appreciate the opportunity to submit these comments to the BLM as it works toward revision of the Lander RMP.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce Pendery and Lisa McGee". The signature is written in a cursive style with a long horizontal flourish at the end.

Bruce Pendery and Lisa McGee
Wyoming Outdoor Council



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

JUL 07 2009

Mr. Steve Ferrell
Director, Wyoming Game and Fish Department
5400 Bishop Blvd
Cheyenne, WY 82006

STEVE

Dear Director ~~Ferrell~~:

Thank you for your letter of July 7, 2009, regarding the State of Wyoming's Greater sage-grouse "Core Population Area Strategy" (Strategy) (Executive Order 2008-2). Your letter requests clarification from the U.S. Fish and Wildlife Service (Service) regarding our endorsement of the Strategy. Specifically, you would like our view of whether wind power can be developed in core areas in a way that the Wyoming Game and Fish Department and the State of Wyoming would maintain our endorsement. This letter is responsive to your request and provides an explanation of our concern about wind development in core areas. In summary, constructing wind farms in core areas, even for research purposes, prior to demonstrating it can be done with no impact to sage-grouse, negates the usefulness of the core area concept as a conservation strategy and brings into question whether adequate regulatory mechanisms are in place to protect the species. Both of these factors are critical in the Endangered Species Act (ESA) listing decision currently facing the Service.

Following are some specific reasons why we endorsed the Strategy when asked by the Governor's Office in 2008:

- A. In a general conservation context the Strategy is a science-driven, outcome-based and adaptive approach to the conservation of a species and its habitat. The Service is in the process of adopting a similar approach, currently called Strategic Habitat Conservation (SHC) for much of our conservation work. Therefore, as a general conservation paradigm we support such an approach.
- B. In the context of a potential listing under the ESA, the State's sage-grouse Strategy provides a useful framework to show how the threats to the species are being managed; and if the Strategy is adopted across different land ownerships in the state, could provide an important regulatory mechanism as well. As you know, to preclude listing under ESA, we must be able to show that threats to the species are effectively addressed by science-based conservation measures, and that adequate regulatory mechanisms are in place to ensure those actions occur. In regard to the latter, the actions of the State Board of Land Commissioners to adopt a process that ensures sage-grouse conservation measures are implemented on state land within core areas, and the regulatory authority of the Department of Environmental Quality Industrial Sighting Council (ISC) are noteworthy.

- Exhibit 4 -

- C. The Strategy provides the mechanism by which the state can be the most flexible in the application of the Statewide Candidate Conservation Agreement with Assurances (CCAA) that is currently being developed. The CCAA tool is important for private landowners in the state both for the conservation of the species and its habitat, and the assurances it provides the landowner if the species is ever listed.

In short, if implemented as envisioned by the State Sage-grouse Implementation Team (SGIT) and Governor's Executive Order, the Strategy is the type of action the Service looks for, both in conservation measures and regulatory process, to preclude listing a species under the ESA. However, it is important that I point out that these potential benefits of the Strategy will only be realized if the integrity of the core area approach is maintained. The Service feels that the greatest threats to the integrity of the core areas are: (1) not adhering to science-based conservation measures associated with development, and (2) allowing mitigation for impacts to core population areas as an option if the proposed development is counter to accepted conservation measures or when impacts are not known.

The foundation of the Strategy from the Service point of view is that development in the most important sage-grouse habitats (core areas and associated seasonal habitats) is done only when no impact to the species can be demonstrated. In essence, ensuring the conservation of sage-grouse in the core areas is mitigation for the greater development flexibility outside core areas provided for by the Strategy. Therefore, allowing impacts within core areas, for research or other reasons, destroys the function and value of the Strategy.

With respect to wind power development, your letter referenced the SGIT recommendations that were adopted by the State Board of Land Commissioners. Specifically, you asked whether we thought the reference in those recommendations to a "no impact/mitigation plan" as you termed it, was possible for wind power development. Your question is an excellent one, but the context of the SGIT's recommendations is critical to our answer to this question. The SGIT's recommendations, as noted in your letter, began by stating: "*Proposals to deviate from standard stipulations (emphasis added) will be considered by a team...*" Your letter appropriately raises questions about whether there is a scientific basis for standard stipulations for wind development different from other road-and-pad development on which the SGIT's recommendations are based, and therefore whether the ability to develop a mitigation plan even exists. In our judgment, we agree, no such data currently exist.

To the Service, the recommendations of the SGIT and Executive Order 2008-2 are clear with respect to deviation from standard stipulations. That is, the burden of proof that development does not affect sage-grouse rests with the industry or proponent in question, and any research they feel is necessary to convey this, should be conducted outside of core areas. This burden of proof to show that development in core areas can be done consistent with conserving sage-grouse underlies all forms of development—not just wind-power. The Strategy is clear on this point and is one of the key reasons for our endorsement.

In assessing the threats to sage-grouse to determine whether the species warrants listing under ESA, we view the science on the impacts of wind development on sage-grouse as being clearer than is being conveyed by some in the wind industry. While there is no doubt that we have more to learn, there exists a large body of empirical, peer reviewed, and published science on the negative impacts of road-and-pad based development on the behavior, movements, survival and productivity of this species. The Service in our 2005 decision to not list the species found that these developments, their associated

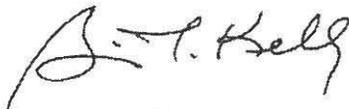
infrastructure, and the fact such development enhanced the spread of invasive species were among the primary threats to the species. In the past 4 years, since our 2005 finding, we have seen no science to change this view, only more science affirming it, while at the same time witnessing a significant increase in this type of potential development.

Regarding your second specific question on development levels outside core areas, the March 25, 2008 letter from the SGIT to the Governor states development should attempt to maintain populations, habitats and essential migration routes outside core areas wherever possible. How low lek persistence or population numbers can decline outside of core areas needs to be consistent with the recommendations of the SGIT. We encourage you to direct your request for specific numbers to the Governor's SGIT (of which the Service is a member) and species experts. Having said this, the Service has been developing, and will continue to develop, means by which we can provide for more strategic conservation of our trust species (e.g., migratory birds) outside of core areas to help meet the intent of item #6 in Executive Order 2008-2. Item #6 as you note, states that incentives to develop outside of core areas are an important component of the Strategy. Some of the flexibility resulting from our efforts we feel will be helpful to the energy industry and other development in the State.

Wyoming has set a national example by signing a Memorandum of Agreement (MOA) between your department, my agency and the Governor's Office to work together to conserve species in a manner that hopefully precludes the need for Federal listing. The approach taken to develop and implement the core area Strategy to date exemplifies the vision shared among us in signing the MOA. However, constructing wind farms in core areas, even for research purposes, prior to demonstrating it can be done with no impact to sage-grouse, negates the usefulness of the core area concept as a conservation strategy and brings into question whether adequate regulatory mechanisms are in place to protect the species.

Please know that my office remains committed to playing our role in helping to implement the sage-grouse core areas strategy as envisioned by the SGIT and the Executive Order and to work within our authorities to collaborate with you and others in helping to develop an environmentally-responsible wind industry and other development in Wyoming.

Sincerely,



Brian T. Kelly
Field Supervisor
Wyoming Field Office

cc: Deputy Chief of Staff, Wyoming Governor's Office (R. Lance)
Chair, Wyoming Sage-grouse Implementation Team (B. Budd)

Encana extends capacity of directional drilling

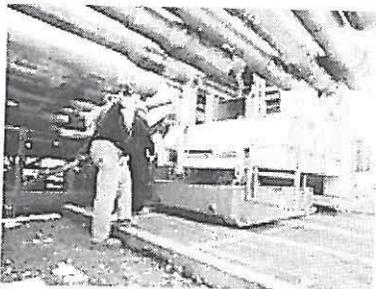


Photo by Dean Humphrey—The rigs used by Encana have hydraulic systems that allow them to be moved without having to be disassembled, which improves efficiency for Encana. View a gallery of the drill site at [GJSentinel.com](http://www.gjsentinel.com).

http://www.gjsentinel.com/news/articles/encana_extends_capacity_of_dir/

By Dennis Webb

Sunday, September 25, 2011

When Encana Oil & Gas (USA) was trying to figure out how to drill for the natural gas beneath a narrow box canyon north of Parachute, it was time for some out-of-the-box thinking.

The company's solution? It drilled a remarkable 50-plus wells directionally from one well pad of just 4.6 acres. As a result, it developed about 640 acres of underground resources — the amount contained in a square mile —

from a single location, based on underground well densities of as much as one every 10 acres. That's the most wells that Frank Merendino, Encana's drilling manager for its North Parachute Ranch property, believes has been drilled from an onshore pad anywhere in the United States.

"The reason they're all here is to drain this massive area ... without impacting the environment," Merendino said as he surveyed the well pad. In the distance behind it, a long, thin waterfall coursed from the rim at the canyon head. It's one of seven falls on the 45,000-acre ranch property.

The directional drilling prevented the cost and visual impact of trying to build pads on the canyon cliff sides, or drilling through a few extra thousand feet of earth from surrounding plateaus and having to locate pads near the rim, where possible spills into the canyon would be a concern.

Encana's effort won it a Colorado Oil and Gas Conservation Commission award this summer. It also is appreciated by state wildlife officials because of the reduced disturbance of habitat.

Encana's accomplishment reflects oil and gas technology's continuing evolution, said Dean Riggs, assistant regional manager for Colorado Parks and Wildlife in Grand Junction.

"Many, many moons ago, we used to have one well per gas pad," Riggs said.

Riggs took over as the manager of the wildlife area that includes Encana's North Parachute project eight years ago, and back then four wells on a pad was probably normal in the region he said.

Exhibit 5

Wind Energy: Doing It Right

The Wyoming Outdoor Council supports the development of alternative renewable energy sources to reduce emissions that contribute to global climate change and air pollution. We recognize that Wyoming has high-quality wind resources that can provide the nation with a domestic source of renewable energy. We also recognize that wind plants have site-specific footprints that can harm Wyoming's wildlife and alter its iconic landscapes.

The potential adverse impacts of wind energy development include collision-related fatalities of birds and bats, habitat destruction and fragmentation, increased human disturbance, and site avoidance by wildlife. We believe that some areas are inappropriate for wind development, just as some areas are not suitable for oil and gas development. Where it is appropriate, wind development must be "done right" by following best management practices (BMPs) to minimize the adverse effects of development on wildlife and wild lands.

This brochure highlights these practices. We encourage developers and agencies to employ these BMPs, and we encourage the public to ask that wind energy companies follow these practices as part of a commitment to developing a renewable energy resource while minimizing environmental impacts.



"The Wyoming Outdoor Council has become a leading source for good, science-based information about the interaction of energy development and the environment.

As an owner of a renewable energy company, I appreciate that the Outdoor Council understands that the

issues are complex, and that renewable energy, done responsibly, will benefit both the environment and the economy. The Council knows that the only way to achieve sustainable solutions in Wyoming will be to work with as many stakeholders as possible, including the energy industry."

—Scott Kane,
founder of Creative Energies,
Wyoming's largest provider of
distributed renewable
energy sources

Wyoming Outdoor Council

Each year Wyoming Outdoor Council staff and volunteers work for Wyoming's land, water, and wildlife. Our work covers the map, from the Medicine Bows to the Tetons, from Pinedale to the Powder River.

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Lander, WY 82520

121 E. Grand Avenue, Suite 200
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307-332-7031

Dan Hayward



Wind Energy: Doing It Right in Wyoming

Exhibit 6

Recommended Best Management
Practices for Wind Energy Development

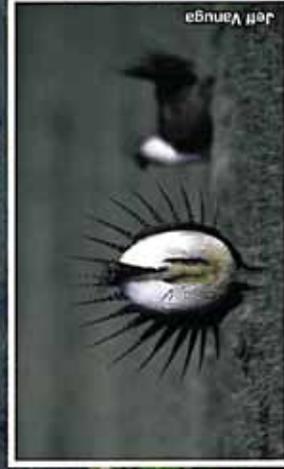
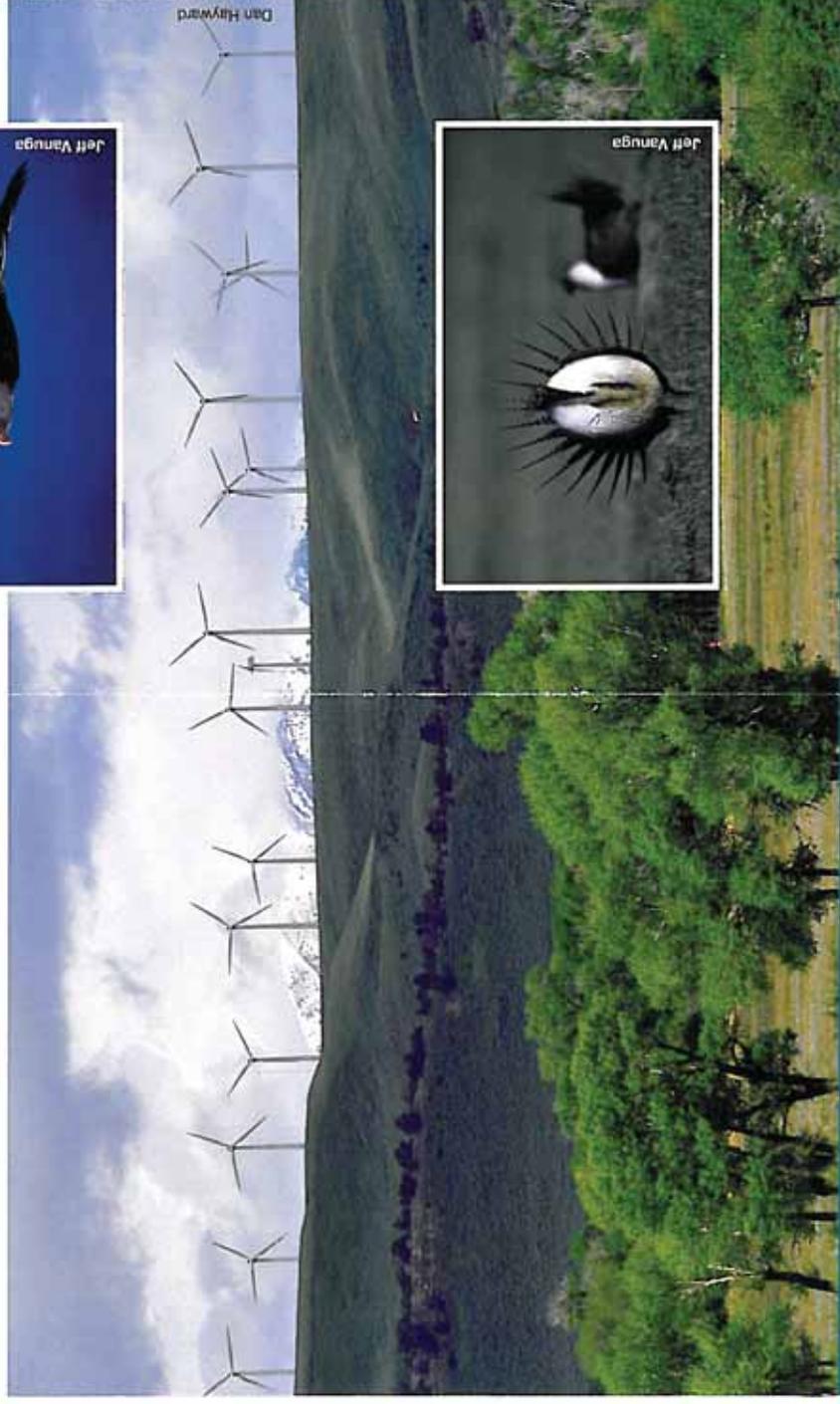
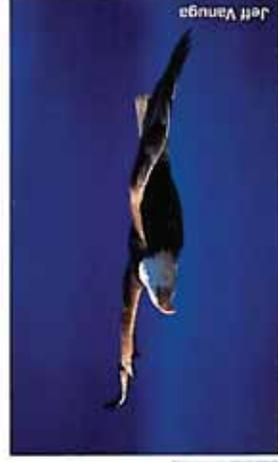
Recycled Paper

cover photo courtesy of Chuck Fryberger Films

Lands That Should Be Excluded from Wind Energy Development

- 1 Lands that are statutorily precluded from development by federal, state, or local laws and regulations, or that are the subject of pending legislation. Examples include national parks and monuments; national wildlife refuges; designated wilderness areas; wilderness study areas and citizens' proposed wilderness areas; rivers designated as wild and scenic; and other protected areas.
- 2 Habitat occupied by animals or plants that are protected under the federal Endangered Species Act.
- 3 Land designated by the Bureau of Land Management as areas of critical environmental concern and other BLM lands that have been identified for the protection of important wildlife resources, ecological features, and significant historical, paleontological, and archeological resources.

- 4 Places designated as "important bird areas" by the National Audubon Society.
- 5 Roadless areas inventoried by the U.S. Forest Service.
- 6 Iconic landscapes, important viewsheds, and BLM lands designated as visual resource management class I and class II areas.
- 7 State wildlife management areas and state parks.
- 8 Greater sage-grouse core breeding areas.



Responsible Development

Once an area is determined to be suitable for wind energy development, the following steps should be taken to ensure that development proceeds responsibly:

- Preconstruction wildlife surveys should be conducted to determine the location of sensitive resources and the most appropriate placement of turbines.
- The siting of wind turbines and associated facilities should be adjusted and modified based on the results of preconstruction studies to minimize future impacts to wildlife.
- Turbines and infrastructure should be designed to reduce potential hazards to wildlife.
- Postconstruction surveys should be conducted to determine actual impacts to wildlife, thereby enabling appropriate additional mitigation measures and improving future siting efforts.



radio-collared animals for at least two years pre- and postconstruction.

Projects should be designed to avoid and minimize potential conflicts with wildlife resources.

2 Site turbines and ancillary facilities to avoid:

- Fragmenting large contiguous tracts of wildlife habitat. *Placing turbines on cultivated, disturbed, degraded, or already-fragmented lands is preferable.*
- Avian concentration areas such as wildlife refuges, wetlands, riparian areas, reservoirs, roosts, leks, nesting colonies, staging areas, and landfalls.
- Migratory pathways, corridors, and known daily movement flyways (e.g., between feeding and resting or breeding areas).
- Greater sage-grouse leks, sage-grouse nesting and brood-rearing habitat, and wintering areas. *Turbines should not be constructed within five miles of greater sage-grouse leks.*
- Columbian and plains sharp-tailed grouse leks, nesting and brood-rearing habitats, and wintering areas.
- Areas known to attract raptors — cliff and rim edges, passes in ridgelines, and sites that potentially have high concentrations of prey such as prairie dog towns. *Turbines should be set at least 350 feet back from cliff and rim edges. They should be clustered rather than widely spaced, and rows should be oriented parallel to known bird movements rather than perpendicular to them.*
- Areas near bat hibernacula, breeding and maternity colonies, migration corridors and flight paths among colonies and feeding areas. *Site turbines away from wetlands, riparian areas, and woodlands to reduce potential bat collisions.*
- High-use avian and bat areas identified in preconstruction surveys.
- Areas prone to fog, mist, low visibility, or low cloud ceilings.

4 hazards to wildlife:

Use state-of-the-art tubular, non-latticed turbines. Avoid placing external ladders and platforms on tubular towers that can be used by birds as perches or nest sites.

- Use no lighting on turbines unless required by Federal Aviation Administration regulations. For turbines that require lights for aviation safety, use a minimal number of simultaneously flashing white or red lights, unless otherwise requested by the FAA. Non-flashing red lights have been shown to attract night-migrating birds.

- If lights on auxiliary buildings are deemed necessary, they should be motion-activated and downcast to reduce light pollution and to prevent disturbing or attracting wildlife. Sodium vapor lights, widely used for streetlights and security lighting, should never be used at or near wind energy facilities because they have been shown to attract night-flying birds.

- Minimize roads and other infrastructure. Use existing roads whenever possible.

- Avoid constructing energy infrastructure during critical wildlife seasons such as breeding, nesting, and parturition.

- Reclaim areas disturbed during construction with native vegetation; prevent the spread of invasive plant species.

5 Place and configure transmission lines to minimize impacts to birds:

- Bury lines whenever feasible, particularly in the vicinity of sage-grouse leks.

- When it is not feasible to bury the lines, keep them at least four miles from the perimeter of occupied grouse leks. Studies have shown that, on average, 74 to 80 percent of female grouse nest within four miles of leks and that the impacts to leks from energy development are discernible out to a minimum of four miles.

- Transmission line configurations should comply with Avian Power Line Interaction Committee standards for minimizing raptor electrocutions.

- Fences should be no higher
- Use sage-grouse diverters or two miles of sage-grouse lek with fence wires.

7 Once operations have begun conduct postconstruction a

using scientifically sound, peer-reviewed protocols to monitor impacts and mitigation measures if necessary.

- Conduct surveys to determine birds and bats, including associated scavenger removal how many dead birds and bats the site by scavengers) and trials (to determine the proportion actually found by searchers.
- Surveys should be conducted and fall migration periods a breeding season for at least postconstruction.

8 Reevaluate operations and

- If postconstruction surveys levels of avian or bat fatality actions to mitigate these impacts wind facilities can be shut down night during peak migrator collisions. Alternatively, individuals appear to be particularly dabats can be shut down temporarily to begin operating at higher speeds during bat migration has shown that temporarily turbines during low-wind conditions dramatically reduce the number at wind plants with a minimum output.

The Wyoming Outdoor Council and wind energy companies to fully engage on both public and private lands, ensure the best possible protection wildlife and iconic landscapes as renewable energy source.

Since there will be pressure to build wind energy in much of Wyoming, development should be sited carefully to avoid conflicts with wildlife and other important resources.

Wind Power Potential in Wyoming

Wind Power Resource Class Potential

3 Fair

4 Good

5 Excellent

6 Outstanding

7 Superb

1 Prior to siting wind turbines, conduct at least two years of preconstruction wildlife surveys.

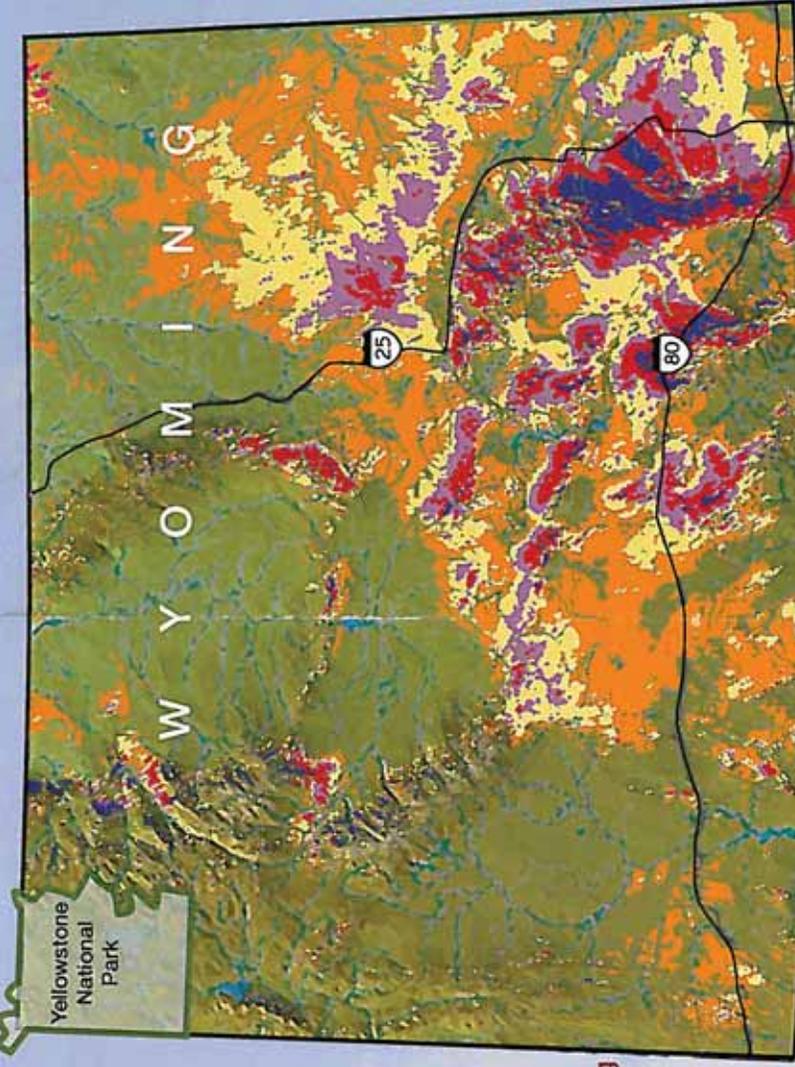
Surveys should use scientifically sound, peer-reviewed research protocols to determine how wildlife use a proposed project area. Adjust siting and facility design based on the results of these studies to reduce potential impacts to the animals. Preconstruction surveys and consultation should include:

- Surveys for federally listed and state-protected animal and plant species, as well as for other species of concern such as the mountain plover, pygmy rabbit, Wyoming pocket gopher, and other special-status species.
- Surveys and consultation with the Wyoming Game and Fish Department to determine locations of greater sage-grouse, Columbian sharp-tailed grouse, and plains sharp-tailed grouse leks, nesting and brood-rearing habitat, and wintering areas. *Research is needed to determine whether wind turbines adversely affect local sage-grouse populations. The Outdoor Council recommends that developers monitor radio-tagged sage-grouse for at least two years preconstruction and five years postconstruction in proposed sites outside core sage-grouse areas.*

- Daytime and nighttime avian and bat surveys during the spring and fall migration season to determine use of the proposed project area, and daytime avian and nighttime bat surveys during the breeding season for at least two years prior to construction. Surveys should follow science-based, peer-reviewed protocols. Avian surveys should include weekly point-counts.

- Surveys to determine active raptor nesting locations, flight pathways, foraging areas, and concentration areas.

- Consultation with the Wyoming Game and Fish Department to determine the locations of crucial ungulate habitats and migration corridors. *Studies are needed to determine whether the presence of wind turbines on crucial seasonal ranges will adversely affect big game. Big game crucial ranges should be avoided when siting wind plants, but if crucial ranges are implicated*



3 Place and configure meteorological towers to minimize impacts on birds:

- Sonic detection and ranging should be used instead of meteorological towers, as long as research does not reveal adverse effects on birds and bats.

- If met towers are used, research has shown that guyed towers may be more dangerous to birds than wind turbines, so un-guyed met towers are preferable. Un-guyed towers should be tubular, not latticed (latticed towers attract perching and nesting birds). If un-guyed met towers cannot be used, guy-wires should be fitted with recommended bird-deterrent devices, such as FireFly diverters.

- Do not place met towers within two miles of sage-grouse, Columbian sharp-tailed grouse, or plains sharp-tailed grouse leks. Sage-grouse have an innate aversion to vertical structures.

6 Minimize fencing and ensure that any fencing is wildlife friendly:

- Avoid the use of fencing, which may disrupt wildlife movements, entangle wildlife, and increase bird fatalities. A chain-link fence can be used around operations and maintenance buildings.
- If fencing must be used or already exists, use a smooth bottom wire at least 18 inches off the ground to facilitate pronghorn movements. Use a smooth top wire or top rail to facilitate elk and deer movements, and to reduce avian fatalities.
- Spacing between the two top wires should be 12 inches to avoid entangling deer.

- Outfit transmission lines within five miles of sage-grouse leks with perch deterrents to prevent raptor use if research shows that such deterrents are effective.

BLM'S RETAINED RIGHTS: HOW REQUIRING
ENVIRONMENTAL PROTECTION FULFILLS
OIL AND GAS LEASE OBLIGATIONS

By

BRUCE M. PENDERY*

There are approximately 39,000,000 acres of federal mineral estate in the eleven western states subject to onshore oil and gas leases issued by the Bureau of Land Management (BLM). The leases grant the lessee the right to extract any oil or natural gas that may be found on the lease. However, the leases make the grant of rights "subject to" a number of reservations of authority to the federal government. The BLM lease provides that these retained rights stem from applicable laws; the terms, conditions, and stipulations in the lease; the Secretary of Interior's regulations and formal orders in effect when the lease is issued; and regulations and formal orders issued afterward if not inconsistent with the lease rights granted. A BLM regulation makes the lease subject to three further reservations of authority: stipulations; restrictions deriving from specific, nondiscretionary statutes; and reasonable measures the BLM authorized officer might require. A review of these authorities shows BLM retains substantial rights allowing it to regulate the time, place, and manner of oil and gas development. Development can be conditioned by regulating the timing of operations and the siting and design of facilities, as well as specification of the rates of oil and gas development and production. BLM can suspend operation of leases and can even prohibit development if impacts are substantially different or greater than normal. BLM retains the right to prevent "adverse impacts" by requiring

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“reasonable measures” to prevent environmental harms. These rights stem from provisions in the Mineral Leasing Act, Federal Land Policy and Management Act, National Environmental Policy Act, Endangered Species Act, Clean Air Act, Clean Water Act, National Historic Preservation Act, other statutes, BLM’s leasing and operations regulations, the terms in the lease itself, and formal orders such as BLM Resource Management Plans, Onshore Oil and Gas Order Number 1, Executive Orders, and Secretarial and Department of Interior Solicitor Orders and Opinions, all of which the lease is made “subject to.” If BLM fully exercises these retained rights it can considerably reduce environmental disturbance due to oil and gas development on the public lands. Means available for exercising these retained rights include requiring phased or paced development, directional drilling, suspension of operations on leases in the interest of conservation of resources, unitization of leases, and a number of best management practices, including placing netting over waste pits to reduce wildlife mortality, requiring “closed-loop” drilling fluid systems to reduce pollution, and requiring mats to be placed on the ground during drilling to reduce drilling impacts, to name a few. This Article argues that given the mandatory, nondiscretionary nature of many of the authorities a federal onshore oil and gas lease has been made subject to, not only does BLM have numerous retained rights, it in fact has an obligation to fully assert them, and several policy changes that could accomplish this are suggested.

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I. INTRODUCTION

There are large areas of the public lands in the western United States that are encumbered by federal oil and natural gas leases. In the eleven western states of New Mexico, Colorado, Wyoming, Montana, Idaho, Utah, Arizona, Nevada, California, Oregon, and Washington—where public lands are an important aspect of land use, economic development, and social structure and culture—there were 404,500,000 acres of federal mineral estate, and over 39,000,000 acres of that estate were subject to federal oil and gas leases in fiscal year 2008.¹

Given the large areas of public land encumbered by federal onshore oil and natural gas leases, a significant question relates to the “retained rights” enjoyed by the federal government in areas it has leased. This Article posits that the federal government has substantial retained rights allowing it to regulate oil and gas development in order to ensure protection of other resources on the lands it has leased. I define the term “retained rights” to mean powers the federal government maintains and has not ceded regarding public lands management when it issues an onshore oil and gas lease to a private party. As will be explained, the government has retained significant rights to protect the natural environment, including, for example, protection of threatened or endangered species, prevention of air and water pollution, the right to regulate operations in order to conserve surface resources, the ability to protect historic trails and other cultural and archeological resources, and the right to prevent unnecessary or undue degradation of the public lands.

With respect to onshore oil and gas leasing, management of the leasing program and the resulting leases is entrusted to the United States Bureau of

¹ See BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, PUBLIC LAND STATISTICS 2008 tbl.I-3 (2008), available at http://www.blm.gov/public_land_statistics/pls08/pls1-3_08.pdf [hereinafter BUREAU OF LAND MGMT., PUBLIC LAND STATISTICS 2008]; BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, TOTAL NUMBER OF ACRES LEASED, http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/energy/oil_gas_statistics.Par.16715.File.dat/chart_2009_02.pdf. These data do not reflect oil and gas leasing on tribal lands. See Bureau of Land Mgmt., U.S. Dep’t of the Interior, Facts About Federal Energy Leasing and Development, http://www.blm.gov/wo/st/en/info/newsroom/Energy_Facts_07.html (last visited Apr. 18, 2010) (pointing out that nationwide the Bureau of Land Management manages nearly 700 million acres of federal mineral estate).

Land Management (BLM) within the United States Department of Interior.² For purposes of this Article, I will focus on the retained rights enjoyed by BLM on the public lands and the mineral estate that it manages in the eleven western states. Because of my knowledge of and experience in the State of Wyoming, many of the examples that will be presented relate to Wyoming.

BLM manages approximately 175,000,000 acres of surface estate in the eleven western states, as well as the above-mentioned mineral estate.³ I will not specifically consider leasing in Alaska in this Article because some different legal provisions apply there, particularly in the National Petroleum Reserve in Alaska, but generally the analysis presented here also applies to BLM-managed oil and gas in Alaska.⁴ While the focus of this Article will be on BLM and the lands it manages, similar lines of reasoning and the conclusions that will be presented here also apply to the over 158,000,000 acres managed by the United States Forest Service (Forest Service) in the eleven western states because similar leasing rules apply on those lands.⁵ For purposes of this Article, I only consider federal onshore oil and gas leasing and leases. I will not consider offshore leasing managed by the Minerals Management Service under the direction of the Outer Continental Shelf Leasing Act.⁶

In the following sections, I will first describe the Mineral Leasing Act⁷ and the onshore oil and gas leasing system it created. I will then discuss the terms and conditions of BLM onshore oil and gas leases with an eye toward what those provisions mean relative to BLM's retained rights. Following that is a discussion of the retained rights BLM enjoys under applicable laws, lease terms and conditions, regulations, and other authorities a BLM oil and gas lease is made "subject to." Then I will consider general doctrines of contract law that may also help define BLM's retained rights. Following that is a discussion of issues that might limit BLM's exercise of its retained rights, such as Fifth Amendment takings claims. Last, I will consider means by which BLM could exercise its retained rights and policy changes it could make, and then argue that not only does BLM enjoy substantial retained rights, it also has an obligation to assert them.

² See 43 C.F.R. pts. 3100, 3160 (2008) (presenting BLM's onshore oil and gas leasing and oil and gas operations regulations).

³ See BUREAU OF LAND MGMT., PUBLIC LAND STATISTICS 2008, *supra* note 1, tbl.1-3.

⁴ See Bureau of Land Mgmt., U.S. Dep't of the Interior, BLM-Alaska Energy Program, <http://www.blm.gov/ak/st/en/prog/energy.html> (last visited Apr. 18, 2010) (presenting information on BLM oil and gas leasing in Alaska).

⁵ The Forest Service must consent to leasing on its lands, although BLM conducts the actual leasing. See Mineral Leasing Act, 30 U.S.C. § 226(h) (2006) (providing that leasing by the Secretary of the Interior on Forest Service lands cannot occur over the objection of the Secretary of Agriculture); 43 C.F.R. § 3101.7-1(c) (2008) (same); 36 C.F.R. §§ 228.100-.116 (2009) (presenting the Forest Service's oil and gas resource regulations).

⁶ 43 U.S.C. §§ 1331-1356 (2006). For a description of the Minerals Management Service's offshore leasing program, see Minerals Mgmt. Serv., U.S. Dep't of the Interior, Offshore Energy & Minerals Management, <http://www.mms.gov/offshore> (last visited Apr. 18, 2010).

⁷ 30 U.S.C. §§ 181-287 (2006).

II. OVERVIEW OF THE MINERAL LEASING ACT

Onshore leasing of federally owned oil and gas is governed by the Mineral Leasing Act of 1920.⁸ The leasing system it established, including provision for royalties to be paid on produced minerals, represented a marked departure from the provisions under the General Mining Law of 1872,⁹ where minerals and the exclusive right to possession of the land were granted to the first prospector able to "locate[]" a "valuable" mineral on public lands.¹⁰ The leasing system established by the Mineral Leasing Act for many nonmetalliferous minerals provides for a significant increase in governmental control and regulation of mineral disposition and development compared to the self-initiated system under the General Mining Law that applies to hardrock minerals such as "gold, silver, cinnabar, lead, tin, [and] copper."¹¹

Subject to enumerated exceptions, the Mineral Leasing Act provides that deposits of coal, phosphite, sodium, potassium, oil, oil shale, gilsonite, or gas, and lands containing such deposits that are owned by the United States, "shall be subject to disposition in the form and manner provided by this chapter."¹² The Act establishes qualifications for holding an oil and gas lease, establishes limits on the aggregate acreage of lease holdings, allows for cancellation and forfeiture of leases, allows for necessary rules and regulations to be prescribed, provides for royalties and other income to the government and disposition of the moneys received, prescribes the maximum size of individual leases and lease term lengths, and makes many other provisions.¹³

Most significantly for purposes of this Article, section 17 of the Mineral Leasing Act provides for leasing of oil and gas. Section 17(a) declares that "[a]ll lands subject to disposition under this [Act] which are known or believed to contain oil or gas deposits may be leased by the Secretary [of the Interior]."¹⁴ Section 17(b) then provides for a competitive leasing system via oral auction where parcels are leased to the "highest responsible qualified

⁸ *Id.*

⁹ 30 U.S.C. §§ 22–24, 26–30, 33–35, 37, 39–43, 47 (2006).

¹⁰ *Id.* § 29.

¹¹ *Id.* § 23.

¹² 30 U.S.C. § 181 (2006).

¹³ *Id.* §§ 181, 184(d), 188–189, 191, 226(b)–(c).

¹⁴ *Id.* § 226(a) (emphasis added). In a line of cases, numerous courts have held that the decision to issue a lease in the first instance is a decision within the Secretary of the Interior's discretion. See, e.g., *Udall v. Tallman*, 380 U.S. 1, 4 (1965); *United States ex rel. McLennan v. Wilbur*, 283 U.S. 414, 417 (1931); *McDonald v. Clark*, 771 F.2d 460, 463 (10th Cir. 1985); *McTiernan v. Franklin*, 508 F.2d 885, 887 (10th Cir. 1975); *Duesing v. Udall*, 350 F.2d 748, 750 (D.C. Cir. 1965); *Cont'l Land Res.*, 162 I.B.L.A. 1, 7 (2004). But see *Mountain States Legal Found. v. Hodel*, 668 F. Supp. 1466, 1474 (D. Wyo. 1987) (finding that delay in processing leasing proposals can constitute an impermissible withdrawal of public lands); *Mountain States Legal Found. v. Andrus*, 499 F. Supp. 383, 391 (D. Wyo. 1980) (same). In *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223 (9th Cir. 1988), the United States Court of Appeals for the Ninth Circuit declined to follow the holding in *Andrus* relative to withdrawals. *Id.* at 1229–30.

bidder.”¹⁵ If no qualified bids are received at competitive auction, lease parcels become available for sale noncompetitively.¹⁶ Under the provisions for noncompetitive leases, “the person first making application for the lease who is qualified to hold a lease under this [Act] shall be entitled to a lease of such lands without competitive bidding.”¹⁷ In addition to specifying the leasing system, section 17 also makes several provisions related to environmental protection.¹⁸

This system where leases are first offered at competitive auction before becoming available for noncompetitive sale is relatively new. It was established on December 22, 1987, when the Federal Onshore Oil and Gas Leasing Reform Act (FOOGLRA)¹⁹ was enacted. This law is codified in several sections of the Mineral Leasing Act and elsewhere, but the most important amendments for purposes of this review were the amendments to subsections 17(b) through 17(h), which deal with the leasing provisions that have been mentioned and environmental protection measures that will be described in more detail below.²⁰ Prior to FOOGLRA a different leasing system existed.

Under the pre-FOOGLRA system, competitive leasing only occurred if a lease was in a “known geologic structure” (KGS).²¹ Otherwise, if the lands were not in a KGS, a lease could be acquired on a noncompetitive basis.²² The noncompetitive system allowed for two ways to acquire a lease. The first was an over-the-counter purchase based on a first-come, first-served system.²³ The second was based on a lottery system called “SIMO.”²⁴ Over-the-counter leases were available if the land was not in a KGS, had never been leased, and the lands had not received bids in the lottery system.²⁵ The lottery system was utilized for lands not in a KGS but where the lands had been previously leased.²⁶

This pre-FOOGLRA leasing system turned out to have a number of problems. BLM had difficulty defining KGSs, which lead to uncertainty and

¹⁵ 30 U.S.C. § 226(b)(1)(A) (2006).

¹⁶ *Id.*

¹⁷ *Id.* § 226(c)(1).

¹⁸ *Id.* § 226(f)–(h).

¹⁹ Federal Onshore Oil and Gas Leasing Reform Act of 1987, Pub. L. No. 100-203, 101 Stat. 1330-256 (codified as amended at 30 U.S.C. §§ 195, 226-3 (2006)).

²⁰ 30 U.S.C. § 226(b)–(h) (2006).

²¹ Act of Feb. 25, 1920, ch. 85, § 17, 41 Stat. 437, 443 (1920) (current version at 30 U.S.C. § 181(b) (2006)).

²² Act of Aug. 8, 1946, ch. 916, § 3, 60 Stat. 950, 951 (1946) (current version at 30 U.S.C. § 181(c) (2006)).

²³ 4 GEORGE CAMERON COGGINS & ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW § 39:2, at 39-6 (2d ed. 2010).

²⁴ *Id.* at 39-6 to -7. “SIMO” stands for “simultaneous lease drawing,” but according to BLM officials the abbreviation is really a shortened reference to “simultaneous.” Telephone Interview with William Gewecke, Petroleum Eng’r, Minerals & Realty Mgmt., Bureau of Land Mgmt. (Nov. 12, 2009).

²⁵ Patricia J. Beneke, The Federal Onshore Oil and Gas Leasing Reform Act of 1987: A Legislative History and Analysis, 4 J. MIN. L. & POL’Y 11, 15 (1988).

²⁶ *Id.*

abuse, and outright fraud and speculation occurred in the noncompetitive lottery system.²⁷ It was these problems that led to the enactment of FOOGLRA and the creation of the modern leasing system where competitive leasing is the general rule and noncompetitive leasing only occurs when a qualified bid is not received at a competitive lease sale.²⁸ The pre-FOOGLRA leasing system, problems that developed under it, and the resulting enactment of FOOGLRA are ably described in three law review articles²⁹ and in the leading case of *Arkla Exploration Co. v. Texas Oil & Gas Corp.*³⁰

The significance of the pre-FOOGLRA versus post-FOOGLRA leasing systems is that oil and gas leases have been issued under two distinctly different systems, one in existence before 1987 and one after. However, according to officials with BLM there have been no differences in the terms of a competitive versus a noncompetitive lease, whether issued pre- or post-FOOGLRA.³¹ There has been only one lease form in use at any particular time.³² Thus, when the provisions of BLM leases in use during different time periods are discussed below in an effort to discern BLM's retained rights, there will be no need to distinguish between competitive- and noncompetitive-issued leases, or—for purposes of ascertaining BLM's retained rights—a need to distinguish between pre- versus post-FOOGLRA leases.³³

III. THE FEDERAL ONSHORE OIL AND GAS LEASING AND DEVELOPMENT PROCESS

A. The Stages of BLM Oil and Gas Planning, Leasing, and Development

The BLM onshore oil and gas leasing and development process for federally owned oil and gas is comprised of five steps or stages. These include land-use planning, leasing, exploration, full field development, and filing an application for permit to drill (APD).³⁴

²⁷ *Id.* at 17–25.

²⁸ *Id.* at 35–37.

²⁹ See generally *id.* at 11; Thomas L. Sansonetti & William R. Murray, A Primer on the Federal Onshore Oil and Gas Leasing Reform Act of 1987 and Its Regulations, 25 *LAND & WATER L. REV.* 375 (1990); Abraham E. Haspel, Drilling for Dollars: The New and Improved Federal Oil Lease Program, *REG.*, Fall 1990, at 62.

³⁰ 734 F.2d 347 (8th Cir. 1984) (determining that KGS determinations on the Fort Chaffee Military Reservation in Arkansas were arbitrarily constrained, allowing lands to be inappropriately leased on a noncompetitive basis in an area with strong competition for productive oil and gas properties).

³¹ Telephone Interview with Julie Weaver, Chief, Branch of Fluid Minerals Adjudication, Wyo. State Office, Bureau of Land Mgmt. (Oct. 15, 2009).

³² *Id.*

³³ *Id.* According to Ms. Weaver, in older leases there can be some differences in rental provisions when a lease was in a KGS or in a unitized field, and sometimes different royalty provisions can apply. *Id.* But there are no differences in the environmental protection provisions in competitive versus noncompetitive leases or in pre- versus post-FOOGLRA leases. *Id.*

³⁴ In *New Mexico ex rel. Richardson v. Bureau of Land Mgmt.* (*Richardson*), 565 F.3d 683 (10th Cir. 2009), the United States Court of Appeals for the Tenth Circuit construed the BLM oil and gas development process as being comprised of three stages: land use planning, leasing, and filing an APD. *Id.* at 689 n.1, 716. However, I believe the five-step process I describe

1. Land-Use Planning

Step one is land-use planning, the development of BLM Resource Management Plans (RMPs). BLM land-use planning is required under the Federal Land Policy and Management Act (FLPMA).³⁵ At this stage, lands that will be available for oil and gas leasing are identified, and limitations that will be applied to leasing, including applicable stipulations, are specified.³⁶ In Wyoming, there are ten BLM field offices and each has an RMP in place.³⁷ Other western states also have a number of field offices and most operate under the guidance of an RMP.³⁸ Under many of the RMPs in Wyoming, much of the land under the direction of the field office is available for oil and gas leasing, and this is generally true elsewhere in the West.³⁹ The development of an RMP requires compliance with the National Environmental Policy Act (NEPA)⁴⁰ and is therefore accompanied by preparation of an environmental impact statement (EIS).⁴¹

2. Leasing

The next stage in the oil and gas leasing and development process on BLM lands and mineral estates is the leasing stage. At this stage leases are first offered for sale at competitive auctions and then are available

captures the nuances of the oil and gas leasing and development process; moreover, the court did note that "exploring" needed to occur. *Id.* at 689 n.1.

³⁵ 43 U.S.C. §§ 1701-1785 (2006); see *id.* § 1712 (presenting FLPMA's planning requirements); 43 C.F.R. pt. 1600 (2008) (presenting BLM's regulations implementing FLPMA's planning requirements).

³⁶ Richardson, 565 F.3d at 689 n.1.

³⁷ The RMP for a BLM field office can be found on that field office's website. For example, the RMP for the Pinedale, Wyoming field office can be found on that field office's website. Pinedale Field Office, Bureau of Land Mgmt., Record of Decision/Approved RMP, http://www.blm.gov/wy/st/en/programs/Planning/rmps/pinedale/rod_armp.html (last visited Apr. 18, 2010).

³⁸ See, e.g., Bureau of Land Mgmt., U.S. Dep't of the Interior, Arizona Resource Management Plans, http://www.blm.gov/az/st/en/info/nepa/environmental_library/arizona_resource_management.html (last visited Apr. 18, 2010) (providing draft and final RMPs for the Arizona state office).

³⁹ See, e.g., PINEDALE FIELD OFFICE, BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, RECORD OF DECISION AND APPROVED PINEDALE RESOURCE MANAGEMENT PLAN 2-1 tbl.1-1 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/planning/rmps/pinedale/rod.Par.45058.File.dat/05_Record_of_Decision_and_Approved_Pinedale_RMP.pdf; *id.* map 1-3, available at http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/planning/rmps/pinedale/rod/maps.Par.50090.File.dat/03_Map1-03.pdf. Areas available for lease can be examined using the GeoCommunicator tool at Bureau of Land Mgmt. & U.S. Forest Serv., U.S. Dep't of the Interior & U.S. Dep't of Agric., GeoCommunicator Home, <http://www.geocommunicator.gov> (last visited Apr. 18, 2010).

⁴⁰ National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4347 (2006).

⁴¹ See *id.* § 4332(2)(C) (2006) (requiring preparation of an EIS when a federal action may significantly affect the quality of the human environment); 43 C.F.R. § 1601.0-6 (2008) ("Approval of a resource management plan is considered a major Federal action significantly affecting the quality of the human environment.").

noncompetitively if a qualified bid is not received at the competitive sale.⁴² After an acceptable offer is received, and assuming there are no protests that delay the leasing process, a lease is issued.⁴³ As has been recognized in numerous court and administrative decisions, the leasing stage is crucial because it represents an “irreversible and irretrievable commitment[] of resources” due to the developed rights granted by a federal onshore oil and gas lease, and thus compliance with NEPA is required prior to issuing a lease, at least when the lease does not contain a stipulation specifying there will be no surface occupancy of the leasehold.⁴⁴ This issue will be discussed in more detail in Part VII.D.

3. Exploration

Once an oil and gas lease is issued, the next step is often exploration to determine if there are likely to be valuable oil and gas deposits on a lease. BLM has developed regulations that govern exploration, and exploration projects are also subject to NEPA.⁴⁵ In general, at least in Wyoming, exploration projects are approved by preparation of a NEPA environmental assessment (EA), not a more detailed EIS.⁴⁶ Sometimes a leaseholder does not engage in exploration and proceeds directly to drilling a “wildcat” well, so called because the well is drilled in an area where the potential for production in paying quantities is uncertain.⁴⁷

4. Full-Field Development

If it becomes apparent that oil and gas may be present in an area and that a number of wells are likely to be drilled, the process enters what is called the project level stage. This stage is also sometimes called the “full-field development” stage.⁴⁸ NEPA applies to this level of activity because of the BLM approvals required before development can occur, and often an EIS is prepared (sometimes an EA is prepared for smaller fields or

⁴² Beneke, *supra* note 25, at 43.

⁴³ See *infra* notes 75–81 and accompanying text (discussing lease protests).

⁴⁴ See, e.g., *Sierra Club v. Peterson*, 717 F.2d 1409, 1414 (D.C. Cir. 1983) (quoting *Mobil Oil Corp. v. Fed. Trade Comm’n*, 562 F.2d 170, 173 (2d Cir. 1977)) (holding that issuing an oil and gas lease without a no surface occupancy stipulation represents an irreversible and irretrievable commitment of resources, which requires compliance with NEPA); *Richardson*, 565 F.3d 683, 718 (10th Cir. 2009) (same); *Conner v. Burford*, 848 F.2d 1441, 1449–50 (9th Cir. 1988) (same); *Ctr. for Native Ecosystems*, 170 I.B.L.A. 331, 344–45 (2006). These and other cases will be discussed in Part VII.D, *infra*.

⁴⁵ 43 C.F.R. pt. 3150 (2008).

⁴⁶ See 40 C.F.R. §§ 1501.3–4, 1508.9 (2009) (presenting Council on Environmental Quality regulations governing when to prepare an EA versus an EIS and requirements for these two types of documents); *id.* pt. 1502 (2009) (same).

⁴⁷ See *Gates Rubber Co. v. Comm’r*, 74 T.C. 1456, 1460 (1980).

⁴⁸ *Rocky Mountain Oil & Gas Ass’n v. Watt*, 696 F.2d 734, 742 (10th Cir. 1982).

drilling projects).⁴⁹ There have been a number of full-field development EISs prepared in Wyoming in recent years, including, but by no means limited to, analyses of the Jonah Infill project, the Pinedale Anticline project, the Atlantic Rim project, and coal bed methane development in the Powder River Basin; these EISs can be reviewed on BLM field office websites.⁵⁰ Approval of these projects through the “record of decision” that accompanies an EIS can allow for the drilling of thousands of wells.⁵¹ Similar full field development EISs in environmentally significant areas have been developed in several of the other western states in recent years, such as the Roan Plateau project in western Colorado.⁵²

5. Application for Permit to Drill

Finally, the last stage in the oil and gas development process on BLM lands and mineral estates is called the APD stage. Under BLM’s regulations, no well can be drilled until an APD has been approved.⁵³ Up until now, no actual surface disturbance has occurred (other than the relatively limited disturbance associated with exploration), but after the APD stage, drills can begin to dig into the ground.⁵⁴ The APD stage also implicates NEPA, and in many cases an EA is prepared as part of the APD approval to ensure environmental concerns are considered and mitigated on a site-specific basis.⁵⁵ However, since passage of the Energy Policy Act of 2005,⁵⁶

⁴⁹ See National Environmental Policy Act of 1969, 42 U.S.C. § 4332(2) (2006) (making NEPA applicable to all federal agencies, of which BLM is one); id. § 4332(2)(C) (requiring an EIS for all federal agency actions significantly affecting the quality of the human environment).

⁵⁰ See, e.g., BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, RECORD OF DECISION FOR THE JONAH INFILL DRILLING PROJECT: ENVIRONMENTAL IMPACT STATEMENT 1 (2006), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/jonah.Par.5187.File.dat/00rod2.pdf> [hereinafter BUREAU OF LAND MGMT., JONAH INFILL ROD]; BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, RECORD OF DECISION: FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PINEDALE ANTICLINE OIL AND GAS EXPLORATION AND DEVELOPMENT PROJECT 4 (2008), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/anticline/rod.Par.50775.File.dat/00ROD.pdf> [hereinafter BUREAU OF LAND MGMT., PINEDALE ANTICLINE ROD]; BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, RECORD OF DECISION: ENVIRONMENTAL IMPACT STATEMENT FOR THE ATLANTIC RIM NATURAL GAS FIELD DEVELOPMENT PROJECT 1 (2006), available at http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/atlantic_rim/rod.Par.46558.File.dat/ROD.pdf [hereinafter BUREAU OF LAND MGMT., ATLANTIC RIM EIS] (approving approximately 2000 wells); see also *Theodore Roosevelt Conservation P’ship v. Salazar*, 605 F. Supp. 2d 263, 269 (D.D.C. 2009) (deciding in a challenge to the Atlantic Rim project that BLM did not violate NEPA or FLPMA).

⁵¹ See *supra* note 50.

⁵² See BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, RECORD OF DECISION FOR THE DESIGNATION OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN FOR THE ROAN PLATEAU: RESOURCE MANAGEMENT PLAN AMENDMENT AND ENVIRONMENTAL IMPACT STATEMENT 1 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/co/programs/land_use_planning/rmp/roan_plateau/documents.Par.3928.File.dat/FinalRoanRODII_3_13_08.pdf.

⁵³ 43 C.F.R. § 3162.3-1(c) (2008).

⁵⁴ *Id.*

⁵⁵ See *S. Utah Wilderness Alliance*, 159 I.B.L.A. 220, 224 (2003).

⁵⁶ Pub. L. No. 109-58, 119 Stat. 604 (codified primarily in scattered sections of 42 U.S.C.)

“categorical exclusions” from NEPA compliance at the APD stage have been available in many cases, and NEPA compliance at the APD stage has been made less rigorous.⁵⁷ In addition to complying with NEPA, the Mineral Leasing Act provides that when an APD is filed, BLM must provide notice to the public of the proposed action.⁵⁸

The outcome of this multistage oil and gas leasing and development process can be substantial environmental disturbance, such as the thousands of wells that have been planned and drilled in Wyoming’s Pinedale Anticline and Jonah fields, and in the Powder River Basin.⁵⁹ Similar levels of activity are apparent in other parts of the West, such as in the Farmington area in New Mexico, the Piceance Basin in Colorado, the Uinta Basin in Utah, and in Montana’s portion of the Powder River Basin.⁶⁰ It is this Article’s premise that to prevent substantial environmental harm in these and many other environmentally significant areas, it is crucial that BLM

⁵⁷ See 42 U.S.C. § 15942(a), (b)(1)–(4) (2006) (presenting the Energy Policy Act of 2005’s categorical exclusions). In September 2009, the United States Government Accountability Office (GAO) released a report entitled *Energy Policy Act of 2005: Greater Clarity Needed to Address Concerns with Categorical Exclusions for Oil and Gas Development Under Section 390 of the Act*. U.S. GOV’T ACCOUNTABILITY OFFICE, *ENERGY POLICY ACT OF 2005: GREATER CLARITY NEEDED TO ADDRESS CONCERNS WITH CATEGORICAL EXCLUSIONS FOR OIL AND GAS DEVELOPMENT UNDER SECTION 390 OF THE ACT* (2009), available at <http://www.gao.gov/new.items/d09872.pdf>. The GAO found that 6100 out of 22,000 APDs, or 28%, that had been filed between 2006 and 2008 were approved via categorical exclusion from NEPA. *Id.* at 12. Categorical exclusions were also used in another 1150 instances. *Id.* at “Highlights” (unnumbered page). The GAO also found that the use of categorical exclusions often was not in compliance with section 390 of the Energy Policy Act or BLM guidance on the use of categorical exclusions. *Id.* at 23. The report recommends that Congress take action to amend section 390 so as to clarify certain key terms, and that BLM take interim action to provide better oversight and guidance on the use of categorical exclusions. *Id.* at 53. BLM indicated to the GAO that it will take immediate steps to ensure the use of section 390 categorical exclusions are consistent with the Energy Policy Act of 2005 and BLM guidance. *Id.* at 54. The Forest Service has also adopted a categorical exclusion from NEPA for oil and gas development projects. 36 C.F.R. § 220.6(e)(17) (2009). This categorical exclusion is not based on the Energy Policy Act of 2005 categorical exclusions and is a separate Forest Service policy. See *National Environmental Policy Act Procedures*, 73 Fed. Reg. 43,084, 43,090–91 (July 24, 2008) (codified at 36 C.F.R. pt. 220). Issues related to Energy Policy Act of 2005 categorical exclusions will be considered further infra in the text accompanying notes 221–23.

⁵⁸ Mineral Leasing Act, 30 U.S.C. § 226(f) (2006).

⁵⁹ See *W. Org. of Res. Councils v. Bureau of Land Mgmt.*, 591 F. Supp. 2d 1206, 1208 (D. Wyo. 2008) (reviewing a BLM decision to allow up to 51,000 coal bed methane wells in the Powder River Basin); *BUREAU OF LAND MGMT., JONAH INFILL ROD*, *supra* note 50, at 1; *BUREAU OF LAND MGMT., PINEDALE ANTICLINE ROD*, *supra* note 50, at 4.

⁶⁰ See *S. Utah Wilderness Alliance*, 177 I.B.L.A. 284, 284–85 (2009); *Gas Gathering Agreement in Powder River Basin: Coal Bed Methane Project Reached Between Pennaco Energy and TransMontaigne Unit, Bear Paw Energy Inc.*, *BUS. WIRE*, Mar. 24, 1999, http://findarticles.com/p/articles/mi_m0EIN/is_1999_March_24/ai_54191657 (last visited Apr. 18, 2010); Press Release, Nat’l Trust for Historic Pres., *Coalition Applauds Bureau of Land Management for Withdrawing Eight Parcels of Land Near Chaco Canyon, New Mexico from Oil and Gas Lease Sale* (Oct. 9, 2009), <http://www.preservationnation.org/about-us/press-center/press-releases/2009/coalition-applauds-bureau-of.html> (last visited Apr. 18, 2010); *ExxonMobil, Colorado: Piceance Basin*, http://www.exxonmobil.com/corporate/energy_project_piceance.aspx (last visited Apr. 18, 2010).

recognize the retained rights it still enjoys despite having issued an oil and gas lease and regulate this development accordingly.

B. The BLM Onshore Oil and Gas Leasing Process

Numerous provisions that govern oil and gas leasing can be found in the Mineral Leasing Act and in BLM's oil and gas leasing regulations.⁶¹ For purposes of this Article it is not necessary to provide a detailed discussion of the leasing process, but some relevant provisions will be mentioned in this section. A user-friendly description of the leasing process can be found on the BLM website.⁶² Information on particular lease sales can be found on BLM state office web pages.⁶³

As mentioned, there are two means by which BLM can offer onshore oil and gas leases. Leases must first be made available for sale at a competitive oil and gas auction, which are held at least quarterly.⁶⁴ If no legally sufficient bids are received at the competitive sale, BLM can then make the leases available on a noncompetitive basis.⁶⁵ Leases not sold at a competitive oil and gas lease sale remain available for noncompetitive leasing for a period of two years after the competitive lease sale.⁶⁶

The maximum size of a competitive lease parcel is 2560 acres (different limits apply in Alaska) and the maximum size of a noncompetitive parcel is 10,240 acres.⁶⁷ The primary term of a lease is for ten years and the lease will automatically continue in force so long as there is at least one well on the lease capable of producing oil and gas in paying quantities, or the lease has been committed to a "unitized" group of leases that have at least one well capable of producing in paying quantities.⁶⁸ A lease term can be extended for two years if actual drilling is being diligently prosecuted prior to the end of the primary term.⁶⁹

The annual rental on a lease is \$1.50 per acre, or fraction thereof, for the first five years of the lease and \$2.00 per acre thereafter.⁷⁰ Royalties on production must be paid at a rate of 12.5% of the value of production removed.⁷¹ Royalties and other monies received are paid to the United States Department of the Treasury, with fifty percent of that returned to the state

⁶¹ 30 U.S.C. § 226(a)–(e) (2006); 43 C.F.R. pt. 3100 (2008).

⁶² Bureau of Land Mgmt., U.S. Dep't of the Interior, Oil and Gas, http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas.html (last visited Apr. 18, 2010); see also Sansonetti & Murray, *supra* note 29, at 385–403 (discussing, among other things, the leasing process).

⁶³ See, e.g., Bureau of Land Mgmt., U.S. Dep't of the Interior, Competitive Lease Sale Notices & Results, http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Leasing.html (last visited Apr. 18, 2010) (presenting Wyoming oil and gas lease sale information).

⁶⁴ 30 U.S.C. § 226(b)(1)(A) (2006); 43 C.F.R. §§ 3110.1(b), 3120.1-1 to -2 (2008).

⁶⁵ 30 U.S.C. § 226(b)(1)(A), (c) (2006); 43 C.F.R. §§ 3110.1(b), 3120.6 (2008).

⁶⁶ 30 U.S.C. § 226(b)(1)(A) (2006); 43 C.F.R. §§ 3110.1(b), 3120.6 (2008).

⁶⁷ 30 U.S.C. § 226(b)(1)(A) (2006); 43 C.F.R. §§ 3110.3-3(b), 3120.2-3 (2008).

⁶⁸ 30 U.S.C. § 226(e) (2006); 43 C.F.R. §§ 3107.2-1, 3107.3-1, 3110.3-1, 3120.2-1 (2008).

⁶⁹ 30 U.S.C. § 226(e) (2006); 43 C.F.R. § 3107.1 (2008).

⁷⁰ 30 U.S.C. § 226(d) (2006); 43 C.F.R. § 3103.2-2(a) (2008).

⁷¹ 30 U.S.C. § 226(b)(1)(A), (c) (2006); 43 C.F.R. § 3103.3-1(a)(1) (2008).

where the oil or gas was produced.⁷² In addition to rent and royalties, bonding is required prior to conducting surface disturbing activities to ensure compliance with lease terms and reclamation and restoration of impacted lands.⁷³ Bonding must be in an amount not less than \$10,000 per lease or, in lieu of that, statewide bonds of \$25,000 or nationwide bonds of \$150,000 can be posted.⁷⁴

Generally, BLM will issue a lease to a successful bidder after it receives the bid form and all money due.⁷⁵ A lease is effective the first day of the month following the month in which BLM signs the lease, although there are provisions allowing for the lease to be effective sooner.⁷⁶ However, the public can protest the sale of leases.⁷⁷ If this is done—and BLM often receives protests of lease parcels offered for sale at auction—the lease will not be issued until the protest is resolved, which often takes several months.⁷⁸ If the protest is rejected, BLM can issue the lease.⁷⁹ If a protest is upheld, the lease parcel will be withdrawn and fees, rentals, and bonus bids will be returned to the bidder.⁸⁰ However, a BLM decision to reject a protest is subject to appeal to the Interior Board of Land Appeals (IBLA).⁸¹

A BLM oil and gas lease issued as a result of this leasing process is made subject to a number of provisions and it also contains a number of terms. The next Part of this Article will discuss these terms and how they create an array of retained rights for BLM, allowing it to regulate oil and gas development in order to protect the natural environment.

IV. THE TERMS AND CONDITIONS OF BLM ONSHORE OIL AND GAS LEASES

The place to start in determining what rights BLM retains when it issues an onshore oil and gas lease is with the lease itself, the contractual agreement the government enters into when it issues a lease to a private

⁷² 30 U.S.C. § 191(a) (2006).

⁷³ 43 C.F.R. § 3104.1(a) (2008).

⁷⁴ *Id.* §§ 3104.2, 3104.3(a)–(b).

⁷⁵ *Id.* §§ 3110.4(a), 3120.5-1(a)–(b), 3120.5-2, 3120.5-3(a).

⁷⁶ *Id.* §§ 3110.3-2, 3120.2-2.

⁷⁷ *Id.* §§ 4.450-2, 3120.1-3; see also BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, NOTICE OF COMPETITIVE OIL AND GAS LEASE SALE, at i–ii, viii–ix (2009), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/og/leasing/2009.Par.62062.File.dat/12list.pdf> (presenting information on BLM's competitive oil and gas lease sale on December 1, 2009, in Wyoming and describing protest procedures).

⁷⁸ BUREAU OF LAND MGMT., *supra* note 77, at vi.

⁷⁹ *Id.* at ix.

⁸⁰ *Id.*

⁸¹ *Id.*; 43 C.F.R. §§ 4.410(a), 3120.1-3 (2008). However, an appeal to the IBLA is not subject to an automatic stay while the appeal is considered, so lease parcels can be issued after a protest is rejected even if an appeal is filed. See *id.* § 3120.1-3 (providing that “[n]o action pursuant to the regulations in this subpart shall be suspended under § 4.21(a) of this title due to an appeal from a decision by the authorized officer to hold a lease sale” and also providing that the authorized officer “may” suspend a lease on a parcel while considering a protest or appeal).

party. BLM's current regulations provide that "[a] lease shall be issued only on the standard form approved by the Director [of BLM]."⁸²

A. Versions of the BLM Oil and Gas Lease Form

Over the years since the Mineral Leasing Act was enacted in 1920, BLM has used several lease forms to issue leases under the pre-FOOGLRA and post-FOOGLRA leasing frameworks. Currently, BLM leases are presented on Form 3100-11, the "Offer to Lease and Lease for Oil and Gas."⁸³ Based on information received from BLM's Forms Manager in Denver, five versions of Form 3100-11 were used between 1984 and 2006.⁸⁴ There were no earlier versions of the form on file. The earliest version of Form 3100-11 is dated March 1984.⁸⁵ Later versions dated June 1988, October 1992, February 2003, and July 2006 were also on file.⁸⁶ In October 2008, BLM adopted a further revision to Form 3100-11, and this is now the most recent version of the standard lease form.⁸⁷ Thus, six versions of Form 3100-11 may apply to leases in existence today.

Despite the lack of earlier versions of the lease form that are on file in the BLM archives, upon request I received three examples of earlier leases from the BLM Wyoming state office.⁸⁸ These leases were issued in 1954, 1965, and 1971.⁸⁹ This sampling of older lease forms coupled with the six archived

⁸² 43 C.F.R. § 3101.1-1 (2008).

⁸³ See BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS 1 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/lease_sales/2009/jan.Par.6548.File.dat/3100-11.pdf.

⁸⁴ Mailed Copies of Lease Forms from Karen Wrenn, Forms Manager, Denver Office, Bureau of Land Mgmt., to Rebekah Smith (Aug. 13, 2008) (on file with author). These forms included versions published in 1984, 1988, 1992, 2003, and 2006. BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1984) [hereinafter BUREAU OF LAND MGMT., 1984 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1988) [hereinafter BUREAU OF LAND MGMT., 1988 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1992) [hereinafter BUREAU OF LAND MGMT., 1992 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (2003) [hereinafter BUREAU OF LAND MGMT., 2003 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3100-11, OFFER TO LEASE AND LEASE FOR OIL AND GAS (2006) [hereinafter BUREAU OF LAND MGMT., 2006 LEASE FORM].

⁸⁵ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84.

⁸⁶ See sources cited *supra* note 84.

⁸⁷ See BUREAU OF LAND MGMT., *supra* note 83.

⁸⁸ Mailed Copies of Lease Forms from Vickie Mistarka, Wyo. State Office, Bureau of Land Mgmt., to author (Feb. 2009) (on file with author). These forms included versions in use in 1954, 1965, and 1971. BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 4-1158, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1954) [hereinafter BUREAU OF LAND MGMT., 1954 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 4-1158, OFFER TO LEASE AND LEASE FOR OIL AND GAS (1965) [hereinafter BUREAU OF LAND MGMT., 1965 LEASE FORM]; BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, FORM 3120-19, LEASE FOR OIL AND GAS (1971) [hereinafter BUREAU OF LAND MGMT., 1971 LEASE FORM].

⁸⁹ See sources cited *supra* note 88. The 1954 lease was issued on Form 4-1158 (fourth edition), dated September 1953; the 1965 lease was issued on Form 4-1158 (ninth edition), dated August 1961; and the 1971 lease was issued on Form 3120-19, dated May 1968.

versions of Form 3100-11 likely constitute a reasonably complete picture of lease forms that have been used over the years, allowing an analysis of what rights have been retained by BLM when it issues an oil and gas lease. The nine lease forms considered in this Article are on file with the author and are available upon request. In addition, the version of Form 3100-11 currently in use—the October 2008 form—is available via the hyperlink referenced in footnote 83.

Table 1: Number of Currently Active Federal Oil and Gas Leases in the Eleven Western States Issued During the Indicated Time Period when Various BLM Oil and Gas Lease Forms Were in Effect or Presumed to Have Been in Effect⁹⁰

Date Lease Form Was Made Effective	Period of Time Lease Form Was in Effect or Is Presumed to Have Been in Effect	Number of Still-Active Leases in the Eleven Western States Issued During This Time Period
September 1953	1920–1954 ⁹¹	4383
August 1961	1955–1965 ⁹²	1948
May 1968	1966–February 1984 ⁹³	6755
March 1984	March 1984–May 1988 ⁹⁴	889
June 1988	June 1988–September 1992	1113
October 1992	October 1992–January 2003	11,442
February 2003	February 2003–June 2006	13,819
July 2006	July 2006–September 2008	6469
October 2008	October 2008–Present	1524
	TOTAL	48,342

Working from these lease forms, I have assessed the number of leases that are currently active in the eleven western states that were issued in the time periods when the various versions of the leases were in effect or when it is presumed the lease forms were in effect—i.e., the 1954, 1965, and 1971 lease examples have presumed periods of effectiveness; the period when a

⁹⁰ Id.

⁹¹ The time period the lease is presumed to have been in effect is based on an example of a lease that was issued on July 9, 1954, provided by the BLM Wyoming state office. This lease form is dated September 1953, but it is assumed similar leases were in effect from the enactment of the Mineral Leasing Act in 1920 through the date of this lease.

⁹² The time period the lease is presumed to have been in effect is based on an example of a lease that was issued on January 20, 1965, provided by the BLM Wyoming state office. This lease form is dated August 1961, but it is assumed similar leases were in effect from the date of the 1954 lease through the date of this lease.

⁹³ The time period the lease is presumed to have been in effect is based on an example of a lease that was issued on March 29, 1971, provided by the BLM Wyoming state office. This lease form is dated May 1968, but it is assumed similar leases were in effect from the date of the 1965 lease through the date of the first lease available in BLM's archives, which is March 1984.

⁹⁴ This and the subsequent lease forms are available in BLM's archives, so the dates this lease and the subsequent leases were in effect can be determined with assurance and is not presumed.

lease form was in effect is certain with respect to the six 3100-11 forms that have been archived since 1984. Table 1 presents the results of this analysis.⁹⁵

Knowing how many still-active leases were issued during the time periods when each version of the lease was in effect or is presumed to have been in effect allows an analysis of what terms and conditions of a lease were effective at various times and thus allows consideration of what rights have been retained by BLM. While the varying periods when different lease forms were in effect or presumed to have been in effect makes it impossible to discern if there were periods of time when greater rates of leasing were occurring, it is apparent the majority of currently active leases were issued since 1984 when the best records of operative lease forms are available.

B. The Terms of Federal Onshore Oil and Gas Leases

The nine lease forms all start from the proposition that the federal government is granting the lessee the exclusive right to fully develop any oil and gas that may be found on the leasehold and that any necessary facilities that are required to extract the oil and gas can be constructed.⁹⁶ The 1954 lease states,

The lessee is granted the exclusive right and privilege to drill for, mine, extract, remove, and dispose of all the oil and gas deposits, except helium gas, in the lands leased, together with the right to construct and maintain thereupon, all . . . structures necessary to the full enjoyment thereof.⁹⁷

The 1965 and 1971 leases make the same provision.⁹⁸ Beginning with the March 1984 lease form it is stated that “[t]his lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described . . . together with the right to build and maintain necessary improvements thereupon.”⁹⁹ This same language is contained in the June 1988, October 1992, February 2003, July 2006, and October 2008 lease forms.¹⁰⁰

⁹⁵ These data were generated from BLM’s LR2000 database. Bureau of Land Mgmt., U.S. Dep’t of the Interior, Bureau of Land Management’s Land & Mineral Legacy Rehost 2000 System–LR 2000, <http://www.blm.gov/lr2000/> (last visited Apr. 18, 2010). A search was done for all currently active oil and gas leases within the different time frames by state in the 11 western states.

⁹⁶ In addition to granting the right to develop oil and gas, the leases also make provisions for other matters not directly implicating BLM’s retained rights relative to protection of the natural environment. These include provisions for payment of rentals, royalties, and bonds, among other things. See BUREAU OF LAND MGMT., *supra* note 83, at 1.

⁹⁷ BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 83, at 1.

⁹⁸ BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 83, at 1; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 83, at 1.

⁹⁹ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1.

¹⁰⁰ BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., *supra* note 83, at 1. The “exclusive right” to develop all of the oil and gas that might be found on

But in all of these lease forms the government also retains a number of rights allowing it to condition development so as to protect the environment. In the 1954 lease form, the lease is made "subject to" the provisions of the Mineral Leasing Act and reasonable regulations not inconsistent with the terms of the lease and the provisions in the lease.¹⁰¹ The lessee agrees to a number of terms and the lessor reserves several rights. The lessee agrees "[t]o take such reasonable steps as may be needed to prevent operations from unnecessarily" causing or contributing to soil erosion or damaging forage or timber growth, polluting waters, damaging crops, or damaging range improvements.¹⁰² It is also agreed that upon conclusion of operations the lessee will restore the surface to its former condition, and the lessor is permitted to prescribe the steps and restoration to be made.¹⁰³ The lessee further agrees that rental and royalty suspension may occur if the Secretary of the Interior finds such is necessary "for the purpose of encouraging the greatest ultimate recovery of oil or gas and in the interest of conservation of natural resources."¹⁰⁴ Moreover, the lessee agrees to "plug properly and effectively all wells . . . before abandoning the same."¹⁰⁵ Perhaps most significantly, it is agreed in section 4 of the 1954 lease

that the rate of prospecting and developing and the quantity and rate of production from the lands covered by this lease shall be subject to control in the public interest by the Secretary of the Interior, and in the exercise of his judgment the Secretary may take into consideration, among other things, Federal laws, State laws, and regulations issued thereunder.¹⁰⁶

The lessor also reserved the right to dispose of the surface of the leased lands if not necessary for the extraction of the oil and gas and the right "to dispose of any resource in such lands" if it would not "unreasonably interfere" with lease operations.¹⁰⁷

The 1965 lease provides that the lease is subject to the same conditions, that the lessee agrees to the same provisions, and that lessor has the same reserved rights.¹⁰⁸ The 1971 lease, too, makes these provisions, but the agreement to not unnecessarily damage enumerated natural resources is expanded to include agreeing not to pollute the air as well as water, and to

a lease should probably be viewed as creating a right for the lessee to ensure no other entity seeks to develop oil and gas on a lease, not as creating rights against the government that could prevent it from exercising its retained rights. An exclusive right is "[o]ne which only the grantee thereof can exercise, and from which all others are prohibited or shut out." BLACK'S LAW DICTIONARY 565 (6th ed. 1990).

¹⁰¹ BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2.

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88.

protecting fossil, historic, or prehistoric resources and other antiquities that are found.¹⁰⁹

Beginning with the March 1984 lease form, the form takes on what might be called its modern form, and it will be referred to as such henceforth.¹¹⁰ Many of the provisions in the 1954, 1965, and 1971 leases are continued, but often in somewhat modified form. In this modern form, following the statement of what the lease grants—the exclusive right to extract all of the oil and gas on a leasehold—there immediately follows a statement of what the lease is made “subject to.” The lease states,

Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior’s regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.¹¹¹

This same statement is made in the June 1988, October 1992, February 2003, July 2006, and October 2008 lease forms.¹¹²

There are several relevant lease terms in the modern lease form that the rights granted to the lessee are made subject to. In section 2 the provision allowing suspension of royalties is maintained. But now, rather than being available “for the purpose of encouraging the greatest ultimate recovery of oil or gas and in the interest of conservation of natural resources,”¹¹³ this action can be taken when necessary “to encourage the greatest ultimate recovery of the leased resources, or [as] is otherwise justified.”¹¹⁴ The agreement to allow the Secretary of the Interior to specify the rate of development is maintained but is slightly modified in section 4 of the modern lease forms: “Lessor reserves right to specify rates of development and production in the public interest . . . if deemed necessary for proper development and operation of area, field, or pool embracing these leased lands.”¹¹⁵ In section 7 of the modern lease forms it is stated that if the impacts from mining “would be substantially different or greater” than normal, “lessor reserves the right to deny approval of such operations.”¹¹⁶

¹⁰⁹ BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

¹¹⁰ See BUREAU OF LAND MGMT., *supra* note 83.

¹¹¹ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1.

¹¹² BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., *supra* note 83, at 1.

¹¹³ See, e.g., BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 1.

¹¹⁴ BUREAU OF LAND MGMT., *supra* note 83, at 2.

¹¹⁵ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 3; BUREAU OF LAND MGMT., *supra* note 83, at 3.

¹¹⁶ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84,

And in section 12 it is provided that when the leased lands are returned to the lessor, the lessee will reclaim the land as specified by the lessor and remove equipment and improvements not deemed necessary by the lessor for the preservation of producible wells.¹¹⁷ These same provisions are made in all of the modern lease forms.

But the most significant term in the modern lease forms relative to retained rights allowing protection of the natural environment is section 6 of the lease form. In the March 1984, June 1988, October 1992, and February 2003 forms, this term provides the following:

Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.¹¹⁸

Section 6 goes on to provide that prior to any surface disturbance, "lessee shall contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary."¹¹⁹ This section allows for inventories and studies "to determine the extent of impacts to other resources," although these apparently are limited to "minor inventories" or "short term special studies."¹²⁰ Section 6 concludes by requiring that if during the conduct of operations "threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee shall immediately contact the lessor" and "shall cease any operations that would result in the destruction of such species or objects."¹²¹ As indicated, these provisions appeared in the

at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 3; BUREAU OF LAND MGMT., *supra* note 83, at 3.

¹¹⁷ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1.

¹¹⁸ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 1; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 1.

¹¹⁹ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

¹²⁰ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

¹²¹ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

March 1984 through February 2003 lease forms; however, the July 2006 and October 2008 lease forms changed the language in Section 6.¹²²

In the July 2006 and October 2008 versions of the lease, where previously the word “shall” had been used in section 6 it was replaced with the word “must.”¹²³ So, for example, the prior requirement that lessee “shall” conduct operations so as to minimize adverse impacts was changed to a requirement that lessee “must” conduct operations to minimize such impacts.¹²⁴ And the former requirement that lessee “shall” take reasonable measures deemed necessary by lessor to accomplish this intent was replaced with a statement that lessee “must” take reasonable measures so as to accomplish the intent of minimizing adverse impacts.¹²⁵

The significance of this wording change may be debatable but is probably minimal. In construing the word shall, the United States Supreme Court offered that “[t]hough ‘shall’ generally means ‘must,’” the use, or misuse, of the word “shall” was apparent in the usage of some legal writers because they posited less-than-mandatory definitions of “shall.”¹²⁶ “Must” means to “be obliged or required by morality, law, or custom,”¹²⁷ and “shall” means something that will take place or exist in the future or an order, promise, requirement, or obligation.¹²⁸ Black’s Law Dictionary states that “must,” “like the word ‘shall,’ is primarily of mandatory effect,”¹²⁹ and that shall “is generally imperative or mandatory.”¹³⁰ It goes on to state that “shall” “in ordinary usage means ‘must’ and is inconsistent with a concept of discretion.”¹³¹ Standard works presenting the meaning of words as construed by the courts also indicate that “shall” and “must” are generally construed in a mandatory light.¹³²

¹²² Compare BUREAU OF LAND MGMT., 1984 LEASE FORM, supra note 84, at 2, BUREAU OF LAND MGMT., 1988 LEASE FORM, supra note 84, at 2, BUREAU OF LAND MGMT., 1992 LEASE FORM, supra note 84, at 2, and BUREAU OF LAND MGMT., 2003 LEASE FORM, supra note 84, at 2, with BUREAU OF LAND MGMT., 2006 LEASE FORM, supra note 84, at 3, and BUREAU OF LAND MGMT., supra note 83.

¹²³ Compare BUREAU OF LAND MGMT., 2006 LEASE FORM, supra note 84, at 3, and BUREAU OF LAND MGMT., supra note 83, at 3, with BUREAU OF LAND MGMT., 1984 LEASE FORM, supra note 84, at 2, BUREAU OF LAND MGMT., 1988 LEASE FORM, supra note 84, at 2, BUREAU OF LAND MGMT., 1992 LEASE FORM, supra note 84, at 2, and BUREAU OF LAND MGMT., 2003 LEASE FORM, supra note 84, at 2.

¹²⁴ Compare BUREAU OF LAND MGMT., 1984 LEASE FORM, supra note 84, at 2, BUREAU OF LAND MGMT., 1988 LEASE FORM, supra note 84, at 2, BUREAU OF LAND MGMT., 1992 LEASE FORM, supra note 84, at 2, and BUREAU OF LAND MGMT., 2003 LEASE FORM, supra note 84, at 2, with BUREAU OF LAND MGMT., 2006 LEASE FORM, supra note 84, at 3, and BUREAU OF LAND MGMT., supra note 83.

¹²⁵ Compare BUREAU OF LAND MGMT., 1984 LEASE FORM, supra note 84, at 2, BUREAU OF LAND MGMT., 1988 LEASE FORM, supra note 84, at 2, BUREAU OF LAND MGMT., 1992 LEASE FORM, supra note 84, at 2, and BUREAU OF LAND MGMT., 2003 LEASE FORM, supra note 84, at 2, with BUREAU OF LAND MGMT., 2006 LEASE FORM, supra note 84, at 3, and BUREAU OF LAND MGMT., supra note 83.

¹²⁶ *Gutierrez de Martinez v. Lamagno*, 515 U.S. 417, 432–33 n.9 (1995).

¹²⁷ THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1160 (4th ed. 2000).

¹²⁸ *Id.* at 1598.

¹²⁹ BLACK’S LAW DICTIONARY 1019 (6th ed. 1990).

¹³⁰ *Id.* at 1375.

¹³¹ *Id.*

¹³² See 27A WORDS AND PHRASES 663–90 (2007 & Supp. 2009) (presenting constructions of “must”); 39 *id.* at 173–229 (2006 & Supp. 2009) (presenting constructions of “shall”).

It is apparent from the nine versions of the lease reviewed that BLM has retained substantial rights allowing it to protect the natural environment despite having granted lessees a right to develop the oil and gas that might be found on a lease. The leases issued prior to 1984 appear to retain somewhat fewer or lesser rights than those issued after 1984, but even in these earlier leases the lessee agreed “[t]o take such reasonable steps” as are needed to prevent certain categories of resource damage.¹³³ And probably most significantly it was agreed by BLM and the lessee

that the rate of prospecting and developing and the quantity and rate of production . . . shall be subject to control in the public interest by the Secretary of the Interior, and in the exercise of his judgment the Secretary may take into consideration, among other things, Federal laws, State laws, and regulations issued thereunder.¹³⁴

After March 1984, section 6 of the lease form required that in the conduct of operations, the lessee was required to minimize adverse impacts to a number of resources and specified that reasonable measures deemed necessary by lessor could be specified to ensure this was accomplished, so long as consistent with the lease rights granted.¹³⁵ These reasonable measures could include, but were not limited to, modifications to the siting or design of facilities, timing of operations, and the specification of interim and final reclamation measures.¹³⁶ The modern lease forms continued to specify that the “[l]essor reserves the right to specify rates of development and production in the public interest.”¹³⁷ In the modern leases, the entire lease is made “subject to” applicable laws; the terms, conditions, and stipulations of the lease; the regulations and formal orders that are in place when the lease is issued; and later-adopted regulations and formal orders, if not inconsistent with the lease rights granted.¹³⁸ So again, all lease forms have retained a number of rights to the government that allow it to substantially protect the natural environment despite having issued a lease that grants the “exclusive right” to remove all of the oil and gas that might be found on a leasehold.

C. BLM's 43 C.F.R. § 3101.1-2 Regulation

Another important determinant of what rights and limitations have been created under a BLM onshore oil and gas lease besides the terms and conditions in the standard lease form are the provisions in the BLM leasing

¹³³ See, e.g., BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

¹³⁴ BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

¹³⁵ See, e.g., BUREAU OF LAND MGMT., *supra* note 83, at 3.

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.* at 1.

regulation found at 43 C.F.R. § 3101.1-2.¹³⁹ In this Part I will first present the language of the § 3101.1-2 regulation, then discuss its “reasonable measures” provision which mirrors that in section 6 of the modern lease form, and follow that with a consideration of further BLM guidance interpreting the § 3101.1-2 regulation.

1. The Provisions of the § 3101.1-2 Regulation

This regulation in its current form was promulgated on May 16, 1988.¹⁴⁰ Consequently, this regulation would not specifically or necessarily have been made applicable to leases issued prior to May 1988. But, as Table 1 shows, only twenty-nine percent of the leases that are currently in effect in the eleven western states were issued before this regulation was promulgated and seventy-one percent were issued after its adoption. The regulation provides in full that

[a] lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold subject to: Stipulations attached to the lease; restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed. To the extent consistent with lease rights granted, such reasonable measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. At a minimum, measures shall be deemed consistent with lease rights granted provided that they do not: require relocation of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year.¹⁴¹

In addition, BLM’s regulations define the term “operating right,” which is “the interest created out of a lease authorizing the holder of that right to enter upon the leased lands to conduct drilling and related operations, including production of oil or gas from such lands in accordance with the terms of the lease.”¹⁴²

2. Reasonable Measures

In addition to making a lease subject to stipulations and specific, nondiscretionary statutes, issues that will be addressed below,¹⁴³ the

¹³⁹ 43 C.F.R. § 3101.1-2 (2008).

¹⁴⁰ Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340, 17,352 (May 16, 1988).

¹⁴¹ 43 C.F.R. § 3101.1-2 (2008) (emphasis added).

¹⁴² Id. § 3100.0-5(d).

¹⁴³ See discussion *infra* Parts V.B–C.

§ 3101.1-2 regulation provides that “reasonable measures” may be required so as to minimize adverse impacts to the environment and other resources.¹⁴⁴ So long as consistent with the lease rights granted, these reasonable measures may include, “but are not limited to,” modification to siting and design of facilities, timing of operations, and specification of reclamation measures.¹⁴⁵ Given that modern versions of the lease form make these same provisions in section 6, it seems unlikely that “reasonable measures” that might be demanded would be inconsistent with the lease rights granted, so long as any oil and gas can still be extracted. And the term in older leases specifying that the rate of prospecting and development is subject to control “in the public interest” does not indicate that reasonable measures could not be required of operations on these older leases as well.

The provisions in the § 3101.1-2 regulation and section 6 of the modern lease appear to be complimentary and should be read together. However, the § 3101.1-2 regulation may attempt to shrink the potential scope of reasonable measures by providing that

[a]t a minimum, [reasonable] measures shall be deemed consistent with lease rights granted provided that they do not: require relocation of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year.¹⁴⁶

This provision, often called the “200-meter 60-day rule,” is sometimes cited as a limit to BLM’s ability to condition development. BLM or lessees sometimes claim that, in the absence of a stipulation or specific, nondiscretionary statute, the only “reasonable measures” that can be imposed are those in compliance with the 200-meter 60-day “rule.”¹⁴⁷ This restricted view of the regulation is unwarranted.

For one thing, the regulation is specific that these limited measures, which have been defined as consistent with the lease rights granted and thus

¹⁴⁴ 43 C.F.R. § 3101.1-2 (2008).

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ See, e.g., BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, BLM MANUAL HANDBOOK 3110-1, OIL AND GAS ADJUDICATION HANDBOOK: ISSUANCE OF LEASES §§ 3101.06.B, 3101.06.B.1, 3101.12 (1996) (on file with the author) (stating that conditions of approval will impose requirements “by not more than” the limitations in the 200-meter 60-day rule); PINEDALE FIELD OFFICE, BUREAU OF LAND MGMT., DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PINEDALE RESOURCE MANAGEMENT PLAN app. 7, at A7-1 (2007), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/planning/mups/pinedale/deis/appendices.Par.48971.File.dat/Appendix07.pdf> (“[T]he [standard lease terms] allow the authorized officer to move a well or other facility up to 200 meters or delay operations for up to 60 days in a year.”); Instruction Memorandum No. WY-2010-12 from State Dir., Wyo. State Office, Bureau of Land Mgmt., to Dist. Managers & Deputy State Dirs. 12 (Dec. 29, 2009), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/resources/efoia/IMS/2010.Par.61358.File.dat/wy2010-012.pdf> (presenting the BLM Wyoming state office Instruction Memorandum regarding sage-grouse conservation and stating, “BLM may, to some degree, exceed the siting and timing limitations set forth in 43 C.F.R. § 3101.1-2”).

are “reasonable,” are “a minimum” of what is consistent with lease rights.¹⁴⁸ Moreover, the final rulemaking, which addressed comments in response to the proposed rule about the definition of “reasonable measures,” clarifies the meaning of “reasonable” in the context of the § 3101.1-2 regulation.¹⁴⁹ BLM stated, “The final rulemaking provides that the Bureau, at a minimum, can require relocation of proposed operations by 200 meters and can prohibit new surface disturbance for a period of 60 days, and that such requirements are consistent with the lease rights granted.”¹⁵⁰ BLM then stated that “the authority of the Bureau to prescribe ‘reasonable,’ but more stringent, protection measures is not affected by the final rulemaking.”¹⁵¹

Quite simply, the 200-meter 60-day rule establishes a floor, not a ceiling, as to the reasonable measures BLM may require. The specific terms in section 6 of the standard lease form certainly do not limit BLM’s authority to just require reasonable measures that comply with the 200-meter 60-day rule, which the lease contract does not even mention. It may be worth noting that the modern version of the lease form—specifically the March 1984 version—predated the § 3101.1-2 regulation by at least four years, so BLM certainly developed the May 1988 § 3101.1-2 regulation in recognition of the existing provisions in its lease form that were in use at the time, namely those in section 6, which do not limit reasonable measures to just those stated in the 200-meter 60-day rule.¹⁵²

In considering supplemental mitigation measures required by BLM to protect the greater sage-grouse (*Centrocercus urophasianus*), the Interior Board of Land Appeals (IBLA) rejected an interpretation of the § 3101.1-2 regulation that would not allow reasonable measures beyond those mentioned in the 200-meter 60-day rule.¹⁵³ It stated, “[This] constrained interpretation of a ‘reasonable measure’ is at odds with the plain language of the regulation, which describes what measures ‘at a minimum’ are deemed consistent with lease rights, and does not purport to prohibit as unreasonable per se measures that are more stringent.”¹⁵⁴ What is reasonable should be determined by what is needed to minimize adverse impacts while still allowing access to any oil and gas, not the predetermined minimum limits mentioned in the 200-meter 60-day rule.

3. Further BLM Guidance on the § 3101.1-2 Regulation

After issuing the § 3101.1-2 regulation, BLM determined there was potential for confusion and disagreement about how the § 3101.1-2 regulation should be interpreted. In an Instruction Memorandum (IM) issued

¹⁴⁸ 43 CFR § 3101.1-2 (2008).

¹⁴⁹ Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340, 17,341 (May 16, 1988).

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² See *id.*; BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2.

¹⁵³ Yates Petroleum Corp., 176 I.B.L.A. 144, 156 (2008).

¹⁵⁴ *Id.*

on December 3, 1991, BLM attempted to clarify the requirements of the § 3101.1-2 regulation.¹⁵⁵ Using the term “reserved authority,” BLM stated that “[w]ithin this . . . authority, the BLM may impose additional mitigation measures [beyond stipulations] to ensure that proposed operations minimize adverse impacts to other resources” so long as consistent with lease rights granted.¹⁵⁶ More specifically, BLM determined that the requirement in the Federal Land Policy and Management Act of 1976 for BLM to “take any action necessary to prevent unnecessary or undue degradation of the [public] lands”¹⁵⁷ served as a basis to require reasonable measures in excess of the 200-meter 60-day rule.¹⁵⁸ Approaching imposition of reasonable measures through use of this FLPMA standard was seen as placing “the resolution of this issue clearly within the concept of striking the best multiple use balance.”¹⁵⁹ However, BLM then went on to narrow the application of this FLPMA statutory standard by imposing a requirement that the need for any reasonable measures required to comply with the unnecessary or undue degradation clause must be “clearly and convincingly documented” based on a site-specific analysis.¹⁶⁰

Under the terms of IM 92-67, its provisions were to be incorporated into BLM Manual MS-3101, and BLM has done this.¹⁶¹ The manual generally restates the language from the IM, providing that, among other things, “[t]he clear evidence and convincing need” for conditions of approval must be demonstrated on a site-specific basis.¹⁶² And, as was true in the IM, this requirement was focused on providing for compliance with FLPMA unnecessary or undue degradation clause, not any other statutory requirements.

The requirement for clear and convincing evidence made in the IM and the BLM manual creates an unwarranted hurdle for BLM’s exercise of its authority to require reasonable measures. The § 3101.1-2 regulation states that the basis for imposing reasonable measures is “to minimize adverse impacts to other resource values.”¹⁶³ This language is directly comparable to the language in section 6 of the standard lease form, which provides that the lessee shall (or must) conduct operations so as to minimize adverse impacts.¹⁶⁴ Moreover, the § 3101.1-2 regulation and section 6 of the lease form recognize modifications to facility siting and design and timing of operations are means to accomplish these reasonable measures, but options

¹⁵⁵ Instruction Memorandum No. 92-67 from Dir., Bureau of Land Mgmt., to All State Dirs. (Dec. 3, 1991) (on file with the author).

¹⁵⁶ *Id.* at 1.

¹⁵⁷ Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1732(b) (2006). The implications of the FLPMA requirement to prevent unnecessary or undue degradation will be considered further *infra* in Part V.B.3.

¹⁵⁸ Instruction Memorandum No. 92-67 from Dir. to All State Dirs., *supra* note 155, at 3.

¹⁵⁹ *Id.* at 2.

¹⁶⁰ *Id.*

¹⁶¹ *Id.* at 4; BUREAU OF LAND MGMT., *supra* note 147, § 3101.06.

¹⁶² BUREAU OF LAND MGMT., *supra* note 147, § 3101.06.B.2.

¹⁶³ 43 C.F.R. § 3101.1-2 (2008).

¹⁶⁴ BUREAU OF LAND MGMT., *supra* note 83, at 3.

“are not limited to” these measures.¹⁶⁵ The § 3101.1-2 regulation also explicitly states that the enumerated 200-meter 60-day rule provisions are “[a]t a minimum” of what is consistent with the lease rights. In the final rule adopting the § 3101.1-2 regulation, BLM stated, “[T]he authority of the Bureau to prescribe ‘reasonable,’ but more stringent, protection measures is not affected by the final rulemaking.”¹⁶⁶ Nowhere, other than in the IM and manual, is it indicated that the basis for imposing a reasonable measure that exceeds the 200-meter 60-day rule is found only in assuring compliance with the unnecessary or undue degradation clause of the FLPMA, and more importantly there is no indication the standard of proof should be the heightened clear and convincing evidence test specified in the IM and manual.

IBLA recently recognized BLM’s rights to condition postlease development pursuant to the § 3101.1-2 regulation and the unnecessary or undue degradation clause, holding that BLM could require post-lease conditions of approval that were not addressed in lease stipulations to protect sage-grouse.¹⁶⁷ IBLA determined that a claim that conditions of approval were limited to no more than the limits in the 200-meter 60-day rule was unsupported by the § 3101.1-2 regulation and that more stringent limitations were not inconsistent with lease rights.¹⁶⁸ In reaching this conclusion, IBLA did not mention any need for clear and convincing evidence to support BLM’s decision to require more stringent mitigation to protect the sage-grouse.¹⁶⁹ Accordingly, there is no underlying basis for requiring clear and convincing evidence before a reasonable measure can be required.¹⁷⁰

¹⁶⁵ 43 C.F.R. § 3101.1-2 (2008); BUREAU OF LAND MGMT., *supra* note 83, at 3.

¹⁶⁶ Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340, 17,341 (May 16, 1988).

¹⁶⁷ Yates Petroleum Corp., 176 I.B.L.A. 144, 155 (2008) (citing 43 C.F.R. § 3101.1-2 and Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1732(b) (2006)).

¹⁶⁸ *Id.* at 156 (“[T]he authority of the Bureau to prescribe ‘reasonable,’ but more stringent, protection measures is not affected by the final rulemaking.” (alteration in original) (quoting 53 Fed. Reg. at 17,340–41)).

¹⁶⁹ See *id.*

¹⁷⁰ IM 92-67 expired by its own terms on September 30, 1992. Instruction Memorandum No. 92-67 from Dir. to All State Dirs., *supra* note 155, at 1. That said, IMs can continue to be treated as operative by BLM even after they nominally expire. See, e.g., Yates Petroleum Corp., 176 I.B.L.A. at 159 n.16 (pointing out that in the request for state director review decision under consideration in that appeal, “IM No. WY-90-231 expired on Sept. 30, 1991, [but] it is BLM practice to continue to use the guidance contained in the memorandum”). BLM has sometimes continued to cite the need for clear and convincing evidence to support its ability to condition development long after IM 92-67 expired. See BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE JACK MORROW HILLS COORDINATED ACTIVITY PLAN/PROPOSED GREEN RIVER RESOURCE MANAGEMENT PLAN app. 4, at A4-1 (2004), available at http://www.blm.gov/pgdata/etc/medialib/blm/wy/field-offices/rock_springs/jmhcap/2004final/vol2.Par.9991.File.dat/106app04.pdf (stating that conditions of approval not provided for by stipulation must be documented through analysis that “must provide clear and convincing evidence showing that undue and unnecessary degradation would result if the [condition of approval] were not applied”). Consequently, IM 92-67 is of continuing concern; BLM Manual MS-3101 has no stated expiration date.

D. Summary of Rights Granted and Rights Retained Under the Modern Lease Form and the § 3101.1-2 Regulation

The § 3101.1-2 regulation expands on or elaborates on the rights that have been granted pursuant to a BLM oil and gas lease and provides further definition of what rights have been retained by BLM. If read with the provisions in the modern version of the standard lease form, it is apparent that three rights are granted pursuant to a BLM onshore oil and gas lease: 1) an “exclusive right” to remove all of the oil and gas on the leasehold;¹⁷¹ 2) the right to “use” as much of the leasehold as is “necessary” to recover all of the leased resource;¹⁷² and 3) the right to build and maintain “necessary” improvements to extract the leased resource.¹⁷³ Thus, the lessee has a right to exclude others from developing the lease during his removal of all of the oil and gas that might be found on the lease, a right to use no more of the lease than is “necessary” to retrieve all of the leased oil and gas, and a right to build only “necessary” improvements. Lessees have not been granted a right to develop the oil and gas in exactly the place they desire, the manner they desire, or on the exact timeline they may desire.

Conversely, when the § 3101.1-2 regulation is considered with the terms and conditions in the standard lease form operative since 1984, it is apparent BLM has retained a number of rights allowing it to limit or condition development. Under the modern versions of the standard lease form in effect since 1984 and the § 3101.1-2 regulation in effect since 1988, BLM has made development of the lease and removal of any oil and gas “subject to” a number of provisions that allow BLM to condition development, including the following:

- Applicable laws;¹⁷⁴
- Terms, conditions, and stipulations in the lease;¹⁷⁵
- Regulations and formal orders in effect when the lease is issued;¹⁷⁶
- Regulations and formal orders issued afterward, if not inconsistent with lease rights granted and specific provisions in the lease;¹⁷⁷
- Specific, nondiscretionary statutes;¹⁷⁸ and
- Reasonable measures.¹⁷⁹

¹⁷¹ BUREAU OF LAND MGMT., *supra* note 83, at 1.

¹⁷² 43 C.F.R. § 3101.1-2 (2008).

¹⁷³ BUREAU OF LAND MGMT., *supra* note 83, at 1.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.* at 1; see also 43 C.F.R. § 3101.1-2 (2008) (providing that the lease is made subject to “[s]tipulations attached to the lease”).

¹⁷⁶ BUREAU OF LAND MGMT., *supra* note 83, at 1.

¹⁷⁷ *Id.*

¹⁷⁸ 43 C.F.R. § 3101.1-2 (2008).

¹⁷⁹ *Id.*; see BUREAU OF LAND MGMT., *supra* note 83, at 3 (providing in section six that the lessee must take reasonable measures deemed necessary by the lessor to minimize adverse impacts).

This constellation of rights granted and rights retained that are stated in the lease contract and in the regulatory provision largely define the scope and nature of BLM's retained rights. As will be discussed next, these rights allow BLM to substantially protect the natural environment when oil and gas development is proposed on an onshore oil and gas lease.

V. BLM'S RETAINED RIGHTS UNDER A FEDERAL ONSHORE OIL AND GAS LEASE

Under the terms of the modern lease form and the 43 C.F.R. § 3101.1-2 regulation, BLM retains several rights because the lease is made "subject to" these reservations of authority. The lease rights granted are subject to: applicable laws; terms, conditions, and stipulations of the lease; regulations and formal orders in effect when the lease is issued; regulations and formal orders issued afterward, if not inconsistent with lease rights granted or provisions in the lease; stipulations attached to the lease; specific, nondiscretionary statutes; and reasonable measures that BLM might require.¹⁸⁰ While older leases may not as clearly have been made subject to these conditions, the rights granted in those leases are also conditioned to a significant degree.

In this Part, after a brief review of the Supreme Court's view of the rights retained under a federal onshore oil and gas lease, I will review each of the conditions on the right to develop oil and gas. Based on this review, it will be clear BLM has very substantial retained rights that allow it to regulate oil and gas development so as to protect the natural environment.

A. The Supreme Court's View of the Rights Granted and Rights Retained Under a Federal Onshore Oil and Gas Lease

The scope of retained rights under a federal onshore oil and gas lease was outlined many years ago by the Supreme Court in *Boesche v. Udall*,¹⁸¹ where the Court stated:

Unlike a land patent, which divests the Government of title, Congress under the Mineral Leasing Act has not only reserved to the United States the fee interest in the leased land, but has also subjected the lease to exacting restrictions and continuing supervision by the Secretary. . . . [The Secretary] may prescribe, as he has, rules and regulations governing in minute detail all facets of the working of the land. In short, a mineral lease does not give the lessee anything approaching the full ownership of a fee patentee, nor does it convey an unencumbered estate in the minerals.¹⁸²

¹⁸⁰ 43 C.F.R. § 3101.1-2 (2008); BUREAU OF LAND MGMT., *supra* note 83, at 1.

¹⁸¹ 373 U.S. 472 (1963).

¹⁸² *Id.* at 477-78 (citation omitted) (holding that the Secretary of the Interior has broad administrative powers allowing him to cancel a lease he determined was improperly issued); accord *Udall v. Tallman*, 380 U.S. 1, 19 (1965) ("An oil and gas lease does not vest title to the

Accordingly, it is clear BLM has very expansive retained rights under a federal onshore oil and gas lease that allow it to condition development so as to protect natural resources and values. The recognition by the Supreme Court of these expansive rights retained by the government occurred long before the modern lease form was put in place in 1984 with its explicit list of authorities a lease is made “subject to.”

B. Applicable Laws and Specific, Nondiscretionary Statutes

Modern leases issued since March 1984 are made subject to “applicable laws” under the terms of the lease form.¹⁸³ In addition, leases issued since May 1988 are made subject to “restrictions deriving from specific, nondiscretionary statutes” under the terms of the § 3101.1-2 regulation.¹⁸⁴ “Applicable laws” would seem to be a category of statutes the lease has been made subject to that is broader than “specific, nondiscretionary statutes.” I believe that both of these provisions guide what retained rights BLM enjoys, not one to the exclusion of the other, at least with regard to the 34,367 currently active leases in the eleven western states issued since June 1988, when both reservations were in place (see Table 1).

BLM’s commentary when it adopted the § 3101.1-2 regulation indicates it was not the intent of this regulation to replace or supplant the “applicable laws” language in the lease form.¹⁸⁵ While the commentary focuses on the “reasonable measures” language in the regulation, the overall thrust of this regulation was to “establish the measures over which the Bureau has clear authority” and to “establish minimum parameters” for purposes of specifying site-specific mitigation measures.¹⁸⁶ Consequently, the “specific, nondiscretionary statute” language in the regulation is probably best interpreted as setting a baseline from which BLM has “clear authority,” and not an attempt to exclude other applicable laws that are perhaps less mandatory. Furthermore, BLM’s leasing regulations provide that “[a] lease shall be issued only on the standard form approved by the Director” of BLM.¹⁸⁷ This regulation was also adopted on May 16, 1988, when the current version of the § 3101.1-2 regulation was adopted,¹⁸⁸ so it seems unlikely BLM was attempting to nullify the “applicable laws” language that was already in its existing lease forms through use of the “specific, nondiscretionary statutes” language in the § 3101.1-2 regulation. The “applicable laws” language was present in leases from March 1984 onward, so if BLM intended

lands in the lessee.” (citing *Boesche*, 373 U.S. at 477–78)); *id.* at 22 (stating that an oil and gas lease gives the lessee “no right in the land itself”).

¹⁸³ See BUREAU OF LAND MGMT., *supra* note 83, at 1.

¹⁸⁴ 43 C.F.R. § 3101.1-2 (2008).

¹⁸⁵ Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340, 17,341–42 (May 16, 1988).

¹⁸⁶ *Id.* at 17,341.

¹⁸⁷ 43 C.F.R. § 3101.1-1 (2008).

¹⁸⁸ 53 Fed. Reg. at 17,352.

to modify or limit this language in the § 3101.1-2 regulation adopted in May 1988 it would have done so explicitly.

Because I view most currently active leases as being subject to both applicable laws and specific, nondiscretionary statutes, I will review both of these kinds of laws. Myriad laws are applicable to environmental protection on a leasehold, and there are several statutes that are specific and nondiscretionary. Some of these laws have been in place for many years—one was enacted prior to the Mineral Leasing Act—and thus would apply to all or most active leases.¹⁸⁹ Many were enacted in the 1960s and 1970s, and thus would have been laws in place when both the “applicable laws” language was introduced in March 1984 and when the “specific, nondiscretionary statutes” language was introduced in May 1988.¹⁹⁰ Thus, many of the laws that will be discussed below at a minimum help define BLM’s retained rights on the 35,256 out of 48,342 currently active leases in the eleven western states that have been issued since March 1984 (see Table 1).¹⁹¹

1. The Mineral Leasing Act

As discussed, the Mineral Leasing Act provides for the “disposition” of oil and gas through a leasing system.¹⁹² The Mineral Leasing Act also contains several other provisions that are applicable to oil and gas development that implicate environmental protection, and one provision appears to be specific and nondiscretionary.

First, “[e]ach lease shall contain provisions for the purpose of insuring the exercise of reasonable diligence, skill, and care in the operation of said property.”¹⁹³ The courts do not appear to have interpreted the meaning of the word “care” in this passage, but it could allow for protection of the natural environment in the operation of a lease.¹⁹⁴ Second, “[t]he Secretary of the Interior is authorized to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of this [Act], also to fix and determine the boundary lines of any structure, or oil or gas field.”¹⁹⁵ The courts have recognized this provision grants broad authority to the Secretary of the Interior to regulate oil and gas development.¹⁹⁶ It obviously allows great

¹⁸⁹ See *infra* Part V.B.1–6.

¹⁹⁰ See *infra* Part V.B.1–6.

¹⁹¹ But see BUREAU OF LAND MGMT., *supra* note 147, § 3101.12.B (stating that with respect to specific, nondiscretionary laws, “the requirements of the law shall be met by all oil and gas leases regardless of when the leases were issued”).

¹⁹² Mineral Leasing Act, 30 U.S.C. §§ 181, 226(a)–(c) (2006); see discussion *supra* Parts II, III.A–B.

¹⁹³ 30 U.S.C. § 187 (2006) (emphasis added).

¹⁹⁴ However, the Supreme Court said in a case involving leases “located in a mouth of the Mississippi River” in Louisiana that the Mineral Leasing Act “controls in some measure the actual use of the leased tract, to promote goals such as conservation and safety,” but did not identify particular language in 30 U.S.C. § 187 supporting this view. *Wallis v. Pan Am. Petroleum Corp.*, 384 U.S. 63, 64, 69 (1966).

¹⁹⁵ 30 U.S.C. § 189 (2006).

¹⁹⁶ See *Arch Mineral Corp. v. Lujan*, 911 F.2d 408, 415 (10th Cir. 1990) (recognizing in a coal leasing case that § 189 “is a broad grant of authority”); *Getty Oil Co. v. Clark*, 614 F. Supp.

discretion in rulemaking, and the regulations applicable to oil and gas leasing and lease operations will be discussed below.¹⁹⁷ But the additional authority to “determine the boundary lines of any structure, or oil or gas field”¹⁹⁸ could directly allow for environmental protection by authorizing BLM to specify the locations of structures and oil and gas fields. A third reservation of authority provided by the Mineral Leasing Act is that “[t]he Secretary of the Interior, for the purpose of encouraging the greatest ultimate recovery of [leasable minerals], and in the interest of conservation of natural resources, is authorized to waive, suspend, or reduce the rental, or minimum royalty, or reduce the royalty on an entire leasehold.”¹⁹⁹ In *Copper Valley Machine Works, Inc. v. Andrus*²⁰⁰ and *Getty Oil Co. v. Clark*,²⁰¹ the courts recognized and approved the government’s authority to suspend leases so as to conserve environmental resources based on this statutory provision.²⁰²

And in what is likely a specific, nondiscretionary provision, the Mineral Leasing Act requires that “[t]he Secretary of the Interior . . . shall regulate all surface-disturbing activities conducted pursuant to any lease issued under this chapter, and shall determine reclamation and other actions as required in the interest of conservation of surface resources.”²⁰³ This addition to the Mineral Leasing Act was adopted in 1987 in the Federal Onshore Oil and Gas Leasing Reform Act (FOOGLRA).²⁰⁴ Accordingly, this provision may only create retained rights on leases issued after 1987. But even if this is true, approximately 34,367 of the 48,342 currently active leases in the eleven western states are subject to this provision (see Table 1).

904, 916 (D. Wyo. 1985) (“This provision grants the Secretary broad powers and authority commensurate with the broad responsibilities imposed upon his office.”), *aff’d sub nom. Texaco Producing, Inc.*, 84 F.2d 776 (10th Cir. 1988).

¹⁹⁷ See discussion *infra* Part V.D.1.a-b.

¹⁹⁸ 30 U.S.C. § 189 (2006).

¹⁹⁹ *Id.* § 209 (emphasis added); see also 43 C.F.R. § 3103.4-4 (2008) (providing a companion regulatory provision authorizing suspension of all operations and production on a lease “in the interest of conservation of natural resources”).

²⁰⁰ 653 F.2d 595 (D.C. Cir. 1981).

²⁰¹ 614 F. Supp. 904 (D. Wyo. 1985).

²⁰² *Copper Valley Machine Works, Inc.*, 653 F.2d at 600 (determining that the “ordinary meaning” of the term “in the interest of conservation” in § 209 of the Mineral Leasing Act allows suspension of operations so as to avoid environmental harm); *Getty Oil Co.*, 614 F. Supp. at 916–17 (holding § 189 and § 209 of the Mineral Leasing Act provide broad grants of authority allowing conditioning of development to protect the environment, even allowing denial of drilling operations to protect wilderness values when a suspension is requested by the lessee).

²⁰³ 30 U.S.C. § 226(g) (2006) (emphasis added) (requiring further that a “plan of operations” exist before a drilling permit can be issued and that bonding be in place “to ensure the complete and timely reclamation of the lease tract, and the restoration of any lands or surface waters adversely affected by lease operations after the abandonment or cessation of oil and gas operations on the lease”).

²⁰⁴ Federal Onshore Oil and Gas Leasing Reform Act of 1987, Pub. L. No. 100-203, § 5102(g), 101 Stat. 1330, 1330-257 to -258 (codified as amended at 30 U.S.C. § 226(g) (2006)); see *supra* notes 19–20 and accompanying text (discussing the enactment of FOOGLRA).

2. The National Environmental Policy Act

Although it is well settled that NEPA does not mandate particular results to protect the environment but rather prescribes the necessary process for environmental review, NEPA is also referred to as our nation's basic environmental charter.²⁰⁵ NEPA provides that "to the fullest extent possible" the laws and policies of this country are to be interpreted and administered in accordance with the policies set forth in NEPA, which include environmental protection goals.²⁰⁶ In carrying out the policy of NEPA, agencies must "use all practicable means" consistent with other considerations of national policy to achieve six specified ends aimed at environmental protection.²⁰⁷ The Council on Environmental Quality regulations implementing NEPA reinforce the obligation to pursue protection of the natural environment that NEPA mandates.²⁰⁸

While NEPA may not be specific and nondiscretionary, there is no doubt it is applicable to oil and gas development decision making on BLM lands. The prominent role NEPA plays at the leasing stage will be discussed *infra* in Part VII.D. However, the courts also recognize that the purposes and goals of NEPA control BLM's oil and gas development decisions. In *Getty Oil Co.*, the court determined that "[t]he Secretary [of the Interior] is not only permitted, but is required, to take environmental values into account in carrying out his regulatory functions [related to oil and gas development], unless there is a clear and unavoidable statutory authority prohibiting the Secretary from complying with NEPA's mandate."²⁰⁹

In a case originating in an important natural area in Michigan that included brown trout (*Salmo trutta*) waters described as perhaps "the best east of the Rockies," the court considered BLM's and the

²⁰⁵ See *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348, 350 (1989) (stating that "[s]ection 101 of NEPA declares a broad national commitment to protecting and promoting environmental quality," but holding "it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process"); 40 C.F.R. § 1500.1 (2009) (providing that NEPA "is our basic national charter for protection of the environment").

²⁰⁶ National Environmental Policy Act of 1969, 42 U.S.C. § 4332 (2006). The continuing policy of the federal government is "to use all practicable means and measures" to achieve three stated goals, one of which is "to create and maintain conditions under which man and nature can exist in productive harmony." *Id.* § 4331(a).

²⁰⁷ *Id.* § 4331(b) (providing that all practicable means are to be used to achieve the ends of fulfilling responsibilities to succeeding generations, assuring pleasing surroundings, attaining the widest range of beneficial uses of the environment without undesirable and unintended consequences, preserving our national heritage, achieving balance that permits high standards of living and sharing of amenities, and enhancing the quality of renewable resources and achieving maximum recycling of depletable resources).

²⁰⁸ See, e.g., 40 C.F.R. § 1500.2 (2009) ("Federal agencies shall to the fullest extent possible . . . [u]se all practicable means . . . to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment.").

²⁰⁹ *Getty Oil Co.*, 614 F. Supp. 904, 920 (D. Wyo. 1985) (citing *Flint Ridge Dev. Co. v. Scenic Rivers Ass'n*, 426 U.S. 776, 787-88 (1976), *aff'd sub nom. Texaco Producing, Inc.*, 840 F.2d 776 (10th Cir. 1988); *Grindstone Butte Project v. Kleppe*, 638 F.2d 100, 103 (9th Cir. 1981); *Detroit Edison Co. v. U.S. Nuclear Reg. Comm'n*, 630 F.2d 450 (6th Cir. 1980)).

Forest Service's obligations under NEPA when lease development activities are pursued, in this case approval of exploratory drilling.²¹⁰ The Forest Service's no significant impact determination allowing it to avoid preparation of an EIS was arbitrary and capricious because it failed to adequately consider four of the "intensity" factors for determining environmental significance that the Council on Environmental Quality NEPA regulations say should be considered.²¹¹

The range of alternatives considered in the EA underlying the approval of this project was also deficient. First, the no action alternative of not permitting drilling was improperly rejected from full consideration because the Forest Service felt it was obligated to approve drilling.²¹² But the court held that "none of the cited authorities [mandate] approval of proposed mineral extraction, forecloses a decision of No Action, or places the Forest Service's objectives at odds with environmental preservation."²¹³ Moreover, in considering BLM's regulation at 43 C.F.R. § 3161.2, which directs the authorized officer to require that operations protect environmental quality and which will be discussed in more detail below,²¹⁴ the court held that "[t]he plain language of the regulation makes [it] clear that approval is not appropriate in all cases, particularly cases where the project poses a threat to environmental quality."²¹⁵ Second, the court held that the range of alternatives considered was deficient "because it impermissibly limited the range of alternatives to only those that would meet [the project proponent's] project objectives, rather than alternatives that might better serve Forest Service goals."²¹⁶

However, the court rejected a claim that the regulation at 43 C.F.R. § 3161.2, which again will be discussed in more detail below, was violated by the Forest Service's approval of the project.²¹⁷ The basis for this holding was the court's conclusion that violating NEPA did not demonstrate a violation of BLM's substantive environmental protection regulation.²¹⁸ Compliance with BLM's oil and gas operations regulations relating to environmental protection obligations was also considered in a case that originated in New Mexico; this case will be considered *infra* in Part V.D.1.b.

²¹⁰ *Anglers of the Au Sable v. U.S. Forest Serv. (Au Sable)*, 565 F. Supp. 2d 812, 815, 818 (D. Mich. 2008).

²¹¹ *Id.* at 824–33 (identifying issues related to uniqueness, controversy and uncertainty; potential for setting precedent and cumulative impacts; and impacts to endangered species as having been insufficiently considered); see 40 C.F.R. § 1508.27(b)(1)–(10) (2009) (presenting the 10 Council on Environmental Quality intensity factors that guide determination of whether an agency action will significantly affect the environment, and thus whether an EIS needs to be prepared rather than a less rigorous EA).

²¹² *Au Sable*, 565 F. Supp. 2d at 834.

²¹³ *Id.*

²¹⁴ See discussion *infra* Part V.D.1.b.

²¹⁵ *Au Sable*, 565 F. Supp. 2d at 835.

²¹⁶ *Id.* at 836.

²¹⁷ *Id.* at 840 (citing 43 C.F.R. § 3161.2 (2008), which provides that the BLM authorized officer is directed to require that operations protect natural resources and environmental quality).

²¹⁸ *Id.*

Given this precedent, it is clear that when operations are proposed on a lease, BLM must interpret and implement its obligations in light of the policies established by NEPA, particularly if the lease was issued after 1969 when NEPA was enacted.²¹⁹ NEPA is an “applicable law” that a lease is “subject to.”²²⁰

But as explained above, the role of NEPA at the APD stage of oil and gas development has recently been reduced due to the availability of “categorical exclusions” from NEPA compliance that were created by the Energy Policy Act of 2005.²²¹ Twenty-eight percent of the APDs that BLM approved between 2006 and 2008 were relieved of further NEPA compliance through the use of these categorical exclusions.²²² But categorical exclusions should not be viewed as completely eliminating application of NEPA in the oil and gas development process. These exclusions are available under five specified circumstances, and two of the conditions require that there has been prior NEPA compliance before an exclusion can be invoked.²²³ And in the majority of field offices, any oil and gas development will occur pursuant to an RMP that was developed in compliance with NEPA.²²⁴ Consequently, NEPA remains an “applicable law” that leases are made “subject to.”

3. The Federal Land Policy and Management Act

FLPMA, BLM’s organic act, establishes policy and requirements to protect the natural environment, including the policy that

the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.²²⁵

²¹⁹ National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. §§ 4321–4347 (2006)).

²²⁰ See discussion *supra* Parts IV.D, V.A.

²²¹ See *supra* note 57 and accompanying text.

²²² See *supra* note 57 and accompanying text.

²²³ Energy Policy Act of 2005, 42 U.S.C. § 15942(b) (2006) (making provisions in subdivisions 1 and 3 that require prior NEPA compliance before the enumerated activity can be categorically excluded from further NEPA compliance).

²²⁴ See National Environmental Policy Act of 1969, 42 U.S.C. § 4332 (2006) (requiring compliance with NEPA for major federal actions significantly affecting the quality of the human environment); Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1712 (2006) (requiring BLM to develop land use plans); 43 C.F.R. § 1601.0-6 (2008) (“Approval of a resource management plan is considered a major Federal action significantly affecting the quality of the human environment.”).

²²⁵ 43 U.S.C. § 1701(a)(8) (2006).

There is no doubt FLPMA is an applicable law that leases have been made subject to, at least if the lease was issued after 1976, which includes the majority of currently active leases in the eleven western states (see Table 1).

While FLPMA also establishes a policy that “recognizes the Nation’s need for domestic sources of minerals . . . including implementation of the Mining and Minerals Policy Act of 1970 as it pertains to the public lands,”²²⁶ it seems clear the commodity development and environmental protection policies must be viewed as companion goals. Under FLPMA, BLM is required to manage the public lands under a multiple use and sustained yield mandate,²²⁷ which requires, among other things, the

harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.²²⁸

And most importantly, FLPMA requires that “[i]n managing the public lands the Secretary [of the Interior] shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.”²²⁹ There is little doubt that BLM views this provision as a specific, nondiscretionary statute.²³⁰

FLPMA’s mandate to prevent unnecessary or undue degradation imposes dual action requirements on BLM. It must take any action needed to prevent both unnecessary degradation as well as undue degradation of the public lands. This dual obligation was confirmed in *Mineral Policy Center v. Norton*.²³¹ Addressing this requirement, the court held that “Congress’s intent was clear: Interior is to prevent, not only unnecessary degradation, but also degradation that, while necessary to mining, is undue or excessive.”²³² While the unnecessary degradation prong may only prevent activities that are not generally recognized or used to pursue mining operations, the undue degradation prohibition establishes a further requirement to prevent activities that would unduly harm or degrade the public land. As stated by

²²⁶ Id. § 1701(a)(12) (citation omitted); see *infra* text accompanying notes 283–84.

²²⁷ 43 U.S.C. § 1732(a) (2006) (“The Secretary shall manage the public lands under principles of multiple use and sustained yield, in accordance with the land use plans . . .”).

²²⁸ Id. § 1702(c); see also id. § 1702(h) (defining “sustained yield”).

²²⁹ Id. § 1732(b).

²³⁰ See BUREAU OF LAND MGMT., *supra* note 147, §§ 3101.06.B.2, 3101.06.B.2.a, 3101.06.B.3, 3101.12.A, 3101.13.A (making references to the unnecessary or undue degradation clause as being a basis for conditioning development, including statements that it “is within the terms of the lease, because all leases are subject to applicable laws and regulations” and “mitigation required to protect the lands from unnecessary and undue degradation is consistent with the lease rights granted”); Instruction Memorandum No. 2003-234 from Dir., Bureau of Land Mgmt., to All Field Officials (July 28, 2003) (on file with author) (stating that conditions of approval are not to exceed the limitations in the lease terms and conditions “unless warranted to prevent unnecessary and undue degradation or meet other regulatory requirements”).

²³¹ 292 F. Supp. 2d 30, 42 (D.D.C. 2003).

²³² Id. at 43.

the court, “FLPMA, by its plain terms, vests the Secretary of the Interior with the authority—and indeed the obligation—to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land.”²³³

BLM has adopted regulations that define unnecessary or undue degradation (UUD) for purposes of hardrock mining pursuant to the General Mining Law,²³⁴ but has no regulations that define UUD relative to oil and gas development. But one court agreed that “[a] reasonable interpretation of the word ‘unnecessary’ is that which is not necessary for mining. ‘Undue’ is that which is excessive, improper, immoderate or unwarranted.”²³⁵ And IBLA determined that “Congress . . . recognized that the mere act of approving oil and gas development does not constitute unnecessary or undue degradation under [the] FLPMA, and that something more than the usual effects anticipated from such development, subject to appropriate mitigation, must occur for degradation to be ‘unnecessary or undue.’”²³⁶ Despite these limited interpretations of the UUD clause, there is no doubt that this provision is specific and nondiscretionary and thus its requirements must be complied with when lease development is proposed.²³⁷

4. The Endangered Species Act

The Endangered Species Act of 1973 (ESA),²³⁸ which of course seeks to protect threatened or endangered species listed under the Act, calls for special mention. BLM may recognize this law more than any other as being a “specific, nondiscretionary statute,” which thus guides (or limits) its management of oil and gas leases to a degree perhaps not reflected in its decision making for other resources.²³⁹ The ESA was enacted in 1973, and thus, at a minimum, is applicable to the roughly 38,000 currently active leases in the eleven western states issued since 1973 (see Table 1). There is no doubt the ESA’s section 7 “jeopardy standard” and its section 9 prohibition on taking endangered species are specific and nondiscretionary

²³³ *Id.* at 42.

²³⁴ 43 C.F.R. subpt. 3809 (2008) (presenting BLM’s hardrock mining regulations). “Unnecessary or undue degradation” is defined at *id.* § 3809.5.

²³⁵ *Utah v. Andrus*, 486 F. Supp. 995, 1005 n.13 (D. Utah 1979) (quoting Brief for American Mining Congress as Amicus in Opposition to the United States’ Request for Permanent Injunction at 9, *Utah v. Andrus*, 486 F. Supp. 995 (Nos. C 79-0037, C 79-0307)).

²³⁶ Biodiversity Conservation Alliance, 174 I.B.L.A. 1, 4–8 (2008) (applying a rational basis standard to determine whether BLM’s determination that a project would not cause UUD was permissible).

²³⁷ See discussion *supra* Part IV.C.3 (reviewing the guidance in IM 92-67 and BLM Manual MS-3101 as to reasonable measures developed to comply with the UUD clause).

²³⁸ 16 U.S.C. §§ 1531–1544 (2006).

²³⁹ See generally BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, BLM MANUAL MS-6840, SPECIAL STATUS SPECIES MANAGEMENT (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.43545.File.dat/6840.pdf (presenting BLM’s special status species manual, MS-6840, including policy regarding the ESA).

provisions.²⁴⁰ In addition, the Act requires the Secretary of the Interior to further the purposes of the ESA, including conserving the ecosystems upon which listed species depend and providing for their conservation.²⁴¹ Given these mandatory provisions, there is no doubt BLM has the authority, and in fact the obligation, to ensure compliance with the ESA when it makes development decisions related to federal oil and gas leases that could affect listed species.

The ESA establishes a number of requirements intended to foster the conservation of listed species, particularly regarding the prohibition under section 7 on federal actions that cause jeopardy to the continued existence of listed species.²⁴² Under these provisions, an agency can be required to prepare a biological assessment that considers the effects of an agency action on a listed species and engage in consultation with the United States Fish and Wildlife Service (FWS) regarding the effects of the action.²⁴³ Consultation can result in an FWS biological opinion specifying mandatory terms and conditions for any incidental take of a listed species, recommended conservation measures intended to further protection and recovery of the species, and even a “jeopardy opinion,” which can effectively preclude the action.²⁴⁴

The courts have considered the requirements of the ESA in the context of the leasing decision in areas where listed species such as grizzly bears (*Ursus arctos horribilis*) and spectacled eiders (*Somateria fischeri*) exist.²⁴⁵ Consultation with FWS must occur at the leasing stage, and the consultation must consider not only the effects of leasing on listed species, but also “all phases of the agency action, which includes post-leasing activities.”²⁴⁶

²⁴⁰ See 16 U.S.C. § 1536(a)(2) (2006) (“Each Federal agency shall . . . insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary . . . to be critical”); id. § 1538(a)(1)(B) (making it unlawful for any person to “take any [endangered] species within the United States or the territorial sea of the United States”); see also *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 173 (1978) (“One would be hard pressed to find a statutory provision whose terms were any plainer than those in § 7 of the Endangered Species Act. Its very words affirmatively command all federal agencies ‘to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence’ of an endangered species or ‘result in the destruction or modification of habitat of such species’ This language admits of no exception.” (alteration in original) (citation omitted) (quoting 16 U.S.C. § 1536 (1976))).

²⁴¹ 16 U.S.C. § 1536(a)(1) (2006) (“The Secretary [of the Interior] shall review other programs administered by him and utilize such programs in furtherance of the purposes of this chapter.”); id. § 1531(b) (providing that two purposes of the ESA are to provide a means for the conservation of ecosystems upon which listed species depend, and to provide a program for the conservation of listed species).

²⁴² Id. § 1536(a)(2).

²⁴³ Id. § 1536(c).

²⁴⁴ See id. § 1536(a)(3), (b)–(c); see also 50 C.F.R. § 402 (2008) (presenting FWS’s biological assessment, consultation, and biological opinion regulations).

²⁴⁵ See, e.g., *N. Alaska Envtl. Ctr. v. Kempthorne*, 457 F.3d 969, 981 (9th Cir. 2006); *Conner*, 848 F.2d 1441, 1453–54 (9th Cir. 1988).

²⁴⁶ *Conner*, 848 F.2d at 1453–54 (holding that failure to prepare a “comprehensive” biological opinion considering all stages of oil and gas development failed to adequately consider the

In a challenge to the sale of sixteen lease parcels in an area of Colorado where the threatened hookless cactus (*Sclerocactus glaucus*) occurred, the court held BLM's consultation with FWS was inadequate because the consultation failed to consider the full "action area" encompassed by all sixteen parcels, having considered only the nine parcels where the cactus occurred, and thus not recognizing potential indirect effects to the species.²⁴⁷ But other courts have held that ESA challenges to leasing were not ripe for judicial resolution, and thus denied motions for summary judgment.²⁴⁸ In *Wyoming Outdoor Council v. Bosworth*, however, the court recognized the ESA is a specific, nondiscretionary statute.²⁴⁹

5. Other Laws Applicable to Protection of the Public Lands

Besides these four overarching statutes, there are other laws that are at least applicable to federal oil and gas leases, and some are in all likelihood specific and nondiscretionary. In the interest of space I will not discuss these laws in detail but will note some of them:

- Under section 106 of the National Historic Preservation Act of 1966,²⁵⁰ BLM must take into account the effect of its undertakings on sites that are eligible for or included in the National Register of Historic Places.²⁵¹ And prior to approval of a federal undertaking that may

potential for jeopardizing listed species, which violated the ESA); *N. Alaska Envtl. Ctr.*, 457 F.3d at 981 (approving use of a leasing biological opinion based on a reasonable and foreseeable development scenario to meet the requirement to make projections of the impacts of production on protected species); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (holding a leasing biological opinion must consider postleasing activities, which was absent in this case, so the ESA was violated); see also *Mont. Wilderness Ass'n v. Fry*, 310 F. Supp. 2d 1127, 1150 (D. Mont. 2004) (holding the scope of the leasing action for ESA purposes "includes activities from leasing through post-production and abandonment," but this requirement was not met in this case). In 1992, the Director of BLM issued an Information Bulletin to all BLM State Directors in response to the decision in *Conner*. Information Bulletin No. 92-198 from Dir., Bureau of Land Mgmt., to All State Dirs. (Jan. 21, 1992) (on file with author). In this Bulletin BLM stated, "The simple rule coming out of the *Conner v. Burford* case is that we will comply with NEPA and ESA prior to leasing." *Id.* at 1. And, "[l]easing in areas where [listed species] are known to exist requires [FWS] Section 7 consultation." *Id.* at 2. Thus, BLM seems to view at least *Conner* as having application beyond the Ninth Circuit.

²⁴⁷ *Wilderness Soc'y v. Wisely*, 524 F. Supp. 2d 1285, 1304-06 (D. Colo. 2007) (holding also that NEPA compliance was insufficient because a no surface occupancy alternative for the leases had been improperly rejected).

²⁴⁸ *Wyo. Outdoor Council v. Bosworth*, 284 F. Supp. 2d 81, 90-93 (D.D.C. 2003) (holding in a case where earlier consultation had occurred when identifying areas that would be open for leasing, but which had not occurred when the decision to issue leases was made, that because BLM and the Forest Service retained authority to condition and even prohibit development, ESA challenges were not ripe); *Wyo. Outdoor Council v. Dornbeck*, 148 F. Supp. 2d 1, 10 (D.D.C. 2001) (holding ESA challenges not ripe because leases had been sold but not actually issued).

²⁴⁹ *Bosworth*, 284 F. Supp. 2d at 91.

²⁵⁰ 16 U.S.C. §§ 470-470x-6 (2006). Section 106 is found at *id.* § 470f.

²⁵¹ *Id.*

affect a National Historic Landmark, the agency must minimize harm to the landmark “to the maximum extent possible.”²⁵²

- The Archeological Resources Protection Act of 1979²⁵³ provides that “[n]o person may excavate, remove, damage, or otherwise alter or deface . . . any archeological resource located on public lands . . . unless such activity is pursuant to a permit” and also prohibits attempting to do so.²⁵⁴
- The Migratory Bird Treaty Act²⁵⁵ has been in place since 1918 and makes it unlawful to take, kill, or otherwise possess or interfere with a number of migratory bird species subject to treaties between the United States and several countries unless done under the governing regulations of the Secretary of the Interior.²⁵⁶ Similarly, the Bald and Golden Eagle Protection Act of 1940²⁵⁷ makes it illegal to take or otherwise possess or interfere with bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) unless done under permit.²⁵⁸
- The National Trails System Act of 1968²⁵⁹ established recreation, scenic, and historic trails.²⁶⁰ Section 7(i) allows regulation of the use and protection of the trails,²⁶¹ and particularly with respect to historic trails such as the Oregon Trail, the provisions of the National Historic Preservation Act may also apply. Provisions of the National Wild and Scenic Rivers Act of 1968²⁶² might be applicable to some federal oil and gas leases.²⁶³
- The Clean Air Act²⁶⁴ declared a national purpose to protect and enhance air quality so as to promote the public health and welfare and a national goal of protection of visibility in highly scenic Class I areas, which include many wilderness areas and national parks.²⁶⁵ It establishes a massive regulatory and permitting regime to ensure compliance with National Ambient Air Quality Standards for several “criteria” pollutants and provides for a number of other pollution control requirements.²⁶⁶ These requirements are primarily implemented by the states, but the Clean Air Act also provides that all federal agencies having jurisdiction over a property or facility

²⁵² Id. § 470h-2(f).

²⁵³ Id. §§ 470aa-470mm.

²⁵⁴ Id. § 470ee(a).

²⁵⁵ Id. §§ 703-712.

²⁵⁶ Id. §§ 703, 704.

²⁵⁷ Id. §§ 668-668d.

²⁵⁸ Id. §§ 668(a), 668a.

²⁵⁹ Id. §§ 1241-1251.

²⁶⁰ Id. § 1244(a).

²⁶¹ Id. § 1246(i).

²⁶² Id. §§ 1271-1287.

²⁶³ See id. § 1273(b).

²⁶⁴ 42 U.S.C. §§ 7401-7671q (2006).

²⁶⁵ Id. §§ 7401(b)(1), 7491(a)(1).

²⁶⁶ See id. §§ 7408(a), 7409 (establishing the National Ambient Air Quality Standards); id. § 7411 (establishing new source performance standards for stationary sources).

that may result in the discharge of air pollutants shall be subject to, and comply with, all requirements “respecting the control and abatement of air pollution in the same manner, and to the same extent as any nongovernmental entity.”²⁶⁷

- The Clean Water Act²⁶⁸ has as its objective attempting “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters,” and to achieve this objective it establishes goals that the discharge of water pollutants be eliminated, that fish and wildlife be protected, and that recreation be provided for in and on the water.²⁶⁹ Like the Clean Air Act, a massive regulatory and permitting regime primarily administered by the states was created.²⁷⁰ Under this regime several kinds of water quality standards or programs are created and enforced.²⁷¹ And using language that is the same as that found in the Clean Air Act, the Clean Water Act also makes its provisions for abatement of water pollution applicable to federal agencies “in the same manner, and to the same extent as any nongovernmental entity.”²⁷²
- Several federal statutes respecting the management, control, cleanup, and reporting of chemicals and hazardous wastes or substances have been enacted. These include the Resource Conservation and Recovery Act of 1976 (RCRA);²⁷³ the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA),²⁷⁴ also known as the Superfund; the Toxic Substances Control Act,²⁷⁵ and the Emergency Planning and Community Right-To-Know Act of 1986.²⁷⁶ Many of these statutes contain explicit exemptions for the oil and gas industry, and thus they may not be applicable laws relative to BLM oil and gas leases.²⁷⁷ Nevertheless, chemicals and hazardous waste are subject to controls by BLM; some of the authorities establishing these rights will be discussed.²⁷⁸ While these federal statutes may not be applicable laws in some cases, it is also

²⁶⁷ Id. § 7418(a).

²⁶⁸ Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2006).

²⁶⁹ Id. § 1251(a).

²⁷⁰ See, e.g., id. § 1311(a) (prohibiting the discharge of any pollutants except when in compliance with the Act); id. § 1342 (establishing the National Pollution Discharge Elimination System and allowing states to administer the permit program).

²⁷¹ See, e.g., id. § 1313(d) (requiring states to identify state waters and establish for each the “total maximum daily load” of pollutants); id. § 1342 (establishing the National Pollution Discharge Elimination System, which requires a permit for specified discharges); id. § 1365 (authorizing citizen suits against any person for violations of an effluent standard or limitation).

²⁷² Id. § 1323(a).

²⁷³ 42 U.S.C. §§ 6901–6992k (2006) (amending Solid Waste Disposal Act, Pub. L. No. 89-272, 79 Stat. 992 (1965)).

²⁷⁴ 42 U.S.C. §§ 9601–9675 (2006).

²⁷⁵ 15 U.S.C. §§ 2601–2692 (2006).

²⁷⁶ 42 U.S.C. §§ 11001–11050 (2006).

²⁷⁷ See generally Env’tl. Prot. Agency, Crude Oil and Natural Gas Waste, <http://www.epa.gov/osw/nonhaz/industrial/special/oil/index.htm> (last visited Apr. 18, 2010) (presenting provisions and policies related to exploration, development, and production of oil and gas under RCRA).

²⁷⁸ See *infra* Part VIII.D.

apparent there are provisions dealing with hazardous wastes that are applicable.

- Even noise pollution has come to the attention of Congress. Congress has found that inadequately controlled noise presents a danger to public health and welfare and has declared a policy “to promote an environment for all Americans free from noise that jeopardizes their health or welfare.”²⁷⁹ And thus, “Congress authorizes and directs that Federal agencies shall, to the fullest extent consistent with their authority under Federal laws administered by them, carry out the programs within their control in such a manner as to further [this] policy.”²⁸⁰

It is apparent there is a wide range of environmental protection laws that are applicable to development of federally owned oil and gas resources, and a number of these are “specific, nondiscretionary statutes.”²⁸¹

6. Energy Policy Statutes

In addition to the numerous environmental protection statutes that are “applicable” to federal oil and gas leases, provisions of federal energy policy are also applicable and evidence a goal of pursuing energy development on federal lands. Despite this goal, however, these laws have not repealed or amended the environmental protection statutes that have been discussed. Congress has declared a policy of support for energy development but also stated this would advance the goals of “protecting[] and enhancing environmental quality,” and assuring public health.²⁸² In the Mining and Minerals Policy Act of 1970,²⁸³ Congress provided that it is the continuing policy of the federal government to “foster and encourage private enterprise” in the pursuit of minerals development.²⁸⁴ Congress has sought to increase the recoverability of energy resources.²⁸⁵ Section 604 of the Energy Policy and Conservation Act Amendments of 2000 (EPCA)²⁸⁶ required an inventory of onshore federal lands to identify oil and gas resources underlying those lands, including an assessment of “the extent and nature of any restrictions or impediments to the development of the resources.”²⁸⁷

²⁷⁹ Noise Control Act of 1972, 42 U.S.C. § 4901(a)–(b) (2006).

²⁸⁰ *Id.* § 4903(a).

²⁸¹ 43 C.F.R. § 3101.1-2 (2010).

²⁸² Energy Reorganization Act of 1974, 42 U.S.C. § 5801(a) (2006).

²⁸³ Mining and Minerals Policy Act of 1970, 30 U.S.C. §§ 21a, 1901–1905 (2006).

²⁸⁴ *Id.* § 21a.

²⁸⁵ See Energy Policy Act of 1992, 42 U.S.C. § 13411(a) (2006) (directing the Secretary of Energy to seek to increase the recoverability of domestic oil resources); *id.* § 13413(a) (directing the Secretary of Energy to increase the recoverable natural gas resource base).

²⁸⁶ 42 U.S.C. §§ 6201–6422 (2006). Section 604 of the Energy Policy and Conservation Act Amendments of 2000 is at *id.* § 6217 (2006).

²⁸⁷ *Id.* § 6217(a). In response to this mandate, BLM has issued three reports intended to document the extent that federal onshore oil and gas resources are unavailable for development due to “restrictions or impediments,” having released those reports in three phases. See Bureau of Land Mgmt., U.S. Dep’t of the Interior, EPCA Phase III Inventory, <http://www.blm.gov/wo/st/>

Probably most significantly, in the Energy Policy Act of 2005 Congress established several policies related to oil and gas development on the public lands. To ensure timely action on leases and APDs, the Secretary of the Interior is to “ensure expeditious compliance” with NEPA and take several other actions.²⁸⁸ Best management practices (BMPs) are to be developed and implemented in order to improve the leasing program and ensure timely action on APDs.²⁸⁹ Using these BMPs as guidance, regulations setting forth timeframes for processing leases and APDs are to be developed, and deadlines are to be established for approving or disapproving resource management plans, lease applications, APDs, surface use plans, and related administrative appeals.²⁹⁰ And in section 390 of the Energy Policy Act of 2005, rebuttable presumptions allowing the use of categorical exclusions to meet NEPA obligations under five enumerated circumstances were established for oil and gas exploration or development activities.²⁹¹ Nevertheless, while Congress sought to speed up oil and gas development on the public lands through enactment of the Energy Policy Act of 2005, it did not require accomplishment of this goal by repealing the numerous applicable environmental protection laws that a lease might be subject to.

Based on this review of potentially “applicable laws” oil and gas leases have been made “subject to,” as well as a number of “specific, nondiscretionary statutes” that leases have also been made “subject to,” it is apparent BLM has many retained rights allowing it to protect the natural environment despite having granted a right to develop the oil and gas that might be found on a lease.²⁹² The federal government has retained significant rights allowing it to protect threatened or endangered species, prevent air and water pollution, control hazardous substances, regulate noise, ensure “care” is exercised in operations on a leasehold, regulate operations in order to conserve surface resources, protect historic trails and other cultural and archeological resources, prevent unnecessary or undue degradation of the public lands, and ensure the policies of NEPA are adhered to, among other things.²⁹³ When coupled with the substantial rights retained under the “terms, conditions, and stipulations in the lease” and “regulations and formal orders” in effect when the lease was issued and even afterward if not inconsistent with the lease rights granted, it is apparent BLM has significant retained rights allowing it to specify to a significant degree the time, place, and manner

en/prog/energy/oil_and_gas/EPCA_III.html (last visited Apr. 18, 2010) (presenting a BLM website containing the results of the EPCA inventories). BLM's analyses have been subject to criticism. See THE WILDERNESS SOC'Y, “EPCA III” FACT SHEET 2 (2008), available at http://wilderness.org/files/EPCA_III_fact_sheet.pdf (arguing that 88% of onshore federal gas resources and 68% of onshore federal oil resources are available for development, contrary to BLM's claims in its “EPCA III” report that only 59% of the gas and 37.8% of the oil is “accessible”).

²⁸⁸ Energy Policy Act of 2005, 42 U.S.C. § 15921(a)(1) (2006).

²⁸⁹ *Id.* § 15921(b)(1).

²⁹⁰ *Id.* § 15921(b)(3).

²⁹¹ *Id.* § 15942(a)-(b)(5); see *supra* notes 57, 221-23 and accompanying text (discussing the Energy Policy Act categorical exclusions).

²⁹² BUREAU OF LAND MGMT., *supra* note 83, at 1.

²⁹³ See *supra* Part V.B.

of oil and gas development on a lease.²⁹⁴ Retained rights stemming from lease terms, conditions, and stipulations will be considered next.

C. Terms, Conditions, and Attached Stipulations of BLM Oil and Gas Leases

As discussed in detail above, BLM's leases, whether of the modern form or what is apparent in the examples of older leases, retain many rights to the federal government to protect the natural environment.²⁹⁵ The terms and conditions in the leases provide that the rate of development and production can be specified; especially in the modern leases there are requirements to minimize adverse impacts to the environment, lease suspensions can be required, reclamation measures can be specified, and in some instances operations can be denied.²⁹⁶ It is apparent that the contractual relationship established between BLM and its oil and gas lessees allows BLM to regulate the time, place, and manner of oil and gas development to a substantial degree under the terms and conditions of the lease.

But in addition to making the rights granted under a lease subject to the terms and conditions in the lease, the modern versions of the lease form operable since March 1984 state that the rights granted are subject to "attached stipulations of this lease."²⁹⁷ The § 3101.1-2 regulation in place since 1988 also makes leases "subject to" stipulations attached to the lease.²⁹⁸ Stipulations have not been discussed previously.

BLM regulations provide that "[s]tipulations shall become part of the lease and shall supersede inconsistent provisions of the standard lease form."²⁹⁹ The lessee is deemed to agree to the terms of a stipulation.³⁰⁰ There are three types of stipulations BLM requires: 1) no surface occupancy (NSO) stipulations, 2) timing limitation stipulations (TLS), and 3) controlled surface use (CSU) stipulations.³⁰¹ NSO stipulations prohibit drilling on the surface of a lease or a described portion of it and are reserved for the most sensitive landscapes.³⁰² A TLS limits the time periods when drilling—but not operations and maintenance of production facilities—can occur, such as prohibiting drilling on big game crucial winter ranges between November 15th and April 30th.³⁰³ A CSU stipulation prohibits surface occupancy unless certain operating constraints are met, such as limiting surface occupancy or use within 500 feet of riparian areas unless an acceptable mitigation plan is arrived at first.³⁰⁴ There are many stipulations currently in use, protecting such things as historic trails and resources, threatened, endangered or

²⁹⁴ BUREAU OF LAND MGMT., *supra* note 83, at 1.

²⁹⁵ See discussion *supra* Part IV.B; see also BUREAU OF LAND MGMT., *supra* note 83, at 3.

²⁹⁶ BUREAU OF LAND MGMT., *supra* note 83, at 3.

²⁹⁷ *Id.* at 1.

²⁹⁸ 43 C.F.R. § 3101.1-2 (2008).

²⁹⁹ *Id.* § 3101.1-3.

³⁰⁰ *Id.*

³⁰¹ BUREAU OF LAND MGMT., *supra* note 147, § 3101.13A.

³⁰² *Id.* § 3101.13A1(c).

³⁰³ *Id.* § 3101.13A1(a).

³⁰⁴ *Id.* § 3101.13A1(b).

special status species, high quality visual environments, raptors, and special management areas, among others.³⁰⁵ In Wyoming, it is not unusual for a current lease to have between four to seven stipulations attached to it.³⁰⁶ Examples of these stipulations can be seen in any BLM Notice of Competitive Oil and Gas Lease Sale.³⁰⁷ BLM's manual governing issuance of leases contains a number of provisions regarding stipulations.³⁰⁸

In addition to stipulations, current leases also often have "information notices" attached to them.³⁰⁹ There are currently three lease notices in use in Wyoming: one applicable to protections for steep slopes and certain other resources, one applicable to historic trails, and one applicable to the greater sage-grouse.³¹⁰ While these notices express an intent to protect these resources, they probably have little or no legal consequence:

An information notice has no legal consequences, except to give notice of existing requirements, and . . . [only] convey[s] certain operational, procedural or administrative requirements relative to lease management within the terms and conditions of the standard lease form. Information notices shall not be a basis for denial of lease operations.³¹¹

"The issuance of the Information Notices therefore establishe[s] no binding policy or practice . . ."³¹² So while these notices certainly express a goal of BLM's to protect resources like the sage-grouse, the legal authority for any resulting actions must be found in the lease itself, in the § 3101.1-2 regulation, or in other law, not in the lease notice.

D. Regulations and Formal Orders

With respect to modern versions of the lease form issued since 1984, the rights granted under the lease are made subject to two conditions related to compliance with regulations and formal orders, one applicable to regulations and formal orders in place when the lease is issued, and the other to later-adopted regulations and formal orders. In the modern lease forms, the rights granted are subject to "the Secretary of the Interior's regulations and formal orders in effect as of lease issuance" and are additionally subject to "regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this

³⁰⁵ See, e.g., WYO. STATE OFFICE, BUREAU OF LAND MGMT., NOTICE OF COMPETITIVE OIL AND GAS LEASE SALE (2010), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/og/leasing/2010.Par.40252.File.dat/02list.pdf> (presenting the different types of lease stipulations for BLM lease sales in Wyoming).

³⁰⁶ See *id.* at 1-31.

³⁰⁷ See, e.g., *id.* (presenting lease stipulations for BLM lease sales in Wyoming).

³⁰⁸ BUREAU OF LAND MGMT., *supra* note 147, § 3101.13A.

³⁰⁹ *Id.* § 3101.13B.

³¹⁰ WYO. STATE OFFICE, *supra* note 305, at 44-46.

³¹¹ 43 C.F.R. § 3101.1-3 (2008).

³¹² Cont'l Land Res., 162 I.B.L.A. 1, 5 (2004).

lease.³¹³ The older versions of the lease from 1954, 1965, and 1971 provide that the offer to lease is pursuant and subject to the rules and regulations of the Secretary of the Interior “now or hereafter in effect” when not inconsistent with the lease rights granted.³¹⁴ These conditions on the exercise of lease rights will be considered next.

I. Regulations

a. The Regulations at 43 C.F.R. Part 3100

BLM’s current leasing regulations are found at 43 C.F.R. part 3100. The § 3101.1-2 regulation that elaborates on the rights granted to the lessee and BLM’s retained rights when an oil and gas lease is issued was discussed in some detail above,³¹⁵ as was the § 3101.1-1 regulation that provides that leases shall be issued only on standard forms.³¹⁶ In addition, the regulations applicable to stipulations were just discussed.³¹⁷ An additional regulation in this part provides that “[a] suspension of all operations and production may be directed or consented to by the authorized officer only in the interest of conservation of natural resources.”³¹⁸ Suspension of lease operations is a significant means by which BLM can exercise its retained rights to protect the natural environment.³¹⁹ When a suspension occurs, the term of the lease is extended by the period of time of the suspension, and rental and minimum royalty payments are also suspended.³²⁰ Few other regulations in part 3100 likely implicate BLM’s retained rights with respect to environmental protection after issuing an oil and gas lease.³²¹

The current version of BLM’s oil and gas leasing regulations was promulgated in 1988.³²² Thus, the current version of the part 3100 regulations

³¹³ BUREAU OF LAND MGMT., *supra* note 83, at 1.

³¹⁴ BUREAU OF LAND MGMT., *supra* note 147, § 3101.11B; BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 1.

³¹⁵ See discussion *supra* Part IV.C.

³¹⁶ See *supra* Part IV.

³¹⁷ See *supra* text accompanying notes 299–308.

³¹⁸ 43 C.F.R. § 3103.4-4(a) (2008); see also Mineral Leasing Act, 30 U.S.C. § 209 (2006) (providing that the Secretary of the Interior is authorized to suspend leases “in the interest of conservation of natural resources”).

³¹⁹ See *supra* notes 200–02 and accompanying text (citing Copper Valley Mach. Works, Inc., 653 F.2d 595, 600 (D.C. Cir. 1981), and its approval of the use of suspensions to avoid environmental harm as consistent with the ordinary meaning of the term “in the interest of conservation” of natural resources in 30 U.S.C. § 209).

³²⁰ 43 C.F.R. § 3103.4-4(b), (d) (2008).

³²¹ However, there are provisions in the regulations that provide for consultation with non-BLM surface managing agencies prior to leasing and even a prohibition on leasing over surface managing agency objection in some cases (including Forest Service objection), and there are also special regulations that apply to leasing on National Wildlife Refuges. 43 C.F.R. §§ 3101.5-1, .5-2, .5-4, .7-1, .7-2 (2008).

³²² Oil and Gas Leasing, Geothermal Resources Leasing, 53 Fed. Reg. 17,340 (May 16, 1988) (codified at 43 C.F.R. pts. 3000–3260); Minerals Management, 53 Fed. Reg. 22,814 (June 17, 1988) (codified at 43 C.F.R. pts. 3000–3280). Limited amendments that do not implicate BLM’s

would clearly apply to the 34,367 currently active leases in the eleven western states issued since that date (see Table 1). Most significantly, the § 3101.1-2 regulation applies to these leases, which represent seventy-one percent of the currently active leases in the eleven western states (see Table 1).

Prior to adoption of the 1988 version of the leasing regulations, which were promulgated to comply with FOOGLRA,³²³ several iterations of the leasing regulations had been in place. Regulations governing oil and gas leases were in place in 1938, and notices of modifications to the regulations were published in the Federal Register in 1946, 1954, 1964, 1970, and 1983.³²⁴ The 1983 regulations contained a provision in § 3101.1-2, but it was amended when the 1988 version that has been discussed extensively was adopted. The 1983 version provided that stipulations could be attached to a lease only if either “the stipulations did not absolutely bar exploration” or the lease as stipulated remained acceptable to the offeror.³²⁵ With respect to provisions allowing BLM to ensure protection of the environment, many of the older versions of the leasing regulations provided for suspensions and stipulations.³²⁶

Whether leases issued prior to 1988 are subject to the current leasing regulations, particularly the § 3101.1-2 regulation, is debatable, but the broad reservations contained in the 1954, 1965, and 1971 leases, such as the term allowing the rate of prospecting and development and the quantity and rate of production to be subject to BLM control in the public interest,³²⁷ suggest that these leases could be subject to the later-adopted regulations. The older leases provide that reasonable regulations “hereafter in force” apply to the

retained rights relative to environmental protection have been made since 1988. See, e.g., Oil and Gas Lease Acreage Limitation Exemptions and Reinstatement of Oil and Gas Leases, 71 Fed. Reg. 14,821, 14,821–23 (Mar. 24, 2006) (codified at 43 C.F.R. pt. 3100); Oil and Gas Leasing, 70 Fed. Reg. 58,854, 58,874–75 (Oct. 7, 2005) (codified at 43 C.F.R. pts. 3000–3870); Oil and Gas Leasing: Onshore Oil and Gas Operations, 66 Fed. Reg. 1883, 1892–94 (Jan. 10, 2001) (codified at 43 C.F.R. pts. 3100–3160); Promotion of Development, Reduction of Royalty on Heavy Oil, 61 Fed. Reg. 4748, 4750–52 (Feb. 8, 1996) (codified at 43 C.F.R. pt. 3100).

³²³ See Thomas L. Sansonetti & William R. Murray, *A Primer on the Federal Onshore Oil and Gas Leasing Reform Act of 1987 and Its Regulations*, 25 *LAND & WATER L. REV.* 375–76, 383 (1990) (discussing the adoption of FOOGLRA and related regulations).

³²⁴ See 43 C.F.R. pt. 192 (1939); Minerals Management and Oil and Gas Leasing, 48 Fed. Reg. 33,648, 33,662–75 (July 22, 1983) (codified at 43 C.F.R. pts. 3100–3150); Reorganization and Revision of Chapter, 35 Fed. Reg. 9503, 9670 (June 13, 1970) (codified at 43 C.F.R. pts. 3100–3109); Revision of Regulations—Continued, 29 Fed. Reg. 4507 (Mar. 31, 1964) (codified at 43 C.F.R. pts. 3000–3129); Editorial Revision of Regulations, 19 Fed. Reg. 8835, 9011–19 (Dec. 23, 1954) (codified at 43 C.F.R. pt. 192); General Regulations Applicable to Mineral Permits, Leases and Licenses, 11 Fed. Reg. 12,952 (Nov. 1, 1946) (codified at 43 C.F.R. pts. 191–192); Oil and Gas Leases, 11 Fed. Reg. 9760 (Sept. 5, 1946) (codified at 43 C.F.R. pt. 192).

³²⁵ 43 C.F.R. § 3101.1-2 (1983).

³²⁶ E.g., 11 Fed. Reg. at 12,953 (requiring special stipulations for lands in national forests and reclamation projects); *id.* at 12,954 (providing for suspension of operations, production, and rental payments).

³²⁷ See *supra* notes 106–09, 134 and accompanying text.

lease if not inconsistent with the provisions in the lease.³²⁸ Section 6 of the 1984 version of the lease form already allowed for reasonable measures to be required, even before the § 3101.1-2 regulation was promulgated in 1988.³²⁹ Accordingly, the current version of the leasing regulations could well apply to leases issued prior to 1988. However, as will be discussed below, in some circumstances the courts have not been receptive to allowing later-enacted statutes to govern a lease.³³⁰

b. The Regulations at 43 C.F.R. Part 3160 and Other BLM Regulations

In addition to its leasing regulations, BLM also has an extensive body of regulations governing onshore lease operations. These regulations are found at 43 C.F.R. part 3160.³³¹ BLM's current operating regulations are replete with provisions allowing BLM to protect the natural environment when operations are proposed, including the following:

- "The authorized officer is authorized and directed to . . . require compliance with lease terms, with the regulations in this title and all other applicable regulations promulgated under the cited laws; and to require that all operations be conducted in a manner which protects other natural resources and the environmental quality"³³²
- "Before approving operations on [a] leasehold, the authorized officer shall determine . . . that the proposed plan of operations is sound both from a technical and environmental standpoint."³³³
- Operators are to comply with applicable laws, regulations, lease terms, onshore oil and gas orders, notices to lessees, and other orders and instructions from BLM, including but not limited to conducting all operations in a manner that "protects other natural resources and environmental quality."³³⁴
- The regulations make extensive provisions regarding submission of APDs, including requiring submission of a surface use plan of operations which must contain information regarding roads and drill pads, methods for containment and disposal of waste materials, and reclamation plans.³³⁵
- "The operator shall conduct operations in a manner which protects the mineral resources, other natural resources, and environmental

³²⁸ See BUREAU OF LAND MGMT., *supra* note 147, § 3101.1.11B; see also BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

³²⁹ BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 1.

³³⁰ See discussion *infra* Parts VI, VII.B.

³³¹ 43 C.F.R. pt. 3160 (2008).

³³² *Id.* § 3161.2.

³³³ *Id.*

³³⁴ *Id.* § 3162.1(a).

³³⁵ *Id.* § 3162.3-1(f); see also Mineral Leasing Act of 1920, 30 U.S.C. § 226(g) (2006) (requiring "a plan of operations covering proposed surface-disturbing activities").

quality,” which obligates the operator to comply with all pertinent orders, applicable laws, regulations, lease terms and conditions, and the approved drilling plan.³³⁶ BLM is to prepare an environmental review to ensure compliance with NEPA, and this environmental review can be used to determine terms and conditions of approval of the proposed drilling plan.³³⁷

- “The operator shall exercise due care and diligence to assure that leasehold operations do not result in undue damage to surface or subsurface resources or surface improvements.”³³⁸
- Operators may be subject to penalties for noncompliance with these regulations, including shut down or shut-in of operations where significant environmental impacts are occurring.³³⁹

While these regulations clearly create mandatory obligations to protect the environment, that is not their sole purpose. The regulations at 43 C.F.R. §§ 3161.2 and 3162.1(a) require actions to protect the environment, but they also specifically provide that an objective of operations is to maximize oil and gas recovery.³⁴⁰

Moreover, one court, in *Blancett v. U.S. Bureau of Land Management*,³⁴¹ determined many of these regulations do not provide a basis for a “failure to act” claim pursuant to the Administrative Procedure Act.³⁴² This case concerned claims that BLM had failed to protect the environment from oil and gas operations that affected a ranch in New Mexico.³⁴³ The court ruled that while the regulations at 43 C.F.R. §§ 3161.2, 3162.1(a), and 3162.5-1(a)–(b) established broad objectives, “none of the regulations in Part 3160 imposes a mandatory duty on BLM to protect the environment with the specificity required to support a claim under § 706(1) of the [Administrative Procedure

³³⁶ 43 C.F.R. § 3162.5-1(a) (2008).

³³⁷ *Id.* “Conditions of approval” is a term of art in BLM and means requirements that BLM can impose based on a site-specific review but which were not necessarily provided for by stipulation. Presumably the “conditions of approval” referenced in 43 C.F.R. § 3162.5-1(a) are one form of a “reasonable measure[]” that can be required pursuant to 43 C.F.R. § 3101.1-2 and section six of the modern lease forms. 43 C.F.R. § 3102.1-2 (2009); BUREAU OF LAND MGMT., *supra* note 83. Best Management Practices (BMPs) are another type of protective measure that BLM encourages and can require, and is increasingly emphasizing. See *supra* text accompanying notes 289–90 (discussing BMP provisions in the Energy Policy Act of 2005); *infra* text accompanying notes 429–34, 577–81 (discussing BMPs and BMP provisions in *The Gold Book*).

³³⁸ 43 C.F.R. § 3162.5-1(b) (2008).

³³⁹ *Id.* § 3163.1(a)(3).

³⁴⁰ *Id.* §§ 3161.2, 3162.1(a) (providing in both instances that operations are to result in the maximum ultimate recovery of oil and gas); see also *id.* § 3160.0-4 (providing that the objective of BLM’s oil and gas operations regulations “is to promote the orderly and efficient exploration, development and production of oil and gas”).

³⁴¹ No. Civ.A. 04-2152 (JDB), 2006 WL 696050 (D.D.C. Mar. 20, 2006).

³⁴² 5 U.S.C. §§ 551–559, 701–706, 1305, 3105, 3344, 4301, 5335, 5362, 7521 (2006); *Blancett*, 2006 WL 696050, at *6; see 5 U.S.C. § 706(1) (2006) (authorizing a reviewing court to “compel agency action unlawfully withheld or unreasonably delayed”); see also *id.* § 551(13) (defining “agency action” that is subject to judicial review under the Administrative Procedure Act as including five particular activities, including a “failure to act”).

³⁴³ *Blancett*, 2006 WL 696050, at *1.

Act].³⁴⁴ It found the regulations did not specify discrete agency action and did not define actions that were legally required.³⁴⁵ Thus, the plaintiffs' lawsuit failed the two-part test under the Supreme Court's precedent in *Norton v. Southern Utah Wilderness Alliance*³⁴⁶ that is required to support a § 706(1) claim.³⁴⁷ Consequently, the court granted BLM's motion to dismiss the lawsuit based on the pleadings and found that it did not have subject matter jurisdiction. However, because the dismissal without prejudice did not constitute a decision on the merits,³⁴⁸ the precedential value of this unpublished decision is limited. BLM's obligations to protect the environment will be considered further in Part IX.³⁴⁹

Despite the decision in *Blancett*, it seems clear that even if BLM's operations regulations do not mandate particular actions by BLM that can be enforced in court, the regulations nevertheless provide that BLM is obligated to require environmental protection when it permits oil and gas development. As the court recognized in *Blancett*, defendant BLM "acknowledge[s] that the regulations charge BLM with requiring operator compliance with lease terms and regulations and with requiring that operations be conducted in a manner that protects environmental quality."³⁵⁰

A form of the part 3160 regulations that closely approximates the current version of the regulations with respect to environmental protection obligations has been in place since 1982 when the Minerals Management Service (MMS) amended the predecessor regulations.³⁵¹ The 1982 regulations were intended to be codified at 30 C.F.R. part 221, and at that time onshore operations were under the direction of MMS, not BLM.³⁵² However, the 1982 regulations were amended again in August 1983. In the 1983 revision the regulations were transferred from 30 C.F.R. part 221 and redesignated as 43 C.F.R. part 3160, and the management authority was transferred to

³⁴⁴ *Id.* at *11.

³⁴⁵ *Id.* at *6, *10.

³⁴⁶ 542 U.S. 55 (2004).

³⁴⁷ *Blancett*, 2006 WL 69050, at *6; see *Norton*, 542 U.S. at 64 (requiring that a cause of action under 5 U.S.C. § 706(1) "can proceed only where a plaintiff asserts that an agency failed to take discrete agency action that it is required to take" (emphasis added)).

³⁴⁸ *Blancett*, 2006 WL 696050, at *11.

³⁴⁹ See discussion *infra* Part IX. The court in *Au Sable*, 565 F. Supp. 2d 812 (E.D. Mich. 2008), also held claims that BLM and Forest Service actions violated 43 C.F.R. § 3161.2 were unsubstantiated. *Id.* at 840. However, that holding was based on a determination that "plaintiffs have not alleged any facts that would establish a violation of this regulation independent of their [successful] NEPA claim." *Id.* *Au Sable* was not based on a consideration of whether the requirements to sustain a "failure to act" claim were met. *Id.*; see discussion *supra* Part V.B.2 (considering the court's decision in *Au Sable*).

³⁵⁰ *Blancett*, 2006 WL 696050, at *8.

³⁵¹ Oil and Gas Operating Regulations, 47 Fed. Reg. 47,758, 47,765-76 (Oct. 27, 1982) (codified at 43 C.F.R. pt. 3160 (1983)) (adopting final rule that, among other things, amended the language of 30 C.F.R. §§ 221.11, 221.12, 221.20, 221.23, and 221.30 with language identical to or similar to that found in the current regulations at 43 C.F.R. §§ 3161.2, 3162.1, 3162.3-1, and 3162.5-1).

³⁵² See *id.* at 47,758 (indicating rulemaking was undertaken by the Minerals Management Service).

BLM.³⁵³ In 1988, as part of the regulatory revisions needed to conform to FOOGLRA, the operating regulation governing APDs was modified to its current form by adding requirements related to surface use plans of operation, as well as other provisions.³⁵⁴ Thus, with respect to environmental protection provisions, the current version of the operations regulations has been fully in place since 1988,³⁵⁵ but regulations quite similar to, and often identical to, the current regulations have been in place since 1982.³⁵⁶ Consequently, the vast majority of currently active leases in the eleven western states are subject to the current operating regulations or a version very similar to them (see Table 1).

Prior to the 1982 revision of the regulations, MMS managed oil and gas operations under regulations adopted in 1942.³⁵⁷ The 1942 regulations, which were in place for forty years,³⁵⁸ provided for less in the way of environmental protection than the current regulations, but they did provide that “[t]he lessee shall not pollute streams or damage the surface or pollute the underground water of the leased or other land.”³⁵⁹ More generally, the old operations regulations required compliance with lease terms, regulations, and applicable law.³⁶⁰

In addition to the part 3160 regulations, BLM also promulgated regulations governing approval of land use authorizations. With respect to provisions that are relevant here, these regulations have been in place since 1981.³⁶¹ These regulations provide that the United States reserves the right to use the public lands or authorize the use of the public lands by the general public in ways that are compatible or consistent with the land-use authorization.³⁶² They also provide that each land-use authorization shall contain terms and conditions that shall minimize damage to scenic, cultural, and aesthetic values and wildlife habitat and that “otherwise protect the environment”;³⁶³ require compliance with air and water quality standards;³⁶⁴

³⁵³ Onshore Oil and Gas, General, 48 Fed. Reg. 36,582, 36,583 (Aug. 12, 1983) (codified at 43 C.F.R. pt. 3160 (1983)) (establishing, among other things, a form of the regulation at 43 C.F.R. § 3161.2 that is identical to the current version); see also 43 C.F.R. § 3161.2 (2006).

³⁵⁴ See, e.g., Minerals Management, 53 Fed. Reg. 22,814, 22,846 (June 17, 1988) (codified at 43 C.F.R. pt. 3160 (1988)).

³⁵⁵ Compare 43 C.F.R. pt. 3160 (1988), with 43 C.F.R. pt. 3160 (2008).

³⁵⁶ Compare 43 C.F.R. pt. 3160 (1983), with 43 C.F.R. pt. 3160 (1988), and 43 C.F.R. pt. 3160 (2008).

³⁵⁷ Oil and Gas Operating Regulations, 7 Fed. Reg. 4132 (June 2, 1942) (codified at 30 C.F.R. pt. 221 (1944)).

³⁵⁸ See *supra* text accompanying note 351.

³⁵⁹ 30 C.F.R. § 221.32 (1944).

³⁶⁰ *Id.* §§ 221.4, .18. An even older version of the operating regulations is found at 30 C.F.R. §§ 221.1–.56 (1939).

³⁶¹ Leases, Permits, and Easements, 46 Fed. Reg. 5772, 5777 (Jan. 19, 1981) (codified at 43 C.F.R. pt. 2920 (1981)).

³⁶² 43 C.F.R. § 2920.7(a) (2008). “Land use authorization” means “any authorization to use the public lands issued under this part” and “lease” means “an authorization to possess and use public lands for a fixed period of time.” *Id.* § 2920.0-5(c), (l).

³⁶³ *Id.* § 2920.7(b)(2).

³⁶⁴ *Id.* § 2920.7(b)(3).

and require compliance with state environmental protection standards that are more stringent than federal standards.³⁶⁵ Land-use authorizations shall also contain provisions that “[r]equire the use to be located in an area which shall cause least damage to the environment, taking into consideration feasibility”³⁶⁶ and to “[o]therwise protect the public interest.”³⁶⁷ Other provisions provide for inspection and monitoring during construction, operation, and maintenance of the land-use authorization so as to protect the environment.³⁶⁸

In sum, BLM’s oil and gas leasing regulations, its oil and gas operations regulations, and the land-use authorization regulations provide an additional and substantial basis for BLM to assert retained rights so as to protect the natural environment. The leasing regulations have existed in their present form since 1988, the operations regulations have been in essentially their current form since 1982, and the relevant land-use authorization regulations have been in place since 1981. Consequently the majority of currently active leases in the eleven western states are subject to these provisions without need to consider the question of whether later-adopted regulations were incorporated into a lease or were consistent with lease rights previously granted (see Table 1).

2. Formal Orders

Beyond these regulatory provisions are a number of authorities that could be “formal orders,” which many leases are also subject to—particularly leases issued since 1984 when this condition on the granted lease rights was introduced.³⁶⁹ These formal orders could include BLM Resource Management Plans (RMPs) developed pursuant to FLPMA, onshore oil and gas orders, notices to lessees, provisions in the BLM manual and handbook, BLM instruction memoranda, BLM’s “Gold Book,” Executive Orders, and Department of the Interior Solicitor opinions and Secretarial orders. These sources of authority will be considered next.

a. Resource Management Plans

BLM RMPs are required by FLPMA,³⁷⁰ and their role in the oil and gas leasing and development process was discussed above.³⁷¹ Once an RMP is developed, the Secretary of the Interior shall manage the public lands

³⁶⁵ Id. § 2920.7(b)(4).

³⁶⁶ Id. § 2920.7(c)(5).

³⁶⁷ Id. § 2920.7(c)(6).

³⁶⁸ Id. §§ 2920.9-1(c), -2.

³⁶⁹ See *supra* notes 111–12, 176–77 and accompanying text.

³⁷⁰ Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1712(a) (2006) (stating that the Secretary of the Interior “shall . . . develop, maintain, and, when appropriate, revise land use plans”). See generally *id.* § 1712 (specifying land-use planning requirements); 43 C.F.R. §§ 1601.1-1 to -8 (2008) (presenting the objectives and policies for BLM’s planning regulations).

³⁷¹ See discussion *supra* Part III.A.1.

governed by the plan in accordance with the plan.³⁷² There seems to be little doubt that an RMP constitutes a formal order that an oil and gas lease issued since 1984 is subject to.

The first RMPs were adopted in the early to mid-1980s.³⁷³ Accordingly, oil and gas leases have been made subject to these formal orders since approximately the mid-1980s. As indicated several times above, it seems likely that older leases are also subject to the provisions in a later-adopted RMP because the expansive language in older leases—“not inconsistent with any express and specific provisions herein”³⁷⁴—arguably makes the older leases subject to the later-adopted RMP provisions. For RMPs adopted after 1984, the RMP provisions could well be “not inconsistent with lease rights granted or specific provisions of this lease,” as provided for in the modern lease form in place since 1984.³⁷⁵

RMPs provide general guidance for oil and gas development that might occur pursuant to them.³⁷⁶ Under the BLM handbook governing land-use planning, an RMP should identify areas open to leasing subject to various constraint levels—for example, an area may be open to leasing with “moderate constraints” such as seasonal and controlled surface-use restrictions; identify areas closed to leasing; identify lease stipulations, conditions of approval, and best management practices that will be employed; identify “[w]hether constraints identified in the land use plan for new leases also apply to areas currently under lease”; and define “resource condition objectives for areas under development to guide reclamation activities in these areas.”³⁷⁷ Thus, RMPs contain considerable guidance that oil and gas leases are subject to.

b. Onshore Oil and Gas Orders

BLM is authorized to issue Onshore Oil and Gas Orders when necessary to implement or supplement the oil and gas operations regulations.³⁷⁸

³⁷² 43 U.S.C. § 1732(a) (2006); see also 43 C.F.R. § 1610.5-3(a) (2008) (“All future resource management authorizations and actions . . . shall conform to the approved plan.”).

³⁷³ See 2 COGGINS & GLICKSMAN, *supra* note 23, § 16:18, at 16-31 (noting that by 1987, BLM had completed only 12 of 162 RMPs).

³⁷⁴ BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 1; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 1.

³⁷⁵ BUREAU OF LAND MGMT., *supra* note 83, at 1.

³⁷⁶ See discussion *supra* Part III.A.1.

³⁷⁷ BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, LAND USE PLANNING HANDBOOK 23–24 (2005), available at http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/planning_general.Par.65225.File.dat/blm_lup_handbook.pdf; see also BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, BLM PLANNING FOR FLUID MINERAL RESOURCES (1990) [hereinafter BUREAU OF LAND MGMT., FLUID MINERAL HANDBOOK] (outlining similar provisions). Provisions in this handbook are discussed below. See *infra* Part V.D.2.d.

³⁷⁸ 43 C.F.R. § 3164.1(a) (2008).

Seven onshore orders are currently in effect.³⁷⁹ They deal with drilling and disposal of produced water, site security, and other issues. An onshore order is “binding on operating rights owners and operators.”³⁸⁰

The most significant onshore order for purposes of this discussion is Onshore Oil and Gas Order Number 1.³⁸¹ This order was first adopted on October 21, 1983,³⁸² and it was most recently revised on March 7, 2007.³⁸³ It governs approval of oil and gas exploratory, development, and service wells and most subsequent well operations on essentially all federal onshore oil and gas leases.³⁸⁴ The order governs APDs including their accompanying drilling plans and surface use plan of operations.³⁸⁵ Among other things, the order describes a number of requirements for the surface-use plan of operations.³⁸⁶ These include provisions for revegetation of disturbed areas and the safe containment and disposal of waste material (including chemicals).³⁸⁷ The processing of APDs is discussed and prescribed in detail, including requirements for on-site inspections.³⁸⁸ BLM can approve, defer, or deny an APD depending on whether certain requirements have been met; this includes a provision that “BLM cannot approve an APD or Master Development Plan until the requirements of certain other laws and regulations including NEPA, the National Historic Preservation Act, and the Endangered Species Act have been met.”³⁸⁹ Onshore Order Number 1 then makes this provision:

The approved APD will contain Conditions of Approval that reflect necessary mitigation measures. In accordance with 43 CFR 3101.1-2 . . . , the BLM . . . may require reasonable mitigation measures to ensure that the proposed operations minimize adverse impacts to other resources, uses, and users, consistent with granted lease rights. The BLM will incorporate any mitigation requirements, including Best Management Practices, identified through the APD review and appropriate NEPA and related analyses, as Conditions of Approval to the APD.³⁹⁰

³⁷⁹ See Bureau of Land Mgmt., U.S. Dep’t of the Interior, Onshore Operations, http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Onshore_Operations.html (listing BLM’s active onshore orders) (last visited Apr. 18, 2010).

³⁸⁰ 43 C.F.R. § 3164.1(b) (2008).

³⁸¹ See generally Bureau of Land Mgmt., U.S. Dep’t of the Interior, Onshore Oil and Gas Order No. 1, http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/Onshore_Order_no1.html (last visited Apr. 18, 2010) (containing links to background information regarding Onshore Oil and Gas Order Number 1).

³⁸² Onshore Oil and Gas Order No. 1, 48 Fed. Reg. 48,916 (Oct. 21, 1983).

³⁸³ Onshore Oil and Gas Operations, 72 Fed. Reg. 10,308 (Mar. 7, 2007).

³⁸⁴ *Id.*

³⁸⁵ *Id.*

³⁸⁶ *Id.* at 10,331–33.

³⁸⁷ *Id.* at 10,332–33 (subsections describing methods for handling waste and plans for surface reclamation).

³⁸⁸ *Id.* at 10,333–34 (subsections describing APD posting and processing and APD approval).

³⁸⁹ *Id.* at 10,334.

³⁹⁰ *Id.*

It is noteworthy that the “reasonable mitigation measures” referred to here are not confined to the “200-meter 60-day rule” limitations mentioned in the § 3101.1-2 regulation, and thus these reasonable mitigation measures are arguably not limited accordingly; this is consistent with both the language in the § 3101.1-2 regulation and section 6 of the standard lease form in use since 1984.³⁹¹ Moreover, there is no indication in Onshore Order Number 1 that the heightened clear and convincing evidence standard presented in IM 92-67 and BLM Manual MS-3101 is applicable for determining reasonable measures.³⁹²

Onshore Order Number 1 also specifies several general operating requirements. It provides that “[t]he operator must conduct operations to minimize adverse effects to surface and subsurface resources, prevent unnecessary surface disturbance, and conform with currently available technology and practice.”³⁹³ Furthermore, “[t]he operator must comply with the provisions of the approved APD and applicable laws, regulations, Orders, and Notices to Lessees, including but not limited to [several specified provisions, including provisions related to cultural and historic resources, ESA compliance, and surface protection].”³⁹⁴

While the current version of Onshore Order Number 1 has only been in place since March 2007, as noted, it has been in place in some form since October 1983.³⁹⁵ Thus, the roughly 36,000 leases issued since 1983 are subject to this formal order in one of its previous versions (see Table 1). As claimed elsewhere, it is not clear that the newest version of Onshore Order Number 1 would necessarily be inconsistent with lease rights granted in older leases since those older leases contain at least somewhat expansive reservations of authority allowing actions to be taken to protect the environment and other resources.³⁹⁶

c. Notices to Lessees

Another kind of formal order that is recognized is the notice to lessee (NTL). The BLM authorized officer may issue an NTL “when necessary to implement the onshore oil and gas orders and the regulations in this part.”³⁹⁷ NTLs “implement the regulations in [part 3160] and operating orders, and

³⁹¹ See discussion *supra* Part IV.C.2–3 (arguing reasonable measures are not limited to those specified in the 200-meter 60-day rule).

³⁹² See Onshore Oil and Gas Operations, 72 Fed. Reg. at 10,335; see also discussion *supra* Part IV.C.3 (arguing the clear and convincing evidence standard in IM 92-67 and BLM Manual MS-3101 is unwarranted).

³⁹³ Onshore Oil and Gas Operations, 72 Fed. Reg. at 10,335.

³⁹⁴ *Id.* Onshore Order Number 1 also makes provisions related to waiver, exemption, or modification of lease stipulations. *Id.* at 10,337; see also 43 C.F.R. § 3101.1-4 (2008) (establishing similar provisions for modification and waiver of stipulations).

³⁹⁵ See Onshore Oil and Gas Order No. 1, 48 Fed. Reg. 48,916 (Oct. 21, 1983); *supra* notes 381–83 and accompanying text.

³⁹⁶ See *supra* Part IV.B.

³⁹⁷ 43 C.F.R. § 3164.2(a) (2008).

serve as instructions on specific item(s) of importance within a State, District, or Area.³⁹⁸

There are three operable NTLs in Wyoming, which are posted on BLM's website.³⁹⁹ One of these addresses flow meters,⁴⁰⁰ another deals with reporting "undesirable events,"⁴⁰¹ and the last deals with royalties from lost oil and gas.⁴⁰² The flow meter NTL is applicable in Wyoming and the other two NTLs apply nationwide.⁴⁰³ According to BLM personnel, there is a trend to convert NTLs to onshore oil and gas orders and many are only applicable in a particular state.⁴⁰⁴

d. The BLM Manual and Handbook

BLM also has an agency manual and handbook.⁴⁰⁵ The BLM manual "provides policy, procedures, and instructions to manage programs."⁴⁰⁶ The BLM handbook is a "source of detailed instructions for performing specialized procedures to carry out policy and direction described in the Manual Section."⁴⁰⁷ According to the BLM handbook, "[H]andbooks are considered part of the Manual."⁴⁰⁸ It is debatable whether the provisions in

³⁹⁸ Id. § 3160.0-5.

³⁹⁹ Bureau of Land Mgmt., U.S. Dep't of the Interior, Oil & Gas Operations, http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Onshore_Operations.html (last visited Apr. 18, 2010).

⁴⁰⁰ See BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, NOTICE TO LESSEE/OPERATORS OF ONSHORE FEDERAL AND INDIAN OIL AND GAS LEASES WITHIN THE JURISDICTION OF THE WYOMING STATE OFFICE (NTL 2004-1) (2004), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/og/ogdocs.Par.7786.File.dat/04wy-efcntl.pdf>.

⁴⁰¹ See U.S. GEOLOGICAL SURVEY, U.S. DEP'T OF THE INTERIOR, NOTICE TO LESSEES AND OPERATORS OF ONSHORE FEDERAL AND INDIAN OIL AND GAS LEASES (NTL-3A) (1979), available at http://www.blm.gov/pgdata/etc/medialib/blm/co/programs/oil_and_gas.Par.49503.File.dat/ntl3a.pdf. Undesirable events include spills of toxic liquids of 100 or more barrels, equipment failures or other accidents that result in the venting of certain volumes of gas, fires, blowouts of wells, accidents involving fatal injuries, and "[a]ny spill, venting, or fire, regardless of the volume involved, which occurs in a sensitive area, e.g., areas such as parks, recreation sites, wildlife refuges, lakes, reservoirs, streams, and urban or suburban areas." Id. at 1-2.

⁴⁰² See BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, NOTICE TO LESSEES AND OPERATORS OF ONSHORE FEDERAL AND INDIAN OIL AND GAS LEASES (NTL-4A) (1980), available at http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/energy/og_forms.Par.32669.File.dat/ntl4a.pdf.

⁴⁰³ Bureau of Land Mgmt., *supra* note 399.

⁴⁰⁴ Telephone Interview with Julie Weaver, Chief, Branch of Fluid Minerals Adjudication, Wyo. State Office, Bureau of Land Mgmt. (Oct. 8, 2009) (on file with author).

⁴⁰⁵ Bureau of Land Mgmt., U.S. Dep't of the Interior, BLM Manual, http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/blm_manual.html (last visited Apr. 18, 2010) [hereinafter BLM Manual]; Bureau of Land Mgmt., U.S. Dep't of the Interior, BLM Handbooks, http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/blm_handbooks.html (last visited Apr. 18, 2010) [hereinafter BLM Handbooks]. The Department of Interior also has a manual. U.S. Dep't of the Interior, ELIPS Electronic Library of Interior Policies, http://206.131.241.18/app_dm/index.cfm?fuseaction=home (last visited Apr. 18, 2010).

⁴⁰⁶ BLM Manual, *supra* note 405.

⁴⁰⁷ BLM Handbooks, *supra* note 405.

⁴⁰⁸ Id.

the manual and handbook constitute formal orders since they are not developed pursuant to the formal notice-and-comment rulemaking procedures specified by the Administrative Procedure Act,⁴⁰⁹ however there is no doubt these internal sources of guidance play a major role in BLM's day-to-day decision making.⁴¹⁰

Potentially relevant manual sections that could constitute formal orders that a lease has been made subject to include but are not limited to the following: MS-1601 (land-use planning); MS-1703 (hazardous materials management and resource restoration); MS-3150 (onshore oil and gas geophysical exploration surface management requirements); MS-6840 (special status species management); and MS-8110, -8130, -8140, and -8150 (relating to various aspects of cultural resources management).⁴¹¹ Potentially relevant handbook sections include but are not limited to H-1601-1 (land-use planning), H-1740-2 (integrated vegetation management), H-1790-1 (NEPA), H-3070-2 (economic evaluation of oil and gas properties), H-3101-1 (issuance of leases), H-3110-1 (noncompetitive leases), H-3150-1 (onshore oil and gas geophysical exploration surface management requirements), and H-3203-1 (leasing terms).⁴¹²

In the interest of space, I will make no effort to review all of the provisions in this guidance. This would be a daunting task, and it might well be virtually impossible to determine what versions of these documents were in place at various times in the past. However, there are potentially a number of relevant provisions that could constitute formal orders, perhaps most significantly those found in the handbook section entitled "Planning for Fluid Minerals Resources."⁴¹³ The provisions in BLM Manual MS-3101, relating to issuance of leases, are also relevant and some have been discussed.⁴¹⁴

e. BLM Instruction Memoranda

In addition to manual and handbook provisions, BLM also has an extensive library of "Instruction Memoranda" (IMs), which may also be formal orders that a lease is subject to, at least if the lease was issued since 1984 when the "formal orders" language was adopted in the standard lease form. IMs "are temporary directives that supplement the Bureau Manual

⁴⁰⁹ See 5 U.S.C. § 553 (2006) (specifying the Administrative Procedure Act rulemaking provisions).

⁴¹⁰ See 43 C.F.R. § 3162.1(a) (2008) (providing that operating rights owners shall comply "with other orders and instructions of the authorized officer" (emphasis added)).

⁴¹¹ See BLM Manual, *supra* note 405 (presenting BLM manual sections).

⁴¹² See BLM Handbooks, *supra* note 405 (presenting BLM handbook sections).

⁴¹³ BUREAU OF LAND MGMT., FLUID MINERAL HANDBOOK, *supra* note 377. It makes many provisions, including specifying that stipulations are to be the least restrictive possible, *id.* at III-11, providing for certain determinations in the RMP for some oil and gas lease decision making, *see id.* at IV-1, and providing that "[c]onstraints in the form of conditions of approval (COAs) on applications for permit to drill (APD's) are site specific requirements or measures imposed to protect resources or resource values. COAs must be reasonable and consistent with lease rights." *Id.* at IV-2.

⁴¹⁴ See *supra* notes 147, 191, 314 and accompanying text.

Sections.⁴¹⁵ The BLM website presents IMs that have been issued since 1999.⁴¹⁶ Generally they are directives from the BLM Director to BLM state directors and field office officials, although state offices may also issue IMs.⁴¹⁷ Most, if not all, IMs have associated expiration dates,⁴¹⁸ so it is debatable whether they have continuing force after they expire, even if the IM was in force when a lease was issued. But BLM sometimes continues to treat IMs as effective after they have nominally expired.⁴¹⁹ At this time, IMs 2009-225, 2009-078, 2009-044, and 2009-011 are operational at a minimum (all expire on September 30, 2010).⁴²⁰ These IMs address a range of topics including oil and gas inspection and enforcement strategies,⁴²¹ processing APDs that employ directional drilling from well pads on nonfederal lands,⁴²² the use of categorical exclusions from NEPA compliance for geophysical exploration,⁴²³ and assessment and mitigation of

⁴¹⁵ Bureau of Land Mgmt., U.S. Dep't of the Interior, National Instruction Memoranda, http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction.html (last visited Apr. 18, 2010).

⁴¹⁶ *Id.*

⁴¹⁷ See, e.g., Instruction Memorandum No. 2010-037 from Dir., Bureau of Land Mgmt., to All State Directors (Dec. 18, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2010/im_2010-037_tribal.html (last visited Apr. 18, 2010); Instruction Memorandum No. 2009-167 from Dir., Bureau of Land Mgmt., to All Field Officials (July 7, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-167.html (last visited Apr. 18, 2010); Instruction Memorandum No. WY-2010-017 from State Dir., Bureau of Land Mgmt., Wyo. State Office to All Employees (Jan. 26, 2010), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/resources/efoia/IMs/2010.Par.14095.File.dat/wy2010-017.pdf>.

⁴¹⁸ See, e.g., Instruction Memorandum No. 2010-025 from Assistant Dir., Minerals & Realty Mgmt., Bureau of Land Mgmt., to All Field Officials (Dec. 4, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2010/IM_2010-025.html (last visited Apr. 18, 2010) (expiring September 30, 2011).

⁴¹⁹ See *Yates Petroleum Corp.*, 176 I.B.L.A. 144, 159 n.16 (2008) (pointing out that it was "BLM practice to continue using the guidance contained in [a] memorandum" issued by the BLM Wyoming State Office (IM No. WY-90-231) even though the IM had expired).

⁴²⁰ See Instruction Memorandum No. 2009-225 from Assistant Dir., Minerals & Realty Mgmt., Bureau of Land Mgmt., to All Field Officials (Sept. 30, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-225.html (last visited Apr. 18, 2010); Instruction Memorandum No. 2009-078 from Assistant Dir., Minerals & Realty Mgmt., Bureau of Land Mgmt., to All Field Officials (Feb. 20, 2009), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-078.html (last visited Apr. 18, 2010); Instruction Memorandum No. 2009-044 from Dir., Bureau of Land Mgmt., to All Wash. Office & Field Officials (Dec. 19, 2008), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-044.html (last visited Apr. 18, 2010); Instruction Memorandum No. 2009-011 from Assistant Dir., Renewable Res. & Planning, Bureau of Land Mgmt., to All State Dirs. (Oct. 10, 2008), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-011.html (last visited Apr. 18, 2010).

⁴²¹ Instruction Memorandum No. 2009-225 from Assistant Dir. to All Field Officials, *supra* note 420.

⁴²² Instruction Memorandum No. 2009-078 from Assistant Dir. to All Field Officials, *supra* note 420.

⁴²³ Instruction Memorandum No. 2009-044 from Dir. to All Wash. Office & Field Officials, *supra* note 420.

impacts to paleontological resources.⁴²⁴ Many other nominally expired IMs relate to oil and gas development.⁴²⁵

f. The BLM “Gold Book”

An additional BLM document that could constitute a formal order is The Gold Book (actually entitled Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development: The Gold Book).⁴²⁶ While this document also has not been adopted through formal notice-and-comment rulemaking, it is an important source of information and guidance for BLM decision making regarding operations on an oil and gas lease.⁴²⁷ It is essentially a user-friendly companion to Onshore Oil and Gas Order Number 1.

The Gold Book provides a wide array of guidance (and requirements) relative to all phases of oil and gas development operations. It was “developed to assist operators by providing information on the requirements for obtaining permit approval and conducting environmentally responsible oil and gas operations on Federal lands.”⁴²⁸ It defines “Best Management Practices” as measures that “minimiz[e] undesirable impacts to the environment” and promotes the use of best management practices to

⁴²⁴ Instruction Memorandum No. 2009-011 from Assistant Dir. to All State Dirs., supra note 420.

⁴²⁵ See, e.g., Instruction Memorandum No. 2002-053, from the Dir., Bureau of Land Mgmt., to All State Dirs., Assistant Dirs. & Field Officials (Dec. 12, 2001) (expiring September 30, 2003) (on file with author) (requiring preparation of a statement of adverse energy impacts); Instruction Memorandum No. 2003-233, from Dir., Bureau of Land Mgmt., to State Dirs. (July 28, 2003) (expiring September 30, 2004) (on file with author) (requiring use of the least restrictive mitigation); Instruction Memorandum No. 2003-234, from Dir., Bureau of Land Mgmt., to All Field Officials (July 28, 2003) (expiring September 30, 2004) (on file with author) (requiring use of the least restrictive mitigation); Instruction Memorandum No. 2004-110, from Dir., Bureau of Land Mgmt., to All WO & FO Officials (Feb. 23, 2004) (expiring September 30, 2005) (on file with author) (guiding leasing decisions during RMP revision); Instructional Memorandum No. 2004-110 Change 1, from Dir., Bureau of Land Mgmt., to All WO & FO Officials (Aug. 13, 2004) (expiring September 30, 2005) (on file with author) (guiding leasing decisions during RMP revision); Instruction Memorandum No. 2005-235, from Dir., Bureau of Land Mgmt., to AFOs (Sept. 13, 2005) (expiring September 30, 2006) (on file with author) (presenting APD processing timelines to comply with the Energy Policy Act of 2005); Instruction Memorandum No. 2007-021, from Dir., Bureau of Land Mgmt., to All Field Officials (Nov. 8, 2006) (expiring September 30, 2008), http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2007/im_2007-021_.html (last visited Apr. 18, 2010) (providing for the use of best management practices). As mentioned, IMs issued since 1999 are available on the BLM website. See supra text accompanying note 415. See supra Part IV.C.3 for a discussion of IM 92-67, which is not available on the BLM website.

⁴²⁶ BUREAU OF LAND MGMT., SURFACE OPERATING STANDARDS AND GUIDELINES FOR OIL AND GAS EXPLORATION AND DEVELOPMENT: THE GOLD BOOK (4th ed. 2007), available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/_energy/oil_and_gas.Par.18714.File.dat/OILgas.pdf.

⁴²⁷ See 43 C.F.R. § 3162.1(a) (2008) (providing that operating rights owners shall comply “with other orders and instructions of the authorized officer” (emphasis added)).

⁴²⁸ BUREAU OF LAND MGMT., supra note 426, at 1.

achieve this end.⁴²⁰ The Gold Book states that “[c]onstraints . . . may be imposed on the location of access roads, well sites, and facility sites or the timing of geophysical exploration, well drilling, or other operations” and “may result from lease stipulations, the surface management agency’s review and environmental analysis of the proposed operations, Notices to Lessees, Onshore Orders, or regulations.”⁴³⁰ The Gold Book specifies that environmental concerns might be addressed through conditions of approval or best management practices that result from a site-specific analysis.⁴³¹ Thus, design and construction techniques for well sites should “minimize surface disturbance and the associated effects of proposed operations and maintain the reclamation potential of the site.”⁴³² There are a number of specific considerations related to construction of well sites, reserve pits, roads and access ways, and drainage and drainage structures.⁴³³ Guidance for drilling and production operations is also specified, as “[o]nshore oil and gas lease operations are subject to applicable laws, regulations, lease terms, the [APD], APD conditions of approval, Onshore Oil and Gas Orders, Notices to Lessees, and orders and instructions of the authorized officer.”⁴³⁴ These obligations aim to ensure that the conduct of operations protects “natural resources, environmental quality, life, and property.”⁴³⁵ Maximizing oil and gas recovery with minimum adverse effect on the environment is “[t]he primary objective.”⁴³⁶ To achieve these objectives, The Gold Book details measures for disposal of produced water, pollution control and hazardous waste management, noise control, protection of visual and scenic resources, and even how facilities should be painted.⁴³⁷ The Gold Book also specifies reclamation measures.⁴³⁸

g. Presidential Executive Orders

Executive Orders (EOs) issued by the President of the United States are official documents by which the President manages the operations of the executive branch. A number of these relate to obligations of the federal government to protect the natural environment. There is no doubt they are formal orders that many leases are subject to.

A few of the active EOs indicate the extent to which BLM retains rights in areas that have been leased for oil and gas development. President Carter issued EOs 11,990 and 11,988 in 1977 to guide and establish requirements for

⁴²⁹ Id. at 2.

⁴³⁰ Id. at 3.

⁴³¹ See id. at 9.

⁴³² Id. at 15.

⁴³³ See id. at 15–36.

⁴³⁴ Id. at 37.

⁴³⁵ Id.

⁴³⁶ Id.

⁴³⁷ Id. at 38–41.

⁴³⁸ See id. at 43–47, 49.

federal protection of floodplains and wetlands.⁴³⁹ EO 12,088, issued by President Carter in 1978, provides that “[t]he head of each Executive agency is responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under the control of the agency.”⁴⁴⁰ President Nixon issued EO 11,593 in 1971 to guide and establish obligations for the protection of cultural and historical resources.⁴⁴¹ EO 13,186, issued by President Clinton in 2001, provides for the conservation of migratory birds.⁴⁴²

In addition to EOs aimed at protecting the natural environment, there are EOs that address energy development. President George W. Bush issued EO 13,211 in 2001 to require the preparation of a Statement of Energy Effects for federal regulatory actions that can have significant adverse effects on the supply, distribution, or use of energy.⁴⁴³ EO 13,212, also issued by President Bush in 2001, requires federal agencies to expedite permitting of energy projects.⁴⁴⁴ It states, “For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections.”⁴⁴⁵ These directives to further energy production have not eliminated requirements to protect the natural environment when federal oil and gas leases are developed.

h. Solicitor Opinions and Secretarial Orders

Finally, two additional types of formal orders that a lease may be subject to are opinions of the Solicitor of the U.S. Department of the Interior and orders issued by the Secretary of the Interior. A list of, and access to, many of these opinions and orders can be found online.⁴⁴⁶ On January 6, 2010, Secretary of the Interior Ken Salazar issued Secretarial Order 3294, which established an Energy Reform Team in the Department of the Interior that will oversee evaluation and reform of Department energy policies.⁴⁴⁷ Part and parcel of this reform effort was the establishment of new policies regarding onshore oil and gas leasing under the management of BLM. This includes a requirement for “Master Leasing and Development Plans” prior to

⁴³⁹ Exec. Order No. 11,990, 3 C.F.R. 121 (1978), reprinted as amended in 42 U.S.C. § 4321 (2006); Exec. Order No. 11,988, 3 C.F.R. 117 (1978), reprinted as amended in 42 U.S.C. § 4321 (2006).

⁴⁴⁰ Exec. Order No. 12,088, 3 C.F.R. 243 (1979), reprinted as amended in 42 U.S.C. § 4321 (2006).

⁴⁴¹ Exec. Order No. 11,593, 3 C.F.R. 559 (1971–1975), reprinted in 16 U.S.C. § 470 (2006).

⁴⁴² Exec. Order No. 13,186, 3 C.F.R. 719 (2002), reprinted in 16 U.S.C. § 701 (2006).

⁴⁴³ Exec. Order No. 13,211, 3 C.F.R. 767 (2002), reprinted in 42 U.S.C. § 13201 (2006).

⁴⁴⁴ Exec. Order No. 13,212, 3 C.F.R. 769 (2002), reprinted as amended in 42 U.S.C. § 13201 (2006).

⁴⁴⁵ *Id.*

⁴⁴⁶ U.S. Dep’t of Interior, ELIPS Electronic Library of Interior Policies: Secretary’s Orders, http://elips.doi.gov/app_so/index.cfm?fuseaction=home (last visited Apr. 18, 2010) (listing orders issued by the Secretary of the Interior); U.S. Dep’t of Interior, Office of the Solicitor—Solicitor’s Opinions, <http://www.doi.gov/solicitor/opinions.html> (last visited Apr. 18, 2010) (listing opinions of the Solicitor of the U.S. Department of the Interior).

⁴⁴⁷ Sec’y of the Interior, Order No. 3294 (Jan. 6, 2010), available at http://www.interior.gov/documents/Order_3294.pdf.

leasing in areas where intensive new oil and gas development is anticipated, and increased environmental review of lease parcels leading to identification of mitigation measures.⁴⁴⁸ This new policy direction could lead to substantial changes in BLM's oil and gas program and to issues related to BLM's assertion of its retained rights. This new direction will be discussed further in Part VIII.B.

E. Reasonable Measures

"Reasonable measures" is the last of the several conditions that a BLM oil and gas lease is subject to. This option for ensuring environmental protection when operations are proposed on a lease, which is provided for by both the § 3101.1-2 regulation and section 6 of the modern lease form, has been discussed in some detail above.⁴⁴⁹ BLM can require reasonable measures to minimize adverse effects to the environment that include, but are not limited to, modifying the siting and design of facilities, timing of operations, and specifying interim and final reclamation measures, so long as the reasonable measures are consistent with the lease rights granted.⁴⁵⁰

As is apparent from this lengthy discussion of legal authorities, BLM has substantial retained rights under the lease contract that allow it to protect the natural environment when lease development is proposed. But furthermore, in addition to what is apparent from this analysis, basic principles of contract law may also help define or illuminate BLM's retained rights. These principles will be considered next.

VI. GENERAL PRINCIPLES OF CONTRACT LAW WILL HELP DEFINE BLM'S RETAINED RIGHTS

A. Court Decisions Related to Federal Oil and Gas Leases Have Relied on General Principles of Contract Law

Courts evaluating the federal government's rights and duties under federal oil and gas leases have considered basic principles of contract law. Consequently, it is appropriate to not only consider the provisions and legal authorities lease contracts are specifically subject to when determining BLM's retained rights in leased land, but to also consider more general contract law principles. There is, of course, a large body of law that has been developed around contracts.

In *Mobil Oil Exploration and Producing Southeast, Inc. v. United States (Mobil Oil)*,⁴⁵¹ the United States Supreme Court considered oil and gas

⁴⁴⁸ See Press Release, U.S. Dep't of Interior, Secretary Salazar Launches Onshore Oil and Gas Leasing Reforms to Improve Certainty, Reduce Conflicts and Restore Balance on U.S. Lands (Jan. 6, 2009), http://www.interior.gov/news/09_News_Releases/010610.html (last visited Apr. 18, 2010) (presenting new policies that apply to BLM oil and gas leasing).

⁴⁴⁹ See discussion *supra* Parts IV.B, IV.C.2-3.

⁴⁵⁰ See discussion *supra* Part IV.C.1.

⁴⁵¹ 530 U.S. 604 (2000).

leases off the North Carolina coast that were issued pursuant to the Outer Continental Shelf Leasing Act (OCSLA) and held that repudiation of the leases occurred when the federal government refused to take a required action (approval of an exploration plan) within a specified timeline.⁴⁵² The Court noted, “[W]hen the United States enters into contract relations, its rights and duties therein are governed generally by the law applicable to contracts between private individuals.”⁴⁵³ Based on this, the Court looked to the Restatement (Second) of Contracts for a definition of when repudiation and breach of contract occurs, and also stated that “[t]he Restatement of Contracts reflects many of the principles of contract law that are applicable to this action.”⁴⁵⁴ Mobil Oil will be considered further in Part VII.B.

Similarly, in another offshore leasing case that dealt with OCSLA leases off the California coast, *Amber Resources Co. v. United States*,⁴⁵⁵ the United States Court of Appeals for the Federal Circuit ruled that the government had breached the lease contracts when it altered the terms of suspensions.⁴⁵⁶ Again, the court looked to the Restatement (Second) of Contracts for guidance on when repudiation and breach occurs. The court relied on the Supreme Court’s analysis in *Mobil Oil* to reach its conclusion.⁴⁵⁷

In considering state law claims related to assignments of leases and royalty interests based on BLM onshore oil and gas leases, the District Court in Wyoming determined that reservation language should be examined “in accordance with the general principles of contract interpretation.”⁴⁵⁸ Relying on Wyoming Supreme Court precedent, the court determined the prime focus should be on the intent of the parties and where the language of a contract is unambiguous, intent should be gathered from the contract itself, although the context within which the document was written can be considered.⁴⁵⁹ If contract language is ambiguous, extrinsic evidence can be considered.⁴⁶⁰

Another case originating in Wyoming stemmed from BLM decisions to suspend oil and gas leases in an area with rich trona deposits so that trona mining could occur prior to oil and gas development.⁴⁶¹ The United States Court of Federal Claims observed that when determining whether the suit was timely filed, repudiation of a contract occurs when the government announces it will not perform contractual obligations and a breach of

⁴⁵² *Id.* at 604, 618, 620, 621, 624.

⁴⁵³ *Id.* at 607 (quoting *United States v. Winstar Corp.*, 518 U.S. 839, 895 (1996) (plurality opinion) (internal quotation marks omitted)).

⁴⁵⁴ *Id.* at 608 (citing RESTATEMENT (SECOND) OF CONTRACTS §§ 243, 250, 373 (1981), to explain remedies for a repudiation and define the terms “total breach” and “repudiation”).

⁴⁵⁵ 538 F.3d 1358 (Fed. Cir. 2008).

⁴⁵⁶ *Id.* at 1374.

⁴⁵⁷ *Id.* at 1368, 1371–74.

⁴⁵⁸ *Followwill v. Merit Energy Co.*, 371 F. Supp. 2d 1305, 1309 (D. Wyo. 2005).

⁴⁵⁹ *Id.* (citing Wyoming Supreme Court cases).

⁴⁶⁰ *Id.*

⁴⁶¹ *Barlow & Haun, Inc. v. United States*, 87 Fed. Cl. 428, 431–32 (2009). Trona is a sodium-rich mineral that is processed into soda ash, which is used in manufacturing many products, such as glass, soap, and paper. *Id.* at 431.

contract occurs when the government actually fails to honor its obligations or when the promisee brings suit in the face of a repudiation.⁴⁶²

Given this precedent it is appropriate to consider underlying principles of contract law that might help define the scope and nature of obligations under a federal onshore oil and gas lease, and thus BLM's retained rights and duties pursuant to a lease. This will be done next by briefly considering some of the relevant guidance in the Restatement (Second) of Contracts and American Jurisprudence 2d Contracts.

B. Contract Principles Presented in the Restatement of Contracts and American Jurisprudence

The initial question in construction of a contract is a determination of whether the contract is ambiguous.⁴⁶³ Contract language is unambiguous when it has a "definite and precise meaning," and if the contract is unambiguous "the rules governing the interpretation of ambiguous contracts do not come into play."⁴⁶⁴ The meaning of an unambiguous contract is determined without reference to extrinsic facts or aids and "it must be enforced as written."⁴⁶⁵ Ambiguity is determined objectively through the eyes of a reasonably intelligent person, considering the entire written agreement.⁴⁶⁶ Ambiguity is not created just because a contract will work hardship on one party, or the parties disagree over the meaning of a contract, or urge varying interpretations.⁴⁶⁷ Ambiguity must emanate from the language used in the contract, "rather than from one party's subjective perception of its terms."⁴⁶⁸

Where there is ambiguity, the intention of the parties to the contract will be sought; "the fundamental and cardinal rule in the construction or interpretation of contracts is that the intention of the parties is to be ascertained."⁴⁶⁹ If the contract is not ambiguous, intent is determined from the language used in the contract.⁴⁷⁰ The intention or meaning of a contract can be conveyed by implication if such is plainly required by the language in the contract.⁴⁷¹

Other principles of contract law can also affect construction and interpretation. Ambiguous language is interpreted most strongly against the

⁴⁶² Id. at 435–36.

⁴⁶³ 17A AM. JUR. 2D Contracts § 329 (2004).

⁴⁶⁴ Id.

⁴⁶⁵ Id. § 330; see also RESTATEMENT (SECOND) OF CONTRACTS ch. 9, topic 5, introductory note (1979) ("The terms of the agreement or promise to a large extent define the obligation created.").

⁴⁶⁶ 17A AM. JUR. 2D Contracts § 331 (2004).

⁴⁶⁷ Id.

⁴⁶⁸ Id.

⁴⁶⁹ Id. § 345.

⁴⁷⁰ Id. § 348.

⁴⁷¹ Id. § 368. Conditions in a contract may also be express or implied. Id. § 454; see also RESTATEMENT (SECOND) OF CONTRACTS § 204 (1979) (stating that, where a term is essential to the determination of rights and duties under a contract, "a term which is reasonable in the circumstances is supplied by the court").

drafting party, which is certainly BLM when it comes to onshore oil and gas leases.⁴⁷² However, in contracts where the government enters into the contract on behalf of the public, the contract is liberally construed in favor of the government.⁴⁷³ There is an implied covenant of good faith and fair dealing in every contract, but this duty does not alter a contract's express provisions.⁴⁷⁴ Parties to a contract are presumed to contract with reference to existing law.⁴⁷⁵ Existing law is made part of the contract, but subsequent law is not made part of a contract unless there is clear expression in the contract to do so.⁴⁷⁶

A federal onshore oil and gas lease is, undoubtedly, a written, integrated agreement between the government and the lessee.⁴⁷⁷ Thus, the language used in the lease will likely determine which rights to condition development are retained by BLM, an issue which has been discussed at length elsewhere. The language in a federal onshore oil and gas lease is arguably unambiguous, so interpretation of what rights BLM retains will likely be based on consideration of that language and not extrinsic evidence. But that of course could be subject to debate; a claim might be made in a particular circumstance that ambiguity exists and extrinsic evidence needs to be considered to interpret the contract.

The intent of the parties to a BLM oil and gas lease is to allow for, and even promote, oil and gas development on public lands.⁴⁷⁸ Modern versions of the lease form state, "This lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described . . . together with the right to build and maintain necessary improvements thereupon."⁴⁷⁹ The three older versions of

⁴⁷² 17A AM. JUR. 2D Contracts § 343 (2004).

⁴⁷³ Id. § 397; see id. § 339 ("A contract should be construed liberally to protect the public interest where that is involved in the case."); RESTATEMENT (SECOND) OF CONTRACTS § 207 (1979) ("In choosing among the reasonable meanings of a promise or agreement or a term thereof, a meaning that serves the public interest is generally preferred.")

⁴⁷⁴ See 17A AM. JUR. 2D Contracts § 370 (2004); RESTATEMENT (SECOND) OF CONTRACTS § 205 (1979).

⁴⁷⁵ 17A AM. JUR. 2D Contracts § 371 (2004).

⁴⁷⁶ Id. §§ 371–372.

⁴⁷⁷ See RESTATEMENT (SECOND) OF CONTRACTS ch. 9, topic 3, introductory note (1979) (discussing the effects of adoption of a writing as the final expression of agreement, referred to as an "integrated agreement," the principal effect of which is "to focus interpretation on the meaning of the terms embodied in the writing").

⁴⁷⁸ See, e.g., Conner, 848 F.2d 1441, 1453 (9th Cir. 1988) (analyzing onshore leases and agreeing with the District of Columbia Circuit Court of Appeals' view expressed in an offshore leasing case that "[p]umping oil and not leasing tracts is the aim of congressional [mineral leasing] policy" (quoting *N. Slope Borough v. Andrus*, 642 F.2d 589, 608 (D.C. Cir. 1980) (internal quotation marks omitted))); see also *Devon Energy Corp. v. United States*, 45 Fed. Cl. 519, 521 (1999) (finding that in passing the Mineral Leasing Act, Congress "sought to promote the orderly development of oil and gas deposits in publicly owned lands of the United States" (citation omitted)).

⁴⁷⁹ BUREAU OF LAND MGMT., *supra* note 83, at 1; see also 43 C.F.R. § 3101.1-2 (2008) ("A lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold . . .").

the lease form make a nearly equivalent grant.⁴⁸⁰ Yet, in the next sentence following this grant, modern versions of the lease state “[r]ights granted are subject to” the authorities discussed above at length—applicable laws; lease terms, conditions, and stipulations; regulations and formal orders in place when the lease is issued; and regulations and formal orders issued afterward if not inconsistent with the lease rights granted.⁴⁸¹ The § 3101.1-2 regulation adds to this list.⁴⁸² And while older versions of the lease form may be less explicit, they nevertheless provide that “lessee agrees” to take reasonable steps to prevent certain specified types of environmental damage, “lessor reserves” certain rights, and that “it is agreed” that the rate of prospecting and development and the quantity and rate of production are subject to control in the public interest by the Secretary of the Interior.⁴⁸³

Parties to an onshore federal oil and gas lease intend to allow for oil and gas resource development; however, they also understand that, or should understand that, any such development is conditional.⁴⁸⁴ Consequently, when general principles of contract law are considered, it is apparent that BLM has significant retained rights under a lease allowing it to condition development to protect the natural environment. The provision in section 6 of the modern version of the standard lease form, stating that BLM can specify reasonable measures to minimize adverse impacts to resources, is perhaps the provision that is most likely to be challenged as ambiguous. However, the language that appears in section 6 of the October 2008 standard lease form states that the “[l]essee must take reasonable measures deemed necessary by lessor to accomplish the intent of this section.”⁴⁸⁵

⁴⁸⁰ BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

⁴⁸¹ BUREAU OF LAND MGMT., *supra* note 83, at 1.

⁴⁸² 43 C.F.R. § 3101.1-2 (2008) (making leases subject to stipulations, specific, nondiscretionary statutes, and reasonable measures that might be required).

⁴⁸³ BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2 (“The lessee agrees . . . [t]o take such reasonable steps as may be needed to prevent operations from unnecessarily: (1) Causing or contributing to soil erosion or damaging any forage and timber growth thereon, (2) polluting the waters of the reservoirs, springs, streams, or wells”); BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2 (requiring the same “reasonable steps”); BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2 (same).

⁴⁸⁴ *Boesche v. Udall*, 373 U.S. 472, 477–78 (1963) (finding that onshore leases are subjected to exacting restrictions and are governed by the Secretary of the Interior in minute detail); see *supra* Part V.A.

⁴⁸⁵ BUREAU OF LAND MGMT., *supra* note 83, at 3 (emphasis added); see also 43 C.F.R. § 3101.1-2 (2008) (stating that the right to develop oil and gas is subject to “such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses, or users” and that such reasonable measures include “but are not limited to” modification of the siting or design of facilities, timing of operations, and specification of reclamation measures); *supra* Parts IV.B, IV.C.2–3 (analyzing the reasonable measures provision). This same language is used in the July 2006 version of the modern lease form. BUREAU OF LAND MGMT., 2006 LEASE FORM, *supra* note 84, at 2. In the March 1984, June 1988, October 1992, and February 2003 versions of the modern lease form, “shall” was used rather than “must.” BUREAU OF LAND MGMT., 1984 LEASE FORM, *supra* note 84, at 2; BUREAU OF

The intent specified is to “conduct operations in a manner that minimizes adverse impacts” to various resources, and it is stated that reasonable measures “include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures” so long as consistent with the lease rights granted.⁴⁸⁶ Therefore, it would appear that reasonable measures could include any measures that BLM might require so long as they did not take away the exclusive right to remove all of the oil and gas on a leasehold or prohibit the construction of necessary improvements. Any condition short of this appears to be within BLM’s discretion and within the meaning of the term reasonable measures as used in the standard lease form. In *Yates Petroleum Corp.*,⁴⁸⁷ the Interior Board of Land Appeals (IBLA) rejected an attempt to limit BLM’s imposition of reasonable measures to nothing more stringent than those mentioned in the 200-meter 60-day rule and recognized BLM could restrict the siting or timing of lease activities.⁴⁸⁸ Thus, a highly constrained interpretation of what constitutes reasonable measures likely will not succeed, especially in light of the general contract principle that when the government enters into a contract on behalf of the public, then the contract is construed in favor of the public.⁴⁸⁹

VII. POTENTIAL LIMITATIONS ON BLM’S ABILITY TO EXERCISE ITS RETAINED RIGHTS

I have discussed in detail the authorities that support BLM’s assertion of considerable retained rights in areas it has leased for oil and gas development, allowing it to protect the natural environment through the exercise or implementation of those retained rights. But of course, this is not a one-way street, and consideration must be given to contrary authority that could limit the exercise of any asserted retained rights. Some of these possible contrary authorities will be considered in this section.

A. The Lessee Has Been Granted the Right to Use as Much of the Leased Lands as Is Necessary to Remove All of the Oil and Gas and the Right to Build Necessary Improvements

Modern versions of the lease form in use since 1984 grant the exclusive right to remove all of the oil and gas on a leasehold and the right to build and maintain necessary improvements thereupon.⁴⁹⁰ The § 3101.1-2 regulation supplements this grant by providing that “[a] lessee shall have the right to

LAND MGMT., 1988 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 1992 LEASE FORM, *supra* note 84, at 2; BUREAU OF LAND MGMT., 2003 LEASE FORM, *supra* note 84, at 2.

⁴⁸⁶ BUREAU OF LAND MGMT., *supra* note 83, at 3 (emphasis added).

⁴⁸⁷ 176 I.B.L.A. 144 (2008).

⁴⁸⁸ *Id.* at 155–56; see also *Nat’l Wildlife Fed’n*, 169 I.B.L.A. 145, 164 (2006) (holding BLM has authority to restrict the siting and timing of lease activities).

⁴⁸⁹ 17A AM. JUR. 2D Contracts § 397 (2004).

⁴⁹⁰ See BUREAU OF LAND MGMT., *supra* note 83, at 1.

use so much of the leased lands as is necessary to [remove] all the leased resource in a leasehold.”⁴⁹¹ As discussed, under the modern lease forms and the § 3101.1-2 regulation three rights have been granted: 1) the exclusive right to use the leasehold for the removal of all oil and gas; 2) the right to “use” as much of the leasehold as is “necessary” to remove “all” of the oil and gas; and 3) a right to build “necessary” improvements.⁴⁹² The three older versions of the lease grant similar rights, but these lease forms were in use prior to promulgation of the § 3101.1-2 regulation in 1988. The 1954, 1965, and 1971 versions of the lease form all provide that the lessee is granted the “exclusive right and privilege to [remove] all the oil and gas . . . in the lands leased, together with the right to construct and maintain [structures] necessary to the full enjoyment thereof.”⁴⁹³

In considering whether these granted rights might limit BLM’s ability to assert retained rights to limit or guide development, it seems unlikely there will often be dispute that a particular lessee has the exclusive right to access the oil and gas on a leasehold. Thus, the more critical questions likely relate to what actions might be “necessary” for the use of the leasehold for the removal of all the oil and gas, and what might constitute “necessary” improvements.

The right to do what is necessary to access all of the oil and gas that may be found on a lease and the right to build and maintain necessary improvements should not be viewed as granting an unfettered right to do anything the lessee may desire to extract the oil and gas. The word “necessary” gathers meaning from the connection in which it is used.⁴⁹⁴ It can mean absolute physical necessity or inevitability, or it can mean only that which is “convenient, useful, appropriate, suitable, proper, or conducive to the end sought.”⁴⁹⁵ This latter construction probably defines the word “necessary” in the context of BLM’s standard lease form and the § 3101.1-2 regulation given the significant conditions the lease is subject to.

The connection in which the word “necessary” is used includes the provision in the next sentence of the modern lease forms that makes the rights granted subject to applicable laws; the terms, conditions, and stipulations found in the lease; regulations and formal orders in place when the lease is issued; and regulations and formal orders issued afterward if not inconsistent with the lease rights granted.⁴⁹⁶ The § 3101.1-2 regulation adds to or elaborates on this list by providing that the rights granted are subject to stipulations attached to the lease; specific, nondiscretionary statutes; and

⁴⁹¹ 43 C.F.R. § 3101.1-2 (2008).

⁴⁹² See *supra* Part IV.D.

⁴⁹³ BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

⁴⁹⁴ BLACK’S LAW DICTIONARY 1029 (6th ed. 1990).

⁴⁹⁵ *Id.*; see also 28 WORDS & PHRASES 188–236 (perm. ed. 2003) (presenting judicial interpretations of the word “necessary” that generally indicate it does not mean an absolute right); *id.* at 23–31 (Supp. 2009) (presenting additional judicial interpretations of the word “necessary” that generally indicate it does not mean an absolute right).

⁴⁹⁶ BUREAU OF LAND MGMT., *supra* note 83, at 1.

“such reasonable measures as may be required by the authorized officer to minimize adverse impacts.”⁴⁹⁷ Therefore, the context of any rights granted is that they have been made conditional on compliance with an array of external authorities, and what is “necessary” should be interpreted in this context. As discussed in detail above, many of these external sources of authority that have been incorporated into the lease include mandatory obligations to protect the environment that are imposed on BLM, the lessee, or both.⁴⁹⁸

Accordingly, the term “necessary” should not be viewed as strongly limiting BLM’s retained rights. Lessees can take actions to access the oil and gas and to build related improvements only to the extent these activities can be conducted in a manner that is in compliance with the substantial reservations of authority found in the lease. What is necessary is better viewed as being defined by actions that are “appropriate” or “proper” in light of what the rights granted are subject to rather than an absolute right to pursue any activity that is desired by the lessee.⁴⁹⁹

B. Breach and Repudiation of Contract Claims

Perhaps the ultimate limit on efforts by BLM to exert its retained rights would be a successful claim by a lessee asserting BLM had repudiated the lease contract or breached it through the actions it took, with attendant monetary damages awarded. A repudiation of a contract occurs when there is a “statement by the obligor to the obligee indicating that the obligor will commit a breach that would of itself give the obligee a claim for damages for total breach” or “a voluntary affirmative act which renders the obligor unable or apparently unable to perform without such a breach.”⁵⁰⁰ A total breach is defined as a breach that “so substantially impairs the value of the contract to the injured party at the time of the breach that it is just in the circumstances to allow him to recover damages based on all his remaining rights to performance.”⁵⁰¹

Probably the most significant case that has considered the issue of repudiation and breach of contract in the context of federal oil and gas leases was *Mobil Oil*, although it considered offshore leases issued pursuant to the OCSLA, not onshore Mineral Leasing Act leases. In *Mobil Oil* the government entered into lease contracts with the petitioners for oil exploration and development off the coast of North Carolina.⁵⁰² Due to provisions in the later-enacted Outer Banks Protection Act (OBPA)⁵⁰³ that prohibited approval of required exploration, development, and production

⁴⁹⁷ 43 C.F.R. § 3101.1-2 (2008).

⁴⁹⁸ See discussion *supra* Part V.

⁴⁹⁹ See BLACK’S LAW DICTIONARY 1029 (6th ed. 1990) (defining “necessary”).

⁵⁰⁰ RESTATEMENT (SECOND) OF CONTRACTS § 250(a)-(b) (1979).

⁵⁰¹ *Id.* § 243.

⁵⁰² *Mobil Oil*, 530 U.S. 604, 609 (2000).

⁵⁰³ Outer Banks Protection Act, Pub. L. No. 101-380, § 6003, 104 Stat. 555, 556 (1990), repealed by Pub. L. No. 104-134, § 109, 110 Stat. 1321, 1321-177 (1996).

plans until specified new requirements were met, the government refused to approve an exploration plan within a specified timeline and placed the leases in suspension.⁵⁰⁴ On these facts the Supreme Court ruled a repudiation of contract had occurred and awarded the petitioners compensation.⁵⁰⁵ The Court's analysis provides guidance as to when repudiation or breach of a federal oil and gas lease contract might be deemed to occur.

The contracts at issue in *Mobil Oil* provided the leases were "subject to" several statutory and regulatory provisions, and the Court recognized that these provisions "in effect were incorporated into the contracts."⁵⁰⁶ However, the Court refused to allow the later-enacted OBPA to control these leases, because it determined the OBPA was not a statute the leases were made subject to.⁵⁰⁷ Besides the fact that the OBPA was not a statute referenced in the lease contracts, the Court also determined that the "catchall provision" specifying the leases were subject to applicable statutes and regulations did not extend to the later-enacted OBPA and the leases were not subject to the later-enacted OBPA.⁵⁰⁸ The Court found that without a contractual limitation on the government's ability to impose "new and different requirements," such as those in the newly-enacted OBPA, the companies would have received "next to nothing" when they entered into the leases.⁵⁰⁹

Mobil Oil teaches that care must be exercised in attempting to incorporate later-adopted regulations and statutes into a lease. The provision in modern leases that the lease is made subject to applicable laws likely includes only laws in existence when the lease is issued. The only regulations that a lease may be subject to, whether in existence at lease formation or adopted afterward, are "the Secretary of the Interior's regulations and formal orders" as specifically provided for in the modern lease forms.⁵¹⁰ Nevertheless, *Mobil Oil* does not teach that BLM will be greatly limited in exercising its retained rights.

The Court in *Mobil Oil* recognized that the statutes and regulations referenced in the leases contained terms "which in effect were incorporated into the contracts" and that these "made clear that obtaining the necessary permissions [to conduct postlease activities] might not be an easy matter."⁵¹¹ Furthermore, the Court did not hold that later-adopted statutes or regulations could never be made part of a lease contract; it only held the leases created a promise not to impose new approval procedures and standards beyond those in the underlying statutes and regulations in effect

⁵⁰⁴ *Mobil Oil*, 530 U.S. at 609–14.

⁵⁰⁵ *Id.* at 607, 618, 620, 624.

⁵⁰⁶ *Id.* at 609, 615.

⁵⁰⁷ *Id.* at 615–17. The leases were made subject to the OCSLA, sections 302 and 303 of the Department of Energy Organization Act, 42 U.S.C. §§ 7152–7153 (2006), regulations issued pursuant to these statutes in existence when the lease was issued, future regulations issued under these statutes that provided for the prevention of waste and conservation of resources, and "all other applicable statutes and regulations." *Id.* at 615.

⁵⁰⁸ *Id.* at 616.

⁵⁰⁹ *Id.*

⁵¹⁰ E.g., BUREAU OF LAND MGMT., *supra* note 83, at 1.

⁵¹¹ *Mobil Oil*, 530 U.S. at 609.

when the leases were executed and which had been specifically incorporated into the leases.⁵¹² While acknowledging that the lease contracts “gave the companies rights to explore for, and to develop oil,” the Court also pointed out that

the need to obtain Government approvals so qualified the likely future enjoyment of the exploration and development rights that the contract, in practice, amounted primarily to an opportunity to try to obtain exploration and development rights in accordance with the procedures and under the standards specified in the cross-referenced statutes and regulations.⁵¹³

Under the facts in *Mobil Oil*, the Court determined this “gateway” had been significantly narrowed by the government’s actions and thus determined that a repudiation had occurred.⁵¹⁴ But if the government does not deviate significantly from the procedures and standards stated in the contract or incorporated into it when it is initially formed, a breach is unlikely to be found.

Given that 35,256 of the 48,342 currently active leases in the eleven western states have been issued since 1984 when the “applicable laws” language was introduced (see Table 1), that many of the “applicable laws” were adopted prior to 1980, and that BLM’s oil and gas operating regulations have been in place in nearly their present form since 1982 (and the relevant land use authorization regulations since 1981), it seems likely that most BLM oil and gas leases will survive claims that BLM actions pursuant to these authorities are a repudiation. More generally, so long as BLM takes care not to make leases worth “next to nothing,” its actions are unlikely to constitute a breach of contract. It must ensure that the gateway for seeking approval of activities on the lease is not so substantially narrowed that the legal regime that served as the basis for the bargained for right to explore for and extract oil and gas is lost or significantly altered. But given the significant number of conditions that an onshore lease is subject to, as in *Mobil Oil*, BLM oil and gas leases represent an opportunity to seek approval for development, not an unqualified right. As long as that opportunity is not entirely foreclosed BLM should be within its rights to demand protection of the environment, and no breach or repudiation of the contract would occur.

C. Reasonable Measures

The import of the term “reasonable measures,” which appears in section 6 of the modern lease forms as well as in the § 3101.1-2 regulation,

⁵¹² See *id.* at 616.

⁵¹³ *Id.* at 620.

⁵¹⁴ *Id.* at 620–21. While the Court’s statements regarding a “gateway” and the contract creating only an “opportunity” to pursue development were made in the context of outer continental shelf leases issued under the OCSLA, not onshore Mineral Leasing Act leases, this language probably has application to onshore leases as well, which are also conditional in nature. See *Boesche v. Udall*, 373 U.S. 472, 477–78 (1963) (describing how onshore lease rights are subject to “restrictions and continuing supervision”); see discussion *supra* Part V.A.

was discussed above.⁵¹⁵ If a narrow view—such as that indicated in the 200-meter 60-day rule—were adopted, it could limit BLM's ability to effectively assert its retained rights under an onshore oil and gas lease. But, as discussed,⁵¹⁶ a narrow interpretation seems unfounded. Section 6 of the modern lease form provides that reasonable measures are those "deemed necessary by lessor" and the regulation provides these measures are "as may be required by the authorized officer."⁵¹⁷ Both the modern lease form and the § 3101.1-2 regulation state that reasonable measures within BLM's discretion may include, but are not limited to, modification of the siting or design of facilities and timing of operations so long as they are consistent with the lease rights granted.⁵¹⁸ Moreover, the § 3101.1-2 regulation provides that the limits stated in the 200-meter 60-day rule are "[a]t a minimum" of what is consistent with lease rights.⁵¹⁹ Consequently, it seems unlikely that the discretion to impose reasonable measures on lease operations would be construed in such a narrow manner as to greatly limit BLM's retained rights to condition development. This view is supported by recent IBLA precedent.⁵²⁰

D. Courts Have Found BLM Cannot Completely Prohibit Development
When It Issues a Non-No Surface Occupancy Lease, Which Represents
an Irreversible and Irretrievable Commitment of Resources That
Requires Compliance with NEPA

The federal courts have held that when BLM and the Forest Service engage in oil and gas leasing activities that do not preclude surface disturbance, they make an irreversible and irretrievable commitment of resources that triggers NEPA requirements because the government has committed itself to allowing some level of disturbance.⁵²¹ The leases at issue have not provided for "no surface occupancy;" the leases have been "non-NSO" leases.⁵²² This view of the nature of an oil and gas lease could limit BLM's ability to exercise its retained rights because the vast majority of federal onshore leases are non-NSO.

In *Sierra Club v. Peterson*, concerning a BLM and Forest Service leasing action on roadless lands in the Targhee and Bridger-Teton National Forests

⁵¹⁵ See discussion *supra* Parts IV.B, IV.C.2–3.

⁵¹⁶ See discussion *supra* Part IV.C.2.

⁵¹⁷ BUREAU OF LAND MGMT., *supra* note 83, at 3; 43 C.F.R. § 3101.1-2 (2008).

⁵¹⁸ BUREAU OF LAND MGMT., *supra* note 83, at 3; 43 C.F.R. § 3101.1-2 (2008).

⁵¹⁹ 43 C.F.R. § 3101.1-2 (2008).

⁵²⁰ *E.g.*, *Yates Petroleum Corp.*, 176 I.B.L.A. 144, 155–56 (2008).

⁵²¹ See, e.g., *Bob Marshall Alliance*, 852 F.2d 1223, 1227 (9th Cir. 1988); *Conner*, 848 F.2d 1441, 1451 (9th Cir. 1988); *Sierra Club*, 717 F.2d 1409, 1414–15 (D.C. Cir. 1983). Use of the terms "irreversible" and "irretrievable" in these cases is likely linked to the provision in NEPA that requires an EIS to consider "any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." National Environmental Policy Act of 1969, 42 U.S.C. § 4332(2)(C)(v) (2006).

⁵²² *Bob Marshall Alliance*, 852 F.2d at 1227; *Conner*, 848 F.2d at 1444–45; *Sierra Club*, 717 F.2d at 1414.

in Idaho and Wyoming, the D.C. Circuit determined that, with respect to the non-NSO leases that were challenged, “[e]ven assuming, arguendo, that all lease stipulations are fully enforceable, once the land is leased the Department no longer has the authority to preclude surface disturbing activities even if the environmental impact of such activity is significant.”⁵²³ Consequently, preparation of an EIS was necessary to support the leasing decision.⁵²⁴ In *Conner v. Burford*, involving leasing on Forest Service lands with important wildlife and natural values in Montana, the Ninth Circuit determined that the sale of non-NSO leases “constitutes the point of commitment; after the lease is sold the government no longer has the ability to prohibit potentially significant inroads on the environment.”⁵²⁵ So, again, preparation of an EIS was necessary prior to leasing.⁵²⁶ In *Bob Marshall Alliance v. Hodel*, the Ninth Circuit reached the same conclusion with respect to leasing on “wild, mountainous terrain” in the Lewis and Clark National Forest in Montana.⁵²⁷

More recently, in *Northern Alaska Environmental Center v. Kempthorne* (Northern Alaska),⁵²⁸ involving the National Petroleum Reserve in Alaska, the Ninth Circuit again ruled that leasing represented an irretrievable commitment of resources and thus required preparation of an EIS.⁵²⁹ But in this case, the court held that a parcel-by-parcel NEPA analysis was not required because impacts were unidentifiable at the leasing stage on a parcel-by-parcel basis.⁵³⁰ The United States Court of Appeals for the Tenth Circuit, in *New Mexico ex rel. Richardson v. BLM*,⁵³¹ also concluded that issuing an oil and gas lease without an NSO stipulation in a biologically diverse Chihuahuan Desert grassland can constitute an irretrievable commitment of resources and thus require site-specific NEPA analysis prior to lease issuance. The court recognized that “[b]ecause BLM could not prevent the impacts resulting from surface use after a lease issued, it was required to analyze any foreseeable impacts of such use before committing the resources.”⁵³² The IBLA has reached the same conclusions.⁵³³

⁵²³ *Sierra Club*, 717 F.2d at 1414 (determining also that the decision to allow surface disturbance has been made at the leasing stage absent an NSO stipulation and that this represents an “irrevocable commitment” to allow some surface disturbance).

⁵²⁴ *Id.* at 1415.

⁵²⁵ *Conner*, 848 F.2d at 1451 (internal quotation marks omitted) (recognizing also that leasing that does not absolutely preclude surface disturbance represents an irretrievable commitment of resources).

⁵²⁶ *Id.* at 1450.

⁵²⁷ *Bob Marshall Alliance*, 852 F.2d at 1225, 1227.

⁵²⁸ 457 F.3d 969 (9th Cir. 2006).

⁵²⁹ *Id.* at 976.

⁵³⁰ *Id.* at 975–77.

⁵³¹ 565 F.3d 683 (10th Cir. 2009).

⁵³² *Id.* at 718–19. *New Mexico ex rel. Richardson* appears to differ from, or certainly elaborate on, Tenth Circuit precedent. See *Park County Res. Council, Inc. v. U.S. Dep’t of Agric.*, 817 F.2d 609, 624 (10th Cir. 1987), overruled on other grounds by *Vill. of Los Ranchos de Albuquerque v. Marsh*, 956 F.2d 970, 973 (10th Cir. 1992). In *Park County Resource Council*, the Tenth Circuit allowed leasing to go forward prior to preparation of a leasing EIS. *Id.* at 624. The court determined that the leasing was not “unreasonable” because of the preparation of a

While these cases have clearly determined that when BLM issues leases that do not include an NSO stipulation it has committed itself to allowing some level of development, these rulings probably will not greatly limit BLM's ability to exercise its retained rights to protect the natural environment. In the majority of these cases, the leasing decisions implicated many lease parcels and thousand of acres of public land were at issue.⁵³⁴ The question before these courts was whether an EIS was needed before this far-reaching action could be taken when the leases did not preclude surface occupancy.⁵³⁵ The courts concluded that an EIS was required if the leases being issued were non-NSO because the courts did not believe any reservation of authority was sufficient to assure impacts would be insignificant for purposes of NEPA over the the numerous lease parcels and large areas at issue.⁵³⁶ But this determination of the need for NEPA compliance when a Federal leasing action affects public land does not necessarily stand for the proposition that BLM cannot limit development as needed on specific lease parcels. In fact, in most of these cases the courts recognized that BLM still retained rights to protect the environment, even if development could not be entirely precluded on all leases.⁵³⁷

In *Sierra Club* the court recognized that mitigation measures could be required, but because surface disturbance could not be absolutely precluded, it determined BLM needed to prepare an EIS.⁵³⁸ In *Conner*, the court recognized that reasonable regulation of surface-disturbing activities

substantial EA, the requirements for further mitigation measures prior to surface disturbance, the nebulosity of future drilling plans at the leasing stage, and the continuing supervision by federal agencies. *Id.*; see also *Pennaco Energy, Inc. v. U.S. Dep't of the Interior*, 377 F.3d 1147, 1161–62 (10th Cir. 2004) (discussing NEPA requirements at the leasing stage in the context of coal bed methane leases and distinguishing *Park County Resource Council*). In another case, a challenge to 16 leases sold and issued in Utah, a district court held that the preleasing NEPA analysis was insufficient where the underlying land use plans used to support the leasing decision had not considered a no-leasing alternative and where BLM's NEPA analysis was not supplemented to consider new information regarding wilderness characteristics on the lands at issue. *S. Utah Wilderness Alliance v. Norton*, 457 F. Supp. 2d 1253, 1264, 1267, 1269 (D. Utah 2006).

⁵³³ *Wilderness Society v. Salazar*, 603 F. Supp. 2d 52, 60 (D.D.C. 2009) (presenting in both cases further analyses of NEPA compliance requirements at the leasing stage, including site-specific impact analysis needs and consideration of the irreversible and irretrievable commitment of resources question); see also *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 785–86 (9th Cir. 2006) (same); *Ctr. for Native Ecosystems*, 170 I.B.L.A. 331, 345 (2006) (citing *S. Utah Wilderness Alliance*, 166 I.B.L.A. 270, 276–77 (2005)).

⁵³⁴ See *Richardson*, 565 F.3d at 689; *Bob Marshall Alliance*, 852 F.2d 1223, 1227 (9th Cir. 1988); *Conner*, 848 F.2d 1441, 1443 (9th Cir. 1988); *Sierra Club*, 717 F.2d 1409, 1410 (D.C. Cir. 1983); *Park County Res. Council*, 817 F.2d at 612–13; *Northern Alaska*, 457 F.3d at 976; *Pennaco Energy*, 377 F.3d at 1161–62; see also *Marla E. Mansfield*, *Through the Forest of the Onshore Oil and Gas Leasing Controversy Toward a Paradigm of Meaningful NEPA Compliance*, 24 *LAND & WATER L. REV.* 85 (1989) (analyzing the decisions in *Conner*, *Sierra Club*, and *Park County Resource Council* and suggesting approaches to NEPA compliance at the leasing stage).

⁵³⁵ *Richardson*, 565 F.3d at 716; *Bob Marshall Alliance*, 852 F.2d at 1225; *Conner*, 848 F.2d at 1448–49; *Sierra Club*, 717 F.2d at 1412.

⁵³⁶ *Richardson*, 565 F.3d at 718–19; *Bob Marshall Alliance*, 852 F.2d at 1225, 1227; *Conner*, 848 F.2d at 1449–50; *Sierra Club*, 717 F.2d at 1415.

⁵³⁷ See *Conner*, 848 F.2d at 1444; *Park County Res. Council*, 817 F.2d at 622.

⁵³⁸ *Sierra Club*, 717 F.2d at 1411–12, 1414.

was allowed but again determined this did not assure impacts would be reduced to insignificance for purposes of NEPA, and it therefore required an EIS to be prepared at the leasing stage.⁵³⁹ In Northern Alaska the court concluded that, although surface disturbance could not be precluded, “[t]he government can condition permits for drilling on implementation of environmentally protective measures, and we assume it can deny a specific application altogether if a particularly sensitive area is sought to be developed and mitigation measures are not available.”⁵⁴⁰

The extent of BLM’s retained rights in the context of non-NSO leases garnered discussion in a challenge to BLM and Forest Service compliance with the ESA at the leasing stage in *Wyoming Outdoor Council v. Bosworth*.⁵⁴¹ In *Wyoming Outdoor Council* the district court found that when the reservations of authority in the § 3101.1-2 regulation as well as the requirements related to APDs and the need for NEPA compliance at the APD stage were considered, “these reservations and procedural hurdles demonstrate that while the lessee clearly has a legal right to apply for permission to conduct oil and gas operations, his right to development of the lease parcel is far from certain.”⁵⁴² Thus, while there may be a need to prepare an EIS at the leasing stage so as to comply with NEPA, especially when numerous parcels or large areas are approved for lease sales and development cannot be absolutely precluded on all the leases, BLM still retains substantial rights to condition development on particular parcels, up to and including the prohibition of development in some circumstances.

E. Takings Claims

I have interacted with a number of BLM field personnel throughout Wyoming on a number of oil and gas projects. In response to a suggestion to assert BLM’s retained rights, BLM field personnel have sometimes commented that such action could be challenged as an illegal “taking” and BLM is limited in its rights due to this perceived barrier. The U.S. Constitution provides that “no private property be taken for public use, without just compensation.”⁵⁴³ This prohibition on the federal government “taking” property without just compensation is, however, unlikely to be a basis for successfully asserting legal claims against the government if it asserts its retained rights under an oil and gas lease.

Generally speaking, if claims were made against the government if it asserted its retained rights, those claims would likely have to be based on breach of contract claims, not constitutional takings claims. In a case challenging BLM actions related to onshore oil and gas leases issued in

⁵³⁹ *Conner*, 848 F.2d at 1448, 1450.

⁵⁴⁰ *Northern Alaska*, 457 F.3d 969, 976 (9th Cir. 2006).

⁵⁴¹ 284 F. Supp. 2d 81 (D.D.C. 2003).

⁵⁴² *Id.* at 92. See generally Michael D. Axline, *Private Rights to Public Oil and Gas*, 19 *IDAHO L. REV.* 505 (1983) (arguing BLM has authority to preclude lease development based on protective stipulations, particularly when engaging in NEPA analysis at the APD stage).

⁵⁴³ U.S. CONST. amend V.

Wyoming, the Federal Court of Claims observed that “the concept of a taking as a compensable claim theory has limited application to the relative rights of party litigants when those rights have been voluntarily created by contract.”⁵⁴⁴ “Ordinarily, the government’s interference with contractual rights arising under a contract with the government will give rise to a breach of contract action rather than a taking claim.”⁵⁴⁵ And, as discussed, when the Supreme Court considered challenges to the government’s actions affecting offshore leases in *Mobil Oil*, the Court addressed the matter as a question of contract law, not constitutional law.⁵⁴⁶

Despite this general principal, concurrent takings claims can be pursued if the property right that is asserted is not governed by the terms of the contract.⁵⁴⁷ Thus, while it is unlikely that takings claims will generally have viability because the standard lease contract has reduced the parties’ agreement to writing, it is possible a takings claim might be viable if the lessee can identify a property interest that has been interfered with that is not governed by the contract. But such claims would seem to have a remote chance of widespread success given the apparent comprehensive nature of BLM oil and gas leases.⁵⁴⁸ To the extent a regulatory taking claim was successfully advanced, the Supreme Court has developed an extensive body of law specifying what is required to establish that a Fifth Amendment regulatory taking has occurred.⁵⁴⁹

F. Lessees Must Exercise Diligence to Develop Leases

Under section 4 of the modern lease forms, the lessee “must exercise reasonable diligence in developing and producing.”⁵⁵⁰ Under section 2(j) of the 1954, 1965, and 1971 lease forms, the lessee agrees “[t]o exercise reasonable diligence in drilling and producing the wells herein provided for.”⁵⁵¹ The Mineral Leasing Act also requires reasonable diligence in the

⁵⁴⁴ *Barlow & Haun*, 87 Fed. Cl. 428, 438 (2009) (quoting *Hughes Commc’ns Galaxy, Inc. v. United States*, 271 F.3d 1060, 1070 (Fed. Cir. 2001) (internal quotation marks omitted)); see *supra* note 461 and accompanying text (discussing *Barlow & Haun*).

⁵⁴⁵ *Barlow & Haun*, 87 Fed. Cl. at 438 (citing *Sun Oil Co. v. United States*, 572 F.2d 786, 818–19 (Ct. Cl. 1978)).

⁵⁴⁶ See *supra* text accompanying notes 451–54, 502–13 (discussing *Mobil Oil*, 530 U.S. 604 (2000)).

⁵⁴⁷ *Barlow & Haun*, 87 Fed. Cl. at 439–40 (holding at the motion to dismiss stage of a case involving BLM oil and gas leases that “[t]he Court is unable to ascertain . . . whether all the rights that plaintiffs allege have been taken were reduced to writing by the parties” and therefore denying the motion to dismiss the takings claims at that stage of the proceedings).

⁵⁴⁸ See, e.g., *BUREAU OF LAND MGMT.*, *supra* note 83 (presenting the current version of BLM’s standard oil and gas leasing form).

⁵⁴⁹ See, for example, *Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg’l Planning Agency*, 535 U.S. 302 (2002), and cases cited therein.

⁵⁵⁰ *BUREAU OF LAND MGMT.*, *supra* note 83, at 3.

⁵⁵¹ *BUREAU OF LAND MGMT.*, 1954 LEASE FORM, *supra* note 88, at 2; *BUREAU OF LAND MGMT.*, 1965 LEASE FORM, *supra* note 88, at 2; *BUREAU OF LAND MGMT.*, 1971 LEASE FORM, *supra* note 88, at 2.

operation of leased property.⁵⁵² Moreover, a lessee can be required to develop wells “in accordance with good economic operating practices” and must ensure that drainage of oil and gas from a lease is not occurring due to development on adjacent leases.⁵⁵³

It is conceivable that these obligations to pursue production could limit or at least get in the way of BLM’s asserting retained rights to protect the natural environment. Nevertheless, these provisions do not specifically limit BLM’s retained rights or modify other obligations BLM operates under, so in all likelihood these requirements will have little impact on BLM’s exercise of its retained rights. And if development is essentially mandated or if BLM perceives a need to require development, it is more likely that BLM will be forced to assert its retained rights because development might occur in areas where there was otherwise less interest in pursuing development.

G. Split Estate Issues

BLM manages approximately 58 million acres of land where the surface is privately owned but the federal government owns the rights to the minerals underlying the land.⁵⁵⁴ These lands are called split estates.⁵⁵⁵ While BLM operates under many of the same legal requirements on split estate lands as it does on lands wholly owned by the federal government (the oil and gas lease forms used on split estates do not differ from those used in other situations), and enjoys many of the same legal rights, the simple fact that the surface is privately owned—often by a rancher or farmer whose family has lived on the land for several generations—could affect how BLM asserts its retained rights.⁵⁵⁶

BLM guidance provides that it must fulfill the requirements of NEPA, the National Historic Preservation Act, the ESA, the Clean Water Act, and “other applicable laws” when it engages in permitting on split estates.⁵⁵⁷ The guidance states that during permit review, BLM “offers the surface owner the same level of resource protection provided on federally owned surface.”⁵⁵⁸ Additionally, BLM will also invite the surface owner to on-site inspections, seek the owner’s input on development and reclamation issues, carefully consider the surface owner’s views and the effects on the surface owner’s use of the land “before determining mitigation requirements and approving operations,” and carefully consider the surface owner’s views on reclamation requirements and seek concurrence that final reclamation is

⁵⁵² Mineral Leasing Act, 30 U.S.C. § 187 (2006).

⁵⁵³ See 43 C.F.R. §§ 3162.2-1 to -15 (2008) (presenting BLM’s drilling and producing requirements and regulations governing drainage).

⁵⁵⁴ BUREAU OF LAND MGMT., SPLIT ESTATE: RIGHTS, RESPONSIBILITIES, AND OPPORTUNITIES 2 (2007), available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION/_bmps.Par.57486.File.dat/SplitEstate07.pdf.

⁵⁵⁵ *Id.*

⁵⁵⁶ *Id.*

⁵⁵⁷ *Id.*

⁵⁵⁸ *Id.* (emphasis omitted).

satisfactory.⁵⁶⁰ Consequently, while BLM enjoys the same retained rights on split estates that it enjoys elsewhere and may well exercise those rights, it is equally clear that the private surface owner will exert a strong influence over the measures that BLM prescribes. Overall, it is probably unlikely that BLM will require lesser environmental protections on split estate lands than on wholly federally owned lands, but it is possible that its approach to exerting its retained rights will differ on split estate lands.

VIII. MEANS BY WHICH BLM CAN EXERCISE ITS RETAINED RIGHTS

In this Part, I will briefly describe some of the means by which BLM could exercise its retained rights on federal onshore oil and gas leases. This will not be an exhaustive review; the goal is only to give the reader a sense of the options that are available to BLM to protect the natural environment. Undoubtedly more options exist than those that will be discussed. I will also present several policy changes BLM might consider that would make it better able to exercise its retained rights.

A. Options Available for Regulating Oil and Gas Development on the Public Lands That Would Help Protect the Natural Environment

BLM has substantial authority to regulate the time, place, and manner of oil and gas development.⁵⁶⁰ It can regulate the siting of development, the design of facilities, and the timing of operations.⁵⁶¹ It can specify the rates of oil and gas development and production.⁵⁶² There is no doubt BLM can specify the conditions of oil and gas development on a federal onshore lease to a considerable degree.

One of the most important means by which environmental values can be protected is by requiring phased or paced development in environmentally sensitive areas. This is an “obvious” way to manage oil and gas development, according to the IBLA.⁵⁶³ In Montana, the federal district court found that an EIS that had not considered phased development for coal bed methane development in Montana’s portion of the Powder River Basin failed to meet the requirements of NEPA.⁵⁶⁴ Using this approach BLM can ensure that development activities are staggered over time, or take place in prescribed areas, until reclamation and other measures of environmental recovery indicate development can proceed in other areas.

Another important means to achieve environmental protection is to require clustered development and the related measure of directional

⁵⁵⁹ *Id.*

⁵⁶⁰ See discussion *supra* Parts IV.B–C, V.

⁵⁶¹ See discussion *supra* Part IV.B–C.

⁵⁶² See *supra* Part V.C.

⁵⁶³ Powder River Basin Res. Council, 120 I.B.L.A. 47, 55 (1991) (“[A]n alternative under which development would be limited was both obvious and reasonable.”).

⁵⁶⁴ Northern Plains Res. Council v. U.S. Bureau of Land Mgmt., No. CV 03-69-BLG-RWA, 2005 U.S. Dist. LEXIS 25238, at *7–8 (D. Mont. Apr. 5, 2005).

drilling. Directional drilling, also called horizontal, deviated, or slant drilling, allows for hydrocarbon deposits that are not directly under a well pad to be accessed.⁶⁶⁵ Using this technology, it is possible to concentrate wells on a more limited number of well pads yet still reach the oil and gas, which reduces the environmental impacts of drilling.⁶⁶⁶ The technology and practicality of directional drilling is improving and at this point hydrocarbon deposits several thousand feet, and even more, from a well pad can be reached.⁶⁶⁷ On the Pinedale Anticline natural gas field in western Wyoming, directional drilling will allow for thirty-two wells to be drilled from a single, consolidated well pad.⁶⁶⁸

Lease suspension is another means at BLM's disposal to ensure environmental protection is achieved in leased areas. As has been discussed, both the Mineral Leasing Act and BLM's supporting regulations allow BLM to suspend lease operations "in the interest of conservation," as do terms in BLM's leases.⁶⁶⁹ One court has held that "suspending operations to avoid environmental harm is definitely a suspension in the interest of conservation in the ordinary sense of the word."⁶⁷⁰ Suspending leases so as to protect the natural environment is a recognized means to protect the natural environment, having been employed by BLM in the Jack Morrow Hills and Pinedale Anticline areas in Wyoming, for example.⁶⁷¹

Another mechanism that could be utilized to protect environmentally sensitive areas is unitization of leases. When a group of leases are "unitized," the leases can be maintained in force through the drilling and operation of a few, or even one, well which reduces pressure on lessees to drill or produce on their individual leases so as to maintain them in effect.⁶⁷² More efficient management is possible when a group of leases are managed collectively

⁶⁶⁵ KEN KRECKEL, *THE WILDERNESS SOC'Y, DIRECTION DRILLING: THE KEY TO SMART GROWTH OF OIL AND GAS DEVELOPMENT IN THE ROCKY MOUNTAIN REGION 14* (2007), available at <http://wilderness.org/files/Directional-Drilling.pdf>.

⁶⁶⁶ *Id.* at 25.

⁶⁶⁷ *Id.* at 15.

⁶⁶⁸ 2 BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, *FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PINEDALE ANTICLINE OIL AND GAS EXPLORATION AND DEVELOPMENT PROJECT 7-4* (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/anticline/fseis.Par.82863.File.dat/vol2_app.pdf.

⁶⁶⁹ Mineral Leasing Act, 30 U.S.C. § 209 (2006); BUREAU OF LAND MGMT., *supra* note 83, at 1-2; 43 C.F.R. § 3103.4-4 (2008).

⁶⁷⁰ *Copper Valley Mach. Works, Inc.*, 653 F.2d 595, 600 (D.C. Cir. 1981).

⁶⁷¹ See BUREAU OF LAND MGMT., U.S. DEP'T OF INTERIOR, *RECORD OF DECISION AND JACK MORROW HILLS COORDINATED ACTIVITY PLAN/GREEN RIVER RESOURCE MANAGEMENT PLAN AMENDMENT 3*, 52 (2006), available at http://www.blm.gov/pgdata/etc/medialib/blm/wy/field-offices/rock_springs/jmhcap/rod.Par.9393.File.dat/00rod_cap.pdf (providing that leases that had been placed in suspension for nearly 10 years while the plan was developed for this 622,000-acre area would be reinstated within three years of adoption of the July 2006 record of decision); BUREAU OF LAND MGMT., *PINEDALE ANTICLINE ROD*, *supra* note 50, at 4 (providing that 49,903 acres of leases in this 198,037-acre project area would be placed in suspension as part of the decision allowing increased development in this area).

⁶⁷² See generally *Getty Oil Co. v. Clark*, 614 F. Supp. 904, 915-18 (D. Wyo. 1985) (discussing leases subject to a unitization agreement), *aff'd sub nom. Texaco Producing, Inc.*, 84 F.2d 776 (10th Cir. 1988).

(unitized) rather than individually. Unitization can allow for lease holders to enjoy the benefits of a lease while achieving protection of sensitive areas. Pursuing unitization allows for orderly development with less infrastructure and disturbance, while helping to eliminate concerns such as those related to drainage of oil and gas from a lease, which sometimes creates pressure to develop a lease. BLM has authority to require unitization pursuant to section 4 of the modern leases.⁵⁷³ The 1954, 1965, and 1971 leases also allow for unitization to be required.⁵⁷⁴

BLM can exert its retained rights by other means, including the imposition of reasonable measures,⁵⁷⁵ conditions of approval,⁵⁷⁶ best management practices (BMPs),⁵⁷⁷ and the retention and enforcement of lease stipulations.⁵⁷⁸ These conditions could affect an array of practices related to the time, place, or manner of oil and gas development. Examples include limiting the size of well pads, requiring “closed-loop” drilling fluid systems to control hazardous chemicals, using remote (computerized) means to monitor well conditions, requiring carpooling and other traffic reduction measures, requiring “liquids gathering systems” (piping hydrocarbons and perhaps produced water from scattered well locations to a centralized gathering facility so as to reduce activity at individual wells),⁵⁷⁹ and requiring netting to be placed over “reserve” (waste) pits so as to protect birds, bats, and other wildlife. A number of additional measures could be added to this list, including, but not limited to, requiring “green completions” to reduce air pollution when wells are brought into production following drilling, dust control measures, the use of protective mats to reduce surface disturbance when drilling is occurring, using existing roads and minimizing the level of road construction used to access well pads, and reinjecting produced water rather than disposing of it on the surface. Assuring effective reclamation with native plant species (especially shrubs such as sagebrush (*Artemisia*)) is also important. BLM has developed a website devoted to BMPs, and these

⁵⁷³ BUREAU OF LAND MGMT., *supra* note 83, at 3; see also 30 U.S.C. § 226(m) (2006) (“The Secretary may provide that oil and gas leases hereafter issued . . . shall contain a provision requiring the lessee to operate under such a reasonable cooperative or unit plan, and he may prescribe such a plan under which such lessee shall operate . . .”). BLM has regulations related to unitization agreements that are published at 43 C.F.R. § 3180.0-2 (2008).

⁵⁷⁴ BUREAU OF LAND MGMT., 1954 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1965 LEASE FORM, *supra* note 88, at 2; BUREAU OF LAND MGMT., 1971 LEASE FORM, *supra* note 88, at 2.

⁵⁷⁵ See BUREAU OF LAND MGMT., *supra* note 83, at 3; 43 C.F.R. § 3101.1-2 (2008).

⁵⁷⁶ 43 C.F.R. § 3162.5-1(a) (2008) (providing that environmental review documents prepared when an APD is filed can be used to determine “any appropriate terms and conditions of approval”); Onshore Oil and Gas Operations, 72 Fed. Reg. 10,308, 10,334 (Mar. 7, 2007) (providing for the imposition of conditions of approval when an APD is approved).

⁵⁷⁷ Onshore Oil and Gas Operations, 72 Fed. Reg. at 10,334 (providing that BLM will incorporate any mitigation requirements, including BMPs, as conditions of approval for an APD); BUREAU OF LAND MGMT., *supra* note 426, at 2 (recommending the “proactive incorporation” of BMPs by the operator).

⁵⁷⁸ 43 C.F.R. § 3101.1-3 (2008) (providing for lease stipulations).

⁵⁷⁹ BUREAU OF LAND MGMT., *supra* note 426, at 3, 17, 40–41.

measures should be vigorously employed.⁵⁸⁰ The University of Colorado Law School has also developed a website devoted to BMPs applicable to oil and gas development and these too can be employed.⁵⁸¹

One of the most important means by which BLM can protect the natural environment is to ensure that stipulations oriented toward the protection of wildlife and other resources are not abandoned and are, in fact, vigorously enforced. In Wyoming, BLM has shown an increasing tendency to eliminate these important protections, to grant exceptions and waivers to them, or both.⁵⁸² This is an unfortunate trend that should not be perpetuated if protection of other resources is desired.⁵⁸³

Other options that could be considered by BLM when operations are proposed in sensitive areas include pursuing lease buyout and trade. Lease buyout likely would require the approval of Congress, not to mention congressional authorization of funding, but lease trades could be pursued administratively by BLM if a company was willing to exchange its leases.

B. Policy Changes

BLM could make several policy changes which would enable it to better exert its retained rights so as to ensure protection of the natural environment. While, as argued above, the 200-meter 60-day rule establishes a floor to the reasonable measures BLM can require, not a ceiling,⁵⁸⁴ this provision in the § 3101.1-2 regulation is nevertheless sometimes treated by BLM as imposing limits on its discretion.⁵⁸⁵ The § 3101.1-2 regulation should therefore be rewritten to eliminate the 200-meter 60-day rule. The provision stating that reasonable measures deemed consistent with the lease rights granted “[a]t a minimum” include limitations that do not “require relocation

⁵⁸⁰ See Bureau of Land Mgmt., U.S. Dep’t of the Interior, Best Management Practices, http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html (last visited Apr. 18, 2010) (providing links to BLM BMPs).

⁵⁸¹ Univ. of Colo. Law School, Oil & Gas Drilling Best Management Practices in Colorado, Wyoming, Montana, New Mexico, Utah, <http://www.oilandgasbmps.org> (last visited Apr. 18, 2010).

⁵⁸² For example, when BLM approved expanded development on the Pinedale Anticline in western Wyoming, it allowed “exceptions” to (essentially elimination of) long-standing seasonal timing limitation stipulations used to protect big game on crucial winter ranges and greater sage-grouse breeding areas. See 2 BUREAU OF LAND MGMT., *supra* note 568, at 4-19; see also Bureau of Land Mgmt., U.S. Dep’t of the Interior, 2009–2010 Wildlife Exceptions, http://www.wy.blm.gov/pfo/wildlife/2009_10_exceptions.php (last visited Apr. 18, 2010) (presenting information on exceptions to stipulations granted in the Pinedale, Wyoming and Rawlins, Wyoming BLM Field Offices and noting BLM granted the majority of requests); Bureau of Land Mgmt., U.S. Dep’t of the Interior, 2008–2009 Wildlife Exceptions, http://www.wy.blm.gov/pfo/wildlife/2008_09_exceptions.php (last visited Apr. 18, 2010) (same).

⁵⁸³ See, e.g., Hall Sawyer et al., Influence of Well Pad Activity on Winter Habitat Selection Patterns of Mule Deer, 73 J. WILDLIFE MGMT. 1052, 1059 (2009) (“[O]ur results suggest that wintering mule deer are sensitive to varying levels of disturbance and the indirect habitat loss may increase by a factor of >2 when seasonal restrictions are waived.”).

⁵⁸⁴ See *supra* text accompanying notes 150–52.

⁵⁸⁵ See *supra* note 147 (citing provisions and instances where BLM adheres to the 200-meter 60-day rule).

of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year⁵⁸⁶ creates tension with the prior two sentences in the regulation. The first sentence provides that reasonable measures to minimize adverse impacts can be imposed “as may be required by the authorized officer,” and then the next sentence states, “Such reasonable measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures.”⁵⁸⁷ This tension should be eliminated from the regulation, and BLM should simply provide for taking reasonable measures as it deems necessary to minimize adverse impacts, consistent with the lease rights granted.⁵⁸⁸

BLM should also take action to ensure IM 92-67 and similar provisions in BLM Manual MS-3101 have no continuing force.⁵⁸⁹ While the IM nominally expired in 1992, it seems to have some continuing influence over BLM oil and gas development decision making.⁵⁹⁰ And the manual section has no stated expiration date.⁵⁹¹ In particular, the requirement that the need for stipulations or conditions of approval “must be clearly and convincingly documented” or that there be “clear evidence and convincing need” for a condition of approval should be eliminated.⁵⁹² This elevated burden of proof is not justified.⁵⁹³ BLM decision making regarding what measures are needed to minimize adverse impacts when it approves oil and gas development should be subject to the arbitrary and capricious standard that applies to all agency actions, not a heightened clear and convincing evidence standard.⁵⁹⁴

It would also be useful if BLM developed regulations defining what constitutes “unnecessary or undue degradation” (UUD) in the context of oil and gas development, as it has done for hardrock minerals.⁵⁹⁵ Given the importance of this “specific, nondiscretionary statute” under FLPMA⁵⁹⁶ it would be helpful to have a formal definition of what constitutes UUD in the context of oil and gas development. As recognized in Mineral Policy Center, any such regulation should recognize that both unnecessary degradation of

⁵⁸⁶ 43 C.F.R. § 3101.1-2 (2008).

⁵⁸⁷ *Id.*

⁵⁸⁸ See discussion *supra* Part IV.C.2 (presenting arguments why the 200-meter 60-day rule does not preclude other more stringent reasonable measures).

⁵⁸⁹ See discussion *supra* Part IV.C.3 (reviewing IM 92-67 and BLM Manual MS-3101).

⁵⁹⁰ See *supra* note 170 (presenting an example of BLM citing the requirements of IM 92-67 long after its expiration date).

⁵⁹¹ See BUREAU OF LAND MGMT., *supra* note 147.

⁵⁹² See *supra* Part IV.C.3 (discussing this language in IM 92-67 and BLM Manual MS-3101).

⁵⁹³ *Id.* (presenting arguments why this standard of proof is unwarranted).

⁵⁹⁴ See Administrative Procedure Act, 5 U.S.C. § 706(2)(A) (2006) (providing that a reviewing court shall set aside agency action found to be “arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law”).

⁵⁹⁵ 43 C.F.R. § 3802.0-5(1) (2009).

⁵⁹⁶ See BUREAU OF LAND MGMT., *supra* note 147, §§ 3101.06.B.2, 3101.06.B.3, 3103.12.A, 3101.13.A (presenting statements of BLM’s views on the importance of the UUD clause in BLM oil and gas development decision making).

the public lands and undue degradation of the lands must be prevented.⁵⁹⁷ Provisions related to unnecessary degradation could prevent activities that are not necessary for mining while the undue degradation prong of any regulation should prevent excessive or unwarranted harm to the public lands.⁵⁹⁸ The numerous environmental protection laws applicable to oil and gas development on the public lands could help define what impacts are excessive or unwarranted.

More generally, BLM should consider issuing IMs that fully explain BLM's retained rights and its authority to exercise its retained rights so as to protect the natural environment. Likewise, the Secretary of the Interior or the Interior Department Solicitor should consider issuing similar orders or opinions. The extent of BLM's retained rights should be fully explained and apparent in agency policy.

In October 2009, BLM issued a report regarding seventy-seven lease parcels in Utah that had been offered for sale at the December 2008 lease sale but were withdrawn due to court action and other controversy.⁵⁹⁹ In this report the agency made a number of recommendations for improvement of its leasing program with regard to the Utah lease parcels.⁶⁰⁰ One recommendation made by the reviewing team of BLM and other agency personnel was this: "BLM and others would benefit by guidance from the Solicitor's Office on the nature of the right created by issuance of a lease."⁶⁰¹ The team noted that it had heard varying opinions expressed by personnel in the BLM Utah state office regarding what rights were granted by a lease, ranging from views that a lease was a "compensable property right" that could only be extinguished by paying just compensation, to views that a lease is a "contingent right" that could be extinguished.⁶⁰² There were also various opinions expressed regarding what level of development constituted enjoyment of lease rights.⁶⁰³ The review team concluded that "[t]he nature of a lease right is a fundamental issue that underlies the Bureau's oil and gas leasing program."⁶⁰⁴ The findings and differences of opinion in the report emphasize the need for formal statements from BLM via IMs, or from the Department of Interior via Solicitor's opinions or Secretarial orders, regarding the nature of the rights granted under a federal onshore oil and gas lease, and, just as importantly, the rights that BLM retains and will exert despite having issued a lease.

⁵⁹⁷ See *supra* text accompanying notes 231–33 (discussing the decision in *Minerals Policy Ctr.*, 292 F. Supp. 2d 30, 42–43 (D.D.C. 2003)).

⁵⁹⁸ See *supra* text accompanying notes 234–35 (discussing interpretations of the unnecessary or undue degradation clause by the courts).

⁵⁹⁹ BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, FINAL BLM REVIEW OF 77 OIL AND GAS LEASE PARCELS OFFERED IN BLM-UTAH'S DECEMBER 2008 LEASE SALE 2 (2009), available at http://www.doi.gov/documents/BLM_Utah77LeaseParcelReport.pdf.

⁶⁰⁰ *Id.* at 6–14, 23–33.

⁶⁰¹ *Id.* at 30.

⁶⁰² *Id.*

⁶⁰³ *Id.*

⁶⁰⁴ *Id.*

Any BLM IMs and Department of the Interior Solicitor opinions or Secretarial orders related to BLM's retained rights could be made part of the oil and gas reform effort the Department of the Interior is now pursuing.⁶⁰⁵ In particular, they could support or be a component of the Master Leasing and Development Plans that will now be required.⁶⁰⁶

IX. BLM HAS AN OBLIGATION TO FULLY ASSERT ITS RETAINED RIGHTS

In this Article I have largely expressed the degree of BLM's retained rights under an oil and gas lease and its ability to exercise them in somewhat conditional terms. BLM "has" retained rights; it "can" or even "should" exercise them, but I generally have not said BLM must exert those retained rights. In this Part, however, I will argue BLM must fully exert its retained rights and I will explain the basis for this view.

Fundamentally, it is my view that not only does BLM have retained rights allowing it to protect the natural environment in areas where it has issued an oil and gas lease that grants the right to develop those minerals, it in fact has an obligation to fully assert those rights. The reason I take this view is because many of the authorities that the right to develop has been made subject to are stated in mandatory terms or establish specific, nondiscretionary obligations.

Under the Mineral Leasing Act, BLM "shall" regulate surface disturbing activities in the interest of conservation of surface resources.⁶⁰⁷ Under FLPMA, BLM "shall" take any action necessary to prevent unnecessary or undue degradation of the public lands.⁶⁰⁸ Under the ESA, BLM "shall" further the purposes of the ESA, "shall" ensure its actions do not jeopardize the continued existence of listed species or destroy or adversely modify their critical habitat, and it is unlawful for BLM to take a listed species.⁶⁰⁹ The National Historic Preservation Act, Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act contain various mandatory requirements or prohibitions.⁶¹⁰ The Clean Air Act and Clean Water Act provide that federal agencies "shall" be subject to laws for the control and abatement of air and water pollution.⁶¹¹ A number of other applicable laws discussed in Part V.B are also framed in mandatory terms.

⁶⁰⁵ See *supra* text accompanying notes 447–48 (discussing Secretary of the Interior Salazar's energy reform efforts).

⁶⁰⁶ See *supra* text accompanying notes 447–48 (discussing Secretary of the Interior Salazar's energy reform efforts).

⁶⁰⁷ Mineral Leasing Act, 30 U.S.C. § 226(g) (2006).

⁶⁰⁸ Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1732(b) (2006).

⁶⁰⁹ Endangered Species Act of 1973, 16 U.S.C. §§ 1536(a)(1)–(2), 1538(a)(1)(B) (2006).

⁶¹⁰ See National Historic Preservation Act, 16 U.S.C. § 470h-2(f) (2006); Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. § 668 (2006); Migratory Bird Treaty Act, 16 U.S.C. § 703(a) (2006).

⁶¹¹ Federal Water Pollution Control Act, 33 U.S.C. § 1323(a) (2006); Clean Air Act, 42 U.S.C. § 7418(a) (2006).

Many of BLM's oil and gas operating regulations related to protection of the natural environment are also mandatory.⁶¹² For example, in approving oil and gas operations, BLM is directed to protect natural resources and environmental quality and operators are subject to a number of other obligations (which BLM is charged with enforcing). BLM's land-use authorization regulations require mandatory terms and conditions for the protection of a number of environmental attributes and benefits.⁶¹³ Some of the terms and conditions in the lease forms are stated in mandatory terms, especially in modern versions of the lease. Section 6 of the modern leases in use since March 1984 provides that lessees "shall" (or "must") take reasonable measures to minimize adverse impacts to the environment, with the determination of what is reasonable being as "deemed necessary by lessor to accomplish the intent of this section."⁶¹⁴ Provisions in Onshore Oil and Gas Order Number 1 include mandatory obligations for BLM.⁶¹⁵

Modern versions of the lease form make any rights granted under the lease subject to these various mandatory conditions.⁶¹⁶ The § 3101.1-2 regulation contains a similar provision making the lease rights granted subject to stipulations attached to the lease; specific, nondiscretionary statutes; and reasonable measures required by the authorized officer to minimize adverse impacts.⁶¹⁷ It seems clear that BLM is obliged to meet a number of mandatory requirements for environmental protection under the terms of a federal onshore oil and gas lease and the authorities that have been incorporated into it.

This is not to say these mandatory obligations eliminate or override BLM's obligation to manage the public lands for multiple use and sustained yield⁶¹⁸ or to meet the energy development goals expressed in several statutes and BLM's regulations.⁶¹⁹ Assertion of its retained rights relative to environmental protection will have to be done in recognition of these obligations. But it is equally clear that the mineral policies of this country have been formulated in recognition of a need for substantial

⁶¹² See 43 C.F.R. §§ 3161.2, 3162.1(a), 3162.3-1(f), 3162.5-1(a)-(b) (2008) (making mandatory provisions for environmental protection).

⁶¹³ *Id.* § 2920.7(b)-(c) (providing for mandatory terms and conditions for land-use authorizations so as to protect numerous environmental attributes and qualities).

⁶¹⁴ See, e.g., BUREAU OF LAND MGMT., *supra* note 83, at 3; see also discussion *supra* Part IV.B (considering the shall versus must language in the different versions of the standard lease form).

⁶¹⁵ See, e.g., Onshore Oil and Gas Operations, 72 Fed. Reg. 10,308, 10,334 (Mar. 7, 2007) (providing that approved APDs "will" contain conditions of approval that reflect necessary mitigation measures and will incorporate BMPs as conditions of approval).

⁶¹⁶ BUREAU OF LAND MGMT., *supra* note 83, at 1.

⁶¹⁷ 43 C.F.R. § 3101.1-2 (2008).

⁶¹⁸ See Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1702(c) (2006) (providing that, among other things, multiple use includes renewable and nonrenewable resources such as recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific, and historical values); see also *id.* § 1732(a) (providing that management of the public lands is to be done under principles of multiple use and sustained yield).

⁶¹⁹ See *id.* § 1701(a)(12) (2006) (stating that under FLPMA one policy of the United States is to manage the public lands in recognition of the nation's need for domestic minerals); *supra* Parts V.B.6, V.D.1 (discussing energy statutes and BLM regulations).

environmental protection. Accordingly, when BLM issues an oil and gas lease it does not grant an unqualified right to development. It has retained many rights to condition development so as to protect the natural environment. And many of these retained rights are grounded in mandatory environmental protection obligations.

It is not my contention that a successful "failure to act" lawsuit charging violation of § 706(1) of the Administrative Procedure Act could necessarily be launched against BLM in order to force it to assert particular retained rights.⁶²⁰ One court rejected this proposition with respect to BLM's operations regulations.⁶²¹ Rather, my contention is that BLM has substantial retained rights allowing it to protect the environment when oil and gas operations are proposed on an onshore lease, and given the mandatory nature of many of the underlying authorities that have been incorporated into the lease, it must fully exert those retained rights, even if the agency retains discretion to determine exactly what those measures might be.⁶²²

Given the wide array of mandatory provisions requiring strong measures to protect the environment, which attach to a lease and govern lease operations, it is clear that not only does BLM have discretion to condition lease development and operations pursuant to its retained rights in order to protect the natural environment, it in fact has an obligation to do so, even if the details of what those actions might be remain within BLM's discretion.

X. CONCLUSION

There are approximately 39,000,000 acres of federal mineral estate in the eleven western states subject to onshore oil and gas leases issued by the Bureau of Land Management. The leases grant the lessee the right to extract any oil or natural gas that may be found on the leased land. However, the leases also make the grant of rights subject to a number of reservations of authority to the federal government. The rights that BLM retains stem from laws, regulations, terms in the lease contract, and other authorities. A review of the provisions in these authorities shows that BLM retains substantial rights to regulate the time, place, and manner of oil and gas development, despite having granted rights allowing oil and gas development. Development can be conditioned through regulation of the siting and design of facilities and the timing of operations, as well as specification of the rates of oil and gas development and production so as to minimize adverse impacts to the environment, other resource values, land uses, and land

⁶²⁰ See 5 U.S.C. § 706(1) (2006) (providing that a reviewing court can compel agency action unlawfully withheld or unreasonably delayed).

⁶²¹ *Blancett*, No. Civ.A. 04-2152(JDB), 2006 WL 696050, at *6 (D.D.C. Mar. 20, 2006); see *supra* notes 341-48 and accompanying text (discussing *Blancett*).

⁶²² As stated by the Supreme Court, these requirements are "mandatory as to the object to be achieved," even if they leave discretion as to how to achieve the object. *Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 66 (2004); see also *Blancett*, 2006 WL 696050, at *8 (quoting this passage from the Supreme Court's decision).

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users. If BLM fully exercises this array of retained rights it can considerably reduce environmental disturbance caused by oil and gas development on the public lands. Given the mandatory, nondiscretionary nature of many of the authorities that a federal onshore oil and gas lease is subject to, BLM has an obligation to fully exert its retained rights.