Federal, State, and Local Regulatory Framework for Permitting of CBM Development

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Coal Bed Methane (CBM) production has exploded upon the landscapes of mineral-rich Western states. Regulatory agencies with responsibility to preserve and protect natural resources both above and below the surface are scrambling to find effective measures for ensuring both the development of this valuable resource and the protection of other values placed at risk by such development.

Few of these agencies, however, have plans or programs specifically designed to address the special concerns posed by CBM production. Perhaps, the best example of the game of “catch-up” being played by land use management and regulatory agencies is in the Powder River Basin (PRB) where industry proposals now forecast the development of more than 50,000 CBM wells. Thousands of those new wells will be on federal lands. This level of CBM development, however, was never addressed by the agencies charged with managing Wyoming’s federal lands in either land use plans or environmental analyses. The Bureau of Land Management (BLM) and the Forest Service (FS) are now preparing a new environmental impact statement (EIS) on CBM development in the PRB, but the draft EIS avows that the agencies’ ability to limit or control CBM activity in the Basin is limited.

In the State of Montana, where downstream impacts of CBM development in the PRB are being felt, a moratorium on the issuance of new CBM well permits is in place pending completion of a new statewide EIS. The draft was released in January 2002 as a joint effort of BLM and the State of Montana. It acknowledges that neither entity was prepared for the CBM deluge.

The purpose of this article is to explore the regulatory framework currently in place governing CBM production on federal, state, and private lands in five states of the interior West: Colorado, Montana, New Mexico, Utah, and Wyoming. The article begins with a discussion of the special land use and management rules that apply to government lands. The discussion then shifts to the state and local land use and environmental protection provisions applicable to CBM production on both public and private lands.

**Federal lands**

The current framework for approval and management of CBM activity on federal lands is governed by the agencies’ fluid minerals policies adopted pursuant to the Mineral Leasing Act of 1920 (MLA). Lands managed by BLM, those of the National Forest System, as well as other lands owned by the United States, are available for CBM production under MLA. BLM is the principal agency responsible for managing the mineral estate on all federal lands. Its lands and those of FS have been most impacted by CBM development thus far. Therefore, this discussion will focus on the regulatory structures of BLM and FS.

Multiple decisions regarding the availability of lands for leasing and the conditions of mineral production precede drilling for any type of natural gas on the federal mineral estate of BLM and FS. First, land use plans are developed in accordance with Federal Land Policy and Management Act (FLPMA) and the National Forest
6. Land use planning

A. BLM Land Use Plans

FLPMA Section 202 requires BLM to establish “land use plans,” more commonly known as Resource Management Plans (RMPs), and requires BLM to “manage the public lands under principles of multiple use and sustained yield in accordance with the land use plans developed.” An RMP establishes land uses, resource uses, resource goals and objectives, and the management practices necessary to meet FLPMA’s multiple use objectives. FLPMA regulations provide that the implementation of an RMP “is considered a major Federal action significantly affecting the quality of the human environment.” Thus, the RMP planning process triggers NEPA and requires the drafting of an EIS.

Pursuant to BLM’s current policy, that EIS should include a discussion of the potential environmental impacts that might result from future oil and gas activity within the resource area. In order to do so, the agency is required to predict the “reasonably foreseeable development” that would flow from a decision to make lands available for fluid minerals production. The RMP should then reflect BLM’s determination as to where oil and gas activity is appropriate and under what conditions that activity should be conducted.

FLPMA then requires all government actions that affect land governed by an RMP to conform to the RMP. Implementing regulations state that “[a]ll future resource management authorizations and actions, as well as budget or other action proposals to higher levels in the [BLM] and [the Department of the Interior], and subsequent more detailed or specific planning, shall conform to the approved [RMP].” Conformity “means that a resource management action . . . be specifically provided for in the plan, or if not specifically mentioned, . . . be clearly consistent with the terms, conditions, and decisions of the approved plan or plan amendment.”

Pursuant to FLPMA and its implementing regulations, CBM production on BLM lands should only occur where such activities are consistent with the applicable land use plan. Unfortunately, in the PRB and elsewhere, BLM’s RMPs often contain little or no discussion of CBM development. RMP decisions to make lands available for mineral leasing frequently were based upon reasonably foreseeable development scenarios for “conventional” oil and gas. BLM’s continued reliance on these outdated RMPs remains a source of controversy for the agency.

B. FS Land Use Plans

Like RMPs, the Land and Resource Management Plans (LRMPs) prepared by FS pursuant to NFMA are supposed to delineate land uses and resource uses. LRMPs also are binding on future FS management decisions. FS regulations specifically require that “all site-specific decisions, including authorized uses of land, must be consistent” with the applicable LRMP. However, many LRMPs contain little or no information on any fluid minerals activities. In 1991, FS itself concluded that the majority of completed forest plans and accompanying EISs do not contain adequate information upon which to base oil and gas leasing decisions. Since 1991, FS has been including a mineral leasing analysis in its scheduled revisions of LRMPs. Until completion of revised LRMPs, however, FS has determined that the forest plan itself does not have to address any kind of mineral development in order for FS to conclude that CBM production is consistent with the plan’s land management goals.
2. Leasing

Between 35 and 40 million acres of federal land (onshore) currently are under lease for oil and gas development. Pursuant to MLA, as amended by the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (FOOGLRA), leases on lands where the United States owns the oil and gas rights are offered competitively via oral auction at least quarterly. Their maximum size is 2,560 acres and the minimum bid is $2.00 per acre.

A. LEASE PROVISIONS

The Standard Lease Terms (SLTs) provide the lessee the right to use the leased land as needed to explore for, drill for, extract, remove, and dispose of oil and gas deposits under the leased lands. This right is not unlimited. Federal environmental protection laws, such as the Clean Water Act (CWA), Endangered Species Act (ESA), and National Historic Preservation Act (NHPA), apply to all lands and are included in the standard lease stipulations. If threatened or endangered species, objects of historic, cultural, or scientific value, or substantial unanticipated environmental effects are encountered during construction, all work affecting the resource can be halted. Surface-disturbing activities that would destroy or harm these species or objects are prohibited under the terms of all federal leases.

SLTs also provide for some additional measures to minimize adverse impacts to surface resources. These include modifications to the siting or design of facilities, timing of operation, and specification of interim and final reclamation measures. SLTs, however, cannot require the lessee to relocate drilling rigs or supporting facilities by more than 200 meters, require that operations be sited off the leasehold, or prohibit new surface-disturbing operations for more than 60 days each year. The lease requires that the lessee meet stipulation conditions or avoid activities within all, or an identified part, of the leasehold.

SLTs can be modified by special or supplemental stipulations attached to the lease. Additional special stipulations can be developed specifically to meet resource concerns that cannot be mitigated by existing stipulations.

B. NEPA AND LEASING

According to the Supreme Court of the United States, NEPA sets forth a “national policy which will encourage productive and enjoyable harmony between man and his environment [and will] promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.” NEPA, however, neither establishes substantive environmental standards, nor prescribes a regulatory program; instead, it merely requires federal agencies to take a “hard look” at the environmental consequences of “major federal action[s] significantly affecting the quality of the human environment.”

Where an action qualifies as a “major federal action” having a significant impact on the human environment, NEPA dictates that the federal agency must prepare an environmental impact statement that enumerates:

- (i) the environmental impact of the proposed action,
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

If an agency is unsure of whether it must draft an EIS, it may prepare an environmental assessment (EA). Based upon the EA’s analysis and conclusions about the significance of the impacts of the proposed project, an agency must either issue a finding of no significant impact (FONSI), thereby terminating the NEPA process, or prepare an EIS. Two circuit courts of appeals have held that by conveying to the lessee some right to occupy the surface at the time of lease issuance, BLM has irretrievably and irreversibly committed federal resources resulting in a significant impact on the human environment and requiring preparation of an EIS. There is a split in the circuits, however, with the United States Court of Appeals for the Tenth Circuit holding in Park County Resource Council, Inc. v. U.S. Department of Agriculture that leasing alone poses no significant impact on the environment. Although it has been suggested that these cases are reconcilable on their specific facts, they clearly represent distinctly different approaches to balancing
the need for an early environmental analysis while the agency’s full range of options are still open versus delaying the environmental analysis until the potential impacts can be more accurately predicted.

This schizophrenia concerning NEPA compliance prior to lease issuance persists, unresolved by BLM and FS. In response to the decisions in Park County, Conner, and Sierra Club v. Peterson, BLM issued Information Bulletin No. 92-198 announcing that: “[t]he simple rule coming out of the Conner v. Burford case is that we will comply with NEPA and ESA prior to leasing.” Notably, the IB fails to state whether that compliance will take the form of an EIS or an EA.

In theory, completion of a pre-leasing EIS has been integrated into BLM’s resource management planning process. The EIS prepared with the RMP is intended to satisfy NEPA requirements for issuing fluid mineral leases. In practice, few of BLM’s land use plans contain a detailed discussion of the potential environmental impacts resulting from mineral development. In the early 1990’s, BLM completed a number of amendments to its existing land use plans intended to provide the necessary NEPA analysis to support oil and gas leasing decisions on BLM lands. Many of these plan amendments, however, projected only minimal levels of CBM exploration.

C. FOREST SERVICE COMPLIANCE WITH NEPA PRIOR TO LEASING

In FOOGRLA, Congress for the first time legislatively recognized that FS should play a significant role in oil and gas management decisions within the National Forests and expressly defined that role. While BLM is still primarily responsible for managing the federal mineral estate, FS has been delegated significant responsibilities for lease issuance and management of lease activities. Specifically, FOOGRLA prohibits BLM from issuing leases on National Forest lands reserved from the public domain over the objection of FS.

In regulations implementing FOOGRLA, FS established a two-tiered leasing analysis scheme as the basis for making its leasing consent decisions. First, FS conducts a “leasing analysis,” which analyzes all lands under its jurisdiction that are legally available for leasing to determine which of those lands will be administratively available for leasing. This leasing analysis may occur as part of a forest plan or through an independent study. It identifies: (i) areas open to leasing without stipulations, (ii) areas open to leasing with stipulations, and (iii) areas administratively or legally closed to leasing. In its leasing analysis, FS considers alternative availability scenarios, projects the reasonably foreseeable post-leasing activity under each alternative, and analyzes the reasonably foreseeable impact of each activity. However, because a decision to make lands administratively available does not commit FS to authorize BLM to issue leases on those lands, an EIS is not required.

According to FS, the decision to commit to lease issuance is made in the second tier of analysis when FS makes a “leasing decision for specified lands.” Before consenting to lease issuance, FS confirms that an adequate NEPA analysis has been conducted and that lease issuance is consistent with the applicable forest plan. FS ensures that appropriate stipulations, as determined in the leasing analysis, are included in the lease and, except where the lease is subject to an NSO stipulation, ensures that mineral operations are allowed somewhere on the lease. Where sufficient NEPA documentation to support a leasing decision has not been prepared, FS conducts an additional environmental analysis. FS purposefully has refrained, however, from prescribing whether an EA or EIS will be prepared, concluding that the determination is to be made on a case-by-case basis.

2. DRILL PERMITS

After land and resources are allocated in a land use plan and a particular parcel is leased, the final stage prior to drilling a CBM well is approval of an APD. NEPA review at this stage normally is limited to site-specific considerations not previously addressed in broader NEPA documents. The APD is submitted directly to BLM which distributes the APD to any affected surface management agency. Prior to the enactment of FOOGRLA, BLM specified that an APD include a drilling plan which described both surface and subsurface components. The revised BLM regulations and FS regulations separate these into a “drilling plan” and a “surface use plan of operations,” and describe generally the contents of each. FS includes in its regulations a list of very general requirements for the protection of various resources, such as wildlife and wetlands. Despite FOOGRLA’s empha-
sis on the importance of reclamation, neither BLM nor FS rules contain specific terms and conditions governing surface reclamation, although FS does set out some general principles.

Prior to approval of an APD, BLM will verify that the required performance bond is in place. In FOOGSPA, Congress directed the adoption of “such standards as may be necessary to ensure that an adequate bond . . . will be established prior to commencement of surface-disturbing activities on any lease, 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.” BLM concluded that its existing minimum bond levels were adequate to comply with the congressional directive in FOOGSPA. After proposing full-cost bonding, FS agreed with BLM’s approach in its final regulations.

BLM and FS may conduct an on-site inspection prior to issuance of an APD. One purpose of the on-site inspection is to identify the environmental consequences associated with drilling in a particular location. The on-site inspection could include surveys for cultural resources or threatened or endangered species. After the on-site inspection, the APD may be revised or site-specific mitigation may be added as Conditions of Approval to the APD, consistent with the applicable lease terms, for the protection of surface or subsurface resource values near the proposed activity. These may include adjusting the proposed locations of the well sites, roads, and pipelines; identifying the construction methods to be employed; and identifying reclamation standards for the lands.

3. Plans of development

In some instances, APD review is preceded by approval of a POD. If an operator intends to develop a field of oil or gas rather than an individual well, BLM must review and approve a POD. Since CBM production normally requires many wells, POD approval is often necessary. NEPA review at the POD stage affords BLM an opportunity to examine the cumulative impacts of gas field production. At this stage, BLM can require, for example, consolidation of the infrastructure associated with CBM production. The roads, the gas and water pipelines, and the waste disposal facilities for multiple drilling rigs can be limited to specific areas or corridors on the lease. By doing so, BLM can reduce the industrial footprint on the landscape.

Application of other federal statutes

1. Endangered species act

ESA Section 7 requires that all federal agencies “insure that any action authorized, funded or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species.” To satisfy this requirement, all federal agencies must consult with either the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) when any activity they authorize, fund, or carry out could affect listed species. Once consultation has been initiated, the agency must not make any irreversible or irretrievable commitment of resources. If a determination is made that proposed mineral operations will jeopardize an endangered or threatened species or its habitat, those operations must be halted or modified to avoid the harm.

In Conner v. Burford, the United States Court of Appeals for the Ninth Circuit required the Forest Service to include in mineral leases a prohibition on substantial development pending issuance of an adequate biological opinion. USFWS regulations essentially now codify that approach. ESA review is required at every stage of agency decision-making regarding CBM production.

2. The clean water act

Pursuant to section 313 of the Clean Water Act, federal agencies are required to ensure that their actions will not result in violations of state water quality standards (WQSs). In order to meet that obligation, federal agencies must address specifically compliance with those standards in agency decision documents. Any BLM or FS decision regarding CBM production should include a discussion of state WQSs and adopt measures to ensure that the standards will be met.
**A. SECTION 401**

Section 401(a) of the CWA requires that any applicant for a federal license or permit which may result in any discharge into waters of the United States must provide to the permitting agency a certification from the state in which the discharge originates that any discharge will comply with applicable provisions of the CWA. Without such certification, the applicant is ineligible to receive the license or permit.

Although state law determines what requirements may be “appropriate” in a CBM APD, any requirements imposed by state certifications become permit conditions enforceable by BLM or FS.

Section 401(a)(2) further provides that: “[u]pon receipt of such application and certification the . . . permitting agency shall immediately notify the [Environmental Protection Agency region] Administrator. . . . Whenever such a discharge may affect . . . the quality of the waters of any other State, the Administrator . . . shall so notify such other State, the . . . permitting agency, and the applicant.” This provision allows the “other state” to assess whether the discharge will affect the quality of its waters and object to any such discharge. This provision may play an important role in areas where CBM discharges impact downstream states.

**B. SECTION 404**

Activities that would impact waters of the United States from the placement of fill materials, such as road and/or pipeline construction across “navigable streams” or discharge structures in such streams, require compliance with the wetlands provisions of CWA Section 404. A 404 permit must be issued by the Army Corps of Engineers.

**3. NATIONAL HISTORIC PRESERVATION ACT**

NHPA mandates that federal agencies seek information as appropriate, from consulting parties, other individuals, and organizations likely to have knowledge of, or concerns with, historic properties in the areas, and identify issues relating to the potential effects on historic properties; and gather information from Indian tribes to assist in identifying properties, included those located off tribal lands, which may be of religious and cultural significance to them. The recommendations received as a result of this consultation, however, are advisory only.

So, while NHPA Section 106 is an effective tool in focusing attention on federal agency actions affecting historic or cultural resources, it does not prevent federal agencies from taking actions that ultimately harm those resources. NHPA Section 106 only requires that federal agencies comply with certain procedural requirements before issuing a lease or APD. It will not prevent BLM from issuing an APD that entails destroying cultural or historic resources. It does, however, require the agency to identify historic properties and explore alternative measures, in consultation with the State Historic Preservation Officer (SHPO) and others, that may mitigate or avoid whatever harm the project may have.

According to BLM, avoidance of eligible sites is the preferred mitigation method. However, “[w]here eligible sites cannot be avoided, adverse effects can be mitigated by implementation of approved data recovery treatment plans.”

**TRIBAL LANDS**

Leasing of unallotted or tribal lands on reservations is done pursuant to one of two acts: the Omnibus Indian Mineral Leasing Act of 1938 and the Indian Mineral Development Act of 1982. Both require authorization from the Secretary of Interior via the Bureau of Indian Affairs (BIA) prior to lease issuance. Because resource development on Indian lands generally requires federal agency participation, CBM production on the reservation is subject to a dual legal structure of federal and tribal law. For example, NEPA compliance is required before BIA can approve a contract or lease for mineral operations on reservation lands. The consultation provisions of ESA Section 7 also apply to such undertakings in the vast majority of cases.
STATE LANDS

The western states own and manage an enormous amount of land. State lands in Colorado, Montana, New Mexico, Utah, and Wyoming are available for CBM production pursuant to leases issued by the state land boards. The vast majority of these lands are grant lands. These lands are managed according to the principle that they must be used to produce income for the grant fund for which they were given. Although some have questioned whether the principle is as strict as most western states interpret it, it remains the principle to which most state grant land managers adhere. Nevertheless, the mineral leasing policies of several states indicate that CBM production on state lands are subject to conditions intended to provide some protection for environmental resources.

STATE PERMITTING REQUIREMENTS

Prior to commencing CBM operations on federal, state or privately owned lands, permits from state regulatory agencies must be obtained governing the locations of drilling facilities and the control of any pollutants associated with production.

1. STATE DRILLING PERMITS

All of the states under consideration have adopted so-called "conservation" statutes. These acts originally were enacted to protect the opportunity of all owners to share in oil and gas production and prevent waste of the resource. To accomplish these goals, the acts created oil and gas commissions and authorized them to establish drilling units and provide for the location of permitted wells. Over the years, the commissions' responsibilities have expanded. In most states, the commissions now have the authority to regulate the drilling, casing, plugging, and abandonment of wells. The commission may also be authorized to protect the rights of surface owners. In 1984, the Colorado Oil and Gas Commission (COGCC) was directed to promulgate rules to protect the health, safety, and welfare of the general public with respect to oil and gas wells. Ten years later, COGCC was charged to adopt measures to protect environmental resources.

The state oil and gas commissions all require permits to drill that set out spacing requirements for drill pads, regulate disposal of wastes created by oil and gas operations (including injection of produced water), describe the standards for abandonment (including reclamation), and establish bonds.

A. COLORADO OIL AND GAS CONSERVATION COMMISSION

The oil and gas industry in Colorado has been subject to state regulations since the 1915 creation of the office of the State Oil Inspector. In 1951, the Oil and Gas Conservation Act established the Colorado Oil and Gas Conservation Commission. Its original function was "to foster, encourage, and promote the development, production and utilization" of oil and gas. COGCC focused on increasing production by preventing waste.

In 1994, Senate Bill 94-177 refocused the power of COGCC expanding its directives beyond simply encouraging production. COGCC must now "prevent and mitigate significant adverse environmental impacts on any air, water, soil, or biological resource resulting from oil and gas operations." The Act gives COGCC the authority to "investigate, prevent, monitor, or mitigate conditions that threaten to cause, or that actually cause, a significant adverse environmental impact."

Since 1994, COGCC has enacted regulations regarding water quality standards, practice and procedure, reclamation, safety, and financial security requirements.

B. MONTANA

The Montana Board of Oil and Gas Conservation (MBOGC) was established in 1953 with the passage of the Montana Oil and Gas Conservation Act. The Board consists of seven members, three of whom must be from the oil and gas industry, and two of whom must be landowners residing in oil- or gas-producing counties in the state. Under Montana law, no oil or gas exploration, development, production, or disposal well may be drilled until MBOGC issues a drilling permit. The powers and duties of MBOGC in regulating oil and gas activities are defined in MONT. CODE ANN. ’82-11-111. MBOGC serves three primary purposes: (1) to prevent waste of oil and gas resources; (2) to encourage maximum efficient recovery of the resource; and (3) to protect the right of each owner to recover its fair share of the oil and gas underlying its lands. In addition,
MBOGC can take measures to prevent contamination of or damage to surrounding land caused by drilling operations. These measures include, but are not limited to, regulating the disposal of produced salt water and the disposal of oil field wastes.\textsuperscript{123}

Montana has a state environmental policy act requiring its state agencies to complete environmental analyses similar to those required under NEPA.\textsuperscript{124} Currently there is a moratorium on CBM development in Montana pending completion of an state environmental impact statement pursuant to Montana’s “Little NEPA.”\textsuperscript{125}

C. NEW MEXICO OIL CONSERVATION DIVISION
N. M. STAT. ANN. “70-2-1 through 70-2-38 set forth the Oil and Gas Act which grants the Oil Conservation Commission and the Oil Conservation Division of the Energy, Minerals and Natural Resources Department authority over all matters relating to the conservation of oil and gas and the disposition of wastes resulting from oil and gas operations, including the protection of public health and the environment.\textsuperscript{126}

D. UTAH BOARD OF OIL, GAS AND MINING
In Utah, regulation of oil and gas operations falls to the Utah Board of Oil, Gas and Mining\textsuperscript{127} and its related technical and administrative agency, the Division of Oil, Gas and Mining.\textsuperscript{128} The Board’s powers include regulation and enforcement of operations related to drilling, testing, equipping, completing, operating, producing, and plugging wells; spacing and location of wells; and disposal of salt water and field wastes.\textsuperscript{129} Pursuant to Rule 649-3-15: “[t]he operator shall take all reasonable precautions to avoid polluting lands, streams, reservoirs, natural drainage ways, and underground water.” The Board’s rules encourage the development of “surface use agreements” with landowners but do not adopt statewide standards of reclamation.\textsuperscript{130}

E. WYOMING OIL AND GAS CONSERVATION COMMISSION
The Wyoming Oil and Gas Commission (WOGCC) is comprised of the governor, the director of the office of state lands and investments, the state geologist, and two additional members from the public appointed by the governor.\textsuperscript{131} WOGCC has the authority to require drilling, casing, and plugging of wells in order to prevent escape of oil or gas, the furnishing of a reasonable bond limited to plugging each dry or abandoned well, and monitoring of well performance.\textsuperscript{132} WOGCC has the authority to regulate, for conservation purposes, the drilling, producing and plugging of wells, the shooting and chemical treatment of wells, well spacing, disposal of salt water and drilling fluids “uniquely associated” with gas exploration and development, and the contamination or waste of underground water.\textsuperscript{133}

In addition, WOGCC has a duty to prevent the waste of natural gas and to keep it from polluting or damaging crops, vegetation, livestock, and wildlife.\textsuperscript{134} WOGCC rules mandate that, “[t]he owner or operator shall not pollute streams, underground water, or unreasonably damage or occupy the surface of the leased premises or other lands.”\textsuperscript{135}

2. WATER DISPOSAL

Unlike conventional oil and gas operations, CBM production involves pumping large volumes of water from the ground in order to release the pressure that is trapping the methane in the coal seam. There are two primary methods of disposing of this water: surface discharge and injection.

Both of these disposal methods require additional permitting by state regulatory agencies. Surface discharges are subject to regulation under the Clean Water Act.

Injection in governed by the Safe Drinking Water Act.

A. CWA

In 1972 Congress passed CWA\textsuperscript{136} “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”\textsuperscript{137} To achieve these goals, Congress mandated two key initiatives: 1) development of national, technology based effluent standards and treatment requirements for major categories of polluting activities; 2) adoption of water quality standards for rivers and lakes to protect actual and potential stream uses such as fishing and swimming. This approach was intended to provide two layers of protection for the nation’s waters. Dischargers not only have to apply the requisite pollution control technology to meet technology-based limits but also have to provide whatever further treatment is necessary to meet in-stream water quality standards.

The state WQSs have several components, including water quality criteria designed to protect specific uses, anti-degradation provisions to protect the exist-
ing clean condition of state waters, and measures to restore polluted waters.

Water quality criteria are intended to protect designated uses, such as drinking water, agriculture, or cold water fisheries.\textsuperscript{138} Water quality criteria can consist of numeric pollution limits (for example, “five micrograms of selenium per liter of water”), or narrative standards (for example, “no odor”).\textsuperscript{139} Where a water body has more than one designated use, the most stringent applicable criteria control.\textsuperscript{140}

In addition to designated uses and water quality criteria, state standards must include anti-degradation requirements.\textsuperscript{141} Anti-degradation rules require protection beyond water quality criteria. For example, where a river has quality better than that necessary to support fishable/swimmable uses, anti-degradation policy may preclude a new discharger from causing any lowering of in-stream water quality, even if such lowering of quality would not cause water quality criteria to be violated.\textsuperscript{142}

Finally, the Act requires states to identify those waters for which technology-based limitations have not been sufficient to produce compliance with WQSs.\textsuperscript{143} For such “water quality limited” waters, states must develop “total maximum daily loads” (TMDLs) for each pollutant for which standards are being violated.\textsuperscript{144} The TMDL sets a maximum amount of the pollutant that the water body can receive daily without violating WQSs.\textsuperscript{145} States must assign portions of the load to point and non-point sources along the water-body, limiting the allowed contribution from each category so as to ensure that standards will be attained and maintained.\textsuperscript{146} Once all of the TMDL is assigned or “used up,” no further discharges of the affected pollutant are allowed.\textsuperscript{147}

To ensure that all components of state WQSs are achieved, CWA establishes the National Pollutant Discharge Elimination System (“NPDES”), under which it is illegal to discharge pollutants from a point source without a permit complying with the Act.\textsuperscript{148} Any NPDES permit issued by a state must contain effluent limitations sufficiently stringent to prevent violation of water quality standards in downstream states.\textsuperscript{151}

CBM and CWA

CWA regulations provide that “there shall be no discharge of waste water pollutants into navigable waters from any source associated with production, field exploration, drilling, well completion, or well treatment (i.e. produced water, drilling muds, drill cuttings, and produced sand)” without an NPDES permit.\textsuperscript{152} CBM operations, due to the water produced and discharged by each well, require issuance of state NPDES permits.\textsuperscript{153} While there are no technology-based effluent standards for CBM dischargers,\textsuperscript{154} NPDES permits for CBM operations must impose effluent limitations sufficient to ensure that state WQSs will not be violated.

There is, however, little agreement on what those effluent limitations should be. The primary water quality concern for CBM production is the amount of salts contained in produced water. This level of salts often is measured by the sodium absorption ratio (SAR). In some states, such as Wyoming, there are no numeric standards for SAR in meeting water quality standards. Under current regulations in Wyoming, narrative guidelines typically say only that the SAR of CBM-produced water cannot degrade designated uses of surface water.\textsuperscript{155} Montana has numeric water quality criteria for SAR in some watersheds, including many of those in the PRB.\textsuperscript{156} Since the Montana watersheds are downstream, Wyoming’s NPDES permits in the PRB must ensure compliance with Montana’s WQSs. Montana and Wyoming currently are attempting to resolve the differences in their treatment of CBM discharges. The two states have entered into an interim memorandum of cooperation.\textsuperscript{157}

B. THE SDWA

1. INJECTION OF PRODUCED WATER

The purpose of SDWA is to regulate contaminants in drinking water. Part C of the Safe Drinking Water Act establishes a regulatory program intended to ensure protection of underground sources of drinking water.\textsuperscript{158} SDWA prohibits any underground injection unless authorized by permit or rule.\textsuperscript{159} Regulations define five classes of injection wells according to the type of fluid they inject and where the fluid is injected.\textsuperscript{160} CBM oper-
ations may require issuance of SDWA permits for Class II injection wells. Class II wells inject fluids either brought to the surface in connection with oil and gas operations or used to enhance recovery of oil or natural gas. Colorado, Montana, New Mexico, Utah, and Wyoming all have primacy under SDWA Section 1425 to regulate Class II underground injection control (UIC) facilities. In these states, the issuance of Class II permits is regulated by the oil and gas commissions. In general, operators are required to:

- site the wells in a location that is free of faults and other adverse geological features;
- drill to a depth that allows the injection into formations that do not contain water that can potentially be used as a source of drinking water;
- use an injection pipe that has multiple layers for containment of potentially contaminating injection fluids; and
- monitor to ensure the integrity of the well.

The primary objective of Class II injection wells is to isolate the produced water from any future use. The regulations governing Class II wells were designed to address the problem of extremely briny water extracted during conventional oil and gas operations. CBM, however, produces much more water than conventional oil and gas. Moreover, CBM-produced water is sometimes suitable in quality for agricultural or domestic use. It has been suggested that some CBM water should be re-injected into usable aquifers in order to avoid dewatering ground water aquifers impacted by CBM operations. Re-injection of produced water into usable aquifers would require compliance with more stringent regulations under SDWA governing Class V wells.

Thus far, BLM has rejected re-injection of CBM-produced water as an option for water disposal. The Montana Draft EIS summarily rejects any alternatives that would have required re-injection stating that such measures would be “counter productive.”

II. Hydraulic Fracturing

Hydraulic fracturing (fracing) is utilized by CBM drillers to pump fluids into the coal seams to fracture the coal, to facilitate methane extraction. In Legal Environmental Assistance Foundation (LEAF) v. EPA, plaintiffs claimed that the nearby use of hydraulic fracturing to extract CBM polluted their well waters and should have been regulated under the SDWA. Plaintiffs petitioned EPA to withdraw approval of Alabama’s UIC program for exempting fracing from the SDWA’s regulatory scheme. EPA refused to conduct a hearing on the petition, contending that fracing did not fall within the regulatory definition of underground injection. Plaintiffs appealed EPA’s decision to the United States Court of Appeals for the Eleventh Circuit.

The court reversed EPA’s decision. The court held that fracing fluids clearing fell within the SDWA’s definition of “underground injection,” stating that “the process of hydraulic fracturing obviously falls within this definition, as it involves subsurface emplacement of fluids by forcing them into cracks in the ground through a well.” Accordingly, the court granted the petition for review and remanded the matter to EPA.

In July of 2000, EPA published a notice in the Federal Register indicating that it is undertaking a nationwide study to the evaluate the environmental risks of fracing to underground sources of drinking water. A final report has not been completed.

The LEAF decision may pose significant implications for CBM development in western states as well. For example, although the Wyoming Department of Environmental Quality (WDEQ) has an approved UIC program, WDEQ does not regulate the underground injection of hydraulic fracting fluids.

Local Regulation of CBM

CBM operations must also comply with any applicable city or county ordinances governing their activities. Many communities, pursuant to local land use authority, have adopted regulations that may bear on CBM production. These regulations fall into two general categories: zoning and conditions of use. Zoning regulations designate those areas of the city or county that are open to CBM and other oil and gas facilities. Conditions of use place restrictions on the manner in which such facilities must operate.

Most local regulations accommodate oil and gas production in industrial and agricultural zones, requiring only that operators obtain special use, building, and road permits; paint production tanks; and keep the site weed-free. Few local governments have adopted ordinances specific to CBM operations. However, some communities, in areas heavily impacted by CBM pro-
duction, have attempted to improve their oversight of such operations.\textsuperscript{171} Local land use regulations recently adopted in Las Animas County, Colorado, for example, required consideration of “noise levels, impacts on air and water quality, vibration and odor levels, fire protection and access requirements, visual impacts, wildlife impacts, and public safety.”\textsuperscript{172}

The central legal question concerning local regulation of CBM is whether these provisions are pre-empted by state and federal activities\textsuperscript{173} in the field. The answer to this question varies from state to state depending on applicable law and regulation. The most extensive legal debate on this issue currently is taking place in the State of Colorado.

1. **Colorado**

In 1992, before the changes made in the Conservation Act by S.B. 94-177, the Colorado Supreme Court looked at the issue of state pre-emption of local government oil and gas production regulations in two cases. In *Board of County Comm’rs of La Plata County v. Bowen/Edwards Associates, Inc.*\textsuperscript{174}, operators challenged the county permit system that required an oil and gas facility to demonstrate the ability to comply with county regulations as to noise and nuisance mitigation measures, visual standards, wildlife mitigation, surface disturbance standards, and setback requirements. The Court first determined that both the County Planning Code\textsuperscript{175} and the Local Government Land Use Control Enabling Act\textsuperscript{176} gave La Plata County the authority to regulate land use aspects of oil and gas operations. It found that the Conservation Act did not explicitly pre-empt the land use authority of the county\textsuperscript{177} nor did the “purpose and scope” of the Act demonstrate an implied intent to occupy the field of oil and gas regulation\textsuperscript{178}. Finally, the Court examined whether an “operational conflict” existed between the state and local regulations. An operational conflict can arise “where the effectuation of a local interest would materially impede or destroy the state interest.”\textsuperscript{179} The Court remanded the case to the district court for further findings regarding whether such a conflict existed stating that “any determination that there exists an operational conflict . . . must be resolved on an ad hoc basis under a fully developed evidentiary record.”\textsuperscript{180}

In *Voss v. Lundvall Brothers, Inc.*\textsuperscript{181}, the Colorado Supreme Court analyzed a Greeley zoning ordinance that banned all oil and gas drilling within the city. The analysis in *Voss* was different than that in *Bowen/Edwards* because of Greeley’s status as a “home rule” city.\textsuperscript{182} Colorado’s home rule cities hold a special constitutional status. Their authority to regulate land use issues within their territorial boundaries supercedes conflicting state statutes. However, if the matter is of purely state concern, state law governs. State statutes and home rule regulations can co-exist if the matter is of mixed local and state concern and there is no conflict with the state statute. The Court found that the regulation of oil and gas operations is one of mixed concern.\textsuperscript{183} Noting that oil and gas pools are not confined by jurisdictional boundaries, the Court found that Greeley’s total ban on drilling “materially impeded” significant state goals.\textsuperscript{184} The Court noted that the decision was specific to a total ban on drilling and was not meant to imply that home rule cities were completely pre-empted from enacting regulations applicable to oil and gas production.

In 1994, the Colorado General Assembly expanded the mission of COGCC but recoiled from declaring that the legislature intended to pre-empt local regulation of oil and gas production. Instead, the legislature attached the following statement to S.B. 94-177: “[t]he General Assembly declares that the purpose of this act is to address the regulatory and enforcement authority of the Colorado Oil and Gas Conservation Commission and that nothing in this act shall be construed to affect the existing land use authority of local governmental entities.”\textsuperscript{185}

In 1996, La Plata County enacted new regulations governing certain aspects of the surface location of oil and gas wells. The Colorado Oil and Gas Association, the Colorado Petroleum Association, and COGCC immediately challenged the regulations, asserting that they were pre-empted by state law. The Colorado District Court for La Plata County disagreed, holding that “nothing in [S.B. 94-177] was intended to overrule *Voss* and *Bowen/Edwards* or delegate the land use authority historically delegated to local governments to [COGCC].”\textsuperscript{186}

Following the decision in *La Plata County*, Las Animas County adopted similar regulations. COGCC amended its rule regarding permits to drill stating that: “[t]he permit-to-drill shall be binding with respect to any conflicting local governmental permit or
land use approval.” Both Las Animas County’s regulations and the COGCC rule have become the subject of legal challenges.

2. Local Regulation in Montana, New Mexico, Utah, and Wyoming

The adoption of comprehensive land use regulations governing oil and gas activity in La Plata and Las Animas Counties was precipitated by a proliferation of CBM development in Colorado. Thus far, however, the expansion of CBM production elsewhere has not resulted in the same kind of restrictive local regulation or the same legal battle over the application of local ordinances. There are no reported cases in the states of Montana, New Mexico, Utah, or Wyoming specifically addressing whether local regulation of oil and gas is pre-empted by state law. As CBM production extends its reach across the West, however, more cities and counties may decide that additional local regulation is appropriate and more legal challenges to the enforceability of such regulation undoubtedly will follow.

A. Montana

All counties and municipalities in the State of Montana have been granted expressly the power to adopt such local ordinances and zoning regulations necessary to promote the general welfare of their citizens. However, part of the zoning enabling legislation provides that “[n]o resolution or rule adopted pursuant to the provisions of this part . . . shall prevent the complete use, development, or recovery of any mineral, forest or agricultural resource by the owner thereof.” In interpreting this provision of state law, Montana courts have held that it does not preclude all local regulation of mineral processing or extraction, however, land use and zoning ordinances must provide that mineral resources can be effectively utilized.

Based upon its land use and zoning authority, Gallatin County, Montana recently rejected issuance of a conditional use permit that would have allowed J.M. Huber to drill an exploratory CBM well east of Bozeman in the Bridger Canyon Zoning District. Denial of Huber’s permit currently is the subject of a legal challenge in federal court.

B. New Mexico

New Mexico courts consistently have upheld county and municipal authority to enact zoning and land use ordinances that are reasonably related to the promotion of the health, safety, and general welfare of their citizens. In looking at whether adoption of a comprehensive act regulating other mineral operations pre-empted local ordinances, the New Mexico Supreme Court concluded that where neither the Act nor the regulations contain any mention of development issues with which local governments are traditionally concerned, such as traffic congestion, increased noise, compatibility of the use with the use made of surrounding lands, appropriate distribution of land use and development, and the effect of the activity on surrounding property values, state law does not pre-empt local regulation.

C. Utah

The legislature has conferred upon cities and counties the authority to enact all measures necessary to promote the general health, safety, morals, and welfare of their citizens. However, local governments are without authority to pass any ordinance prohibited by, or in conflict with, state statutory law. An ordinance “is invalid if it intrudes into an area which the Legislature has pre-empted by comprehensive legislation intended to blanket a particular field.” The Utah Oil and Gas Conservation Act of 1983 states that one of its purposes is “to provide exclusive state authority over oil and gas exploration and development as regulated under the provisions of this chapter. . . .” It is unlikely, however, that exclusive state authority extends to matters of purely local concern such as traffic congestion, noise, and compatibility with surrounding uses.

D. Wyoming

Deep in the belly of the PRB, Johnson County, Wyoming has no comprehensive land use plan. In Converse County, mineral extraction is exempted from local regulations. The City of Gillette’s zoning regulations define oil, gas and mineral exploration and production activities as “permitted uses” within the agricultural or heavy industrial districts within the city.

All Wyoming cities and counties are free to apply their zoning and planning authority under various provisions of Wyoming law. The extent of that authority, however, may not be the same for cities and counties. Counties may “regulate and restrict the location and use of buildings and structures and the use, condition of use or occupancy of lands for residence, recreation, agri-
culture, industry, commerce, public use and other purposes in the unincorporated area of a county."201 However, "no zoning resolution or plan shall prevent any use or occupancy necessary to the extraction or production of mineral resources."202

Conclusion

The operation of CBM facilities, whether located on federal, state, tribal or private lands, requires the authorization and oversight of numerous regulatory agencies. Drill permits must be issued by state and federal agencies. Permits for disposal of waste water and other pollutants must be obtained from federal or state departments of environmental quality. The facilities must be in compliance with city or county land use regulations designed to protect local environmental amenities. Few of these agencies, however, have plans or programs specifically designed to address the special concerns posed by CBM production. There are serious questions as to whether the regulatory programs in place to govern "conventional" oil and gas are adequate to address the environmental impacts associated with CBM production. Certainly the level of CBM development currently proposed was unanticipated. The amount of land that will be disturbed and the volume of water that will be dumped were never contemplated. It remains to be seen whether the regulatory structure discussed here will prove adequate to the challenge now before it.

Notes

1. BLM, Draft Environmental Impact Statement for Oil and Gas Production in the Powder River Basin (PRB Draft EIS) (February 2002), 1–3.

2. Leases within the PRB contain various stipulations concerning surface disturbance, surface occupancy, limited surface area, and timing restrictions. In addition, the lease stipulations provide for the imposition of such reasonable conditions, not inconsistent with the purposes for which the lease was issued, as the BLM or FS may require to protect the surface of the leased lands and the environment. None of these stipulations, however, would empower BLM or FS to deny all development activity because of environmental concerns. See 43 C.F.R. 3101.1–2.

3. PRB Draft EIS at 2–51.

4. For example, BLM’s 1994 Oil and Gas Amendment of the Billings, Powder River, and South Dakota RMPs supported only “limited [CBM] exploration and development” and included no “analysis for full-scale CBM development.” BLM & Montana Dep’t of Envt’l Quality, Draft Environmental Impact Statement for Oil and Gas Production in Montana (Montana Draft EIS) (January 2002), 1–1.

5. This article does not address water rights or air quality issues. Those issues are discussed in other papers in this volume.

6. For the past decade, CBM production has been encumbered by confusion over whether CBM is part and parcel of the coal seam or a separate fluid mineral like conventional natural gas. That issue on certain federal mineral estates was resolved by the United States Supreme Court in Amoco Production Co. v. Southern Ute Indian Tribe, 526 U.S. 865 (1999). At issue in the case were approximately 20 million acres of land patented under the Coal Lands Acts of 1909 and 1910. 30 U.S.C. 81; 30 U.S.C. 83–85. These patents conveyed the surface estate and all underlying minerals to the patentee except the “coal” which the United States reserved. Southern Ute involved a 1938 transfer by the United States to the tribe of title to reserved lands, including lands patented under the 1909 and 1910 Acts. The issue in Southern Ute was whether the reservation of “coal” to the United States upon granting the land patents included CBM, thereby conveying the CBM rights to the Southern Ute Tribe in the 1938 conveyances, or if the CBM rights went to Amoco, the holder of a valid oil and gas lease. The Court, finding that “coal is coal” and “gas is gas,” held that the reservation of “coal” under the Coal Lands Acts of 1909 and 1910 did not include CBM, overruling a Tenth Circuit decision holding that it did.

7. U.S.C. 181–287 (1994). This law removed coal, oil, gas, oil shale, and four chemical minerals from the location system of the General Mining Law and provided that they could be obtained from federal lands only by leasing. The United States Supreme Court has often affirmed that the federal government has broad discretion whether or not to grant mineral leases. See, e.g., Udall v. Tallman, 380 U.S. 989 (1965).

8. Oil and gas operations can also take place on other federal land types—wildlife refuges, national seashores, and in limited areas in the National Park System. 43 C.F.R. 3100.0-3(g)(4). Federal lands next to active oil and gas development, even those not normally available for other types of private commercial activity, may be leased if federal oil and gas reserves could be drained by operations on adjacent lands. See 43 C.F.R. 3100.0-3(d).

Recent amendments to the National Wildlife Refuge Act placed additional limits on the availability of Refuge System lands for uses other than wildlife such as oil and gas operations. Such uses may be prohibited not only when incompatible with the National Wildlife Refuge System mission, but also when they would interfere with wildlife-dependent recreational uses. 16 U.S.C. 668dd.


11. Congress enacted FLPMA to provide BLM with comprehensive statutory guidance for administering the public lands. FLPMA defines public land as “any land owned by the United States within the several States and administered by the Secretary of the Interior through the [BLM], without regard to how the United States acquired ownership.” 43 U.S.C. 1702(c).

12. Since the issuance of the Record of Decision (ROD) for production in the Wyodak resource area, BLM has been requiring that CBM projects be sub-
mitted as Plans of Development (POD). PRB Draft EIS at 1–7. A POD is a group of wells and their supporting infrastructure (e.g., roads, pipelines, power lines, water discharge points, booster stations, and compressor stations) for a given geographic area or sub-watershed.

15. Id. ’ 1732(a).
17. Id. ’ 1601.0-6.
18. BLM HANDBOOK No. 1624-1. For a discussion of the potential environmental impacts that should be addressed by NEPA documents, see Preserving Our Public Lands authored by Thomas F. Darin and Travis Sills in 2002. Copies are available from the Wyoming Outdoor Council.
19. Id. ’ 1610.5-3(a).
20. Id. ’ 1601.0-5(b).
21. The Interior Board of Land Appeals recently ruled that BLM may not rely on RMPs and other environmental addressing only the impacts of conventional oil and gas to support CBM activities. Wyoming Outdoor Council, et al., 156 IBIA 347 (2002).
23. Id. ’ 219.10.
29. The standard lease terms are contained in Form 3100-11, Offer to Lease and Lease for Oil and Gas, United States Department of the Interior, BLM, June 1988 or later addition.
33. The agencies commonly use Lease Notices (LNs) or Notices to Lessees (NTLs) to identify the potential for the occurrence of these protected resources on any given lease. For example, BLM applies two LNs to leases in the PRB. PRB Draft EIS at 5–6.
34. All leases are subject to regulations and formal orders of the Secretaries of the Interior and Agriculture in effect at the time of issuance.
36. These special stipulations include:

   No Surface Occupancy (NSO)—Neither exploration nor production facilities are permitted on the leasehold.

   Controlled Surface Use (CSU)—Surface occupancy and use are permitted but are restricted to mitigate effects to particular resources. The CSU stipulation provides for mitigation measures that would not normally be met by relocating the drilling site the 200 meters provided by SLTs.

   Timing Limitations (TL) — Construction activities are restricted or prohibited during certain periods to protect resources. The TL stipulation provides for mitigation measures that would not normally be met by delaying surface-disturbance operations for the 60 days provided by SLTs.

40. Id.
41. C.F.R. ’ 1501.3, 1508.9, 1507.3.
42. Id. ’ 1508.13.
43. Id. ’ 1502.1.
44. Sierra Club v. Peterson, 717 F.2d 1409 (D.C. Cir. 1983); Conner v. Burford, 848 F.2d 1441 (9th Cir. 1988).
45. F.2d 609 (10th Cir. 1987).
46. Colorado, New Mexico, Utah, and Wyoming fall within the jurisdiction of the Tenth Circuit.
47. See, e.g., Mansfield, Through the Forest of Onshore Oil and Gas Leasing Controversy Toward a Paradigm of Meaningful NEPA Compliance, 24 LAND & WATER L. REV. 85 (1989).
49. BLM’s handbook on oil and gas leasing states that “[e]ligible lands are available for leasing when all statutory requirements and reviews, including compliance with [NEPA] have been met. The BLM objective is to place reliance on land-use planning and associated NEPA analyses, conducted in accordance with the supplemental program guidance for energy and mineral resources (see . . . Handbook 1624-1).” BLM HANDBOOK No. H-3101-1 at 1.
50. BLM HANDBOOK No. H-1624-1 at I.B.2.

   The Reasonable Foreseeable Development projections can accommodate the drilling of test wells and initial small-scale development of CBM. The extension of the nonconventional fuels tax credit for wells drilled before December 31, 1993, should generate some activity in the planning area. This amendment does not contain either a hydrologic analysis of the RFD area or an environmental study of the impacts of building major pipeline systems.

52. Prior to FOOGCLA, FS took the position that it had “no statutory responsibility for issuing or supervising prospecting permits or leases” on National Forest lands reserved from the public domain. FOREST SERVICE MANUAL ’ 2822.04 (1990).
53. U.S.C. ’ 226(h). The BLM regulations broaden FS’ role by providing that FS consent is required for leasing on all national forest lands regardless of
whether the lands are acquired or reserved from the public domain. 43 C.F.R. \textsuperscript{7}3101.7-1, 3101.7-2(b). Although FOOGGLRA would seem to allow BLM to go forward with leasing proposals when FS simply fails to act on lease proposals, the BLM regulations require affirmative consent from FS, 43 C.F.R. \textsuperscript{7}3101.7-1. 54. C.F.R. \textsuperscript{7}228.102. 55. \textit{Fed. Reg.} at 10,429. 56. C.F.R. \textsuperscript{7}228.102(c). 57. C.F.R. \textsuperscript{7}228.102(c)(21)-(4). 58. \textit{Fed. Reg.} at 10,428.

59. If there is a conflict between the rights conveyed by an oil and gas lease and a subsequently adopted LRMP, FS may choose to enforce the new forest plan, recognizing that this may subject the government to appropriate legal action by the lessee, or FS may choose to enforce the forest plan that was in effect when the lease was issued. 55 \textit{Fed. Reg.} at 10,435. 60. C.F.R. \textsuperscript{7}228.102(e). 61. C.F.R. \textsuperscript{7}228.102(e)(1). If the proposal is inconsistent with the forest plan, the plan must be amended or FS must deny leasing consent. 55 \textit{Fed. Reg.} at 10,430. FS may also determine that lease issuance would be inappropriate even though it would be consistent with the forest plan. \textit{Id}. 62. C.F.R. \textsuperscript{7}228.102(e)(2) and (3). 63. See 55 \textit{Fed. Reg.} at 10,426, 10,431.

64. APD NEPA documents are often “tiered” to EISs or EAs prepared in conjunction with land use planning or lease issuance. Tiering is used by an agency when the impacts covered by a decision have been addressed in a prior NEPA document. Tiering is only appropriate when, “[a] current proposed action previously was proposed and analyzed (or is part of an earlier proposal that was analyzed); resource conditions have not changed; and there is no suggestion by the public of a significant new and appropriate alternative.” BLM, Instruction Memorandum No. 99-149 (1999) at 1.

65. \textit{Fed. Reg.} 22814, 22,832–33 (June 17, 1988). 66. C.F.R. \textsuperscript{7}3162.3-1(d); 36 C.F.R. \textsuperscript{7}228.106(a). 67. For example, a BLM surface use plan of operations shall include “the road and drillpad location, details of pad construction, methods for containment and disposal of waste material, plans for reclamation of the surface...” 43 C.F.R. \textsuperscript{7}3162.3-1(f). FS requires similar information. See 36 C.F.R. \textsuperscript{7}228 Appendix A to Subpart E.

68. C.F.R. \textsuperscript{7}228.108. 69. FOOGGLRA mandates regulation of surface disturbance and directs that BLM and FS “shall determine reclamation and other actions in the interest of conservation of surface resources.” 30 U.S.C. \textsuperscript{7}1536(a)(2). 70. C.F.R. \textsuperscript{7}228.108(g). In response to a comment on this point, BLM noted in the rulemaking preamble that reclamation standards are more properly addressed on a site-specific basis. 53 \textit{Fed. Reg.} at 22,832. 71. U.S.C. \textsuperscript{7}226(g). 72. \textit{Fed. Reg.} at 22,821. Current bond requirements are as follows: $10,000 per lease, 43 C.F.R. \textsuperscript{7}3104.2; $25,000 covering all lease and operations in any one state, id. \textsuperscript{7}3104.3(a); or $150,000 covering all leases and operations nationwide, id. \textsuperscript{7}3104.3(b).

73. C.F.R. \textsuperscript{7}228.109. FS does authorize a bond increase or separate bonds if the agency concludes that the existing BLM bond will not ensure complete and timely reclamation. 36 C.F.R. \textsuperscript{7}228.109(a).


93. C.F.R. \textsuperscript{7}800.5, 800.6. BLM issuance of an oil and gas lease is an undertaking within the meaning of NHPA. BLM Director Opinion No. M 36928 (November 24, 1980). BLM approval of an APD is a federal undertaking within the meaning of NHPA. Solicitor’s Opinion, Legal Responsibilities of BLM for Oil and Gas Leasing and Operations on Split Estate Lands, April 1988. 94. \textit{See} 36 C.F.R. Part 800. 95. PRB Draft EIS at 4–226. 96. \textit{Id}. 97. U.S.C. \textsuperscript{7}396a–396g. 98. \textit{Id}. \textsuperscript{7}2101–2108. 99. The 1982 Act was intended to provide increased flexibility for the tribes to conduct their own lease negotiations. 100. Although states have actively sought environmental jurisdiction over the reservations, these efforts have been largely rebuffed by EPA and the courts. \textit{See}, e.g., \textit{Washington v. EPA}, 752 F.2d 1465, 1469–70 (9th Cir.1985) (upholding EPA’s refusal to permit state regulatory program to operate on Indian lands). \textit{See generally} Judith V. Royster & Rory Snow Arrow Fausett, Control of the Reservation Environment: Tribal Primacy, Federal Delegation, and the Limits of State Intrusion, 64 WASH. L. REV. 581 (1989) (providing detailed information on jurisdictional conflicts over environmental regulation); Charles F. Wilkinson, Cross-Jurisdictional Conflicts: An Analysis of Legitimate State Interests on Federal and Indian Lands, 2 UCLA J. ENVTL. LAW & POL’Y 145 (1982). 101. \textit{See}, e.g., MONT. ADMIN. R. 36.25.103 (2001); UTAH ADMIN. CODE R652-20-100 (2001); WY ADC LAND LC Ch. 6 \textsuperscript{7}5 (2001).
102. Every state entering the Union since 1803 has received lands from the federal government for the support of public schools. For example, the 1875 Enabling Act for the Territory of Colorado, 18 Stat. 474 (1875), authorizing the admission of Colorado as a state provided that two sections of every township would be granted for the support of common schools.


104. A letter produced by the State of Wyoming Office of State Lands and Investments, see Letter from Harold D. Kemp, Assistant Director, Wyoming Office of State Lands and Investments, to Wyoming Coal Bed Methane Operators (November 18, 1999), unabashedly encourages CBM development on state sections (marked on state land status maps with blue shading). The letter informs producers that due to higher permitting costs for federal wells, and the application of NEPA and other laws, CBM operators can obtain a better return on investment if they drill on largely unregulated state sections. Id. The letter asks CBM operators “to take another look at the blue squares” on the Wyoming Land Status Map, and “fill them in” with CBM wells in order to “get the biggest bang for your drilling buck.” Id.

105. Colorado has amended the provisions of its Constitution with respect to grant lands, eliminating the requirement that the state manage these lands “in such a manner as will secure the maximum possible amount therefore” and substituting an obligation to “produce reasonable and consistent income over time.” Colorado Const. art. 9, ‘ 10. See Branson School Dist. RE-82 v. Romer, 161 F.3d 619 (10th Cir. 1998) (upholding the amendment). Colorado has also created a “Stewardship Trust” of 300,000 acres that must be managed to “protect and enhance the beauty, natural values, open space, and wildlife habitat thereof.” Id.

In Montana, the Trust Land Management Division’s Minerals Management Bureau must comply with the Montana Environmental Policy Act (MEPA), MONT. CODE ANN. ‘ 82-11-701 to 306, before issuing oil and gas leases. See also UTAH ADMIN. CODE R652-20-2200 (3)(a), (b); R850-20-2200(3)(a), (b) (Utah rules authorizing the inclusion in state leases of provisions requiring surveys for biologic and cultural resources and mitigation of adverse impacts).

106. See, e.g., COLO. REV. STAT. ‘ 34-60-116(1).

107. COLO. REV. STAT. ‘ 34-60-104.


109. See, e.g., COLO. REV. STAT. ‘ 34-60-106(1)(c), 34-60-106(3.5).

110. COLO. REV. STAT. ‘ 34-60-107(10), 43-6-107(11).

111. COLO. REV. STAT. ‘ 34-60-106(2)(d).

112. The amount the bonds is often linked to the depth of the wells. See, e.g., N.M. ADMIN. CODE tit. 19, ‘ 15.3.101 (2001); UTAH ADMIN. CODE R649-3-1, WOGCC Rules, ch.2, ‘ 4 (2001).


115. Id.

116. Id.

117. COLO. REV. STAT. ‘ 34-60-102(1).

118. COLO. REV. STAT. ‘ 34-60-106(2)(d).

119. COLO. REV. STAT. ‘ 34-60-124(4).
waste, . . . and industrial, municipal, and agricultural waste discharged into water.” *Id.* CBM water with dissolved solids and minerals contains pollutants. It is important to note that some state CWA programs provide for a general permit for certain oil and gas operations. *See, e.g.*, Montana Draft EIS at HYD-13.

154. Under CWA Section 402, EPA is preparing a technical and economic analysis to assess disposal options for water that is produced as part of the CBM extraction process. This analysis will support the determination of effluent limitations that represent Best Available Technology Economically Achievable (BACT) for CBM produced waters. Montana Draft EIS at 1–10.

155. *See PRB Draft EIS at 4–43.*


157. *Id.* at HYD-9 to HYD-11.


159. C.F.R. ‘ 145.11(a)(5).

160. C.F.R. ‘ 144.6(b).


162. Injections of other fluids or injections into drinking water aquifers normally are permitted by state departments of environmental quality. *See, e.g.*, 56 Fed. Reg. 9408-22 (March 6, 1991).

163. SDWA prohibits EPA from prescribing requirements that interfere or impede the underground injection of brine or other fluids that are brought to the surface in connection with oil and gas production unless the requirements are essential to assure that injection will not endanger an underground source of drinking water. 42 U.S.C. ‘ 300(h)(b)(2).


166. F.3d 1467.

167. Id. at 1474–75.


169. *See, e.g.*, City of Gillette, Wyoming Land Use Regulations.

170. *See, e.g.*, Oil and Gas Regulations of Las Animas County, Colorado as originally adopted in 2001.

171. *Id.* ‘ 1.10(b).

172. Zoning regulations, for example, are not applicable to CBM facilities located on federal lands within the boundaries of a city or county planning area. *See California Coastal Comm’n v. Granite Rock Co.*, 480 U.S. 572, 587 (1987).


176. *P.2d at 1057.

177. *Id.* at 1058.

178. *Id.* at 1060.

179. *Id.* at 1061 (Colo. 1992).

180. A home rule city is created by and obtains powers directly from the state constitution. The Home Rule Amendment gives such cities the “right of self-government in both local and municipal matters,” Colo. Const., art. 20, ‘ 6, and provides that a city ordinance “shall supercede within the territorial limits” a state law when there is a conflict, *id.* If a matter is of purely local concern, the authority of the home rule city to regulate the issue supercedes any state authority.

181. *P.2d at 1067.*

182. *Id.* at 1068.

183. COLO. REV. STAT. ‘ 34-60-102.


185. *COGCC Rule 303(a).*

186. Legal challenges to Las Animas County’s oil and gas regulations were recently settled. The County agreed to amend its regulations significantly. E-mail conversation with Gwen Lachelt, Oil and Gas Accountability Project (May 14, 2002).

187. MONT. CODE ANN. ‘ 76-2-209 (applicable to county zoning). The chapter on municipal planning contains a nearly identical provision, MONT. CODE ANN. ‘ 7-6-1-113, which states that “[n]othing in this chapter shall be deemed to authorize an ordinance, resolution, or rule that would prevent the complete use, development, or recovery of any mineral, forest, or agricultural resource by the owner thereof.”


189. *Bozeman Chronicle* (January 12, 2002). Elsewhere in the County, however, outside the zoning district, local authorities have no control over CBM activities.


191. *See, e.g.*, San Pedro Mining Corp. v. *Bd. of County Comm’rs of Sante Fe County*, 909 P.2d 754 (N.M. 1996).

192. *Id.* at 1058.

193. *Id.* at 1060.

194. UTAH. CODE ANN. ‘ 10-8-84, 17-5-77.


196. *Id.*

197. UTAH. CODE ANN. ‘ 40-6-1.

198. Converse County Land Use Plan.

199. City of Gillette Land Use Regulations.

