



# San Juan Public Lands

## San Juan Field Center & San Juan National Forest



# Draft Environmental Impact Statement (EIS)

## Northern San Juan Basin Coalbed Methane Project

### Agencies Studying Development Proposal

The U.S. Forest Service and Bureau of Land Management are studying a proposal from BP America, Pure Resources, XTO Energy, Elmridge Resources, Petrox Resources, and Exok, to develop 273 well pads to produce coal bed methane from leases already held by the companies.

When land management agencies are approached by the private sector with a proposal that will result in ground-disturbing activities, the agencies study the proposal through a process outlined by the National Environment Policy Act, known as NEPA. The agencies have released a Draft Environmental Impact Statement (EIS), which is now out for public review and comment.



The Analysis Area studied in the Draft EIS includes 125,000 acres of federal, state, and private lands north of the Southern Ute Indian Reservation in La Plata and Archuleta counties in southwestern Colorado. There are 300 existing coalbed methane wells in the Analysis Area. The Northern San Juan Basin of Colorado makes up about 1/3 of the larger San Juan Basin, which covers 9,000 square miles in northwestern New Mexico and southwestern Colorado. The Northern San Juan Basin Analysis Area includes only the portion of the basin in Colorado north of the Southern Ute Indian Reservation.



The Northern San Juan Basin Draft EIS considers cumulative effects from development on private lands, but makes no decisions involving private property. The U.S. Forest Service and BLM have jurisdiction only on federal lands and minerals.



Copies of the Draft EIS are available at:

- **San Juan Public Lands Center**  
15 Burnett Court, Durango  
970 247-4874
- **Columbine Public Lands Office**  
367 Pearl Street, Bayfield  
970 884-2512

It is also available on the Web at:

- [www.fs.fed.us/r2/sanjuan](http://www.fs.fed.us/r2/sanjuan)
- [www.nsjb-eis.org](http://www.nsjb-eis.org)

**NOTE:** The information provided in this handout is very general, and we encourage you to read at least the Executive Summary, and/or portions of the entire document. The Draft EIS covers information in this handout, plus much more, including monitoring and mitigation proposals.



The Fruitland Outcrop, which forms the northern boundary of the Northern San Juan Basin Analysis area, extends for about 90 miles across southwestern Colorado.

## Coal Bed Methane in the Northern San Juan Basin

Coal bed methane is a natural gas produced from decomposition of carbon-rich organic matter during coal formation. It is 80-99% methane, along with ethane, propane, nitrogen, and carbon dioxide.

The Fruitland coal seams of the Northern San Juan Basin are different from conventional gas formations. The methane is chemically adhered, or adsorbed, to the coal surfaces. Natural gas found in other formations is found as a free gas in pores and fractures of rock.

The Fruitland coalbeds lie at a depth of about 3,500 in the interior of the San Juan Basin, but the coal seams tilt upwards and are exposed at the surface at the rim of the Fruitland Outcrop (see above). They retain a greater amount of gas at shallow depths in comparison to conventional reservoirs at comparable depths and pressures.

Total coalbed methane reserve, including production to date in the San Juan Basin of Colorado (including the Southern Ute Indian Reservation) is estimated at 12 trillion cubic feet (Tcf), which could result in \$36 billion in gross revenues. Total reserve, including production to date, in only the Northern San Juan Basin Analysis Area (excluding the Reservation) is estimated at 2.5 Tcf, which could result in \$7.5 billion in gross revenues. In the HD Mountains Roadless Area, the most recent modeling study estimates that 1.1 Tcf of coalbed methane gas is economically recoverable.

Methane is the main component of natural gas used in homes. Residential gas use has increased 13% in the last decade, and 2/3 of new homes include natural gas heating. In 2000, consumption of natural gas production in southwestern Colorado was:

- 24% Residential
- 16% Commercial
- 39% Industrial
- 21% Electricity Generation

## History

- **1980:** Congress passed the Crude Oil Windfall Profits Tax Act with tax incentives for unconventional fuel resources.

- **Early '80s:** Management plans for the San Juan National Forest and BLM San Juan and San Miguel Resource Areas identified all federal lands in the project area as suitable for oil and gas leasing.

- **1980s/90s:** Some 250 coal bed methane wells were constructed in the Project Area under these plans.

- **2000:** Industry proponents submitted a plan for 170 new CBM wells on existing leases in La Plata County (the majority were infill). A Notice of Intent was filed in the Federal Register to prepare an EIS. Public meetings were held in Durango and Bayfield to determine the scope of the issues.

- **2001:** Industry submitted a revised plan for approximately 300 new CBM wells on existing leases (160 wells proposed in La Plata County; 140 in Archuleta County).

- **2002:** Public meetings were again held in Durango and Bayfield to accept input on the scope of the issues for the revised proposal.

## Applications for Permit to Drill (APDs)

The Northern San Juan Basin EIS studies both the overall development scenario in the project area and site-specific proposals for individual well pads. The proponents have submitted 56 APDs that are studied in the EIS. Future APDs received by the agencies would go through an abbreviated NEPA process tiered to the EIS.



## Royalties from Energy Production

The federal government receives a 12.5% royalty assessed on production, bonus bids, and annual rentals. In 2000, the federal government received \$146 million from royalties on coal, hard rock, and fluid minerals leasing of NFS lands (a mineral value of about \$1.35 billion).

# Alternatives Studied in the EIS

## ALTERNATIVE 1

### Companies' Proposed Action

Includes 25 directional wells on 15 well pads in the HD Mountains (well pads for directional drilling are larger than well pads for single vertical wells).

- 273 well pads
- 118 road miles
- 1,113 impacted acres

## ALTERNATIVE 1A

### Reduction of Surface Impacts (Preferred)

Modifies proposed action to mitigate and/or reduce direct surface impacts by consolidating facilities to reduce surface well density in some areas (could be accomplished through directional drilling).

- 211 well pads
- 94 road miles
- 965 impacted acres

## ALTERNATIVE 1B

### Reduction of Surface Impacts

Modifies proposed action to reduce surface impacts by consolidating facilities to reduce surface well density in some areas (could be accomplished through directional drilling).

- 158 well pads
- 62 road miles
- 690 impacted acres

## ALTERNATIVE 2: Maximum Development

Assumes the demand and price for natural gas would significantly increase in the future, triggering further development.

- 499 well pads
- 203 road miles
- 1,843 impacted acres

## ALTERNATIVE 3

### No New Development in HD Mountains

Offers a significant modification of proposed action to reduce well pads in the Roadless Area.

- 212 well pads
- 78 road miles
- 756 impacted acres

## ALTERNATIVE 4: Existing Guidance

Allows for development of federal leases in accordance with current guidance (Interim Criteria and USFS/BLM planning documents). The number of wells on private and state lands would be the same as proposed action.

- 185 well pads
- 91 road miles
- 766 impacted acres

## ALTERNATIVE 5: No Action

No development on federal lands or of federal minerals. The number of wells on private and state lands would be the same as the proposed action.

- 117 well pads
- 39 road miles
- 422 impacted acres

## Comparison of Alternatives

Ultimately, the Selected Alternative may be one of these seven alternatives, or a combination of them. The alternatives are discussed in great detail in the Draft EIS. You may want to select one that best represents your concerns and offer specific comments on changes you wish to see made in that alternative, or on how you think alternatives could be combined. The more specific your comments, the better.

ACTIVITY	1. Industry Proposed Action	1a. Reduce Surface WellPad Density	1b. Reduce Surface WellPad Density	2. Maximum Development	3. No New Development in Roadless Area	4. Proceed Under Existing Guidance	5. No Action
WELL PADS	273	211	158	499	212	185	118
ROAD MILES	118	94	62	203	78	91	40
IMPACTED ACRES	1,113	965	690	1,843	756	766	422

# Major Issues Studied in the EIS

## Socio-Economic

- The oil and gas industry has paid \$61 million to school districts in the Project Area since 1997.
- Approximately 1/2 of total La Plata County property tax revenue comes from oil and gas development.
- Counties share in federal mineral royalties dispersed to the State of Colorado.
- In Archuleta County, federal mineral revenues generated \$211,112 in 2003, with \$105,556 dispersed to the State.
- Effects on adjacent private property values
- Noise from construction and well pad equipment
- Impacts on aesthetics and scenic values of the area
- Dust from new traffic on roads that access well pads
- Residential and agricultural issues

## Slope Stability/Soils

- Surface disturbance could exacerbate existing landslides and cause new hazards. Based on preliminary location of proposed access roads, 15 miles of new roads would cross high landslide-hazard areas.
- Up to 17 proposed well pads would require cut-and-fill construction in areas of high landslide hazard.

## Fruitland Outcrop/Safety

- Dying vegetation, methane seepage, and coal fires have occurred along the Fruitland Outcrop, where the coal seam crops out at the surface of the basin rim.
- The Interim Criteria, under which development has been managed to date, have instituted a temporary moratorium on drilling within 1.5 miles of the outcrop. The Draft EIS examines drilling within this area.

## Water Depletions/Water Rights

- Existing and proposed development may intercept up to 200 acre-feet per year of surface recharge of four river basins. Almost all of this would be the result of existing development. Although not a substantial amount, all rivers but the Animas are over-appropriated.
- BLM believes it has solved the problem of gas seepage into domestic water wells through Bradenhead testing of existing wells, resealing of older offending wells, and enforcement of new methods of well-bore sealing.

## Wildlife/Fisheries Habitat

- Increased road kill, hunting pressure, and displacement.
- Impacts on game species.
- Suitability of habitat, loss of critical winter range, habitat fragmentation, disruption of migration routes.
- Long-term viability of wildlife populations.
- Impacts on downstream fisheries from dewatering of coal seams.
- Impacts to threatened, endangered, proposed, candidate, and sensitive species, and their habitat.

## Recreation/Travel Management

- Construction of new roads in previously unroaded areas would impact wildlife and natural resources.
- Off-road, cross-country, motorized travel is allowed on federal lands in the Analysis Area. On BLM, motorized travel is unrestricted year-round. On the National Forest, off-road vehicles are allowed to travel unrestricted June - November.
- No change in travel management is proposed for BLM, but motorized use may be limited seasonally on the National Forest, to designated roads and trails. Roads built to access well pads would be gated year-round, except if designated as travel routes. Operators could use roads to maintain wells.

## Cultural Resources

- Hopi Tribe has expressed concerns over site-specific versus block surveys.
- Visual landscape issues are associated with the nearby Chimney Rock Archaeological Area

## HD Mountains Roadless Area

- In the 1970s, the Roadless Area Review and Evaluation (RARE) process identified roadless and undeveloped lands in National Forests. About 20,000 acres in the HDs were classified as roadless.
- The HDs were not included in the Colorado Wilderness Act of 1980, and the roadless area was released for multiple-use management.
- Large portions of the HDs were leased for oil and gas development over the past three decades after USGS identified the area as having high potential for development of oil and gas resources.
- The Roadless Area Conservation Rule of 2001 prohibited road building within areas included in the RARE inventories. However, it protected the right to develop existing leases for oil and gas resources in roadless areas (as in the HDs, seen below).



# Major Issues Studied in the EIS

## Sources of Air Contaminants in the San Juan Basin

- **San Juan Basin, New Mexico**  
20,000 existing wells  
10,000 proposed
- **San Juan Basin, Colorado**  
2,500 existing wells  
1,000 proposed
- **New Mexico power plants**
- **Urban and residential growth**

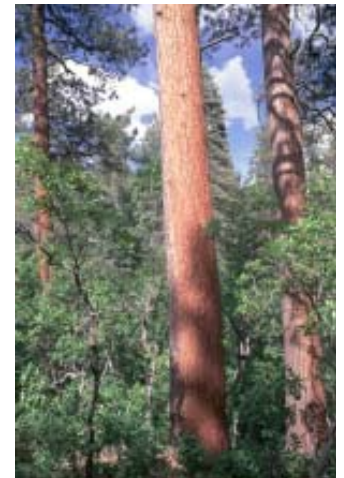
An Interagency Task Force of state and federal officials, local and tribal officials, industry, and environmental organizations may be formed to set mitigation measures. The group would consider emission-source growth beyond oil and gas development, potential ozone impacts, increment issues, and expanded coal-fired power plant development in the entire Four Corners.

## Air Quality

- Although a mandatory emission rate will not be determined until the Record of Decision, a limit of 2.0 gm/hp-hr is under consideration for new and replacement small well-head engines until the Task Force would complete mitigation measures.
- Cumulative impacts are predicted to exceed visibility thresholds (9 - 25 days annually) in the Class 1 Areas of the Weminuche Wilderness and Mesa Verde National Park. These impacts could be reduced to 1 - 17 days annually, if stricter emission controls are required for new emission sources of nitrogen oxides.
- The BLM Farmington Final EIS and Record of Decision deferred a regional cumulative air analysis and evaluation of additional mitigation measures to the Northern San Juan Basin EIS process.
- USFS/BLM, state, and federal air-quality management agencies have discussed possible visibility mitigation measures to limit predicted impacts. A specific mitigation strategy will be selected in the Record of Decision.

## Vegetation

- Construction of well pads, compressor stations, pipelines, and roads would remove ponderosa pine, pinyon-juniper, and Gambel oak. Facilities would be partially revegetated after construction. Full reclamation would occur after production.
- Well pads and compressor stations would be located in upland sites, when possible, to avoid wetlands and riparian areas. However, some impacts on wetlands and riparian areas may occur.
- Roads and pipelines would not cross perennial streams and rivers, but would cross 128 intermittent streams and riparian areas. Efforts would be made to reduce sedimentation.
- Measures to prevent the introduction and spread of noxious weeds would be implemented. Complete prevention and control is unlikely.
- Trees and limbs cut during construction may attract *Ips* beetles into the general area, increasing the risk of infestation. Wood would be removed in a timely manner to help mitigate this danger.
- One federally listed plant, four USFS sensitive plants, and two BLM sensitive plants may occur in the Analysis Area and may be affected. Surveys would be conducted in suitable habitat, and impacts minimized by avoidance.
- The Preferred Alternative would directly impact 31 acres of old-growth ponderosa pine, which is 4% of the 746 acres of National Forest old-growth stands in the Analysis Area. The ability to avoid old-growth stands will not be known until firm locations are proposed during APD submittal.



## Learn More

These issues are discussed in greater detail in Chapters 2 and 3 of the Draft EIS. The information in this handout is very general, and we encourage you to read at least the Executive Summary, and/or portions of the entire document. The Draft EIS covers information in this handout, plus much more, including monitoring and mitigation proposals. Copies are available at the San Juan Public Lands Center, 15 Burnett Court, Durango (970 247-4874) and Columbine Public Lands Office, 367 Pearl Street, Bayfield (970 884-2512). Hard copies are also available for viewing at local libraries in Durango, Bayfield, and Farmington. You can call 970 385-1304 for more information. Additional information is on the Web at [www.fs.fed.us/r2/sanjuan](http://www.fs.fed.us/r2/sanjuan) or [www.co.blm.gov/sjra/index.html](http://www.co.blm.gov/sjra/index.html).

## Other Information

### What Does the EIS Include?

- Seven alternatives with different development scenarios and measures to mitigate possible impacts
- Evaluation of impacts, mitigation, and environmental protection measures
- Detailed studies of many issues, including social, physical, and biological impacts from development of leases
- Evaluation of impacts specific to the HD Mountains
- A project-level gas field development plan, which means the Record of Decision will approve individual Applications for Permit to Drill (APDs)

### What is Not Included in the EIS?

- Well-density-spacing decisions on public lands
- Leasing decisions on public or private lands
- Decisions on private lands or private mineral estate
- Land-use-planning decisions for federal lands and minerals



### Life Expectancy of Project

The overall life of the project, including construction, production, and reclamation, is approximately 40 years. Well construction would begin in 2005 and would continue for five years. The productive life of a well is estimated at 25 - 30 years. Thus, production from wells drilled at the end of the five-year drilling period would conclude by 2040. Final reclamation would take place during the two to three years after the end of the productive life of wells. Thus, the project would be completed by 2043.

During the life of the project, the coalbed methane wells proposed for the Northern San Juan Basin could accommodate the residential needs of hundreds of thousands of households per year, based on average residential-use rates.



### Energy Leasing on Public Lands

The Northern San Juan Basin Draft EIS makes no energy-leasing decisions. Almost all of the federal land in the Analysis Area is already held in leases by private companies. These leases, in some cases, date back to the 1970s.

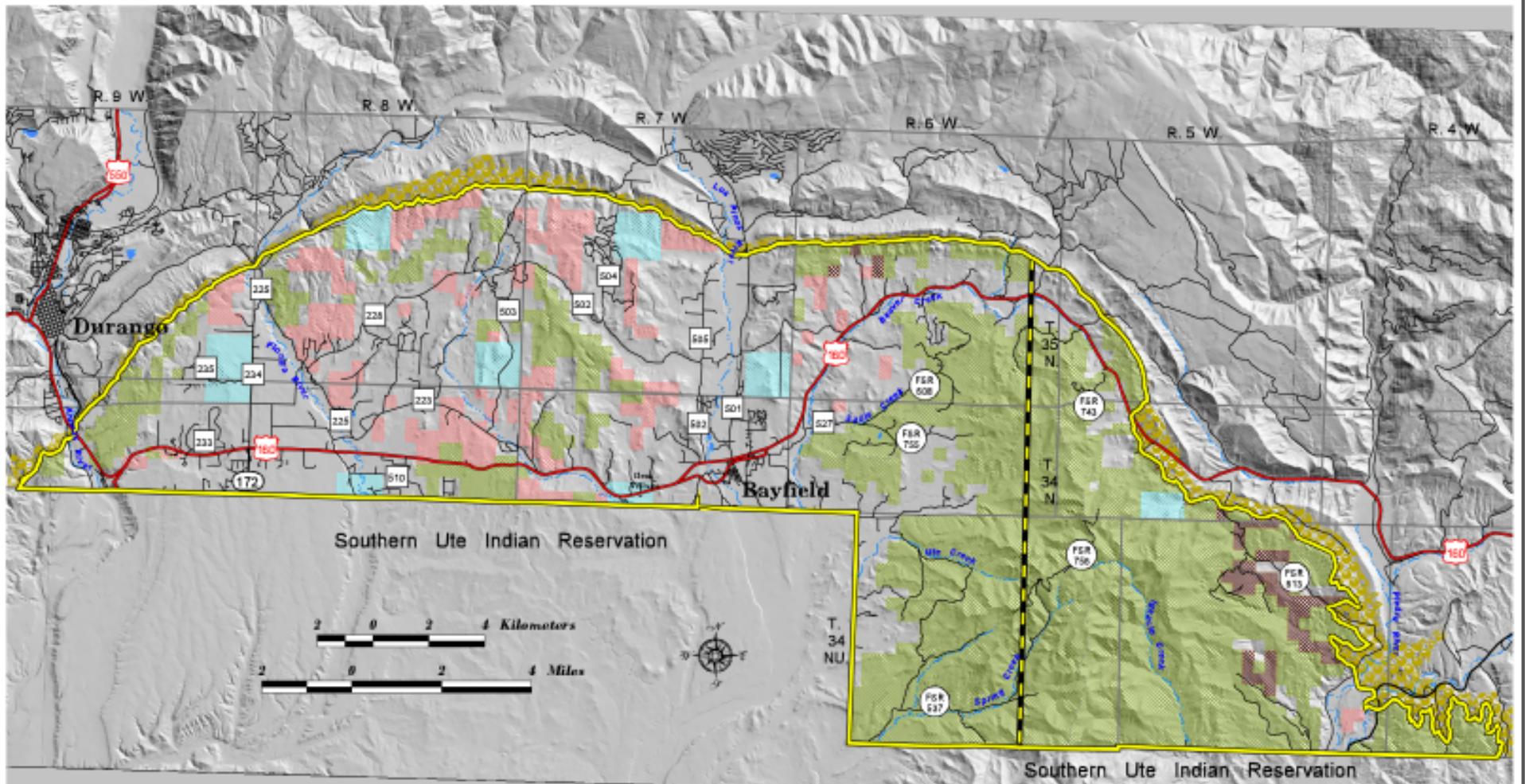
In the Analysis Area, almost half of the subsurface mineral estate is administered by BLM, which has jurisdiction below ground. BLM conducts leasing activities under the Mineral Leasing Act, Federal Onshore Oil and Gas Leasing Reform Act, Federal Coal Leasing Amendments Act, Mining and Mineral Policy Act, National Materials and Mineral Policy, Research and Development Act, and Energy Security Act.

The U.S. Forest Service is responsible for managing surface impacts of energy projects when they occur on National Forest lands. The decision as to what areas are available to lease is based on Forest Plans. When an area is offered for lease, USFS may concur with BLM, based on NEPA analysis. USFS again follows full NEPA for proposals for exploration, development, and production.

Laws that govern management of energy resources on National Forests include the Mineral Leasing Act, National Environmental Policy Act, National Forest Management Act, Endangered Species Act, Clean Water Act, Clean Air Act.

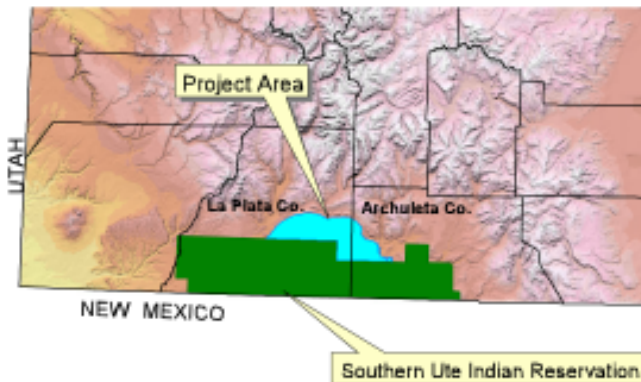
### Land Jurisdiction in the Analysis Area (See Map Next Page)

Land Jurisdiction	% of Analysis Area
Private	45%
USFS	37%
Private surface/Federal mineral	7%
BLM	5%
State	4%
Federal surface/Private mineral	2%



**Legend**

- Project Area Boundary
- La Plata - Archuleta County Line
- U.S. Highway
- Primary Road
- Secondary Road
- Trail
- Lake/Reservoir
- Stream/River
- Fruitland Formation Outcrop
- Surface Ownership/Mineral Ownership**
  - Federal / Federal
  - Federal / Private
  - Private / Private
  - Private / Federal
  - State / State



<b>NORTHERN SAN JUAN BASIN CBM EIS</b>	
<b>LAND OWNERSHIP WITHIN THE PROJECT AREA</b>	
ANALYSIS AREA: LA PLATA & ARCHULETA COUNTIES, COLORADO	
Date: 07/07/04	Archuleta File: C:\004-land\proj\041
Prepared By: JD	

# Opportunities for Public Comment

There are many opportunities for public input during the 90-day public involvement process, including:

**PUBLIC HEARING** - citizens will be able to offer oral comments into the official record

- **Wednesday, July 14, 6 - 10 p.m.**  
Bayfield High School Cafetorium,  
800 CR 501, Bayfield

**OPEN HOUSES** - agency specialists will be on hand to offer information and answer questions.

- **Durango: Monday, July 19, 4 - 7 p.m.**  
San Juan Public Lands Center, 15 Burnett Court
- **Pagosa Springs: Tuesday, July 20, 4 - 7 p.m.**  
Archuleta County Fairgrounds Extension Building  
344 Highway 84
- **Bayfield: Wednesday, July 21, 4 - 7 p.m.**  
Bayfield High School Cafetorium, 800 CR 501
- **Ignacio: Wednesday, July 28, 4 - 7 p.m.**  
Able Atencio Community Room,  
Ignacio Municipal Complex, 570 Goddard Avenue

Public comments may also be offered orally or in writing at additional meetings sponsored by a subcommittee of the BLM Southwest Colorado Resource Advisory Council (RAC), which advises the Secretary of the Interior on public-land issues in southwestern Colorado.

## RAC SUBCOMMITTEE MEETINGS

- **Wednesday, August 11, 6 - 9 p.m.**  
Bayfield High School Cafetorium  
800 CR 501
- **Tuesday, August 17, 6 - 9 p.m.**  
Archuleta County Fairgrounds  
Extension Building  
344 Highway 84, Pagosa Springs
- **Thursday, August 19, 6 - 9 p.m.**  
San Juan Public Lands Center  
15 Burnett Court, Durango

**Written public comments postmarked by September 13, 2004, can be mailed to:**

- Northern San Juan Basin CBM EIS,  
USDA FS Content Analysis Team,  
P.O. Box 221150, Salt Lake City, UT 84122.

**Comments can also be emailed to:**

- [nbasin-cbm-eis@fs.fed.us](mailto:nbasin-cbm-eis@fs.fed.us)

San Juan Public Lands Center  
15 Burnett Court  
Durango, CO 81301

TO: