

APPENDIX F
CUMULATIVE ACTIONS

**Table F-1
Past, Present, and Reasonably Foreseeable Future Actions**

Action	Dates	Action Characteristics
Natural Gas		
<ul style="list-style-type: none"> Leon Lake Gas Unit Leon Lake #1 and Leon Lake #2 	1981 to present	<ul style="list-style-type: none"> The Leon Lake Gas Unit was formed in 1981 by combining oil and gas leases C-13509 and C-13563-A. No gas has been produced from the unit. The Leon Lake Unit #2 well has held the unit for potential production. Leon Lake #1 was drilled in 1981, and has been shut-in since that time. This well was proposed to be plugged and abandoned and the site reclaimed; likely to occur in 2003. Leon Lake #2 was drilled in 1981 and has been shut-in since that time. Sidetrack drilling and recompletion was proposed and approved. This work would disturb 0.77 acre on the existing well pad. After recompletion activities, the pad will be partially reclaimed, reducing the disturbance area to 0.37 acre. Minor road maintenance will be required on access FR 125. Work is expected in 2003. Location is shown on Figure F-1.
<ul style="list-style-type: none"> Four GEC proposed exploration wells on private land 	Approved by Delta County	<ul style="list-style-type: none"> Proposed wells include Dever Creek #1, Spaulding Peak #1, Steven's Gulch #1, and Lone Pine #1 (Delta County). The work would disturb 0.77 acre per well site. The length of new road spurs for all four sites would be 1.3 miles.
<ul style="list-style-type: none"> Other gas well approvals 	Previous authorization recorded	<ul style="list-style-type: none"> One other well location (Leon Lake #5) was approved in 1982; however, as drilling did not take place, the approval was rescinded in 1984.
<ul style="list-style-type: none"> Future gas exploration drilling/development 	Next 5 to 10 years	<ul style="list-style-type: none"> Potential that approximately 50 percent of the exploration wells could become producing wells. Pipelines also could be proposed and would follow access roadways to tie-in with larger lines. Wells brought into production could be in place for up to 40 years. Any locations not capable of production would be reclaimed within 1 year of drilling.
<ul style="list-style-type: none"> Other gas drilling in Steven's Gulch, Hubbard Park, and Thousand Acre Flats area (Somerset 1 and 2, Megas Unit 1, Hotchkiss Ranch 2, Amoco Powers Fed 1, Amoco Electric Mtn. 1) 	1960s and 1980s	<ul style="list-style-type: none"> All wells are plugged and abandoned. Approximate disturbance of 1 acre per well site, with additional disturbance for road access. Locations are shown on Figure F-1. Additional information on the wells is provided in Table F-2.
<ul style="list-style-type: none"> A total of 18 past wells (see Table F-2) 	1954 to 1989	<ul style="list-style-type: none"> Locations are shown on Figure F-1.

Table F-1 (Continued)

Action	Dates	Action Characteristics
Coal Development		
<ul style="list-style-type: none"> West Elk Coal Mine 	1981 to present	<ul style="list-style-type: none"> Mine life currently is projected for 15 additional years. Currently, approximately 11,000 acres are under lease encompassing lands with private, BLM, and USFS surface ownership. Currently approved for drilling and installation of 54 methane drainage wells on federal coal leases. Activity expected to continue through 2007.
<ul style="list-style-type: none"> Bowie No. 1 Mine 	Late 1970s to 1994	<ul style="list-style-type: none"> Currently in reclamation under approval from Colorado Division of Mining and Gas (CDMG). Thirty acres at portal have been reclaimed; approximately 70 acres remain to be reclaimed.
<ul style="list-style-type: none"> Bowie No. 1 Loadout 	Late 1970s to present	<ul style="list-style-type: none"> Coal currently is hauled from the Bowie No. 2 Mine to the loadout located northeast of Paonia. Use of loadout decreased substantially in 2002.
<ul style="list-style-type: none"> Bowie No. 2 Mine 	1997 to present	<ul style="list-style-type: none"> Underground room and pillar and longwall coal mining produces about 4 million tons per year. Coal was transported from the underground mine to Bowie Loadout No. 1. A new coal handling storage and truck and train loadout was constructed in 2002 on Old State Highway 133. Mine expectancy is 10 years. Bowie operates on private and federal coal leases (Sections 33 and 34, T12S, R91W). The federal coal lease was approved in 2000. Mine is operating on the Iron Point federal lease, and actively subsiding. No adverse surface effects noted to date. In 2002, Bowie was approved to install 4 ventilation boreholes over their federal lease, which would involve approximately 3 acres of drill pad disturbance, 1.8 miles of road upgrades, and 5.4 miles of new road construction. Three were drilled in 2002. Bowie also has installed ventilation holes on their private lands. In addition, Bowie has drilled 4 coal exploration holes on its federal lease, completing 3 groundwater monitoring holes. Interim reclamation has occurred. Bowie holds the Alder Creek Coal exploration license (All or parts of sections 14, 22, 23, 26, 27, 28, 29, 32, 33, 34, T12S, R91W). Approved drilling and road access for 18 coal exploration holes. As of 2002, no exploration holes on the license had been drilled.

Table F-1 (Continued)

Action	Dates	Action Characteristics
<ul style="list-style-type: none"> Sanborn Creek Coal Mine 	<p>1991 to present</p>	<ul style="list-style-type: none"> Since the early 1900s, the Sanborn Creek coal permit area was mined by the Somerset, Hawksnest, and Oliver No. 2 mines. Sanborn Creek Mine operates on private and federal coal leases. It produced approximately 4 million tons per year of coal. The mine stopped production in February 2003. Mine life with the Elk Creek lease is expected to be 10 years. The Sanborn Creek Mine mined-out panels are located approximately 0.25 mile from Hawksnest site. Elk Creek coal lease underlies GMUG National Forest and BLM lands. Mine currently not operating in the Elk Creek lease, no subsidence effects have occurred. Oxbow installed 14 ventilation boreholes at their Sanborn Creek Mine on private and BLM lands from 2000 to 2002. Past exploration included approximately 25 drill holes from the 1950s to the 1970s. Oxbow issued a BLM ROW on Bear Creek Road for access to Elk Creek lease in 2003. Oxbow has proposed a coal exploration hole and road access on the GMUG National Forest in Section 35, T12S, R91W, with an estimated disturbance of 2 acres. Activity is scheduled for 2003.
<ul style="list-style-type: none"> Terror Creek Loadout 	<p>Ongoing</p>	<ul style="list-style-type: none"> Coal is hauled to the loadout from the Sanborn, Bowie No. 2, and West Elk Creek Mines.
<ul style="list-style-type: none"> Future coal mining 	<p>Next 10 to 20 years</p>	<ul style="list-style-type: none"> It is estimated that the Mountain Coal Mine would need a lease within the next 10 years to sustain their operation. Coal exploration activities expected to continue over Oxbow and Bowie Mines for the next 5 years.
Range Use/Improvements		
<ul style="list-style-type: none"> Past actions 	<p>Past 100 years</p>	<ul style="list-style-type: none"> Area has been grazed for many years, currently managed on intensive time-controlled system. No planned changes in grazing system.
<ul style="list-style-type: none"> Mill Creek, Electric Mountain, East Terror, Hotchkiss, and Coal Gulch allotments 	<p>Ongoing annually 5/15 to 11/15</p>	<ul style="list-style-type: none"> Cattle and livestock grazing under USFS and BLM permits.
Timber		
<ul style="list-style-type: none"> Past timber sales 	<p>Past 20 years</p>	<ul style="list-style-type: none"> Past clearcut harvests on 368 acres within the Alder Creek watershed, 860 acres in the Terror Creek watershed, and 46 acres in the Surface Creek watershed. Sixteen sites in T13S, R91W; T13S, R92W; T13S, R90W; and T12S, 90W.

Table F-1 (Continued)

Action	Dates	Action Characteristics
<ul style="list-style-type: none"> Current timber sales 	Present	<ul style="list-style-type: none"> Alder Creek watershed - Stevens Gulch personal use (5 acres in T12S, R91W, Section 20; Hayden Curecanti powerline personal & commercial (18 miles in T12S, R91W, Sections 8, 17, and 20); timber hauling (Stevens Gulch Road/Hubbard timber sale).
<ul style="list-style-type: none"> Future harvests 	2003 to 2010	<ul style="list-style-type: none"> Terror Creek watershed – Terror Creek Green Oak Area (2,750 acres [gross] and 200 acres [net] in T12S, R91W, Sections 29, 31, and 32 and T12S, 92W, Section 36); Hayden Curecanti powerline personal & commercial (18 miles in T12S, R91W, Sections 29 and 32); timber hauling (Stevens Gulch Road/Hubbard timber sale).
	2003 to 2010	<ul style="list-style-type: none"> Alder Creek watershed – timber hauling (Stevens Gulch Road; Stevens Gulch Road hazard tree removal (3 miles in T12S, R91W, Sections 5, 6, 7, 8, and 17).
	2003 to 2010	<ul style="list-style-type: none"> Terror Creek watershed – East Terror small sale (20 acres [gross] and 18 acres [net] in T12S, R91W, Section 29); East Terror personal use (2 acres in T12S, R91W, Section 29); hazard tree removal (2 miles in T12S, R92W, Sections 25, 26, 35, and 36), and Stevens Gulch Road timber hauling.
<ul style="list-style-type: none"> Personal use fuelwood gathering, dead and green aspen, green oak, and boughs 	Ongoing	<ul style="list-style-type: none"> Impacts of personal fuelwood gathering are low.
Recreation		
<ul style="list-style-type: none"> Past actions 	Past 20 years	<ul style="list-style-type: none"> Dispersed hunting, fishing, hiking, camping, horseback riding, ATV use, and snowmobiling on GMUG lands, and hunting on BLM lands. No new recreation areas are planned. Areas are seeing impacts from off-highway vehicle use. A segment of the existing Green Mountain Trail (an ATV trail) passes by Leon Lake #5. Although the segment near Leon Lake #5 is not designated for ATV use, it does receive limited use in the summer, with somewhat higher usage during hunting season. Leon Lake #1 and #2 locations are popular dispersed campsites.
Wildlife		
<ul style="list-style-type: none"> BLM public lands 	Past 30 years	<ul style="list-style-type: none"> 961 acres have been chained, crushed, and seeded to improve habitat conditions for big game and livestock.

Table F-1 (Continued)

Action	Dates	Action Characteristics
<ul style="list-style-type: none"> Forest Service system lands 	<p>Past 10 to 20 years</p>	<ul style="list-style-type: none"> Steven's Gulch Wildlife Habitat Improvement Area north of powerline location. Motorized road and trail closures implemented to improve big game habitat. No other wildlife habitat improvements currently underway or planned. Prescribed burning of approximately 800 acres of oakbrush in Terror Creek drainage.
<ul style="list-style-type: none"> Future actions 	<p>Next 5 years</p>	<ul style="list-style-type: none"> Additional habitat improvements in Hubbard Creek drainage by prescribed burning or mechanical treatment of oakbrush. Thin ponderosa pine plantation above Dove Gulch.
Roadless Area Review and Evaluation		
<ul style="list-style-type: none"> Past actions 	<p>1979</p>	<ul style="list-style-type: none"> The Roadless Area Review and Evaluation was performed in 1979 with the purpose of identifying areas to be considered for wilderness designation. Inventoried Roadless Areas (IRAs) were identified in this effort. The portions of the Priest Mountain IRA are contained in Oil and Gas Leases COC-65535 and 65537. Lease COC-65529 is in the Springhouse Park IRA in its entirety. These two IRAs were not carried forward for wilderness designation or considered as further planning areas. A portion of the Priest Mountain IRA, approximately 5 miles northwest of the project area, is carried forward for management as an unroaded area. The GMUG Oil and Gas EIS identified the Springhouse Park and the remaining portions of the Priest Mountain IRA as being open for oil and gas leasing under Standard Lease Terms.
Transportation		
<ul style="list-style-type: none"> Past actions 	<p>Past 20 years</p>	<ul style="list-style-type: none"> Past roads were developed for mining activities, range (cattle driveways), and timber sales and other forest and BLM activities. The high precipitation year in 1983-1984 caused landslides in Hubbard Canyon, making the road impassable. The Hubbard Canyon Road historically was the major ingress/egress from this portion of the Gunnison National Forest. This road has not been reestablished. The Steven's Gulch Road was built in the early 1990s and has become the principal access to the GMUG National Forest.

Table F-1 (Continued)

Action	Dates	Action Characteristics
<ul style="list-style-type: none"> Irrigation Systems 	Past 50 years and longer	<ul style="list-style-type: none"> Terror Reservoir (also known as Bruce Park Reservoir) and Ditch, Stewart Ditch, Fire Mountain Canal, Deer Trail Ditch, Marcot Park Reservoir, Cedar Mesa Reservoir, as well as others, provide irrigation water to the orchards and fields near Cedaredge and Paonia.
Electric Transmission		
<ul style="list-style-type: none"> WAPA Curecanti-Rifle electric transmission line 	1962 to present	<ul style="list-style-type: none"> Transmission line is located just north of the Powerline site. The ROW is 125 feet in width including the access road.
Fires		
<ul style="list-style-type: none"> Past actions 	Past 30 years	<ul style="list-style-type: none"> Approximately 4,515 acres have been affected by wildfires on public lands and adjacent private lands.

**Table F-2
Summary of Past and Present Natural Gas Wells in the General Project Area**

Well Name	Map Location	Date Completed	Total Depth (Feet)	Operator	Status ¹
Megas Unit 1	14	9/15/85	4,405	Amoco Production Co.	DA
Somerset Unit 2	13	10/15/85	4,463	Amoco Production Co.	DA
Megas Unit 1	21	12/23/86	2,345	Amoco Production Co.	PA
Hotchkiss Ranch 2	24	9/1/85	2,251	Amoco Production Co.	PA
Amoco Powers Fed. 1	25	8/29/84	2,419	Amoco Production Co.	PA
Amoco Electric Mtn. 1	12	8/29/85	5,390	Amoco Production Co.	DA
Leon Lake No. 2	3	8/21/81	4,111	Aries Oil & Gas Co. Inc.; purchased by GEC in 2001	SI
Mickelson – Govt. 2	2	8/8/62	7,250	Apache Corp.	DA
Scott 19-1	1	8/2/84	4,240	TXP Inc.	DA
Neaves – Delta 1	5	11/9/69	2,015	Neaves-Delta 1	PA
Powers Fed 30	7	10/20/72	7,288	Petro Lewis Corp.	PA
Govt. 1-c	8	5/28/83	6,100	Sunray Mid Continental Corp.	PA
Morrill 1	9	5/28/83	6,047	Dyco Petroleum Corp.	PA
Bowie Unit 1	10	10/3/84	3,352	Amoco Production Co.	PA
Hotchkiss Ranch 3-11	16	10/3/72	8,450	Petro Lewis Corp.	DA
Pasco Spatafore 1	15	11/24/61	5,067	Delhi Taylor Oil Corp.	DA
McLaughlin – Govt. 1	22	7/8/60	3,550	Delhi Taylor Oil Corp.	PA
Megas Unit 2	20	5/19/89	2,381	Amoco Production Co.	PA
Hotchkiss Ranch 1	23	7/24/78	2,300	Amoco Production Co.	PA
Ferrier 1	6	6/5/57	4,889	Murfin Drilling Co.	PA
Sell Et Al 1	11	11/26/81	4,778	Dyco Petroleum Corp.	PA
Terrel 1	19	7/7/54	1,008	KD Drilling and Mile High	PA
Fansler 1		3/28/83	5,678	Dyco Petroleum Corp.	PA
Leon Lake No. 1	4	9/8/81	4,654	Aries Oil & Gas Co. Inc.; purchased by GEC in 2001	TA
Jacobs 29-1	18	5/31/91	3,050	Young United Co.	TA

¹Status:

- DA – Dry and Abandoned
- PA – Plugged and Abandoned
- SI – Shut-in
- TA – Temporarily Abandoned

Source: COGCC 2003.