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**APPENDIX C:**  
**PROPOSED LAND USE PLAN AMENDMENTS**  
**ASSOCIATED WITH ALTERNATIVES 2, 3, AND 4**  
**FOR OIL SHALE AND TAR SANDS**

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## APPENDIX C:

**PROPOSED LAND USE PLAN AMENDMENTS  
ASSOCIATED WITH ALTERNATIVES 2, 3, AND 4  
FOR OIL SHALE AND TAR SANDS**

The U.S. Department of the Interior, Bureau of Land Management (BLM), develops land use plans to guide activities, establish management goals and approaches, and establish land use allocations within a planning area. Current land use plans are called resource management plans (RMPs); in the past, such plans were called management framework plans (MFPs), and some MFPs are still in use. Analyses conducted in this programmatic environmental impact statement (PEIS) support the amendment of specific land use plans in those field offices where oil shale and tar sands resources are located, as discussed in Chapters 2 and 6 of the PEIS.

For oil shale, eight of the ten land use plans cited in BLM's Notice of Intent (*Federal Register* Vol. 76, No. 72, April 14, 2011) would be amended<sup>1</sup>:

- Colorado
  - Glenwood Springs RMP (BLM 1988, as amended by the 2006 Roan Plateau Plan Amendment [BLM 2006a, 2007, 2008a])
  - Grand Junction RMP (BLM 1987)
  - White River RMP (BLM 1997a, as amended by the 2006 Roan Plateau Plan Amendment [BLM 2006a, 2007, 2008a])
- Utah
  - Price RMP (BLM 2008b)
  - Vernal RMP (BLM 2008c)
- Wyoming
  - Green River RMP (BLM 1997b, as amended by the Jack Morrow Hills Coordinated Activity Plan [BLM 2006b])
  - Kemmerer RMP (BLM 2010)
  - Rawlins RMP (BLM 2008d)

For tar sands, four Utah land use plans would be amended:

- Monticello RMP (BLM 2008e)
- Price RMP (BLM 2008b)

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<sup>1</sup> Because the estimated surface acreages overlying the most geologically prospective oil shale resources are zero for the Monticello and Richfield Field Offices, the corresponding land use plans will not be amended.

- 1           • Richfield RMP (BLM 2008f)
- 2
- 3           • Vernal RMP (BLM 2008c)
- 4

5           Table C-1 presents the proposed amendments for land use plans associated with  
6 Alternatives 2 through 4 for oil shale along with the rationale for each amendment. Table C-2  
7 presents the same information for amendments for land use plans associated with Alternatives 2  
8 through 4 for tar sands. The BLM would amend no land use plans under Alternative 1 for oil  
9 shale or tar sands, leaving the 2008 ROD decision in place.

1 **TABLE C-1 Proposed Land Use Plan Amendments and Rationale Associated with Alternatives 2 through 4 for Oil Shale<sup>a, b</sup>**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><b>Colorado: Glenwood Springs RMP</b></p> <p><i>Amendment:</i> Designate 2,460 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p> <p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing by existing laws and regulations, Executive Orders, or administrative land use plan designation, or have not been specifically excluded by the BLM for other reasons, will be available for application for commercial leasing. In addition, lands that are identified as requiring special management or resource protection in existing land use plans also will be excluded in order to provide maximum protection to the resources in those areas. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 2 (Section 2.3.3.1).</p> <p><i>Amendment:</i> Specify that applications for commercial leases using surface mining technologies will not be accepted in the planning area.</p>	<p>None.</p> <p>None.</p>	<p><i>Amendment:</i> Designate 3,082 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p> <p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 4. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 4.</p> <p>Same as Alternative 2.</p>

**TABLE C-1 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><i>Rationale:</i> Surface mining will be allowed only in areas where the overburden is 0 to 500 ft thick because 500 ft is assumed to be the maximum amount of overburden where surface mining can occur economically, using today’s technologies. Within the most geologically prospective oil shale area defined in the Piceance Basin in Colorado, the areas where the overburden is 0 to 500 ft thick are very limited, and it would be difficult to assemble a logical mining unit (Section 2.3.1).</p>		
<p><b>Colorado: Grand Junction RMP</b></p> <p><i>Amendment:</i> Designate 3,690 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>	<p>None.</p>	<p><i>Amendment:</i> Designate 3,701 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>
<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing by existing laws and regulations, Executive Orders, or administrative land use plan designation, or have not been specifically excluded by the BLM for other reasons, will be available for application for commercial leasing. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 2.</p>		<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 4. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 4.</p>

**TABLE C-1 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><i>Amendment:</i> Specify that applications for commercial leases using surface mining technologies will not be accepted in the planning area.</p> <p><i>Rationale:</i> Surface mining will be allowed only in areas where the overburden is 0 to 500 ft thick because 500 ft is assumed to be the maximum amount of overburden where surface mining can occur economically, using today’s technologies. Within the most geologically prospective oil shale area defined in the Piceance Basin in Colorado, the areas where the overburden is 0 to 500 ft thick are very limited, and it would be difficult to assemble a logical mining unit (Section 2.3.1).</p> <p><b>Colorado: White River RMP</b>  <i>Amendment:</i> Designate 29,158 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>	<p>None.</p> <p><i>Amendment:</i> Designate 26,880 acres (25,600 acres for ongoing leases; 690 for proposed leases) of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>	<p>Same as Alternative 2.</p> <p><i>Amendment:</i> Designate 333,246 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>

**TABLE C-1 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing by existing laws and regulations, Executive Orders, or administrative land use plan designation, or have not been specifically excluded by the BLM for other reasons, will be available for application for commercial leasing. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 2.</p> <p><i>Amendment:</i> Specify that applications for commercial leases using surface mining technologies will not be accepted in the planning area.</p> <p><i>Rationale:</i> Surface mining will be allowed only in areas where the overburden is 0 to 500 ft thick because 500 ft is assumed to be the maximum amount of overburden where surface mining can occur economically, using today’s technologies. Within the most geologically prospective oil shale area defined in the Piceance Basin in Colorado, the areas where the overburden is 0 to 500 ft thick are very limited, and it would be difficult to assemble a logical mining unit (Section 2.3.1).</p>	<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 3. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 3.</p> <p>Same as Alternative 2.</p>	<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 4. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 4.</p> <p>Same as Alternative 2.</p>



**TABLE C-1 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><b>Utah: Vernal RMP</b></p>		
<p><i>Amendment:</i> Designate 252,177 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>	<p><i>Amendment:</i> Designate 5,760 acres (5,120 acres for ongoing leases; 640 for proposed leases) of land within the most geologically prospective oil shale area as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>	<p><i>Amendment:</i> Designate 607,935 acres of land within the most geologically prospective oil shale area, including the Hill Creek extension and split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>
<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing by existing laws and regulations, Executive Orders, or administrative land use plan designation, or have not been specifically excluded by the BLM for other reasons, will be available for application for commercial leasing. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 2.</p>	<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 3. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 3.</p>	<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 4. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 4.</p>
<p><i>Amendment:</i> Specify that applications for commercial leases using surface mining technologies will be accepted only within an area of about 133,194 acres within the most geologically prospective oil shale area where overburden is 0 to 500 ft thick (Figure 2.3-1). Applications for commercial leasing using surface mining technologies will not be accepted in any other areas.</p>	<p>Same as Alternative 2.</p>	<p>Same as Alternative 2.</p>

**TABLE C-1 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><i>Rationale:</i> Surface mining will be allowed only in areas where the overburden is 0 to 500 ft thick because 500 ft is assumed to be the maximum amount of overburden where surface mining can occur economically, using today’s technologies.</p>		
<p><b>Wyoming: Green River RMP</b>  <i>Amendment:</i> Designate 130,496 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>	<p>None.</p>	<p><i>Amendment:</i> Designate 764,561 acres of land within the most geologically prospective oil shale area, including split estate lands where the federal government owns the mineral rights, as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p>
<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing by existing laws and regulations, Executive Orders, or administrative land use plan designation, or have not been specifically excluded by the BLM for other reasons, will be available for application for commercial leasing. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 2.</p>		<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 4. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 4.</p>



**TABLE C-1 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing by existing laws and regulations, Executive Orders, or administrative land use plan designation, or have not been specifically excluded by the BLM for other reasons, will be available for application for commercial leasing. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 2.</p>	<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 4. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 4.</p>	<p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 4. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 4.</p>
<p><i>Amendment:</i> Specify that applications for commercial leases using surface mining technologies will not be accepted in the planning area.</p>	<p>None.</p>	<p>Same as Alternative 2.</p>
<p><i>Rationale:</i> Surface mining will be allowed only in areas where the overburden is 0 to 500 ft thick because 500 ft is assumed to be the maximum amount of overburden where surface mining can occur economically, using today's technologies. In Wyoming, these lands fall within the Green River RMP planning area.</p>		

**TABLE C-1 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><b>Wyoming: Rawlins RMP</b> None.</p>	<p>None.</p>	<p><i>Amendment:</i> Designate 58,910 acres of land within the most geologically prospective oil shale area as available for application for leasing for commercial oil shale development in accordance with applicable federal and state regulations and BLM policies.</p> <p><i>Rationale:</i> All lands within the most geologically prospective oil shale area that are not excluded from commercial leasing under Alternative 2 will also be excluded under Alternative 4. The acreage estimate presented here represents those lands not excluded from commercial leasing under Alternative 4.</p>
<p>None.</p>	<p>None.</p>	<p><i>Amendment:</i> Specify that applications for commercial leases using surface mining technologies will not be accepted in the planning area.</p> <p><i>Rationale:</i> Surface mining will be allowed only in areas where the overburden is 0 to 500 ft thick because 500 ft is assumed to be the maximum amount of overburden where surface mining can occur economically, using today's technologies. In Wyoming, these lands fall within the Green River RMP planning area.</p>

<sup>a</sup> Abbreviations: BLM = Bureau of Land Management; FLPMA = Federal Land Policy and Management Act; MFP = management framework plan; NEPA = National Environmental Policy Act; PEIS = programmatic environmental impact statement; RD&D = research, development, and demonstration; RMP = resource management plan.

<sup>b</sup> Commercial leasing as used herein includes both commercial and RD&D leasing.

1 **TABLE C-2 Proposed Land Use Plan Amendments and Rationale Associated with Alternatives 2 through 4 for Tar Sands<sup>a, b</sup>**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<b>Utah: Monticello RMP</b>		
<p><i>Amendment:</i> Designate the following amounts of land within the specific STSAs as available for application for leasing for commercial tar sands development in accordance with applicable federal and state regulations and BLM policies:</p> <p>White Canyon: 45 acres</p> <p><i>Rationale:</i> All lands within the designated STSAs that are not excluded from commercial leasing by existing laws and regulations, Executive Orders, or administrative land use plan designation, or have not been specifically excluded by the BLM for other reasons, will be available for application for commercial leasing. In addition, lands that are identified as requiring special management or resource protection in existing land use plans also will be excluded in order to provide maximum protection to the resources in those areas. The acreage estimates presented here represent those lands not excluded from commercial leasing under Alternative 2.</p>	<p>None.</p>	<p><i>Amendment:</i> Designate the following amounts of land within the specific STSAs as available for application for leasing for commercial tar sands development in accordance with applicable federal and state regulations and BLM policies:</p> <p>White Canyon: 7,000 acres</p> <p><i>Rationale:</i> All lands within the designated STSAs that are not excluded from commercial leasing under Alternative 2 also will be excluded under Alternative 4. The acreage estimates presented here represent those lands not excluded from commercial leasing under Alternative 4.</p>

**TABLE C-2 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><b>Utah: Price RMP</b>  <i>Amendment:</i> Designate the following amounts of land within the specific STSAs as available for application for leasing for commercial tar sands development in accordance with applicable federal and state regulations and BLM policies:</p> <p>Sunnyside: 19,888 acres                      San Rafael: 8,927 acres</p> <p><b>Utah: Richfield RMP</b>  <i>Amendment:</i> Designate the following amounts of land within the specific STSAs as available for application for leasing for commercial tar sands development in accordance with applicable federal and state regulations and BLM policies:</p> <p>Tar Sand Triangle: 97 acres</p>	<p>None.</p> <p>None.</p>	<p><i>Amendment:</i> Designate the following amounts of land within the specific STSAs as available for application for leasing for commercial tar sands development in accordance with applicable federal and state regulations and BLM policies:</p> <p>Sunnyside: 68,200 acres                      San Rafael: 69,696 acres</p> <p><i>Amendment:</i> Designate the following amounts of land within the specific STSAs as available for application for leasing for commercial tar sands development in accordance with applicable federal and state regulations and BLM policies:</p> <p>Tar Sand Triangle: 24,938 acres</p>

**TABLE C-2 (Cont.)**

Proposed Amendment and Rationale		
Alternative 2	Alternative 3	Alternative 4
<p><b>Utah: Vernal RMP</b></p> <p><i>Amendment:</i> Designate the following amounts of land within the specific STSAs as available for application for leasing for commercial tar sands development in accordance with applicable federal and state regulations and BLM policies:</p>		
<p>Hill Creek: 9,835 acres                      Pariette: 830 acres                      P.R. Spring: 42,304 acres                      Raven Ridge: 9,119 acres</p>	<p>Asphalt Ridge: 2,123 acres</p>	<p>Argyle Canyon: 11,226 acres                      Asphalt Ridge: 5,435 acres                      Hill Creek: 62,152 acres                      Pariette: 10,160 acres                      P.R. Spring: 152,617 acres                      Raven Ridge: 14,364 acres</p>

- <sup>a</sup> Abbreviations: BLM = Bureau of Land Management; FLPMA = Federal Land Policy and Management Act; MFP = management framework plan; NEPA = National Environmental Policy Act; PEIS = programmatic environmental impact statement; RD&D = research, development, and demonstration; RMP = resource management plan.
- <sup>b</sup> Commercial leasing as used herein includes both commercial and RD&D leasing.

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