

## Appendix H. Best Management Practices

Best management practices (BMPs) are environmental protection measures developed by governmental bodies, industry, and scientific or other working groups. BMPs are mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. These practices are applied to help ensure that development is conducted in an environmentally responsible manner. Some BMPs are as simple as choosing a paint color that helps oil and natural gas equipment blend with the natural surroundings, turning development almost invisible. Other BMPs may reduce the amount of vegetation lost to development, may speed the re-growth of vegetation, or may reduce the amount of wildlife disturbance in important habitats. Public land users are encouraged to review these practices, incorporate them where appropriate, or develop better methods for achieving the same goal.

The purpose of this section is not to select certain practices or designs and require that only those be used. It is not possible to evaluate all the known practices and make determinations as to which are best. BMPs should be matched and adapted to meet the site-specific requirements of the management action, project and local environment. No one management practice is best suited to every site or situation. BMPs must be adaptive and monitored regularly to evaluate effectiveness.

The following sources contain information regarding the development and implementation of BMPs. These references are not to be considered as exclusive sources of information; rather, they should be used as a starting point when evaluating specific BMPs during project design and implementation.

### **Bureau of Land Management (BLM) BMP Resources**

*BLM BMPs:* This website provides an introduction to BLM BMPs with links to BLM contacts, specific resources, and other BMP links, and other resources related to BLM BMPs.  
<http://www.blm.gov/bmp/>

*General Information for Oil and Gas BMPs:* This resource provides general information regarding BLM BMPs for oil and gas development. A sample of BMPs are provided with a brief description of types of BMPs and terminology.  
[http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices/general\\_information.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/general_information.html)

*BMP Frequently Asked Questions:* The link below provides responses to frequently asked questions regarding BLM BMPs.  
[http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices/frequently\\_asked\\_questions.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/frequently_asked_questions.html)

*BMP Technical Information:* The slide shows at the link below provide a detailed look at a menu of possible oil and natural gas development BMPs. These slide shows are only a starting point and are not intended to serve as a comprehensive list of BMPs.  
<http://www.blm.gov/nhp/efoia/wo/fy05/im2005-069.htm>

*Oil and Gas Exploration – The Gold Book:* The publication Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as The Gold Book) was developed to assist operators by providing information on the requirements for obtaining permit approval and conducting environmentally responsible oil and gas operations on federal lands and on private surface over federal minerals (split-estate). Split-estate surface owners

will also find the Gold Book to be a useful reference guide. In 2007, the Gold Book was updated to incorporate changes resulting from the new Onshore Oil and Gas Order No. 1 regulations. [http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices/gold\\_book.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html)

*Visual Resources:* There are numerous design techniques that can be used to reduce the visual impacts from surface-disturbing projects. The techniques described here should be used in conjunction with BLM's visual resource contrast rating process wherein both the existing landscape and the proposed development or activity are analyzed for their basic elements of form, line, color, and texture. <http://www.blm.gov/nstc/VRM/destech.html>

*Renewable Energy Development BMPs:* The following resources provide information on BMPs related to renewable energy development.

- *Wind Energy Development Programmatic Environmental Impact Statement [EIS]:* The scope of the Wind Energy Programmatic EIS analysis includes an assessment of the beneficial and adverse environmental, social, and economic impacts; discussion of relevant mitigation measures to address these impacts; and identification of appropriate, programmatic policies and BMPs to be included in the proposed Wind Energy Development Program. <http://windeis.anl.gov/documents/fpeis/index.cfm>
- *BLM Instruction Memorandum [IM] 2009-043, Rights-of-Way, Wind Energy:* This IM further clarifies the BLM Wind Energy Development policies and BMPs provided in the Wind Energy Development Programmatic EIS. [http://www.blm.gov/wo/st/en/info/regulations/Instruction\\_Memos\\_and\\_Bulletins/national\\_instruction/2009/IM\\_2009-043.html](http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-043.html)
- *Record of Decision for the Geothermal Resource Leasing Programmatic Environmental Impact Statement:* This Record of Decision provides a list of sample BMPs that have been collected from various BLM and United States Forest Service documents addressing geothermal and fluid mineral leasing and development, including resource management plans, forest plans, and environmental reports for geothermal leasing and development. The document provides guidance on incorporating BMPs, as appropriate, into the geothermal permit application or as Conditions of Approval. [http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS\\_REALTY\\_AND\\_RESOURCE\\_PROTECTION\\_/energy/geothermal\\_eis/final\\_programmatic.Par.90935.File.dat/ROD\\_Geothermal\\_12-17-08.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/energy/geothermal_eis/final_programmatic.Par.90935.File.dat/ROD_Geothermal_12-17-08.pdf)
- *Solar Energy Development Programmatic Environmental Impact Statement:* This Programmatic EIS is currently under development (as of Summer 2011) and when finalized will include policies and mitigation measures adopted as part of the proposed solar energy deployment program. The Solar Energy Development Programmatic EIS will identify for the Department of Energy, industry, and stakeholders the best practices for deploying solar energy and ensuring minimal impact to natural and cultural resources on BLM-administered lands or other federal, state, tribal, or private lands. <http://www.solareis.anl.gov/>

## **U.S. Environmental Protection Agency (EPA) BMP Resources**

*Healthy Watersheds:* This resource provides conservation approaches and tools designed to ensure healthy watersheds remain intact. The website provides example approaches that are generally site-specific, and watershed managers are encouraged to use the examples as guidance in developing local conservation strategies. The website also supplies outreach strategies to encourage stakeholder engagement in conservation and protection of healthy watersheds.  
<http://www.epa.gov/owow/nps/>

*Storm Water BMPs:* This online menu provides BMPs designed to meet the minimum requirements for six control measures specified by the EPA's Phase II Stormwater Program. The control measures include public education, public involvement, illicit discharge detection and elimination, construction, post-construction, and pollution prevention/good housekeeping. The menu also provides case studies assessing the performance of various storm water BMPs.  
<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm>

*Pasture, Rangeland, and Grazing Operations BMPs:* The link below provides BMPs compiled by the EPA to prevent or reduce pollution associated with livestock grazing. Topics include practices to reduce methane production, managing nonpoint source pollution, controlled grazing, reducing animal feeding operation pollution, and manure management.  
<http://www.epa.gov/oecaagct/anprgbmp.html>

## **U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS) BMP Resources**

*National Conservation Practice Standards:* This website provides links for national conservation practices developed by the NRCS on topics such as herbaceous wind barriers, feed management, forest stand improvement, and irrigation management. The conservation practice standard contains information on why and where the practice is applied, and sets forth the minimum quality criteria that must be met during the application of that practice in order for it to achieve its intended purpose.  
<http://www.nrcs.usda.gov/Technical/Standards/nhcp.html>

*National Range and Pasture Handbook:* Developed by NRCS grazing land specialists, this handbook provides a source of expertise to guide cooperators in solving resource problems and in sustaining or improving their grazing lands resources and operations.  
<http://www.glti.nrcs.usda.gov/technical/publications/nrph.html>

## **Wyoming Game and Fish Department BMP Resources**

*Aquatic Invasive Species:* This resource provides information about how to recognize aquatic invasive species and how to avoid introducing them or spreading them through Wyoming's waters. The website contains links to external resources including a link to waterbodies in the United States currently known to be impacted by zebra and quagga mussels. The website also contains information about how to decontaminate equipment and watercraft suspected of harboring aquatic invasive species.  
<http://gf.state.wy.us/fish/AIS/index.asp>