

INTERNAL DRAFT

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**Appendix I**  
Soil and Water

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# Appendix I. Soil and Water

## I.1 BEST MANAGEMENT PRACTICES (BMPs)

The term “Best Management Practices” (BMPs) is defined by 40 CFR 130.2 (m), *Water Quality Planning and Management*, as “methods, measures, or practices selected by an agency to meet its nonpoint source control needs. BMPs include, but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters.”

BMPs are developed by different government agencies, industries, and scientific or other interest groups. The most effective BMP (or combination of BMPs) is usually determined as a result of a site-specific analysis of the proposed management action. No one BMP, or combination BMPs, are best suited to every site or situation. BMPs must be monitored to evaluate their effectiveness and adapted/adjusted if necessary to achieve effectiveness.

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

**New Mexico Environment Department, Surface Water Quality Bureau** (see *Appendix B, Best Management Practices* contained in the *New Mexico Nonpoint Source Management Program* document found at the following weblink:)

<https://www.env.nm.gov/wp-content/uploads/sites/25/2019/08/2019-NPS-Management-Plan-Final-web.pdf>

## I.2 DESCRIPTIONS OF THE USGS CATALOGING UNITS (8-DIGIT HYDROLOGIC UNIT CODE) WITH HIGHEST ACREAGE OF BLM-ADMINISTERED LAND

### I.2.1 Rio Puerco Watershed (USGS Cataloging Unit 13020204)

The Rio Puerco watershed is 7,350 square miles, with headwaters near Cuba, New Mexico in northern Sandoval County. As the Rio Puerco descends to the Rio Grande at Bernardo, it receives surface flows from the adjacent Rio San Jose and Arroyo Chico watersheds, in addition to many smaller ephemeral streams and dry washes. The Rio Puerco is an ephemeral stream over much of its length. USGS records indicate that it frequently is dry from late fall to late spring. In the Planning Area, a significant amount of BLM-administered lands occur in the northern one-third of the watershed. Several gauging stations provide streamflow data.

USGS gauging station 08352500 (Rio Puerco at Rio Puerco, New Mexico) operated from 1935 to 1976. An examination of the mean monthly statistics shows a high of 259 *cubic feet per second* (cfs) in August to a low of 1.1 cfs in December. The watershed drains 5,460 square miles and includes the influence of the Arroyo Chico Watershed, discussed below.

USGS gauging station USGS 08334000 (Rio Puerco above Arroyo Chico near Guadalupe, New Mexico) has operated from 1952 to the present, and an examination of the mean monthly statistics shows a high of 24 cfs in August to a low of 1.2 cfs in December. The watershed at this point drains 420 square miles with a significant amount of BLM-administered lands contributing.

USGS gauging station 08353000 (Rio Puerco near Bernardo, New Mexico) is at the mouth of the entire watershed, but the period of record is short, from 2001 to 2007.

39 **I.2.2 Arroyo Chico Watershed (USGS Cataloging Unit 13020205)**

40 The Arroyo Chico watershed is bounded on the west by the Continental Divide and is tributary to the Rio  
41 Puerco. A significant amount of BLM-administered lands occur in the Torreon Wash portion of the  
42 watershed. USGS gauging station 08340500 (Arroyo Chico near Guadalupe, New Mexico) has operated  
43 from 1943 to 1986, and from 2006 until present at the mouth of the watershed where it joins the Rio  
44 Puerco. An examination of the mean monthly statistics shows a high of 102 cfs in August to a low of 1.6 cfs  
45 in December. The watershed drains 1,390 square miles of mostly semi-arid rangeland along with some higher  
46 elevation plateau terrain on the north side of Mount Taylor near Grants, New Mexico.

47 **I.2.3 Rio San Jose Watershed (USGS Cataloging Unit 13020207)**

48 The Rio San Jose Watershed is bounded on the west by the Continental Divide and is tributary to the Rio  
49 Puerco. The majority of BLM land within the watershed is the checkerboard area in eastern Cibola County  
50 south and east of the Laguna Pueblo and Acoma Pueblo Nations, respectively. The USGS gauging station  
51 farthest downstream is 08351500 (Rio San Jose at Correo, New Mexico) with a period of record from 1943  
52 to 1994. An examination of the mean monthly discharge statistics shows a high of 49 cfs in August to a low  
53 of 2.9 cfs in December. The watershed drains 2,530 square miles of mostly semi-arid rangeland along with  
54 some higher elevation forested terrain on the south side of Mount Taylor and the north side of the Zuni  
55 Mountains near Grants, New Mexico. USGS gauging station 08343500 (Rio San Jose Near Grants, New  
56 Mexico) also has a significant period of record (1937-2004), and shows mean monthly discharge high of 8.7  
57 cfs in August to a low of 5.0 cfs in December. The contributing drainage area at this station is 1,170 square  
58 miles and also reflects the surface water flows of the highest terrain (parts of the Cibola National Forest) in  
59 the watershed.