Water-Data Report 2012

# 06209500 ROCK CREEK NEAR RED LODGE, MT

Upper Yellowstone Basin
Clarks Fork Yellowstone Subbasin

LOCATION.--Lat 45°05'10", long 109°19'45" referenced to North American Datum of 1983, in NW ¼ NE ¼ SW ¼ sec.36, T.8 S., R.19 E., Carbon County, MT, Hydrologic Unit 10070006, on left bank 40 ft downstream from county bridge, 6.7 mi south of Red Lodge, and at river mile 49.1.

DRAINAGE AREA.--105 $mi^2$.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--April to December 1932, May 1934 to September 1982, May 1985 to September 1986, January 2000 to current year. Monthly discharge only for May 1934, published in Water Supply Paper (WSP) 1309.

REVISED RECORDS.--WSP 1729: Drainage area. Water Data Report MT-00-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,400 ft, referenced to the National Geodetic Vertical Datum of 1929. Prior to October 1986, water-stage recorder at elevation 6,099.42 ft, levels by U.S. Army Corps of Engineers, at previous site 3.1 mi downstream. Streamflows are equivalent.

REMARKS.--Records are fair except for estimated daily discharges, which are poor. Flow is partly regulated by Glacier Lake, as seen by the large increase in flow on August 19, 2011. No diversions occur upstream from station. U.S. Geological Survey satellite telemeter is located at the station. Several unpublished observations of water temperature and specific conductance were made during the year.



Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 06209500, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/06209500.2012.pdf

**06209500 ROCK CREEK NEAR RED LODGE, MT—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
**DAILY MEAN VALUES**
[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 105 | 72 | e45 | e40 | 32 | e30 | 41 | 88 | 246 | 428 | 273 | 185 |
| 2 | 105 | 70 | e40 | e40 | 32 | e30 | 39 | 80 | 390 | 430 | 266 | 193 |
| 3 | 105 | 67 | e40 | 38 | 31 | 33 | 37 | 77 | 592 | 437 | 254 | 182 |
| 4 | 104 | 66 | e40 | 38 | e30 | 30 | 37 | 75 | 762 | 444 | 234 | 174 |
| 5 | 105 | 67 | e40 | 37 | e30 | 29 | 38 | 74 | 936 | 424 | 217 | 169 |
| 6 | 122 | 68 | e35 | 36 | e30 | 28 | 38 | 70 | 840 | 380 | 212 | 166 |
| 7 | 123 | e65 | e35 | e35 | e30 | 29 | 37 | 68 | 521 | 369 | 208 | 166 |
| 8 | 115 | e65 | e40 | e35 | e30 | e30 | 36 | 69 | 459 | 368 | 205 | 158 |
| 9 | 109 | e60 | e40 | e35 | e30 | 29 | 36 | 76 | 464 | 373 | 205 | 152 |
| 10 | 105 | e60 | e40 | e35 | e30 | 28 | 37 | 95 | 374 | 386 | 209 | 148 |
| 11 | 104 | 58 | e40 | e35 | e30 | 28 | 39 | 90 | 317 | 397 | 226 | 147 |
| 12 | 102 | 57 | e40 | e30 | 34 | 28 | 45 | 89 | 303 | 396 | 281 | 142 |
| 13 | 97 | 56 | e40 | e35 | 31 | 28 | 42 | 94 | 335 | 393 | 275 | 138 |
| 14 | 97 | 56 | e40 | e35 | 31 | 29 | 42 | 108 | 394 | 385 | 268 | 133 |
| 15 | 97 | 57 | e40 | e35 | e30 | 30 | 42 | 141 | 349 | 423 | 265 | 128 |
| 16 | 101 | e55 | e40 | e30 | e35 | 32 | 41 | 180 | 327 | 451 | 256 | 126 |
| 17 | 103 | e55 | e40 | e30 | 37 | 32 | 42 | 211 | 386 | 461 | 248 | 124 |
| 18 | 96 | e55 | e40 | e30 | 36 | 31 | 41 | 246 | 477 | 423 | 240 | 119 |
| 19 | 92 | e55 | 40 | e30 | 30 | 31 | 41 | 208 | 430 | 399 | 233 | 114 |
| 20 | 90 | e55 | 40 | e35 | e30 | 28 | 40 | 184 | 359 | 380 | 228 | 110 |
| 21 | 85 | e55 | 41 | 37 | 30 | 29 | 43 | 191 | 336 | 360 | 220 | 105 |
| 22 | 82 | e55 | e35 | 35 | 31 | 30 | 48 | 282 | 375 | 353 | 216 | 101 |
| 23 | 79 | 52 | e35 | e35 | 31 | 32 | 57 | 265 | 433 | 348 | 214 | 96 |
| 24 | 80 | 51 | e40 | e35 | e30 | 33 | 82 | 222 | 510 | 343 | 210 | 93 |
| 25 | 80 | 50 | 40 | e35 | 37 | 34 | 112 | 195 | 549 | 330 | 205 | 91 |
| 26 | 73 | e50 | 38 | 34 | 30 | 35 | 121 | 179 | 571 | 318 | 200 | 89 |
| 27 | 71 | e50 | 38 | e35 | e30 | 34 | 131 | 172 | 530 | 316 | 195 | 87 |
| 28 | 72 | 48 | 38 | e35 | e30 | 33 | 111 | 159 | 439 | 342 | 194 | 85 |
| 29 | 71 | 48 | 39 | e35 | e30 | 33 | 97 | 157 | 423 | 318 | 192 | 85 |
| 30 | 70 | 48 | 39 | 33 | --- | 33 | 89 | 165 | 427 | 300 | 191 | 82 |
| 31 | 71 | --- | 41 | 32 | --- | 38 | --- | 169 | --- | 285 | 186 | --- |
| Total | 2,911 | 1,726 | 1,219 | 1,075 | 908 | 957 | 1,682 | 4,479 | 13,854 | 11,760 | 7,026 | 3,888 |
| Mean | 93.9 | 57.5 | 39.3 | 34.7 | 31.3 | 30.9 | 56.1 | 144 | 462 | 379 | 227 | 130 |
| Max | 123 | 72 | 45 | 40 | 37 | 38 | 131 | 282 | 936 | 461 | 281 | 193 |
| Min | 70 | 48 | 35 | 30 | 30 | 28 | 36 | 68 | 246 | 285 | 186 | 82 |
| Ac-ft | 5,770 | 3,420 | 2,420 | 2,130 | 1,800 | 1,900 | 3,340 | 8,880 | 27,480 | 23,330 | 13,940 | 7,710 |

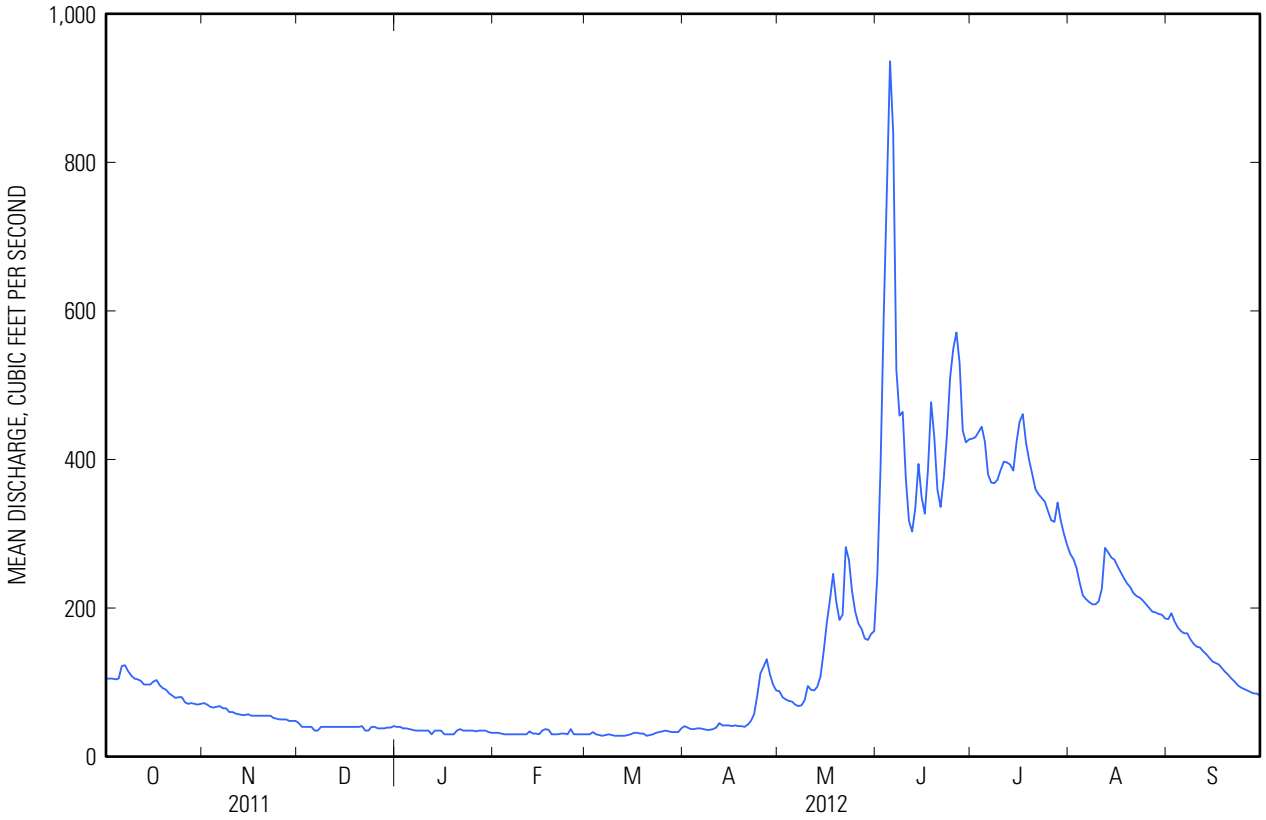
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2012, BY WATER YEAR (WY)***

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 80.1 | 53.9 | 40.6 | 33.4 | 30.1 | 28.9 | 39.1 | 212 | 572 | 485 | 254 | 140 |
| Max | 124 | 77.7 | 56.1 | 45.1 | 42.4 | 39.7 | 99.2 | 460 | 1,129 | 1,088 | 427 | 219 |
| (WY) | (1968) | (1962) | (1962) | (1942) | (1953) | (1972) | (1943) | (1958) | (1957) | (1975) | (1951) | (1971) |
| Min | 49.9 | 36.9 | 26.6 | 20.6 | 19.6 | 19.6 | 24.2 | 78.0 | 252 | 220 | 153 | 88.6 |
| (WY) | (2004) | (2003) | (1955) | (2002) | (2000) | (2002) | (2005) | (2011) | (2004) | (2001) | (2001) | (1960) |

*During periods of operation (April 1932 to December 1932, May 1934 to September 1982, May 1985 to September 1986, January 2000 to current year).

**06209500 ROCK CREEK NEAR RED LODGE, MT—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2011 | | Water Year 2012 | | Water Years 1932 – 2012* | |
|---|---|---|---|---|---|---|
| **Annual total** | 72,199 | | 51,485 | | | |
| **Annual mean** | 198 | | 141 | | 167 | |
| **Highest annual mean** | | | | | 251 | 1943 |
| **Lowest annual mean** | | | | | 97.3 | 2001 |
| **Highest daily mean** | 1,530 | Jul 6 | 936 | Jun 5 | 2,370 | Jun 5, 1957 |
| **Lowest daily mean** | 25 | Feb 1 | 28 | Mar 6 | 14 | Nov 29, 1954 |
| **Annual seven-day minimum** | 26 | Mar 13 | 29 | Mar 6 | 17 | Jan 27, 2002 |
| **Maximum peak flow** | | | [a]1,140 | Jun 5 | [c]3,110 | Jun 4, 1957 |
| **Maximum peak stage** | | | [b]7.56 | Dec 10 | [b]8.56 | Dec 11, 2009 |
| **Annual runoff (ac-ft)** | 143,200 | | 102,100 | | 120,900 | |
| **10 percent exceeds** | 589 | | 380 | | 470 | |
| **50 percent exceeds** | 57 | | 72 | | 61 | |
| **90 percent exceeds** | 27 | | 30 | | 28 | |

*During periods of operation (April 1932 to December 1932, May 1934 to September 1982, May 1985 to September 1986, January 2000 to current year).
[a]Gage height, 7.22 ft.
[b]Backwater from ice.
[c]Gage height, 4.78 ft, previous site and datum.