



Water-Data Report 2009

05327000 HIGH ISLAND CREEK NEAR HENDERSON, MN

Minnesota Basin
Lower Minnesota Subbasin

LOCATION.--Lat 44°34'19", long 93°55'18" referenced to North American Datum of 1927, in NE ¼ NW ¼ sec.26, T.113 N., R.26 W., Sibley County, MN, Hydrologic Unit 07020012, on left bank 20 ft downstream from bridge on County Road 6, 1.6 mi upstream from mouth, and 3.1 mi north of Henderson.

DRAINAGE AREA.--238 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1973 to current year. May 1970 to September 1973, operated as a low-flow station only.

REVISED RECORDS.--WDR-MN-80-2: 1974-75, 1977-79, WRD MN-98: 1993.

GAGE.--Water-stage recorder. Datum of gage is 728.56 ft above sea level (NGVD of 1929).

REMARKS.--Records good except those for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 370 ft³/s and (or) maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|
| Mar 24 | 0015 | (Ice) | *5.54 |
| Mar 25 | 0515 | 541 | 5.49 |

Minimum discharge, 0.25 ft³/s, Aug. 5, gage height, 1.95 ft.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES

[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 1 | 2.1 | e7.9 | e14 | e7.4 | e4.7 | e18 | 363 | 87 | 21 | 22 | 0.67 | 8.1 |
| 2 | 1.4 | e9.1 | e13 | e7.4 | e4.7 | e16 | 267 | 85 | 16 | 19 | 0.50 | 6.2 |
| 3 | 1.2 | e11 | e13 | e7.4 | e4.7 | e13 | 222 | 80 | 13 | 17 | 0.60 | 4.9 |
| 4 | 1.1 | e13 | e12 | e7.4 | e4.8 | e13 | 198 | 74 | 12 | 17 | 0.44 | 3.5 |
| 5 | 1.4 | e18 | e12 | e7.4 | e4.6 | e13 | 183 | 71 | 11 | 15 | 0.31 | 2.5 |
| 6 | 1.3 | e23 | e12 | e7.3 | e4.4 | e16 | 174 | 66 | 13 | 13 | 0.31 | 1.8 |
| 7 | e2.7 | e26 | e11 | e7.3 | e4.5 | e21 | 178 | 62 | 18 | 11 | 5.1 | 1.2 |
| 8 | e2.5 | e26 | e11 | e7.2 | e4.8 | e24 | 188 | 61 | 38 | 15 | 24 | 0.98 |
| 9 | e2.6 | e24 | e11 | e7.1 | e5.6 | e24 | 179 | 68 | 75 | 13 | 11 | 0.77 |
| 10 | e3.1 | e24 | e11 | e7.0 | e65 | e23 | 165 | 64 | 119 | 12 | 9.1 | 7.8 |
| 11 | e3.6 | e26 | e10 | e7.1 | e63 | e20 | 150 | 61 | 154 | 11 | 13 | 20 |
| 12 | e4.0 | e27 | e9.8 | e7.0 | e50 | e19 | 138 | 57 | 162 | 9.7 | 8.9 | 19 |
| 13 | e5.9 | e27 | e9.8 | e7.1 | e42 | e18 | 118 | 54 | 152 | 8.5 | 7.1 | 21 |
| 14 | e6.6 | e26 | e9.8 | e7.3 | e36 | e19 | 99 | 50 | 131 | 7.8 | 6.5 | 28 |
| 15 | e7.0 | e25 | e9.7 | e7.4 | e32 | e24 | 93 | 48 | 110 | 7.3 | 5.4 | 27 |
| 16 | e5.9 | e24 | e9.9 | e7.4 | e30 | e44 | 86 | 48 | 96 | 6.2 | 6.3 | 23 |
| 17 | e5.2 | e22 | e9.7 | e7.2 | e30 | e62 | 80 | 48 | 88 | 5.1 | 8.4 | 20 |
| 18 | e5.0 | 17 | e8.8 | e7.2 | e29 | e66 | 77 | 43 | 79 | 4.5 | 4.3 | 17 |
| 19 | e5.0 | 24 | e8.4 | e6.6 | e28 | e71 | 76 | 39 | 71 | 3.7 | 13 | 14 |
| 20 | e5.0 | 20 | e8.4 | e6.3 | e26 | e72 | 74 | 34 | 63 | 2.8 | 36 | 11 |
| 21 | e5.0 | 12 | e8.0 | e6.1 | e22 | e82 | 72 | 28 | 56 | 3.6 | 49 | 9.7 |
| 22 | e5.9 | 22 | e7.8 | e5.8 | e22 | e114 | 70 | 25 | 51 | 4.6 | 77 | 8.6 |
| 23 | e8.5 | e26 | e7.8 | e5.8 | e21 | e145 | 64 | 31 | 46 | 3.4 | 76 | 7.4 |
| 24 | e9.1 | e25 | e7.3 | e5.9 | e16 | e400 | 57 | 28 | 45 | 2.1 | 61 | 7.3 |
| 25 | e13 | e23 | e7.3 | e5.8 | e15 | 503 | 55 | 28 | 42 | 1.2 | 47 | 8.8 |
| 26 | e12 | e22 | e7.4 | e5.8 | e16 | 430 | 65 | 27 | 38 | 0.91 | 34 | 9.9 |
| 27 | e11 | e19 | e7.7 | e5.7 | e19 | 415 | 78 | 27 | 37 | 0.70 | 26 | 7.9 |
| 28 | e10 | e18 | e8.1 | e5.6 | e18 | 455 | 84 | 29 | 30 | 0.64 | 21 | 7.6 |
| 29 | e8.8 | e16 | e7.9 | e5.4 | --- | 491 | 87 | 27 | 26 | 0.62 | 16 | 7.9 |
| 30 | e8.1 | e15 | e7.4 | e5.2 | --- | 497 | 89 | 25 | 24 | 0.82 | 13 | 8.5 |
| 31 | e7.9 | --- | e7.4 | e5.0 | --- | 455 | --- | 22 | --- | 0.49 | 11 | --- |
| Total | 171.9 | 618.0 | 298.4 | 205.6 | 622.8 | 4,583 | 3,829 | 1,497 | 1,837 | 239.68 | 591.93 | 321.35 |
| Mean | 5.55 | 20.6 | 9.63 | 6.63 | 22.2 | 148 | 128 | 48.3 | 61.2 | 7.73 | 19.1 | 10.7 |
| Max | 13 | 27 | 14 | 7.4 | 65 | 503 | 363 | 87 | 162 | 22 | 77 | 28 |
| Min | 1.1 | 7.9 | 7.3 | 5.0 | 4.4 | 13 | 55 | 22 | 11 | 0.49 | 0.31 | 0.77 |
| Ac-ft | 341 | 1,230 | 592 | 408 | 1,240 | 9,090 | 7,590 | 2,970 | 3,640 | 475 | 1,170 | 637 |
| Cfs/m | 0.02 | 0.09 | 0.04 | 0.03 | 0.09 | 0.62 | 0.54 | 0.20 | 0.26 | 0.03 | 0.08 | 0.05 |
| In. | 0.03 | 0.10 | 0.05 | 0.03 | 0.10 | 0.72 | 0.60 | 0.23 | 0.29 | 0.04 | 0.09 | 0.05 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2009, BY WATER YEAR (WY)

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mean | 67.6 | 52.1 | 30.9 | 14.7 | 22.8 | 143 | 255 | 164 | 182 | 112 | 67.3 | 78.9 |
| Max | 298 | 219 | 111 | 78.4 | 121 | 547 | 1,104 | 478 | 746 | 783 | 380 | 592 |
| (WY) | (1986) | (1993) | (1983) | (2006) | (2006) | (1992) | (2001) | (1993) | (2004) | (1993) | (1997) | (1991) |
| Min | 1.51 | 2.11 | 1.37 | 0.98 | 1.28 | 5.33 | 6.69 | 3.32 | 1.58 | 0.80 | 1.16 | 1.18 |
| (WY) | (1990) | (1990) | (1976) | (1977) | (1989) | (2001) | (1990) | (1976) | (1976) | (1976) | (1976) | (1974) |

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SUMMARY STATISTICS

| | Calendar Year 2008 | | Water Year 2009 | | Water Years 1974 - 2009 | |
|---------------------------------|--------------------|--------|-------------------|--------|-------------------------|--------------|
| Annual total | 23,304.1 | | 14,815.66 | | | |
| Annual mean | 63.7 | | 40.6 | | 99.3 | |
| Highest annual mean | | | | | 293 | 1993 |
| Lowest annual mean | | | | | 9.23 | 1976 |
| Highest daily mean | 980 | Jun 12 | 503 | Mar 25 | 2,400 | Apr 12, 2001 |
| Lowest daily mean | 1.1 | Oct 4 | ^a 0.31 | Aug 5 | 0.31 | Aug 5, 2009 |
| Annual seven-day minimum | 1.5 | Sep 30 | 0.47 | Jul 31 | 0.47 | Jul 31, 2009 |
| Maximum peak flow | | | ^b 541 | Mar 25 | ^c 2,830 | Jul 25, 1997 |
| Maximum peak stage | | | ^d 5.54 | Mar 24 | ^e 9.88 | Apr 23, 2001 |
| Instantaneous low flow | | | 0.31 | Aug 5 | ^f 0.20 | Jan 4, 1981 |
| Annual runoff (ac-ft) | 46,220 | | 29,390 | | 71,930 | |
| Annual runoff (cfsm) | 0.268 | | 0.171 | | 0.417 | |
| Annual runoff (inches) | 3.64 | | 2.32 | | 5.67 | |
| 10 percent exceeds | 211 | | 86 | | 283 | |
| 50 percent exceeds | 10 | | 15 | | 26 | |
| 90 percent exceeds | 2.8 | | 4.2 | | 2.2 | |

^a Also occurred Aug. 6.

^b Gage height, 5.49 ft.

^c Gage height, 9.31 ft.

^d Backwater from ice.

^e Backwater from Minnesota River.

^f Result of freezeup.

