Water-Data Report 2007

03339000 VERMILION RIVER NEAR DANVILLE, IL

Wabash Basin
Vermilion Subbasin

LOCATION.--Lat 40°06′03″, long 87°35′50″ referenced to North American Datum of 1927, in NW ¼ NW ¼ sec.22, T.19 N., R.11 W., Vermilion County, IL, Hydrologic Unit 05120109, on right bank at Danville sewage-treatment plant, 1.7 mi upstream from Stony Creek, 2.2 mi southeast of Danville, and at mile 19.5.

DRAINAGE AREA.--1,290 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.—
SURFACE-WATER DISCHARGE AND STAGE
DISCHARGE: October 1914 to September 1921, June 1928 to current year. Monthly discharge only for some periods, published in WSP 1305.
STAGE: Water years 1994 to current year.
SURFACE-WATER QUALITY
CHEMICAL: Water years 1978-91.
DISSOLVED OXYGEN: Water years 2001-2003.
PH: Water years 2001-2003.
SPECIFIC CONDUCTANCE: Water years 2001-2003.
TURBIDITY: Water years 2001-2003.
WATER TEMPERATURE: Water years 2001-2003.

REVISED RECORDS.-- WSP 853: 1936(M). WSP 973: 1939. WSP 1305: 1915-16, 1920, 1929. WSP 1335: 1934(m). WSP 1909: 1960. WDR IL-75-1: Drainage area. WDR IL-84-1: 1983. WDR IL-92-1: 1991.

GAGE.-- Water-stage recorder, U.S. Army Corps of Engineers satellite telemeter, and crest-stage gage. Datum of gage is 503.74 ft above NGVD of 1929 (503.59 ft NAVD 1988) from Aug. 30, 1982 to present. However, datum incorrectly published as 503.33 ft above NGVD of 1929 from Aug. 30, 1982 to Sept. 30, 2001. Prior to Jan. 9, 1935, nonrecording gage at same site and datum 503.33 ft. above NGVD of 1929 (levels by U.S. Army Corps of Engineers) (503.18 ft NAVD 1988). However, datum incorrectly published as 503.99 ft above NGVD of 1929 from 1928 to 1943. Jan. 9, 1935 to Aug. 30, 1982, at site 0.3 mi downstream and datum 503.33 ft above NGVD of 1929 (503.18 ft NAVD 1988).

REMARKS.--Records fair except those for Oct. 1 to Jan. 11, Jan. 16-18, Sept. 10-27 and estimated daily discharges, which are poor. Effluent from sewage-treatment plant at gage averaged 12.8 ft^3/s during the year. The maximum monthly average was 18.3 ft^3/s in Jan., and the minimum was 9.8 ft^3/s in August. Flow regulated at times by storage at Lake Vermilion on North Fork Vermilion River, 4.5 mi upstream from station, usable capacity, 7,440 acre-ft, and by Danville sewage-treatment plant.

EXTREMES FOR PERIOD OF RECORD.--
SURFACE-WATER DISCHARGE AND STAGE: Maximum discharge, 48,700 ft^3/s, March 13, 1939, gage height, 28.59 ft; maximum gage height, 31.56 ft, Apr. 13, 1994, discharge 47,900 ft^3/s, minimum daily, 2.0 ft^3/s, Oct. 9-14, 1920 and Aug. 10, 1930.

03339000 VERMILION RIVER NEAR DANVILLE, IL—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	85	588	7,540	6,340	e730	3,960	1,640	1,600	613	547	103	55
2	54	523	9,240	5,260	e700	9,320	1,650	1,370	562	406	97	52
3	164	355	6,990	3,380	e670	7,450	1,600	1,220	539	332	90	54
4	296	565	3,500	2,820	e630	3,920	1,510	1,120	561	284	79	43
5	537	252	2,300	4,220	e600	2,280	1,290	1,040	593	258	82	40
6	180	318	1,610	4,950	e570	1,850	1,150	970	598	237	95	35
7	128	414	1,340	3,380	e540	1,620	1,050	823	488	215	96	40
8	101	278	1,040	2,790	e520	1,330	970	779	495	192	74	e100
9	180	358	1,000	2,420	e490	1,350	909	809	376	182	72	e260
10	74	358	868	2,090	e480	1,770	893	764	387	171	59	e220
11	156	391	730	1,860	e460	2,320	990	737	353	151	54	139
12	182	451	932	1,560	e440	1,940	1,540	673	332	149	50	94
13	107	587	2,460	e3,500	e400	1,770	1,580	644	263	135	49	83
14	101	518	2,700	e7,000	e380	1,670	1,470	555	341	121	50	69
15	88	484	2,090	e12,800	e360	1,710	1,620	614	231	116	48	78
16	159	1,320	1,460	e12,200	e370	1,570	1,580	625	210	112	59	62
17	1,250	4,670	1,220	8,580	e390	1,320	1,350	610	202	128	79	51
18	2,730	3,330	1,190	4,050	e410	1,150	1,240	546	190	230	60	50
19	2,360	2,290	1,220	2,810	e440	1,210	1,110	513	267	424	53	48
20	1,390	1,570	1,100	2,270	e480	1,580	1,010	478	348	1,140	106	41
21	998	1,360	2,230	1,930	e520	1,440	905	435	273	988	95	42
22	788	1,020	9,020	1,780	e590	1,400	890	422	304	504	127	39
23	615	1,070	11,200	1,560	e700	3,900	850	506	343	319	141	40
24	501	752	8,850	1,440	875	7,600	814	380	493	227	121	42
25	401	791	5,330	1,280	2,260	8,510	1,230	364	566	185	108	47
26	443	724	3,410	1,180	5,820	6,750	4,560	481	431	148	111	67
27	697	673	2,500	1,180	5,510	4,040	5,060	688	405	143	135	53
28	1,300	486	2,020	1,190	3,420	2,890	3,800	1,290	765	132	99	65
29	1,250	624	1,660	929	---	2,460	2,470	1,010	792	171	78	75
30	906	984	1,430	e860	---	2,060	1,920	779	822	134	69	63
31	830	---	2,510	e770	---	1,810	---	657	---	120	63	---
Total	19,051	28,104	100,690	108,379	29,755	93,950	48,651	23,502	13,143	8,601	2,602	2,147
Mean	615	937	3,248	3,496	1,063	3,031	1,622	758	438	277	83.9	71.6
Max	2,730	4,670	11,200	12,800	5,820	9,320	5,060	1,600	822	1,140	141	260
Min	54	252	730	770	360	1,150	814	364	190	112	48	35
Cfsm	0.48	0.73	2.52	2.71	0.82	2.35	1.26	0.59	0.34	0.22	0.07	0.06
In.	0.55	0.81	2.90	3.13	0.86	2.71	1.40	0.68	0.38	0.25	0.08	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2007, BY WATER YEAR (WY)

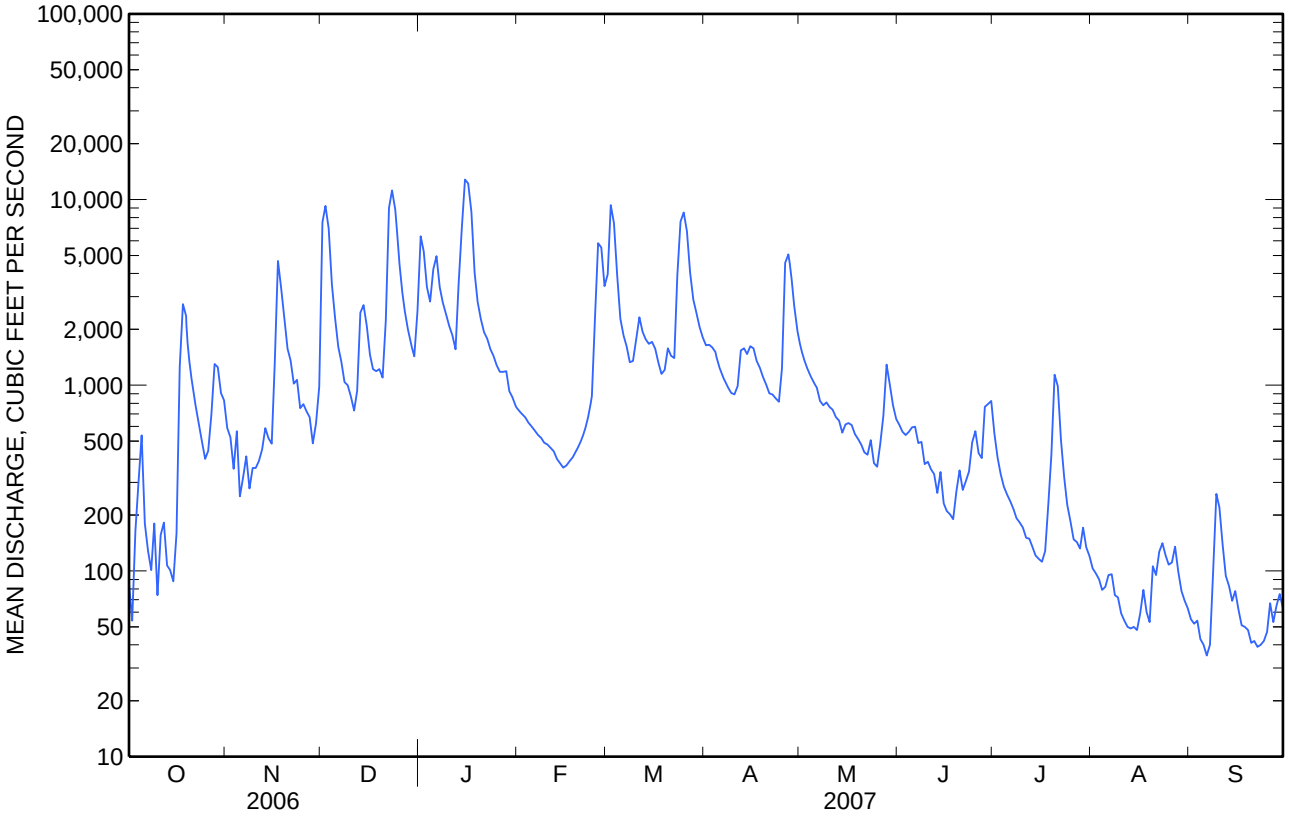
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	354	616	916	1,206	1,433	1,725	1,839	1,656	1,235	779	416	279
Max	3,346	5,743	3,593	6,930	4,818	5,383	6,846	7,615	5,290	4,008	3,049	2,891
(WY)	(1978)	(1986)	(1991)	(1950)	(1982)	(1979)	(1994)	(1943)	(1998)	(1993)	(1979)	(2003)
Min	12.8	22.8	27.3	27.8	39.6	59.6	190	83.7	43.3	26.6	17.9	14.4
(WY)	(1921)	(1921)	(1915)	(1977)	(1931)	(1931)	(1915)	(1934)	(1934)	(1934)	(1930)	(1920)

03339000 VERMILION RIVER NEAR DANVILLE, IL—Continued

SUMMARY STATISTICS

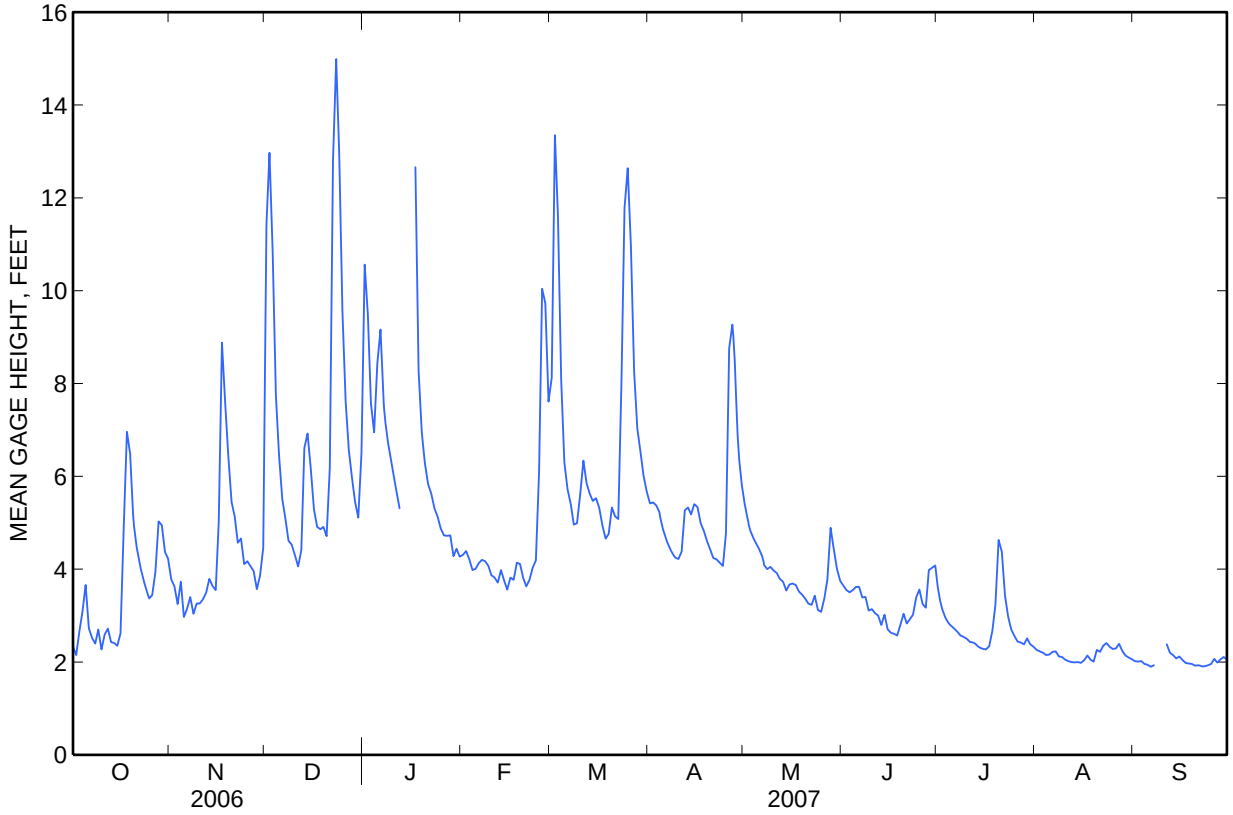
	Calendar Year 2006		Water Year 2007		Water Years 1915 - 2007	
Annual total	460,308		478,575			
Annual mean	1,261		1,311		1,035	
Highest annual mean					2,694	1993
Lowest annual mean					139	1954
Highest daily mean	11,200	Dec 23	[A]12,800	Jan 15	45,100	Apr 13, 1994
Lowest daily mean	47	Aug 27	35	Sep 6	2.0	[B]
Annual seven-day minimum	65	Aug 21	43	Sep 19	2.1	Oct 8, 1920
Maximum peak flow			[C]13,100	Jan 15	[D]48,700	Mar 13, 1939
Maximum peak stage			[C]16.56	Jan 15	[E]31.56	Apr 13, 1994
Instantaneous low flow			25	Sep 23		
Annual runoff (cfsm)	0.978		1.02		0.802	
Annual runoff (inches)	13.27		13.80		10.90	
10 percent exceeds	2,500		3,380		2,490	
50 percent exceeds	813		615		410	
90 percent exceeds	122		74		53	

[A] Estimated.
[B] Oct. 9-14, 1920 and Aug. 10, 1930.
[C] From floodmark.
[D] Gage height, 28.59 ft.
[E] Discharge, 47900 ft³/s.



03339000 VERMILION RIVER NEAR DANVILLE, IL—Continued

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.33	3.78	11.42	10.56	4.31	8.12	5.42	5.37	3.65	3.52	2.26	2.02
2	2.15	3.63	12.97	9.48	4.39	13.35	5.44	5.03	3.55	3.19	2.23	2.01
3	2.66	3.25	10.83	7.58	4.21	11.61	5.37	4.78	3.50	2.99	2.20	2.02
4	3.08	3.73	7.75	6.95	3.98	8.10	5.23	4.61	3.55	2.86	2.15	1.96
5	3.66	2.97	6.44	8.43	4.01	6.30	4.89	4.48	3.62	2.78	2.16	1.94
6	2.73	3.15	5.51	9.16	4.13	5.72	4.67	4.36	3.62	2.72	2.22	1.90
7	2.52	3.40	5.10	7.58	4.20	5.40	4.49	4.09	3.39	2.65	2.23	1.93
8	2.40	3.04	4.61	6.92	4.17	4.96	4.35	4.00	3.40	2.57	2.12	---
9	2.70	3.26	4.53	6.46	4.07	4.99	4.25	4.05	3.11	2.54	2.11	---
10	2.27	3.26	4.30	6.05	3.87	5.61	4.22	3.97	3.14	2.50	2.05	---
11	2.59	3.35	4.06	5.73	3.82	6.34	4.38	3.92	3.05	2.43	2.02	2.38
12	2.72	3.49	4.41	5.31	3.71	5.85	5.27	3.79	3.00	2.42	2.00	2.20
13	2.43	3.79	6.61	---	3.98	5.62	5.33	3.73	2.80	2.37	1.99	2.15
14	2.41	3.64	6.92	---	3.75	5.47	5.18	3.54	3.02	2.31	2.00	2.08
15	2.35	3.55	6.17	---	3.56	5.53	5.40	3.67	2.70	2.29	1.98	2.12
16	2.62	5.03	5.29	---	3.82	5.32	5.34	3.69	2.63	2.27	2.04	2.04
17	4.89	8.88	4.91	12.66	3.77	4.94	4.99	3.66	2.61	2.34	2.14	1.98
18	6.96	7.59	4.86	8.27	4.14	4.66	4.82	3.52	2.57	2.67	2.05	1.97
19	6.49	6.42	4.91	6.94	4.11	4.76	4.60	3.45	2.80	3.23	2.01	1.96
20	5.15	5.45	4.71	6.29	3.81	5.33	4.43	3.36	3.04	4.63	2.26	1.92
21	4.52	5.13	6.18	5.84	3.63	5.14	4.24	3.26	2.83	4.38	2.22	1.93
22	4.15	4.57	12.80	5.63	3.77	5.08	4.21	3.23	2.92	3.43	2.35	1.91
23	3.82	4.66	14.99	5.31	4.03	8.05	4.14	3.43	3.02	2.97	2.41	1.91
24	3.59	4.11	12.93	5.13	4.19	11.78	4.07	3.12	3.39	2.70	2.33	1.93
25	3.37	4.17	9.55	4.88	6.10	12.64	4.77	3.08	3.56	2.56	2.28	1.96
26	3.44	4.06	7.62	4.73	10.04	10.95	8.76	3.37	3.25	2.44	2.29	2.07
27	3.94	3.96	6.56	4.72	9.73	8.26	9.27	3.78	3.17	2.42	2.39	1.99
28	5.03	3.57	5.96	4.73	7.61	7.03	8.03	4.89	3.98	2.38	2.24	2.06
29	4.95	3.86	5.45	4.28	---	6.52	6.52	4.43	4.03	2.51	2.14	2.11
30	4.37	4.46	5.11	4.44	---	6.01	5.81	4.00	4.08	2.38	2.10	2.05
31	4.23	---	6.50	4.27	---	5.67	---	3.75	---	2.33	2.06	---
Mean	3.57	4.24	7.10	---	4.60	6.94	5.26	3.92	3.23	2.77	2.16	---
Max	6.96	8.88	14.99	---	10.04	13.35	9.27	5.37	4.08	4.63	2.41	---
Min	2.15	2.97	4.06	---	3.56	4.66	4.07	3.08	2.57	2.27	1.98	---

03339000 VERMILION RIVER NEAR DANVILLE, IL—Continued