

04092677 GRAND CALUMET RIVER AT INDUSTRIAL HWY AT GARY, IN

LOCATION.--Lat 41°36'28", long 87°23'39".in NW¹/₄NW¹/₄ sec.6, T.37 N., R.8W., Lake County, Hydrologic Unit 04040001, (HIGHLAND, IN quadrangle), on left bank, 30 feet upstream of U.S. 12 (Industrial Highway), 100 feet streamward of the centerline of Interstate 90, 2,000 feet downstream of Norfolk and Western railroad bridge, 6,000 feet southeast of Gary Airport terminal.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--October 1991 to September 1994, (gage heights only), October 1994 to May 2001, December 2001 to current year.

GAGE.--Water-stage recorder and Acoustic Doppler Velocity Meter. Datum of gage is 580.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Discharge is primarily from industrial and city effluent.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609	591	507	431	421	408	e473	463	465	486	448	342
2	596	611	509	468	413	423	e466	461	475	497	472	367
3	586	582	499	449	413	427	e483	457	484	482	444	402
4	566	595	506	434	422	438	e484	462	514	483	454	400
5	575	581	506	408	431	437	e488	453	538	467	454	403
6	577	571	496	387	441	436	e490	473	508	459	470	408
7	572	569	551	385	456	429	e469	473	505	465	468	413
8	587	560	531	392	431	415	e479	477	497	459	465	402
9	586	555	508	389	431	406	e483	470	486	452	463	415
10	577	555	514	415	413	417	e484	458	482	455	426	432
11	587	531	492	432	430	411	e476	469	476	468	421	425
12	593	523	489	437	430	405	e469	472	463	477	401	414
13	575	535	459	489	441	419	445	479	473	483	425	408
14	595	529	475	447	463	421	464	484	475	464	404	401
15	655	516	477	442	454	424	484	479	437	468	400	397
16	604	511	465	424	462	427	486	477	455	478	398	420
17	589	511	468	403	443	411	500	478	455	487	410	406
18	575	506	473	387	442	424	491	497	471	494	423	402
19	575	533	440	379	440	443	511	516	487	482	400	403
20	574	533	428	410	443	e444	491	498	487	484	445	396
21	572	523	436	413	440	e453	479	503	489	460	422	400
22	579	507	421	390	433	e453	510	513	480	470	407	387
23	607	523	412	389	427	e451	464	503	491	487	401	373
24	580	508	406	410	428	e467	472	483	495	485	402	394
25	570	511	410	407	424	e464	482	486	485	525	401	397
26	577	508	401	404	424	e456	486	496	481	484	408	387
27	574	520	413	406	424	e466	474	500	484	488	405	390
28	577	493	420	413	428	e458	467	470	483	470	408	405
29	604	496	422	416	---	e476	468	466	489	449	406	389
30	589	497	421	416	---	e480	471	474	482	443	368	377
31	571	---	447	415	---	e469	---	475	---	459	351	---
TOTAL	18,153	16,084	14,402	12,887	12,148	13,558	14,389	14,865	14,492	14,710	13,070	11,955
MEAN	586	536	465	416	434	437	480	480	483	475	422	398
MAX	655	611	551	489	463	480	511	516	538	525	472	432
MIN	566	493	401	379	413	405	445	453	437	443	351	342

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

MEAN	517	494	467	454	471	485	506	519	539	543	537	529
MAX	591	536	523	515	534	548	579	608	662	711	711	625
(WY)	(2003)	(2005)	(2000)	(1999)	(1999)	(1999)	(1999)	(2002)	(2002)	(2002)	(2003)	(2002)
MIN	454	438	425	416	419	404	381	400	459	434	422	398
(WY)	(1995)	(1996)	(1996)	(2005)	(1996)	(1996)	(1996)	(1996)	(1995)	(1995)	(2005)	(2005)

SUMMARY STATISTICS

FOR 2004 CALENDAR YEAR

FOR 2005 WATER YEAR

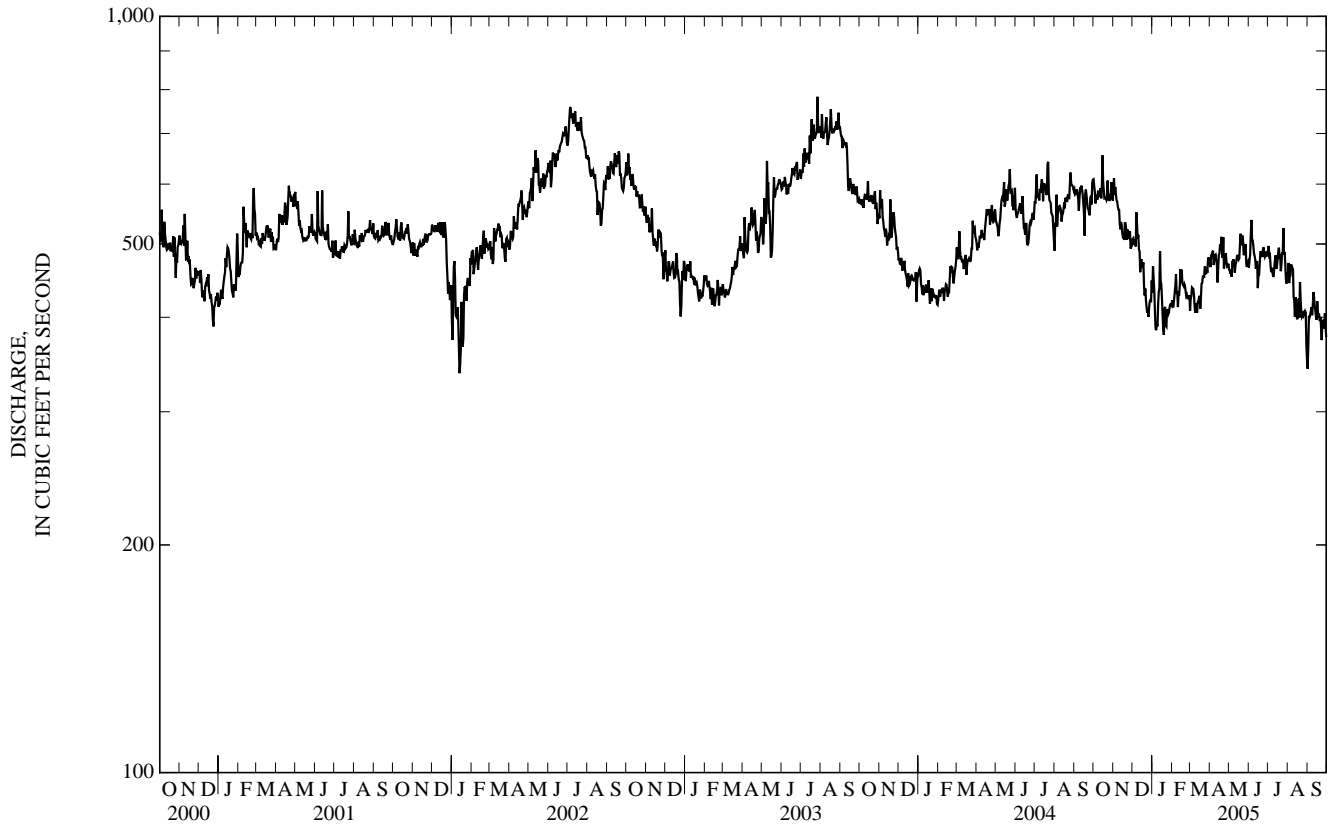
WATER YEARS 1995 - 2005

ANNUAL TOTAL	192,473	170,713	
ANNUAL MEAN	526	468	505
HIGHEST ANNUAL MEAN			556
LOWEST ANNUAL MEAN			444
HIGHEST DAILY MEAN	655	Oct 15	783
LOWEST DAILY MEAN	401	Dec 26	305
ANNUAL SEVEN-DAY MINIMUM	412	Dec 22	361
MAXIMUM PEAK FLOW			848
MAXIMUM PEAK STAGE			3.77
10 PERCENT EXCEEDS	591	569	595
50 PERCENT EXCEEDS	535	466	498
90 PERCENT EXCEEDS	434	403	428

e Estimated

STREAMS TRIBUTARY TO LAKE MICHIGAN

04092677 GRAND CALUMET RIVER AT INDUSTRIAL HWY AT GARY, IN—Continued



04092750 INDIANA HARBOR CANAL AT EAST CHICAGO, IN

LOCATION.--Lat 41°38'57", long 87°28'07", in NE¼NE¼ sec.20, T.37N., R.9W., Lake County, Hydrologic Unit 04040001, (WHITING, IN quadrangle), on left bank at the site of the former Canal Street drawbridge, 3,200 ft east of U.S. Highway 20, 3,500 ft north of U.S. Highway 12, 4,300 ft south of 129th Street, and 1,000 ft west of the crossing of the centerlines of Cline Avenue and the Indiana Harbor Canal.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--October 1991 to current year.

REVISED RECORDS.--WDR IN-96-1: Instantaneous peak flow date.

GAGE.--Water-stage recorder, Acoustic Doppler Velocity Meter. Datum of gage not established. Prior to Sept. 22, 2000, gage was located 0.8 mi downstream.

REMARKS.--Records poor. Positive discharges indicate flow towards Lake Michigan; negative discharges indicate flow away from Lake Michigan.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	644	841	843	674	592	689	620	574	480	493	441	446
2	684	925	740	814	638	654	595	555	455	480	355	443
3	641	698	797	833	638	599	611	569	504	399	415	487
4	593	900	721	755	665	560	558	474	477	471	494	476
5	608	823	675	838	651	696	494	499	555	503	576	462
6	531	667	674	745	679	606	528	480	488	526	540	449
7	522	625	987	690	769	551	625	607	440	527	519	473
8	623	707	901	685	758	703	590	515	433	441	474	515
9	597	744	754	644	750	577	577	490	475	454	502	555
10	604	671	684	700	751	599	557	482	428	451	520	464
11	626	702	817	783	711	671	575	527	419	465	521	419
12	597	667	755	855	645	600	693	681	455	509	466	425
13	589	654	661	1,210	679	617	670	569	511	539	549	388
14	663	647	762	958	885	587	595	581	486	456	568	575
15	870	646	747	862	850	575	576	588	510	e472	459	527
16	746	588	650	793	854	612	548	603	539	501	432	735
17	610	568	653	777	769	616	545	520	540	427	474	517
18	609	574	580	842	726	669	619	493	528	440	452	433
19	644	713	764	629	694	613	540	639	515	520	487	494
20	e586	667	726	716	742	646	584	642	494	447	550	528
21	630	712	664	711	779	654	639	585	435	491	547	426
22	631	703	647	621	711	616	628	527	542	500	598	503
23	755	579	692	787	666	691	730	532	466	518	569	553
24	725	763	670	626	651	614	689	582	423	500	499	461
25	657	805	616	662	653	689	509	557	523	553	505	455
26	653	665	580	665	675	713	498	578	533	550	544	542
27	674	711	672	683	654	645	589	475	447	691	520	502
28	686	738	630	607	663	649	571	478	432	535	459	438
29	731	688	623	587	---	595	627	453	542	462	503	609
30	729	e650	653	580	---	602	552	479	452	471	522	445
31	651	---	619	588	---	728	---	471	---	437	e493	---
TOTAL	20,109	21,041	21,957	22,920	19,898	19,636	17,732	16,805	14,527	15,229	15,553	14,745
MEAN	649	701	708	739	711	633	591	542	484	491	502	492
MAX	870	925	987	1,210	885	728	730	681	555	691	598	735
MIN	522	568	580	580	592	551	494	453	419	399	355	388

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2005, BY WATER YEAR (WY)

MEAN	589	602	623	624	624	636	604	622	576	564	576	556
MAX	752	916	1,094	963	843	1,111	922	1,016	724	761	759	759
(WY)	(1997)	(1997)	(1997)	(1997)	(1997)	(1999)	(1999)	(1999)	(1996)	(1996)	(1996)	(1996)
MIN	418	407	429	467	470	481	474	508	439	471	467	416
(WY)	(1998)	(1998)	(1998)	(1998)	(2003)	(2003)	(2004)	(1998)	(1998)	(2004)	(1998)	(1997)

SUMMARY STATISTICS

FOR 2004 CALENDAR YEAR

FOR 2005 WATER YEAR

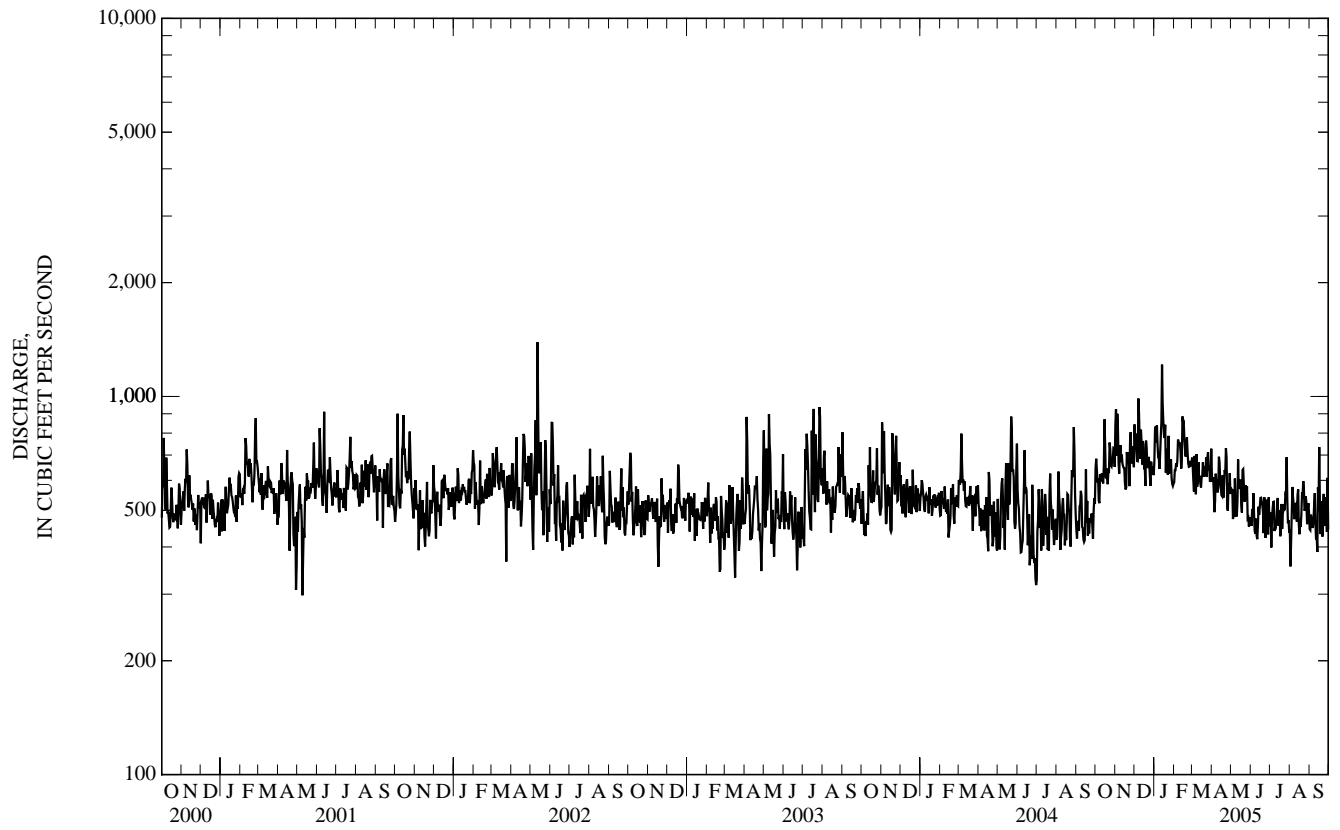
WATER YEARS 1994 - 2005

ANNUAL TOTAL	202,150	220,152	
ANNUAL MEAN	552	603	599
HIGHEST ANNUAL MEAN			727
LOWEST ANNUAL MEAN			462
HIGHEST DAILY MEAN	987	Dec 7	2,120
LOWEST DAILY MEAN	317	Jun 30	-641
ANNUAL SEVEN-DAY MINIMUM	362	Jun 26	439
MAXIMUM PEAK FLOW			5,800
MAXIMUM PEAK STAGE			10.75
10 PERCENT EXCEEDS	711		754
50 PERCENT EXCEEDS	535		595
90 PERCENT EXCEEDS	421		456

e Estimated

STREAMS TRIBUTARY TO LAKE MICHIGAN

04092750 INDIANA HARBOR CANAL AT EAST CHICAGO, IN—Continued



04093000 DEEP RIVER AT LAKE GEORGE OUTLET AT HOBART, IN

LOCATION.--Lat 41°32'10", long 87°15'25", in NW¹/₄NW¹/₄ sec.32, T.36 N., R.7 W., Lake County, Hydrologic Unit 04040001, (GARY, IN quadrangle), on left bank at upstream side of bridge on Ridge Road in Hobart, 300 ft upstream from Duck Creek, and 400 ft downstream from Lake George Dam, 3.3 mi north of Ainsworth, IN.

DRAINAGE AREA.--124 mi².

PERIOD OF RECORD.--April 1947 to current year.

REVISED RECORDS.--WSP 1337: 1953. WSP 1507: 1956. WDR IN-72-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 588.17 ft above National Geodetic Vertical Datum of 1929 (levels by State of Indiana, Department of Natural Resources). Prior to July 29, 1952, nonrecording gage, and July 30, 1952, to July 20, 1955, water-stage recorder at site 400 ft upstream at datum 11.80 ft higher.

REMARKS.--Records fair. Flow subject to regulation by operation of Lake George Dam.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	48	613	131	71	137	89	68	24	15	12	16
2	18	372	724	221	67	133	81	57	24	14	12	14
3	19	463	597	531	65	119	78	48	28	12	10	12
4	18	355	431	940	66	108	72	46	34	11	11	12
5	17	324	291	917	74	122	68	43	159	12	11	12
6	17	215	216	751	113	136	63	41	462	12	10	12
7	17	124	397	576	272	124	61	40	436	11	9.7	12
8	21	83	946	431	606	117	59	38	283	10	9.5	12
9	23	64	935	310	703	104	56	38	223	9.0	9.1	12
10	19	58	690	235	568	91	51	37	149	8.0	8.8	11
11	16	46	518	307	400	86	47	40	101	7.3	14	11
12	16	40	409	725	278	89	51	49	67	8.3	33	11
13	16	37	288	1,660	239	90	69	55	57	9.5	51	12
14	19	33	186	2,040	652	84	76	50	74	10	131	18
15	122	32	127	1,430	1,090	79	64	41	75	10	95	27
16	147	30	101	986	1,050	76	56	38	53	13	53	37
17	65	29	87	705	840	74	51	36	38	12	35	44
18	40	27	78	505	622	74	48	34	29	13	32	29
19	31	46	71	350	433	79	48	46	24	11	46	22
20	26	84	54	253	301	90	43	90	21	11	199	20
21	23	74	59	166	303	85	40	86	18	9.6	380	20
22	21	58	53	124	317	75	48	67	16	8.7	188	17
23	34	48	48	106	260	70	75	51	15	8.9	88	15
24	98	47	41	102	199	73	76	43	14	9.4	54	15
25	79	159	40	105	156	78	72	37	14	11	39	16
26	51	263	38	101	133	169	63	33	13	18	31	17
27	38	336	37	93	118	236	60	31	12	39	25	17
28	31	590	36	71	117	191	51	30	11	38	22	18
29	30	646	36	84	---	143	50	30	11	21	20	29
30	32	531	39	78	---	119	53	28	14	15	19	38
31	26	---	74	72	---	106	---	26	---	13	17	---
TOTAL	1,145	5,262	8,260	15,106	10,113	3,357	1,819	1,397	2,499	410.7	1,675.1	558
MEAN	36.9	175	266	487	361	108	60.6	45.1	83.3	13.2	54.0	18.6
MAX	147	646	946	2,040	1,090	236	89	90	462	39	380	44
MIN	15	27	36	71	65	70	40	26	11	7.3	8.8	11
CFSM	0.30	1.41	2.15	3.93	2.91	0.87	0.49	0.36	0.67	0.11	0.44	0.15
IN.	0.34	1.58	2.48	4.53	3.03	1.01	0.55	0.42	0.75	0.12	0.50	0.17

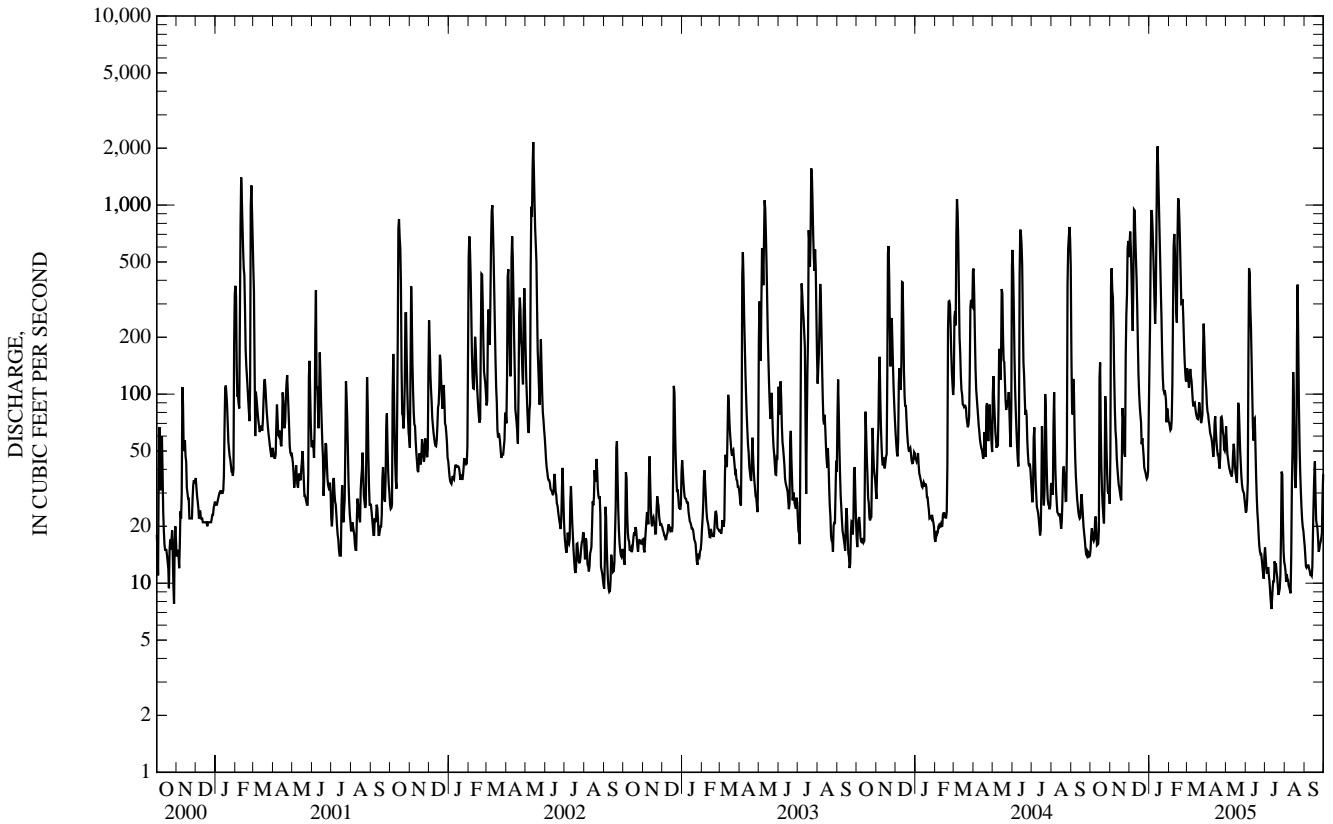
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2005, BY WATER YEAR (WY)

	56.8	92.3	111	121	153	211	206	151	117	67.2	50.5	46.1
MEAN	56.8	92.3	111	121	153	211	206	151	117	67.2	50.5	46.1
MAX	433	499	393	487	456	688	477	454	557	394	427	312
(WY)	(1955)	(1986)	(1983)	(2005)	(1997)	(1979)	(1950)	(1970)	(1993)	(2003)	(1990)	(1993)
MIN	6.42	10.7	12.5	10.8	14.7	38.3	23.1	21.8	16.4	10.7	8.81	6.91
(WY)	(1957)	(1957)	(1963)	(1977)	(1964)	(1957)	(1963)	(1958)	(1988)	(1988)	(1964)	(1948)

STREAMS TRIBUTARY TO LAKE MICHIGAN

04093000 DEEP RIVER AT LAKE GEORGE OUTLET AT HOBART, IN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1948 - 2005	
ANNUAL TOTAL	45,473		51,601.8		115	
ANNUAL MEAN	124		141		234	
HIGHEST ANNUAL MEAN					35.3	
LOWEST ANNUAL MEAN					1963	
HIGHEST DAILY MEAN	1,080	Mar 6	2,040	Jan 14	3,900	Nov 28, 1990
LOWEST DAILY MEAN	14	Sep 24	7.3	Jul 11	0.00	Nov 5, 1978
ANNUAL SEVEN-DAY MINIMUM	14	Sep 24	8.9	Jul 8	0.04	Aug 29, 1996
MAXIMUM PEAK FLOW			2,210	Jan 14	4,230	Nov 28, 1990
MAXIMUM PEAK STAGE			13.64	Jan 14	19.48	Oct 11, 1954
ANNUAL RUNOFF (CFSM)	1.00		1.14		0.927	
ANNUAL RUNOFF (INCHES)	13.64		15.48		12.60	
10 PERCENT EXCEEDS	356		418		274	
50 PERCENT EXCEEDS	52		51		48	
90 PERCENT EXCEEDS	20		12		14	



STREAMS TRIBUTARY TO LAKE MICHIGAN

04094000 LITTLE CALUMET RIVER AT PORTER, IN

LOCATION.--Lat 41°37'18", long 87°05'13", in NE¼NE¼ sec.34, T.37 N., R.6 W., Porter County, Hydrologic Unit 04040001, (CHESTERTON, IN quadrangle), on right bank at downstream end of county road bridge, 200 ft upstream from bridge on U.S. Highway 20, 0.8 mi northwest of Porter, and 4.5 mi upstream from Salt Creek.

DRAINAGE AREA.--66.2 mi².

PERIOD OF RECORD.--May 1945 to current year.

REVISED RECORDS.--WSP 1084: 1945. WSP 1337: 1946-47. WDR IN-72-1: Drainage area. WDR IN-83-1: 1982.

GAGE.--Water-stage recorder. Datum of gage is 603.48 ft above National Geodetic Vertical Datum of 1929. Prior to June 26, 1952, nonrecording gage at same site and datum.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	67	248	e253	e49	124	59	44	33	25	24	22
2	30	188	327	201	e47	99	59	44	32	24	24	21
3	29	141	175	281	e46	86	59	43	36	24	24	21
4	28	137	120	433	e46	84	57	42	35	24	27	21
5	28	190	92	337	e51	125	57	41	34	26	25	20
6	27	113	90	210	e71	168	56	41	58	25	23	20
7	27	76	181	161	e157	138	56	40	46	25	22	20
8	27	63	416	137	313	110	53	40	39	24	22	20
9	30	57	284	121	284	84	54	40	35	23	22	20
10	29	54	161	118	170	82	50	39	33	24	24	20
11	32	55	138	169	123	76	48	41	32	23	24	20
12	29	52	128	394	108	79	47	46	31	e23	27	20
13	29	52	100	1,180	122	71	49	45	32	e23	33	20
14	30	49	82	1,160	350	68	47	45	36	23	58	21
15	43	47	73	462	486	67	46	43	34	23	35	23
16	39	48	69	254	388	67	45	42	31	24	28	34
17	38	50	e67	196	296	67	45	40	30	23	26	28
18	35	52	e65	136	166	66	44	39	30	23	24	24
19	37	65	e63	108	118	71	44	45	31	24	25	24
20	36	77	e61	e80	112	76	43	52	29	23	45	24
21	34	67	e58	e74	154	67	43	45	28	26	39	23
22	35	58	e56	e70	167	64	52	41	28	33	27	22
23	48	54	e55	e69	132	64	69	38	28	26	25	22
24	60	55	e53	e67	109	63	63	37	27	25	24	22
25	49	92	e52	e64	104	68	60	36	27	28	23	23
26	45	119	e51	e61	98	98	54	35	26	30	23	25
27	41	166	e50	e58	85	90	51	35	26	46	23	24
28	43	319	e49	e57	92	78	47	34	26	31	23	25
29	55	244	e48	e55	---	69	46	34	26	26	22	36
30	55	141	e48	e54	---	65	46	34	26	25	22	30
31	47	---	e162	e51	---	62	---	33	---	25	21	---
TOTAL	1,143	2,948	3,622	7,071	4,444	2,596	1,549	1,254	965	797	834	695
MEAN	36.9	98.3	117	228	159	83.7	51.6	40.5	32.2	25.7	26.9	23.2
MAX	60	319	416	1,180	486	168	69	52	58	46	58	36
MIN	27	47	48	51	46	62	43	33	26	23	21	20
CFSM	0.56	1.48	1.76	3.45	2.40	1.26	0.78	0.61	0.49	0.39	0.41	0.35
IN.	0.64	1.66	2.04	3.97	2.50	1.46	0.87	0.70	0.54	0.45	0.47	0.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2005, BY WATER YEAR (WY)

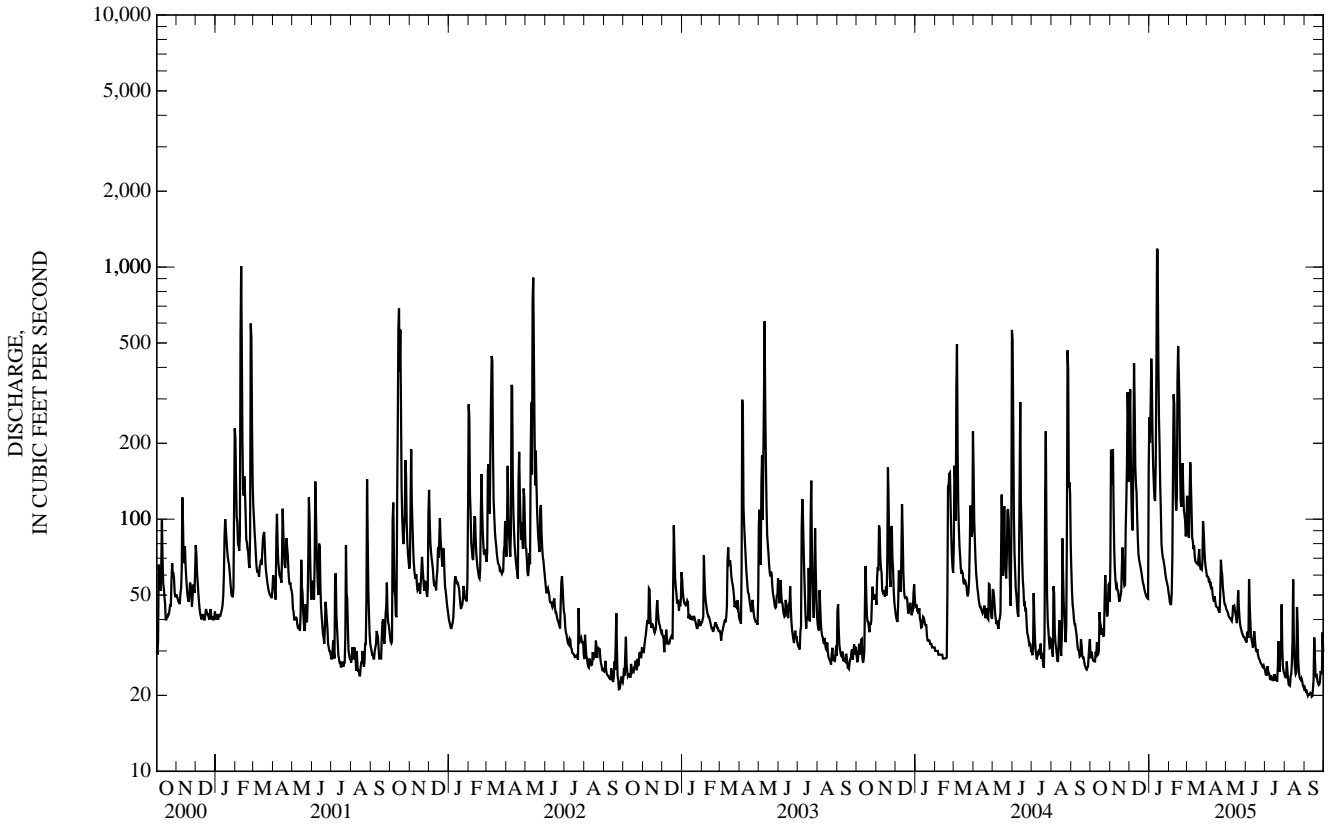
MEAN	58.3	75.2	78.8	81.1	95.8	119	114	87.9	73.2	47.6	42.7	42.4
MAX	414	285	186	228	208	319	292	277	272	190	277	143
(WY)	(1955)	(1991)	(1966)	(2005)	(1997)	(1982)	(1947)	(1996)	(1993)	(1981)	(1990)	(1972)
MIN	22.3	27.4	24.5	27.0	30.9	48.3	44.6	33.5	25.6	22.2	23.1	21.4
(WY)	(1964)	(1954)	(1964)	(1977)	(1964)	(2003)	(1963)	(1958)	(1965)	(1988)	(1964)	(1953)

STREAMS TRIBUTARY TO LAKE MICHIGAN

04094000 LITTLE CALUMET RIVER AT PORTER, IN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1946 - 2005	
ANNUAL TOTAL	25,119		27,918		76.2	
ANNUAL MEAN	68.6		76.5		124	
HIGHEST ANNUAL MEAN					36.5	
LOWEST ANNUAL MEAN					1964	
HIGHEST DAILY MEAN	563	May 31	1,180	Jan 13	3,040	Nov 28, 1990
LOWEST DAILY MEAN	25	Sep 24	20	Sep 5	17	Aug 24, 1965
ANNUAL SEVEN-DAY MINIMUM	26	Sep 21	20	Sep 5	19	Aug 20, 1965
MAXIMUM PEAK FLOW			1,690	Jan 14	3,880	Nov 28, 1990
MAXIMUM PEAK STAGE			9.19	Jan 14	11.66	Oct 10, 1954
ANNUAL RUNOFF (CFSM)	1.04		1.16		1.15	
ANNUAL RUNOFF (INCHES)	14.12		15.69		15.63	
10 PERCENT EXCEEDS	136		161		138	
50 PERCENT EXCEEDS	45		46		49	
90 PERCENT EXCEEDS	29		23		28	

e Estimated



04095090 BURNS DITCH AT PORTAGE, IN

LOCATION.--Lat 41°37'20", long 87°10'35", in NE¼NW¼ sec. 36, T.37 N., R.7 W., Porter County, Hydrologic Unit 04040001, (PORTAGE, IN quadrangle), on right bank at an industrial road bridge, 1,300 feet north of U.S. Highway 12, 0.7 mi south of the mouth, 1.2 mi west of the State Road 249 overpass over U.S. Highway 12, 2.4 mi east of County Line Road, 3.2 mi north of the intersection of Central Avenue and Willow Creek Road in Portage.

DRAINAGE AREA.--331 mi².

PERIOD OF RECORD.--February 2, 1995 to current year.

REVISED RECORDS.--WDR IN-01-1: 1998-2000 (M); WDR IN-05-1: 1996-2004 (M).

GAGE.--Water-stage recorder and Acoustic Doppler Velocity Meter. Datum of gage is 575 ft above National Geodetic Vertical Datum of 1929 from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Peak stage and peak flow for the period of record probably occurred on May 10, 1996 during period of missing record.

REVISIONS.--The estimated maximum daily discharge for water year 1996 has been revised to 4600 ft³/s, May 10, 1996, gage height, unknown; revised estimated daily discharges, in ft³/s, for periods in May 1996 are given below. These figures supersede those published in the reports for 1996 and 1997.

Date Discharge
 May 9, 1996..... e 936
 May 10, 1996..... e 4600

DISCHARGE, CUBIC FEET PER SECOND
 WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	263	345	1,210	810	448	644	460	336	252	257	311	259
2	267	804	1,400	816	441	631	459	319	259	241	273	276
3	298	875	1,220	1,150	429	599	449	308	276	254	257	214
4	230	852	933	1,760	441	579	433	302	274	227	322	244
5	296	931	773	1,920	470	646	420	314	417	267	298	271
6	268	764	687	1,590	526	710	425	306	752	271	269	261
7	244	559	1,000	1,300	836	585	394	262	838	293	295	282
8	272	484	1,680	1,060	1,270	635	386	300	742	286	287	202
9	280	434	1,760	904	1,440	559	389	305	674	299	297	232
10	232	382	1,400	791	1,230	507	371	290	591	275	273	256
11	263	331	1,230	895	972	532	321	252	489	265	292	242
12	266	325	1,070	1,520	798	480	286	342	373	219	289	249
13	232	345	863	3,330	768	483	357	309	396	218	327	241
14	265	343	811	4,310	1,340	468	386	352	484	235	538	246
15	560	325	712	e3,180	2,170	468	372	325	456	269	564	206
16	524	362	592	e2,360	2,180	446	379	284	391	283	448	319
17	443	328	571	e1,720	1,910	429	351	294	338	268	370	332
18	353	317	463	e1,570	1,460	436	355	286	294	271	386	305
19	310	426	465	e1,190	1,130	458	339	319	286	257	367	270
20	254	472	468	e993	931	492	293	389	292	231	599	275
21	292	459	479	e832	931	474	303	379	254	274	785	252
22	291	451	366	e572	932	420	264	312	245	298	661	178
23	364	340	383	e560	808	421	369	281	301	327	437	228
24	464	288	e384	e550	742	427	417	290	296	329	339	234
25	459	534	e388	542	682	436	423	293	241	343	333	250
26	389	658	e354	520	658	594	383	292	238	269	309	219
27	343	771	376	e524	620	644	350	281	286	455	306	279
28	348	1,130	364	e466	587	623	317	292	275	410	283	192
29	369	1,240	366	478	---	589	320	274	253	347	254	322
30	368	1,010	401	464	---	535	321	259	265	345	239	291
31	278	---	570	434	---	511	---	236	---	326	267	---
TOTAL	10,085	16,885	23,739	39,111	27,150	16,461	11,092	9,383	11,528	8,909	11,275	7,627
MEAN	325	563	766	1,262	970	531	370	303	384	287	364	254
MAX	560	1,240	1,760	4,310	2,180	710	460	389	838	455	785	332
MIN	230	288	354	434	429	420	264	236	238	218	239	178

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

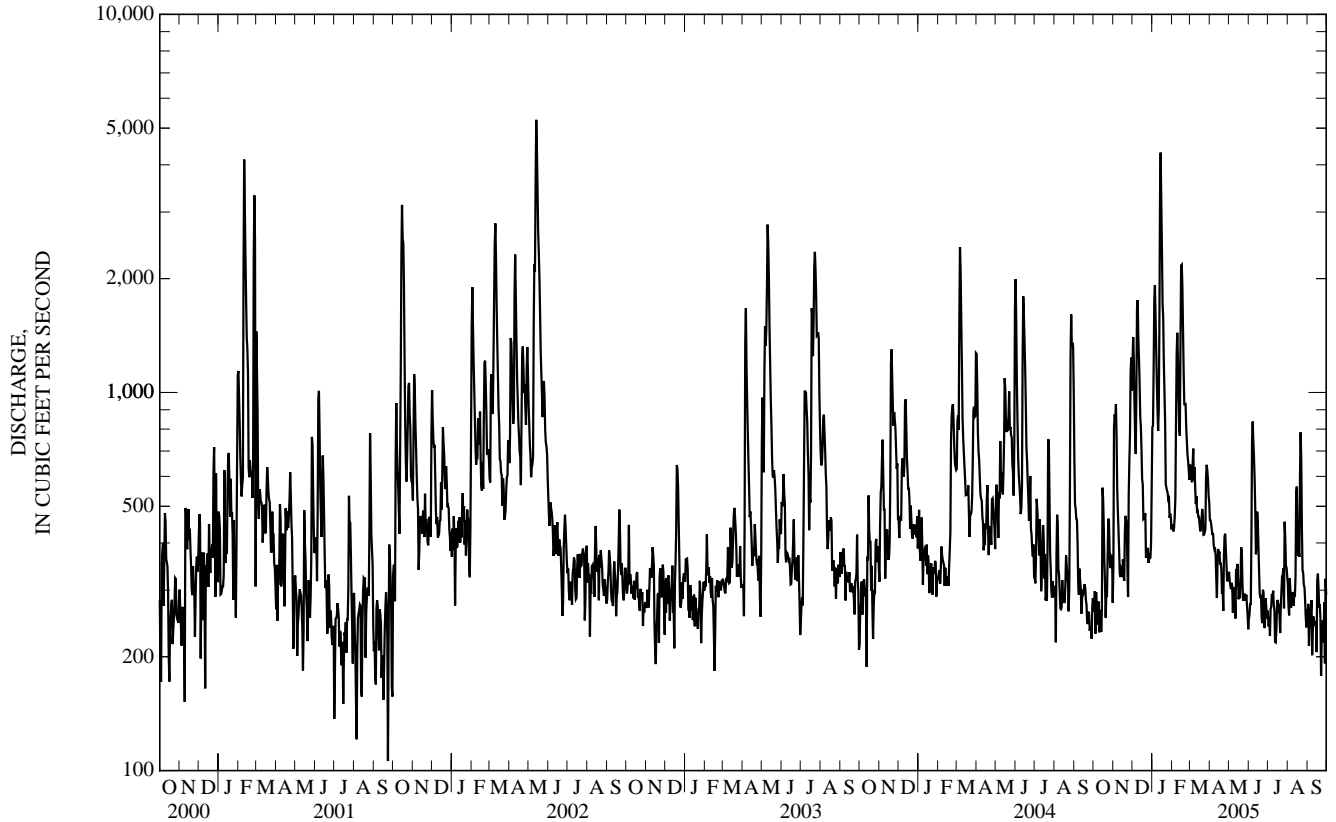
MEAN	351	404	446	487	604	573	582	682	621	441	376	275
MAX	976	628	766	1,262	1,305	981	1,094	1,539	1,187	1,041	515	398
(WY)	(2002)	(2004)	(2005)	(2005)	(2001)	(2002)	(2002)	(2002)	(2000)	(2003)	(2004)	(1995)
MIN	107	144	179	231	255	321	358	288	237	214	205	147
(WY)	(1996)	(1999)	(1999)	(1996)	(1996)	(1996)	(1997)	(1999)	(1999)	(1997)	(1999)	(1997)

STREAM TRIBUTARY TO LAKE MICHIGAN

04095090 BURNS DITCH AT PORTAGE, IN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	202,321		193,245			
ANNUAL MEAN	553		529		486	
HIGHEST ANNUAL MEAN					702	2002
LOWEST ANNUAL MEAN					288	1999
HIGHEST DAILY MEAN	2,420	Mar 6	4,310	Jan 14	5,260	May 13, 2002
LOWEST DAILY MEAN	218	Aug 3	178	Sep 22	83	Oct 16, 1995
ANNUAL SEVEN-DAY MINIMUM	243	Sep 22	226	Sep 22	95	Oct 13, 1995
MAXIMUM PEAK FLOW			4,810	Jan 14		
MAXIMUM PEAK STAGE			5.79	Apr 23	10.19	Mar 9, 1998
10 PERCENT EXCEEDS	1,000		980		837	
50 PERCENT EXCEEDS	434		370		380	
90 PERCENT EXCEEDS	284		254		205	

e Estimated



04095380 TRAIL CREEK AT MICHIGAN CITY HARBOR, IN

LOCATION.--Lat 41°43'22", long 86°54'15", sec. 29, T.38 N., R.4 W., LaPorte County, Hydrologic Unit 04040001, (MICHIGAN CITY WEST, IN quadrangle), on right bank in the northeast drawbridge tower, 2000 ft north of Michigan Street, 2,600 ft southeast of lake end of west breakwater, 0.5 mi southwest of Washington Park, 3000 ft downstream of U.S. Hwy 12 bridge in Michigan City.

DRAINAGE AREA.--59.1 mi².

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder and Acoustic Velocity Meter. Datum of gage is 575 ft above National Geodetic Vertical Datum of 1929 from topographic map.

REMARKS.--Records poor. Positive discharges indicate flow towards Lake Michigan; negative discharges indicate flow away from Lake Michigan. Instantaneous peak discharges are not determined because of variable flow conditions caused by backwater from Lake Michigan.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	e130	234	224	113	95	86	78	-0.18	45	66	48
2	57	e160	e148	242	117	88	78	82	e12	52	56	e34
3	38	e105	e110	271	112	121	76	58	12	47	e62	30
4	22	146	e90	289	112	111	48	36	39	56	e75	e28
5	43	132	95	191	112	193	62	20	103	e64	e64	e44
6	43	e92	e100	168	129	202	36	46	134	e41	e57	e37
7	35	72	e199	145	209	152	49	31	e51	e50	62	13
8	24	84	e231	132	243	129	67	32	e47	e15	57	e20
9	42	84	159	139	162	e94	58	33	24	8.7	69	26
10	28	55	e109	138	124	111	42	22	e50	17	52	2.3
11	32	59	e147	210	149	113	-28	98	e41	20	82	24
12	37	54	e124	392	131	104	58	107	27	22	66	26
13	44	73	e113	780	154	119	44	101	53	12	e63	-5.3
14	46	73	e97	551	319	107	65	81	81	41	66	e19
15	82	82	100	226	302	116	46	62	52	e50	1.9	32
16	88	80	75	162	318	109	49	34	48	53	52	e50
17	31	e48	78	119	204	104	37	e48	44	64	44	8.3
18	40	54	e75	154	134	111	e23	e14	40	84	44	19
19	43	57	e109	164	132	110	34	e45	59	64	45	29
20	48	84	109	128	147	80	38	50	67	108	75	e49
21	43	71	e121	125	195	74	30	e65	63	117	e71	e45
22	49	79	94	96	162	96	69	49	61	86	40	17
23	83	57	e111	127	123	75	129	36	55	50	e27	7.8
24	64	e52	e95	113	124	98	102	56	60	68	-0.43	e-29
25	44	124	e83	126	113	98	99	60	e36	89	40	-12
26	40	e106	e100	120	111	114	73	46	e23	69	e35	-15
27	55	169	e88	118	121	109	61	e72	12	182	e25	e-0.90
28	e61	187	e118	97	97	111	43	e74	23	94	24	e29
29	e50	115	e86	97	---	113	54	e52	37	61	e37	103
30	e43	104	e112	113	---	86	74	53	51	74	14	e14
31	e40	---	e389	119	---	85	---	33	---	66	e57	---
TOTAL	1,435	2,788	3,899	6,076	4,469	3,428	1,702	1,674	1,404.82	1,869.7	1,528.47	692.20
MEAN	46.3	92.9	126	196	160	111	56.7	54.0	46.8	60.3	49.3	23.1
MAX	88	187	389	780	319	202	129	107	134	182	82	103
MIN	22	48	75	96	97	74	-28	14	-0.18	8.7	-0.43	-29

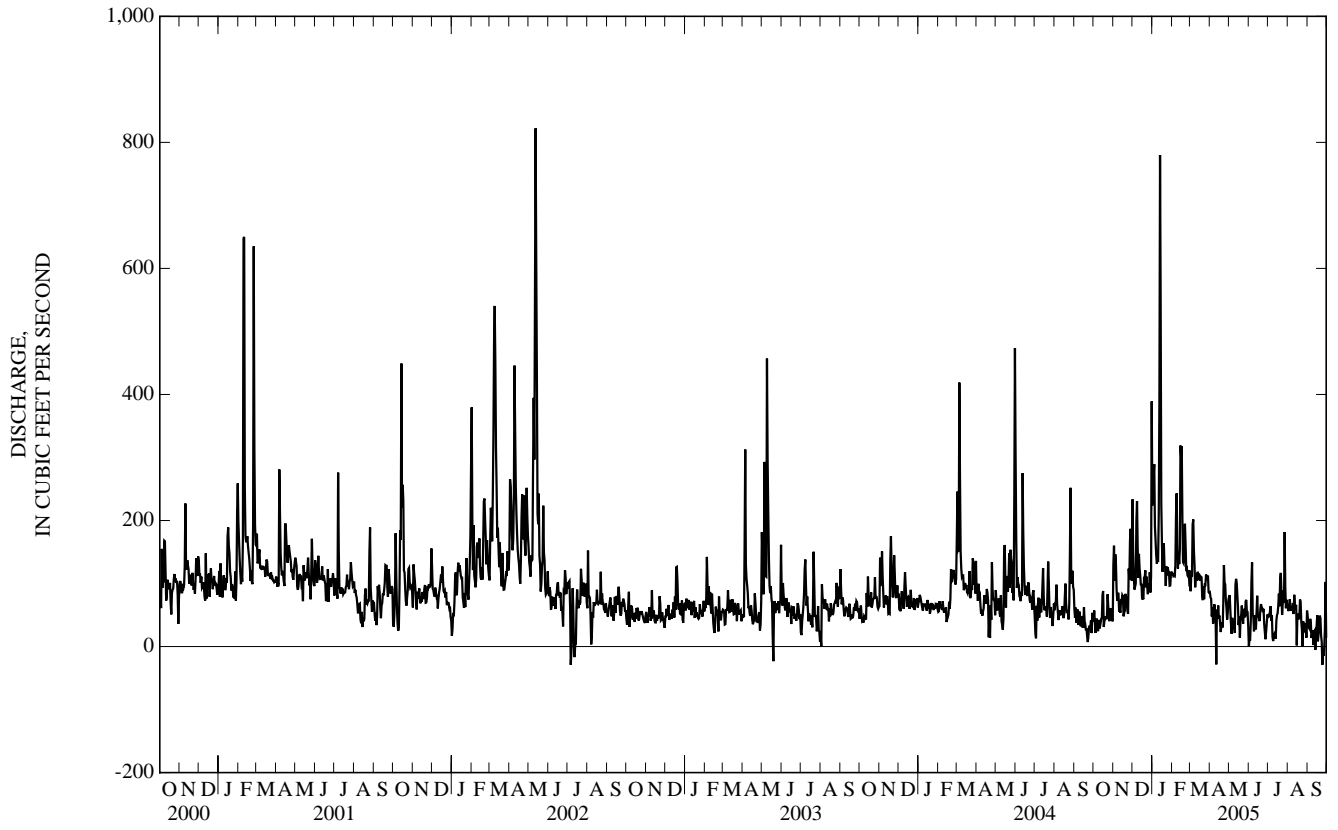
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2005, BY WATER YEAR (WY)

MEAN	94.5	109	118	125	131	132	131	131	109	95.1	86.9	75.4
MAX	127	173	185	196	208	191	201	216	192	150	126	113
(WY)	(1998)	(1995)	(1997)	(2005)	(2001)	(2002)	(2002)	(2002)	(2000)	(1998)	(1995)	(2000)
MIN	46.3	49.4	61.8	59.4	61.8	58.0	56.7	54.0	46.8	57.1	49.3	23.1
(WY)	(2005)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2005)	(2005)	(2005)	(2005)	(2005)

e Estimated

STREAMS TRIBUTARY TO LAKE MICHIGAN

04095380 TRAIL CREEK AT MICHIGAN CITY HARBOR, IN—Continued



04099510 PIGEON CREEK NEAR ANGOLA, IN

LOCATION.--Lat 41°38'04", long 85°06'35", in NW¹/₄SE¹/₄ sec.26, T.37 N., R.12 E., Steuben County, Hydrologic Unit 04050001, (ANGOLA WEST, IN quadrangle), on left bank 5 ft upstream from bridge on U.S. Highway 20, 1.3 mi downstream from outlet of Hogback Lake, 1.3 mi southeast of Flint, and 5.8 mi west of Angola.

DRAINAGE AREA.--106 mi², of which 22.5 mi² does not contribute directly to surface runoff.

PERIOD OF RECORD.--October 1945 to current year. Prior to October 1947, published as "near Flint". Published as Pigeon Creek at Hogback Lake Outlet near Angola, October 1947 to September 1971, and Pigeon Creek and Hogback Lake near Angola, October 1971 to September 1974.

REVISED RECORDS.--WSP 1144: 1948. WSP 2111: Drainage area. WDR IN 92-1: 1991.

GAGE.--Water-stage recorder. Datum of gage is 940.00 ft above National Geodetic Vertical Datum of 1929. Prior to October 1947, nonrecording gage at site 0.3 mi downstream at different (unknown) datum. Oct. 1947 to Aug. 3, 1953, nonrecording gage at site 1.2 mi upstream at same datum. Aug. 4, 1953, to Apr. 3, 1974, recording gage at site 1.3 mi upstream at same datum. Apr. 18, 1974, to Sept. 2, 1974, nonrecording gage at same site and datum.

REMARKS.--Records good.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	13	159	73	123	189	118	72	48	24	138	32
2	24	14	169	85	118	179	114	69	46	23	120	31
3	23	14	173	105	113	170	110	66	43	23	102	30
4	22	15	169	146	109	161	108	64	42	23	86	29
5	21	16	156	196	105	155	103	61	40	23	75	29
6	20	17	143	227	102	152	99	60	39	22	64	28
7	20	17	140	230	103	167	96	58	37	21	56	28
8	20	17	170	217	116	193	93	58	36	21	50	27
9	20	17	213	197	149	209	90	57	35	20	45	31
10	19	15	241	176	182	209	86	55	33	19	42	33
11	19	14	247	162	195	198	83	54	32	19	39	33
12	19	13	238	167	190	184	80	52	31	18	38	32
13	19	12	220	258	184	170	77	52	34	19	40	31
14	19	11	200	403	210	157	74	61	34	19	47	30
15	20	10	180	476	284	147	72	69	35	21	46	28
16	20	9.7	160	507	363	139	70	76	35	21	46	33
17	18	9.6	143	502	413	133	69	77	35	24	45	32
18	18	9.6	131	470	427	129	68	74	34	28	44	31
19	17	11	119	421	412	129	67	72	33	32	42	31
20	16	11	109	371	383	137	66	74	34	34	44	29
21	16	11	100	325	350	149	66	76	35	41	45	28
22	15	12	93	286	321	157	66	79	33	49	44	27
23	16	12	89	247	296	159	68	78	32	54	44	27
24	17	14	84	218	274	154	71	74	31	60	43	25
25	16	19	79	202	254	149	75	69	30	63	41	26
26	16	24	75	186	233	144	78	64	29	64	39	30
27	15	34	72	172	215	139	79	59	27	79	38	32
28	14	52	69	157	201	135	78	56	26	101	36	33
29	14	90	66	146	---	131	77	52	25	133	35	37
30	15	132	64	137	---	127	74	50	25	154	34	36
31	14	---	67	129	---	122	---	48	---	152	33	---
TOTAL	566	665.9	4,338	7,594	6,425	4,873	2,475	1,986	1,029	1,404	1,641	909
MEAN	18.3	22.2	140	245	229	157	82.5	64.1	34.3	45.3	52.9	30.3
MAX	24	132	247	507	427	209	118	79	48	154	138	37
MIN	14	9.6	64	73	102	122	66	48	25	18	33	25
CFSM	0.22	0.27	1.68	2.93	2.75	1.88	0.99	0.77	0.41	0.54	0.63	0.36
IN.	0.25	0.30	1.93	3.38	2.86	2.17	1.10	0.88	0.46	0.63	0.73	0.40

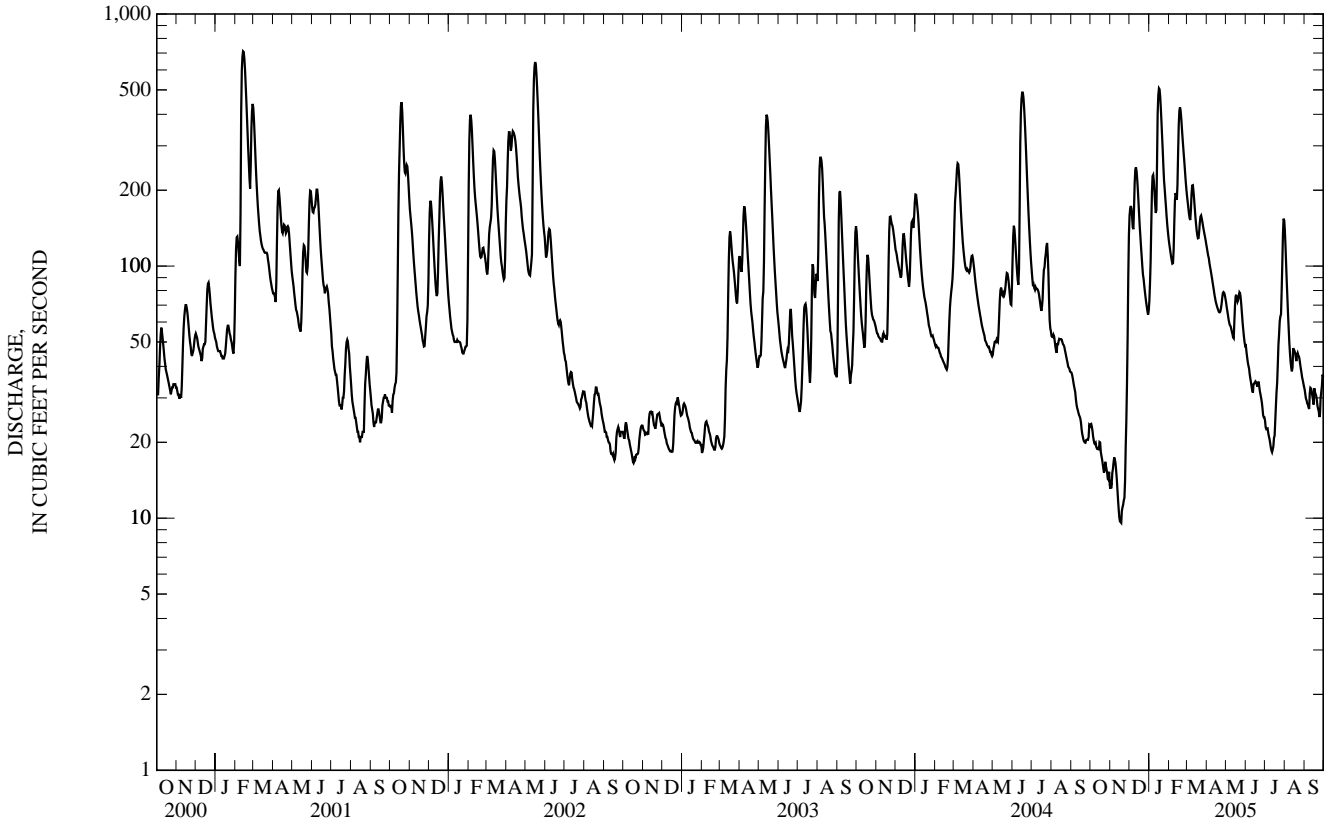
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2005, BY WATER YEAR (WY)

MEAN	37.0	53.5	77.4	95.3	111	157	160	116	83.1	50.6	39.5	33.4
MAX	181	195	195	385	343	437	491	423	362	164	126	119
(WY)	(2002)	(1993)	(1968)	(1993)	(2001)	(1982)	(1950)	(1996)	(1996)	(1981)	(1981)	(1981)
MIN	4.12	4.51	7.20	7.95	8.55	20.4	48.1	29.8	21.6	10.8	8.12	5.83
(WY)	(1965)	(1965)	(1964)	(1964)	(1963)	(1964)	(1946)	(1963)	(1988)	(1963)	(1964)	(1963)

STREAMS TRIBUTARY TO LAKE MICHIGAN

04099510 PIGEON CREEK NEAR ANGOLA, IN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1946 - 2005	
ANNUAL TOTAL	30,037.9		33,905.9		84.4	
ANNUAL MEAN	82.1		92.9		151	
HIGHEST ANNUAL MEAN					19.5	1950
LOWEST ANNUAL MEAN					1964	
HIGHEST DAILY MEAN	488	Jun 16	507	Jan 16	996	May 21, 1996
LOWEST DAILY MEAN	9.6	Nov 17	9.6	Nov 17	3.4	Oct 25, 1964
ANNUAL SEVEN-DAY MINIMUM	10	Nov 14	10	Nov 14	3.5	Oct 22, 1964
MAXIMUM PEAK FLOW			512	Jan 16	1,000	May 21, 1996
MAXIMUM PEAK STAGE			9.89	Jan 16	13.90	Mar 22, 1982
ANNUAL RUNOFF (CFSM)	0.983		1.11		1.01	
ANNUAL RUNOFF (INCHES)	13.38		15.11		13.73	
10 PERCENT EXCEEDS	169		205		188	
50 PERCENT EXCEEDS	60		61		54	
90 PERCENT EXCEEDS	17		17		17	



04099750 PIGEON RIVER NEAR SCOTT, IN

LOCATION.--Lat 41°44'56", long 85°34'35", in SE¹/₄NW¹/₄ sec.14, T.38 N., R.8 E., Lagrange County, Hydrologic Unit 04050001, (SHIPSHEWANA, IN quadrangle), on right bank 20 ft downstream from bridge on County Road 750 North, 1,200 ft downstream from Page Ditch, 0.7 mi south of Indiana-Michigan State line, and 1.2 mi northwest of Scott.

DRAINAGE AREA.--361 mi² of which 53.9 mi² does not contribute directly to surface runoff.

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WSP 2111: Drainage area. WDR IN-92-1: 1991.

GAGE.--Water-stage recorder. Datum of gage is 815.00 ft above National Geodetic Vertical Datum of 1929.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	196	432	332	e503	766	476	324	233	151	232	103
2	141	179	497	328	e471	735	474	316	222	140	209	100
3	141	187	488	365	e448	670	459	309	218	135	191	95
4	140	249	465	448	e419	643	444	303	215	131	183	91
5	139	265	447	505	e411	633	432	296	209	137	176	93
6	138	229	438	530	410	634	413	289	207	136	170	94
7	137	212	449	550	431	665	422	291	199	129	161	89
8	138	192	499	563	543	699	407	289	196	118	151	87
9	145	189	509	568	618	685	381	272	187	112	136	88
10	148	186	496	557	603	666	382	272	185	105	136	90
11	147	187	521	546	606	667	368	264	183	102	147	87
12	145	181	545	581	609	672	357	262	188	99	138	86
13	147	175	550	854	623	653	349	265	218	97	137	87
14	148	171	535	1,280	792	621	341	267	221	96	165	91
15	147	166	505	e1,390	1,060	586	320	294	204	111	177	92
16	147	162	477	e1,380	1,190	561	323	304	191	126	165	114
17	144	169	439	e1,320	1,250	552	319	305	182	175	156	115
18	145	177	417	e1,240	1,240	544	314	313	178	175	152	110
19	148	197	e390	e1,160	1,230	544	314	321	175	202	138	107
20	148	202	e366	e1,080	1,210	574	308	353	168	174	134	106
21	148	195	e341	e1,010	1,230	574	306	339	152	172	157	103
22	148	187	e316	e952	1,210	557	315	322	150	221	150	103
23	152	183	e297	e885	1,150	564	353	322	144	236	140	107
24	167	187	e279	e840	1,070	562	358	319	135	197	134	110
25	177	219	e260	e790	996	555	360	302	137	179	117	112
26	174	243	e244	e760	931	568	346	288	139	182	117	135
27	161	271	e229	e698	854	555	348	282	157	261	118	129
28	150	359	e214	e647	799	537	345	270	143	298	116	126
29	159	401	e220	e601	---	520	339	260	152	237	112	139
30	172	386	e234	e565	---	505	332	239	149	215	109	139
31	199	---	e292	e533	---	483	---	242	---	233	108	---
TOTAL	4,681	6,502	12,391	23,858	22,907	18,750	11,005	9,094	5,437	5,082	4,632	3,128
MEAN	151	217	400	770	818	605	367	293	181	164	149	104
MAX	199	401	550	1,390	1,250	766	476	353	233	298	232	139
MIN	137	162	214	328	410	483	306	239	135	96	108	86
CFSM	0.49	0.71	1.30	2.51	2.66	1.97	1.19	0.96	0.59	0.53	0.49	0.34
IN.	0.57	0.79	1.50	2.89	2.78	2.27	1.33	1.10	0.66	0.62	0.56	0.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2005, BY WATER YEAR (WY)

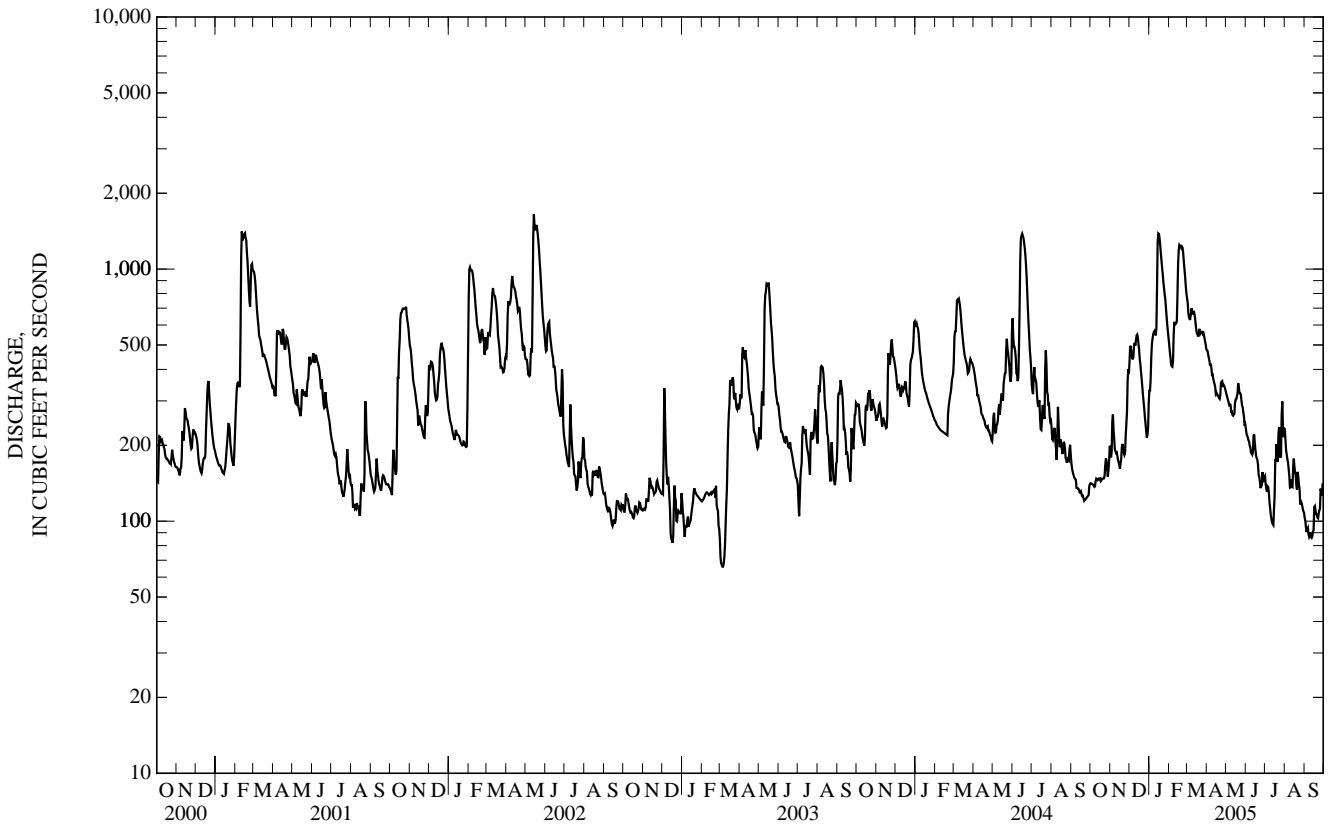
MEAN	222	289	355	393	448	578	573	458	386	256	217	198
MAX	575	684	719	1,169	875	1,389	1,089	976	1,103	654	516	538
(WY)	(1987)	(1993)	(1983)	(1993)	(2001)	(1982)	(1978)	(1996)	(1981)	(1981)	(1981)	(1981)
MIN	96.3	96.7	134	113	124	218	277	233	132	104	92.5	85.8
(WY)	(1972)	(1972)	(2003)	(2003)	(2003)	(2003)	(2004)	(1971)	(1988)	(1988)	(1988)	(1971)

STREAMS TRIBUTARY TO LAKE MICHIGAN

04099750 PIGEON RIVER NEAR SCOTT, IN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1968 - 2005	
ANNUAL TOTAL	121,409		127,467			
ANNUAL MEAN	332		349		363	
HIGHEST ANNUAL MEAN					545 1993	
LOWEST ANNUAL MEAN					207 1972	
HIGHEST DAILY MEAN	1,380	Jun 16	1,390	Jan 15	2,340	Mar 21, 1982
LOWEST DAILY MEAN	120	Sep 21	86	Sep 12	42	Oct 21, 1971
ANNUAL SEVEN-DAY MINIMUM	123	Sep 20	88	Sep 7	68	Mar 2, 2003
MAXIMUM PEAK FLOW			1,510	Jan 16	2,370	Mar 21, 1982
MAXIMUM PEAK STAGE			6.55	Jan 16	7.85	Mar 21, 1982
ANNUAL RUNOFF (CFSM)	1.08		1.14		1.18	
ANNUAL RUNOFF (INCHES)	14.71		15.45		16.06	
10 PERCENT EXCEEDS	546		668		675	
50 PERCENT EXCEEDS	268		249		289	
90 PERCENT EXCEEDS	147		117		144	

e Estimated



04100222 NORTH BRANCH ELKHART RIVER AT COSPERVILLE, IN

LOCATION.--Lat 41°28'54", long 85°28'32", in NE¼NW¼ sec.22, T.35 N., R.9 E., Noble County, Hydrologic Unit 04050001, (ALBION, IN quadrangle), on right bank at downstream side of bridge on County Road 900 North at Cosperville, 1,300 ft downstream from Boyd Ditch, 1.7 mi upstream from Hustin Ditch, and 3.1 mi downstream from Waldron Lake.

DRAINAGE AREA.--142 mi².

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 880.12 ft above National Geodetic Vertical Datum of 1929 (levels by State of Indiana, Department of Natural Resources). Prior to August 14, 1975 datum of gage was 0.12 ft lower.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated at times by dam at Waldron Lake.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	68	176	102	e214	347	194	99	51	19	126	19
2	12	76	192	111	e200	332	191	95	46	18	121	16
3	11	77	196	130	e187	316	182	93	43	17	115	14
4	8.7	80	194	173	175	301	177	90	39	16	e109	12
5	7.8	80	192	208	163	291	171	87	35	15	e103	11
6	5.9	80	188	229	154	287	166	83	40	15	e97	9.4
7	5.1	77	198	237	155	292	161	80	39	14	89	8.1
8	4.6	74	221	242	188	294	157	78	35	13	83	7.6
9	4.9	73	235	244	217	283	149	76	32	12	77	7.9
10	4.4	71	240	241	226	272	143	72	29	10	70	7.9
11	4.7	69	244	245	228	264	139	72	28	9.4	65	8.0
12	5.7	66	244	292	229	256	132	70	31	8.7	59	8.1
13	7.0	62	239	390	235	249	124	67	e42	8.5	56	7.9
14	8.7	59	235	465	295	239	117	98	e45	8.2	59	7.5
15	14	57	226	507	351	229	110	103	41	e8.8	58	7.2
16	42	56	215	514	403	223	104	125	38	10	56	14
17	94	56	205	503	424	218	100	125	36	17	52	e18
18	84	56	196	e489	434	213	96	120	33	e28	48	17
19	72	59	184	e471	432	214	92	121	32	40	43	16
20	61	61	e171	e451	432	218	90	137	30	47	43	15
21	53	61	e157	e430	440	220	90	134	27	50	43	14
22	46	62	e143	e410	446	219	91	127	24	63	42	13
23	43	62	e130	e387	440	219	95	116	22	69	39	12
24	42	69	e120	e364	428	214	97	106	20	74	36	11
25	48	80	e113	e344	411	214	103	95	18	79	32	9.7
26	56	88	e106	e323	394	214	107	85	17	85	30	14
27	61	104	e101	e301	377	212	107	76	17	107	27	17
28	63	133	e95	e282	360	208	108	72	16	118	24	18
29	66	151	e90	e262	---	204	107	67	17	126	22	23
30	68	158	87	e243	---	200	103	62	18	130	24	26
31	65	---	94	e228	---	196	---	57	---	129	22	---
TOTAL	1,079.5	2,325	5,427	9,818	8,638	7,658	3,803	2,888	941	1,364.6	1,870	389.3
MEAN	34.8	77.5	175	317	308	247	127	93.2	31.4	44.0	60.3	13.0
MAX	94	158	244	514	446	347	194	137	51	130	126	26
MIN	4.4	56	87	102	154	196	90	57	16	8.2	22	7.2
CFSM	0.25	0.55	1.23	2.23	2.17	1.74	0.89	0.66	0.22	0.31	0.42	0.09
IN.	0.28	0.61	1.42	2.57	2.26	2.01	1.00	0.76	0.25	0.36	0.49	0.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2005, BY WATER YEAR (WY)

MEAN	78.4	110	138	158	162	242	230	168	139	81.1	60.3	59.9
MAX	272	314	341	542	308	553	530	354	405	211	171	161
(WY)	(1987)	(1973)	(1986)	(1993)	(2005)	(1985)	(1985)	(1996)	(1996)	(1981)	(1997)	(1972)
MIN	17.8	17.8	40.1	42.2	41.2	87.2	82.9	67.2	18.1	16.4	18.3	9.59
(WY)	(1975)	(1972)	(2003)	(1977)	(2003)	(2000)	(2004)	(1988)	(1988)	(1988)	(1978)	(1999)

SUMMARY STATISTICS

FOR 2004 CALENDAR YEAR

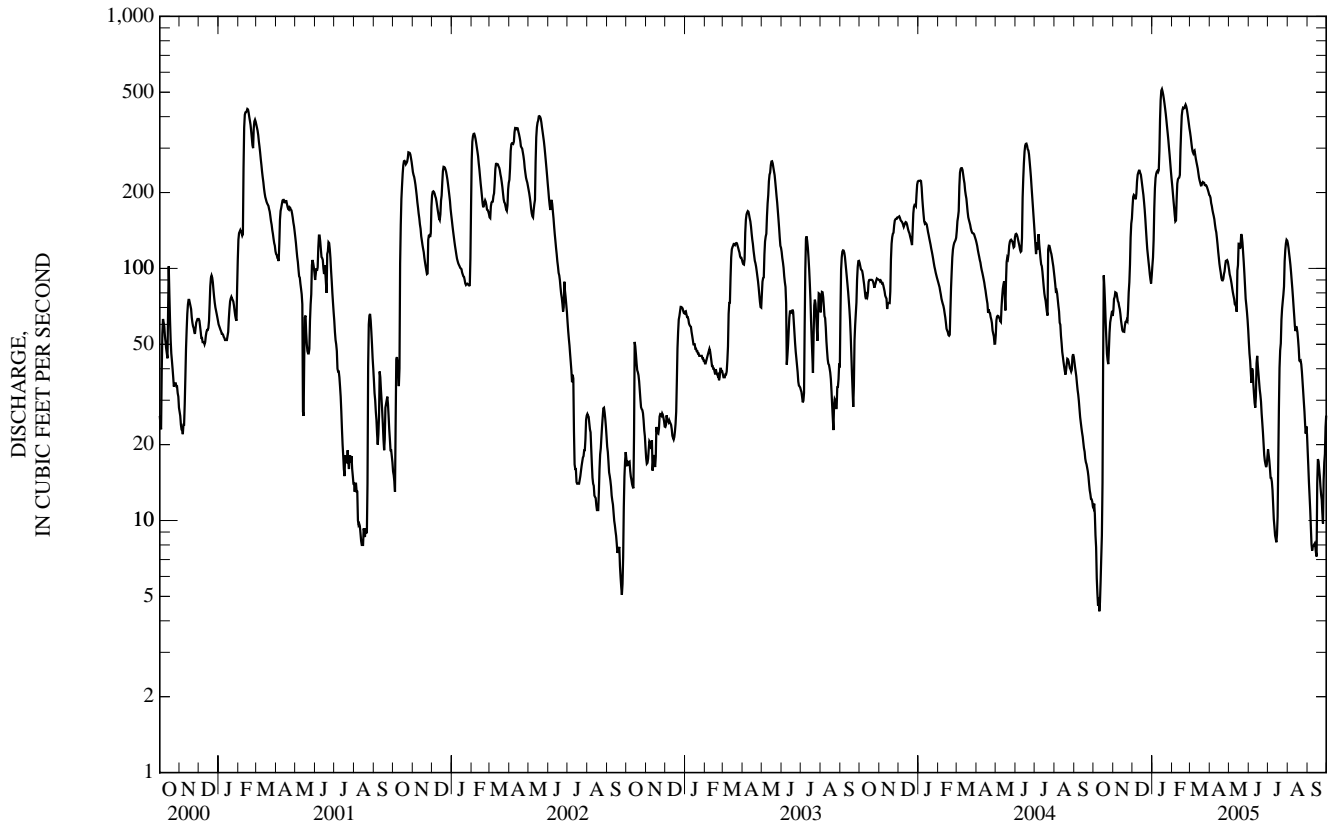
FOR 2005 WATER YEAR

WATER YEARS 1972 - 2005

ANNUAL TOTAL	38,464.5	46,201.4	135
ANNUAL MEAN	105	127	222
HIGHEST ANNUAL MEAN			1993
LOWEST ANNUAL MEAN			69.4
HIGHEST DAILY MEAN	313	Jun 18	916
LOWEST DAILY MEAN	4.4	Oct 10	2.2
ANNUAL SEVEN-DAY MINIMUM	5.0	Oct 6	2.8
MAXIMUM PEAK FLOW			519
MAXIMUM PEAK STAGE			6.53
ANNUAL RUNOFF (CFSM)	0.740	0.891	0.953
ANNUAL RUNOFF (INCHES)	10.08	12.10	12.95
10 PERCENT EXCEEDS	211	292	287
50 PERCENT EXCEEDS	91	89	105
90 PERCENT EXCEEDS	27	12	29

e Estimated

04100222 NORTH BRANCH ELKHART RIVER AT COSPERVILLE, IN—Continued



04100500 ELKHART RIVER AT GOSHEN, IN

LOCATION.--Lat 41°35'36", long 85°50'55", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.8, T.36 N., R.6 E., Elkhart County, Hydrologic Unit 04050001, (GOSHEN, IN quadrangle), on right bank 20 ft downstream from River Avenue bridge at Goshen, 0.4 mi upstream from Rock Run, 9.1 mi northwest of Millersburg and at mile 16.1.

DRAINAGE AREA.--594 mi².

PERIOD OF RECORD.--April 1931 to current year.

REVISED RECORDS.--WSP 1337: 1939(M), WSP 1557: 1954, WSP 2111: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 769.43 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 20, 1931, nonrecording gage at same site and datum.

REMARKS.--Records fair except estimated daily discharges, which are poor. Occasional low-flow regulation at Goshen Dam, 3.4 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e163	180	710	510	721	1,240	650	394	283	141	323	158
2	e155	200	897	508	677	1,170	638	379	269	134	293	148
3	e151	203	741	667	656	1,100	629	366	260	119	267	143
4	e146	260	666	1,070	633	1,060	613	356	251	120	253	137
5	e142	298	628	1,100	618	1,060	601	344	242	113	248	133
6	e143	257	615	1,020	604	1,210	582	334	238	112	240	125
7	e142	235	712	889	661	1,280	570	332	236	104	233	126
8	e143	222	1,070	864	1,040	1,190	555	324	224	95	235	141
9	e149	212	987	850	1,140	1,040	539	319	218	90	325	140
10	e141	205	863	868	981	968	522	309	205	89	265	120
11	e139	200	862	927	894	950	506	302	202	89	249	117
12	e132	193	874	1,380	866	926	489	303	210	85	246	121
13	e134	188	843	3,160	955	887	475	296	273	84	273	115
14	e140	184	800	3,740	1,780	853	460	319	292	89	450	116
15	141	178	763	2,770	2,610	832	441	384	262	123	372	119
16	136	180	734	2,180	2,430	815	424	364	247	141	310	173
17	130	185	706	1,860	2,210	815	415	375	234	162	280	165
18	155	190	661	1,710	1,820	802	405	365	228	164	261	148
19	177	207	612	1,650	1,620	814	396	391	219	189	248	152
20	174	218	477	1,620	1,590	868	388	417	207	189	287	142
21	171	215	486	1,490	1,620	816	385	403	190	208	285	133
22	163	207	502	e1,200	1,730	786	399	386	169	232	249	130
23	171	205	467	e1,190	1,630	758	430	382	146	235	228	131
24	188	218	e365	e1,170	1,520	732	426	369	133	237	215	124
25	168	286	e325	e1,150	1,450	728	422	354	125	249	202	134
26	162	319	e400	e1,130	1,380	769	419	339	122	301	197	188
27	162	393	e375	e1,010	1,300	770	422	328	125	427	189	173
28	162	696	383	e878	1,260	745	418	318	115	412	177	161
29	167	659	393	e864	---	718	407	311	107	356	169	189
30	169	541	378	865	---	693	404	305	120	339	162	177
31	171	---	448	775	---	672	---	296	---	329	167	---
TOTAL	4,787	7,934	19,743	41,065	36,396	28,067	14,430	10,764	6,152	5,757	7,898	4,279
MEAN	154	264	637	1,325	1,300	905	481	347	205	186	255	143
MAX	188	696	1,070	3,740	2,610	1,280	650	417	292	427	450	189
MIN	130	178	325	508	604	672	385	296	107	84	162	115
CFSM	0.26	0.45	1.07	2.23	2.19	1.52	0.81	0.58	0.35	0.31	0.43	0.24
IN.	0.30	0.50	1.24	2.57	2.28	1.76	0.90	0.67	0.39	0.36	0.49	0.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2005, BY WATER YEAR (WY)

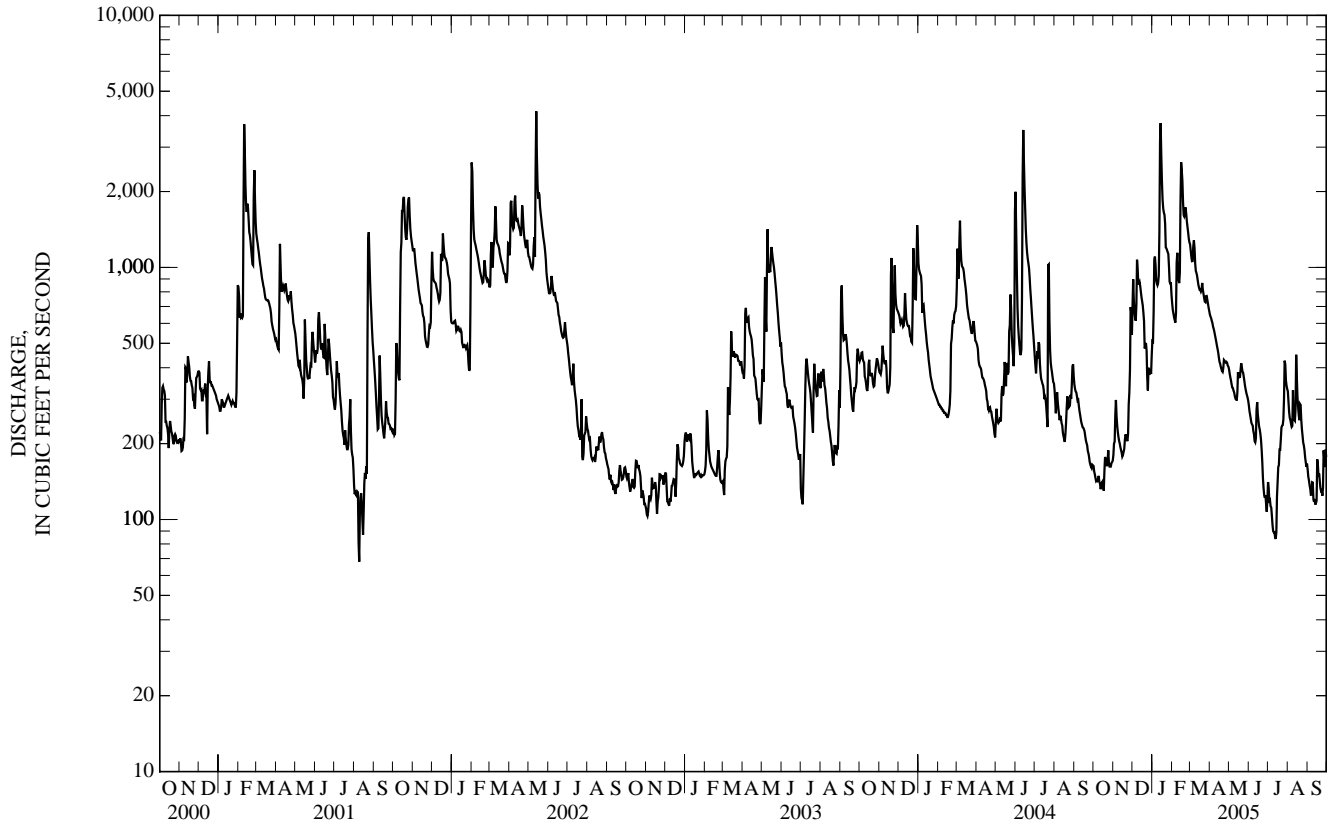
MEAN	317	392	500	599	705	928	927	710	518	356	271	252
MAX	1,652	1,132	1,276	2,058	1,657	2,497	2,424	2,354	1,521	1,079	712	784
(WY)	(1955)	(1973)	(1983)	(1993)	(1959)	(1982)	(1950)	(1943)	(1996)	(1951)	(1958)	(1958)
MIN	75.9	95.9	122	122	108	301	332	222	101	94.0	73.0	58.5
(WY)	(1965)	(1965)	(1964)	(1963)	(1963)	(1964)	(2004)	(1958)	(1934)	(1934)	(1941)	(1941)

STREAMS TRIBUTARY TO LAKE MICHIGAN

04100500 ELKHART RIVER AT GOSHEN, IN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1932 - 2005	
ANNUAL TOTAL	170,882		187,272			
ANNUAL MEAN	467		513		539	
HIGHEST ANNUAL MEAN					1,005	1950
LOWEST ANNUAL MEAN					197	1964
HIGHEST DAILY MEAN	3,510	Jun 13	3,740	Jan 14	6,010	Feb 24, 1985
LOWEST DAILY MEAN	130	Oct 17	84	Jul 13	7.0	Aug 11, 1964
ANNUAL SEVEN-DAY MINIMUM	136	Oct 11	89	Jul 8	50	Sep 21, 1941
MAXIMUM PEAK FLOW			4,140	Jan 14	6,360	Feb 24, 1985
MAXIMUM PEAK STAGE			9.01	Jan 14	11.94	Mar 14, 1982
INSTANTANEOUS LOW FLOW					7.0	Aug 11, 1964
ANNUAL RUNOFF (CFSM)	0.786		0.864		0.907	
ANNUAL RUNOFF (INCHES)	10.70		11.73		12.32	
10 PERCENT EXCEEDS	901		1,110		1,110	
50 PERCENT EXCEEDS	343		325		388	
90 PERCENT EXCEEDS	177		134		156	

e Estimated



04101000 ST. JOSEPH RIVER AT ELKHART, IN

LOCATION.--Lat 41°41'30", long 85°58'30", in SW¹/₄NE¹/₄ sec.5, T.37 N., R.5 E., Elkhart County, Hydrologic Unit 04050001, (ELKHART, IN quadrangle), on left bank 200 ft downstream from Elkhart River, 200 ft upstream from Main Street bridge in Elkhart, 2,000 ft downstream from Christiana Creek, 0.5 mi downstream from Elkhart Hydroelectric Plant, and at mile 76.5.

DRAINAGE AREA.--3,370 mi².

PERIOD OF RECORD.--August 1947 to current year. Gage heights at site 0.8 mi downstream at different datum from September 1924 to March 1926 are available from the district office.

REVISED RECORDS.--WSP 2111: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 700.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are poor. The flow is regulated by Elkhart Hydroelectric Plant.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,460	1,740	3,880	3,490	e4,500	6,390	4,550	2,880	2,150	1,420	1,910	961
2	1,520	1,840	4,440	3,490	e4,400	5,920	4,390	2,840	2,120	1,370	1,890	971
3	1,500	2,020	4,410	3,740	e4,300	5,700	4,330	2,750	2,120	1,350	1,660	936
4	1,500	2,220	4,350	4,570	e4,200	5,600	4,100	2,720	2,070	1,330	1,660	935
5	1,470	2,480	4,240	4,850	4,180	5,460	4,060	2,630	2,050	1,420	1,600	951
6	1,450	2,470	4,220	4,800	4,120	5,610	4,030	2,500	1,900	1,360	1,520	1,050
7	1,440	2,390	4,440	4,720	4,150	5,860	3,900	2,780	2,130	1,390	1,420	1,080
8	1,440	2,470	4,900	4,750	4,790	5,870	3,780	2,630	1,930	1,320	1,280	952
9	1,480	2,400	4,830	4,680	5,150	5,910	3,590	2,520	1,960	1,250	1,240	1,020
10	1,520	2,310	4,780	4,530	5,070	5,740	3,530	2,460	1,930	1,220	1,200	1,020
11	1,480	1,910	4,770	4,520	4,990	5,820	3,460	2,500	1,880	1,100	1,160	886
12	1,530	2,040	4,760	5,180	5,010	5,700	3,300	2,430	1,880	1,140	1,190	857
13	1,450	1,930	4,790	8,040	5,140	5,380	3,190	2,430	2,280	1,180	1,420	933
14	1,540	1,900	4,690	11,000	6,510	5,090	3,020	2,470	2,230	1,160	1,730	912
15	1,700	1,900	4,480	10,100	8,310	5,090	3,020	2,550	2,370	1,250	1,690	921
16	1,680	1,920	4,300	9,440	9,120	4,900	3,030	2,550	2,350	1,310	1,570	1,170
17	1,730	1,930	4,160	e8,700	9,400	4,730	2,980	2,570	2,240	1,530	1,520	1,340
18	1,690	1,940	3,960	e8,100	9,190	4,750	2,910	2,560	2,190	1,740	1,520	1,330
19	1,710	2,050	3,730	e7,700	8,680	4,830	2,860	2,660	2,130	1,910	1,380	1,200
20	1,720	2,060	e2,900	e7,300	8,750	5,030	2,830	2,850	2,060	1,910	1,560	1,200
21	1,560	2,100	e2,800	e6,900	8,730	5,020	2,700	2,960	1,960	2,060	1,510	1,140
22	1,600	2,060	e2,680	e6,600	8,560	5,100	2,820	3,040	1,800	2,350	1,470	1,250
23	1,670	2,090	e2,540	e6,300	8,300	5,230	2,930	3,040	1,690	2,300	1,310	1,310
24	1,730	2,150	e2,450	e6,000	7,800	5,040	3,010	3,000	1,580	2,140	1,190	1,340
25	1,680	2,200	e2,400	e5,800	7,480	5,000	3,000	2,800	1,460	2,060	1,350	1,380
26	1,650	2,280	e2,340	e5,500	7,170	5,050	3,010	2,750	1,340	2,080	1,240	1,570
27	1,660	2,540	e2,320	e5,300	6,750	5,020	3,050	2,660	1,520	2,230	1,230	1,610
28	1,660	3,150	e2,300	e5,100	6,430	4,940	3,020	2,570	1,530	2,250	1,210	1,460
29	1,580	3,260	e2,500	e4,900	---	4,830	3,010	2,480	1,520	2,260	1,140	1,580
30	1,480	3,400	e3,000	e4,700	---	4,520	2,930	2,390	1,470	2,150	1,130	1,490
31	1,700	---	3,600	e4,600	---	4,650	---	2,170	---	1,940	1,000	---
TOTAL	48,980	67,150	115,960	185,400	181,180	163,780	100,340	82,140	57,840	51,480	43,900	34,755
MEAN	1,580	2,238	3,741	5,981	6,471	5,283	3,345	2,650	1,928	1,661	1,416	1,158
MAX	1,730	3,400	4,900	11,000	9,400	6,390	4,550	3,040	2,370	2,350	1,910	1,610
MIN	1,440	1,740	2,300	3,490	4,120	4,520	2,700	2,170	1,340	1,100	1,000	857
CFSM	0.47	0.66	1.11	1.77	1.92	1.57	0.99	0.79	0.57	0.49	0.42	0.34
IN.	0.54	0.74	1.28	2.05	2.00	1.81	1.11	0.91	0.64	0.57	0.48	0.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2005, BY WATER YEAR (WY)

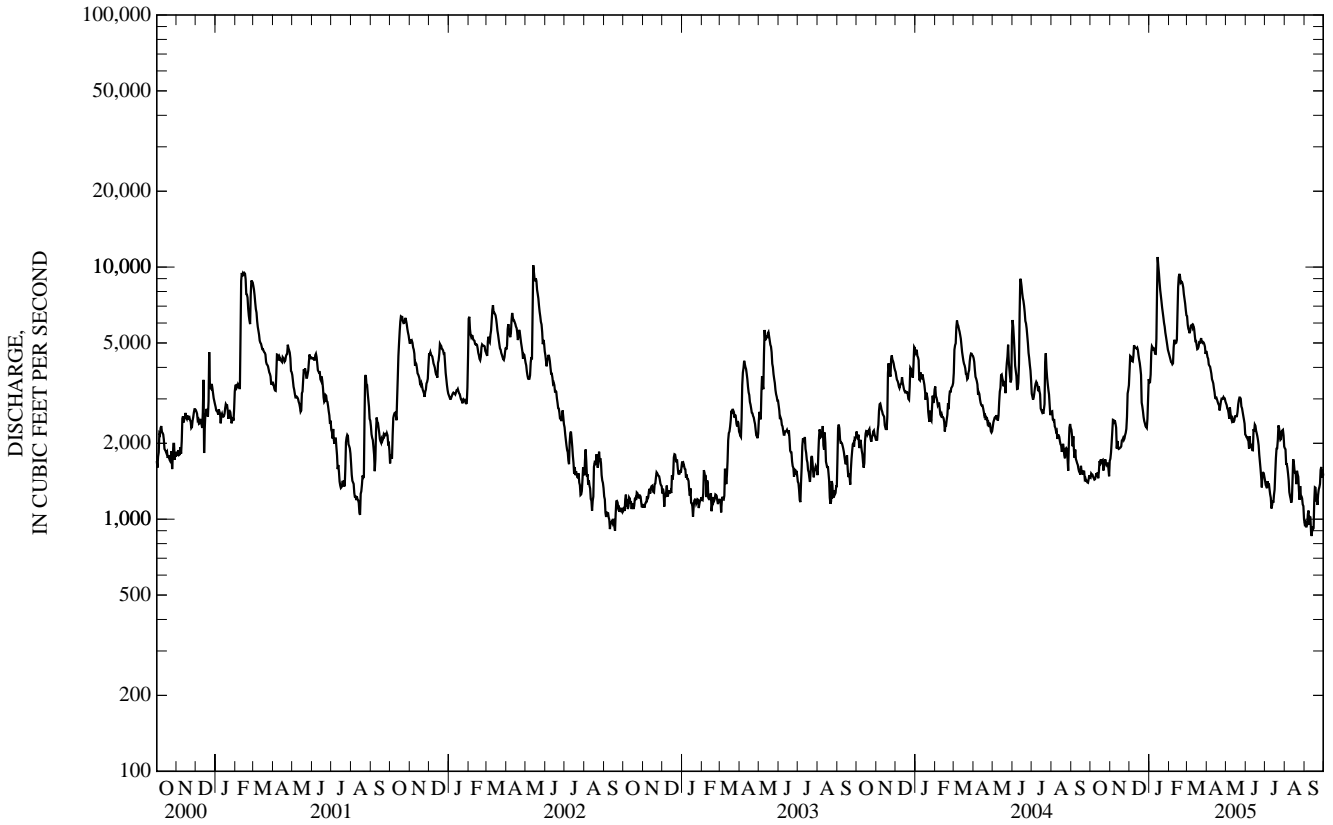
MEAN	2,184	2,616	3,180	3,584	3,911	5,027	5,083	4,096	3,275	2,353	1,948	1,868
MAX	5,752	5,883	5,795	9,270	7,039	10,760	12,690	7,725	7,535	4,409	4,180	3,855
(WY)	(1987)	(1993)	(1991)	(1993)	(1968)	(1982)	(1950)	(1956)	(1989)	(1968)	(1981)	(1981)
MIN	791	856	958	1,127	1,120	1,679	2,633	1,911	1,280	898	737	721
(WY)	(1964)	(1965)	(1964)	(1964)	(1963)	(1964)	(1958)	(1958)	(1988)	(1988)	(1964)	(1964)

STREAMS TRIBUTARY TO LAKE MICHIGAN

04101000 ST. JOSEPH RIVER AT ELKHART, IN—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1948 - 2005	
ANNUAL TOTAL	1,133,030		1,132,905			
ANNUAL MEAN	3,096		3,104		3,256	
HIGHEST ANNUAL MEAN					5,264	1950
LOWEST ANNUAL MEAN					1,283	1964
HIGHEST DAILY MEAN	8,990	Jun 13	11,000	Jan 14	18,500	Mar 21, 1982
LOWEST DAILY MEAN	1,390	Sep 27	857	Sep 12	336	Aug 5, 1964
ANNUAL SEVEN-DAY MINIMUM	1,420	Sep 22	936	Sep 9	561	Aug 2, 1964
MAXIMUM PEAK FLOW			11,700	Jan 14	18,800	Feb 27, 1985
MAXIMUM PEAK STAGE			24.35	Jan 14	27.91	Mar 21, 1982
ANNUAL RUNOFF (CFSM)	0.919		0.921		0.966	
ANNUAL RUNOFF (INCHES)	12.51		12.51		13.13	
10 PERCENT EXCEEDS	4,720		5,700		5,780	
50 PERCENT EXCEEDS	2,820		2,430		2,780	
90 PERCENT EXCEEDS	1,590		1,250		1,380	

e Estimated



04101370 JUDAY CREEK NEAR SOUTH BEND, IN

LOCATION.--Lat 41°43'43", long 85°15'46", in NW¼SE¼ sec .23, T. 38 N., R. 2 E., St. Joseph County, Hydrologic Unit 04050001, (SOUTH BEND WEST, IN quadrangle), on right bank at downstream side of bridge on access road to Izaak Walton League property, 0.1 mi south of Darden Road in Roseland, 0.5 mi northeast of intersection of St. Joseph River and Interstate 80/90, 0.6 mi from mouth.

DRAINAGE AREA.--Approx. 38 mi².

PERIOD OF RECORD.--October 1992 to current year.

REVISED RECORDS.--WDR IN-05-1: 2004(P).

GAGE.--Water-stage recorder. Datum of gage is about 690 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

REVISIONS.--The peak stage for water-year 2004 was erroneously published. The correct peak stage was 3.13 ft, Jan. 10, 2004.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	5.8	18	11	18	23	19	17	13	5.9	5.6	5.5
2	5.0	9.3	17	13	18	23	19	17	13	5.8	5.2	5.4
3	4.7	8.7	16	15	18	23	19	17	14	5.7	4.9	5.4
4	4.6	12	15	18	18	23	18	17	13	5.7	5.0	5.3
5	4.5	12	15	17	18	23	18	16	14	5.9	4.6	5.1
6	4.5	12	14	16	18	23	18	16	14	5.7	4.5	4.9
7	4.4	11	17	15	19	30	19	16	13	6.6	4.4	4.9
8	4.5	10	19	14	21	29	18	16	13	5.8	4.3	4.8
9	4.7	9.7	18	13	22	24	18	16	13	5.6	4.1	4.6
10	4.4	9.6	17	13	20	23	18	16	13	5.5	4.3	4.1
11	4.3	9.5	16	15	20	23	18	17	13	5.3	4.5	3.9
12	4.4	9.5	15	e22	19	22	18	16	13	5.6	4.9	3.8
13	4.5	9.3	15	e26	19	20	18	15	17	6.6	5.9	3.1
14	4.5	9.0	14	e30	27	20	18	15	16	6.4	6.6	5.6
15	4.6	9.0	13	e29	30	20	17	15	13	6.2	5.9	6.6
16	4.9	9.0	13	e28	32	20	17	15	11	6.9	5.4	11
17	4.7	9.1	13	e26	28	20	17	15	9.5	7.4	5.2	4.7
18	4.7	8.7	13	e25	25	19	17	15	8.9	8.1	6.7	3.1
19	4.8	10	13	e24	23	20	17	16	8.4	8.3	7.9	3.0
20	4.6	11	e12	e22	23	22	17	16	7.4	7.7	8.7	2.8
21	4.5	10	e12	e22	23	21	17	15	7.3	7.7	8.0	2.6
22	4.5	10	11	e21	23	20	19	15	7.1	7.3	7.7	2.5
23	5.2	9.9	e11	e20	22	20	19	15	6.9	7.0	7.7	2.9
24	5.1	10	e11	e19	22	20	19	15	6.8	6.9	7.4	2.6
25	4.7	12	e10	e19	22	20	18	14	6.6	6.5	7.1	2.4
26	4.6	12	e9.6	e19	21	20	18	15	6.4	6.4	6.6	2.4
27	4.3	16	e9.6	e18	20	20	18	15	6.2	7.8	6.3	2.3
28	4.3	17	e9.7	e18	21	20	17	14	6.2	7.0	6.1	2.1
29	4.6	15	e9.7	e18	---	19	17	14	6.3	6.4	5.9	2.7
30	4.6	14	9.7	e18	---	19	17	14	6.4	6.2	5.9	2.3
31	4.8	---	11	18	---	20	---	13	---	6.0	5.7	---
TOTAL	143.1	320.1	417.3	602	610	669	537	478	316.4	201.9	183.0	122.4
MEAN	4.62	10.7	13.5	19.4	21.8	21.6	17.9	15.4	10.5	6.51	5.90	4.08
MAX	5.2	17	19	30	32	30	19	17	17	8.3	8.7	11
MIN	4.3	5.8	9.6	11	18	19	17	13	6.2	5.3	4.1	2.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2005, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
MEAN	11.8	15.4	15.1	17.8	18.5	21.4	23.6	21.8	20.8	14.2	12.6	10.1	
MAX	27.3	31.6	23.6	38.3	30.5	33.8	47.0	32.7	44.9	28.6	36.4	24.0	
(WY)	(1994)	(1994)	(1993)	(1993)	(1997)	(1993)	(1998)	(2002)	(1993)	(1996)	(1995)	(1993)	
MIN	3.41	3.32	4.49	5.42	5.12	5.79	10.4	11.3	10.0	6.51	3.52	3.54	
(WY)	(2003)	(2000)	(2000)	(2003)	(2003)	(2003)	(2003)	(2001)	(2003)	(2005)	(2003)	(2003)	

SUMMARY STATISTICS

FOR 2004 CALENDAR YEAR

FOR 2005 WATER YEAR

WATER YEARS 1993 - 2005

ANNUAL TOTAL	4,372.9	4,600.2		
ANNUAL MEAN	11.9	12.6	16.9	
HIGHEST ANNUAL MEAN			27.7	1993
LOWEST ANNUAL MEAN			7.54	2003
HIGHEST DAILY MEAN	73	Jun 13	32	Feb 16
LOWEST DAILY MEAN	4.3	Oct 11	2.1	Sep 28
ANNUAL SEVEN-DAY MINIMUM	4.5	Oct 6	2.4	Sep 24
MAXIMUM PEAK FLOW			unknown	226
MAXIMUM PEAK STAGE			2.92	Jan 13
10 PERCENT EXCEEDS	17		21	29
50 PERCENT EXCEEDS	11		13	15
90 PERCENT EXCEEDS	5.1		4.6	5.5

e Estimated

STREAMS TRIBUTARY TO LAKE MICHIGAN
04101370 JUDAY CREEK NEAR SOUTH BEND, IN—Continued

