

2006 NUTRIENT AND SUSPENDED- SEDIMENT LOADS AND YIELDS

Loads and yields represent two methods for describing nutrient and SS amounts within a basin. Loads refer to the actual amount of the constituent being transported in the water column past a given point over a specific duration of time and are expressed in pounds. Yields compare the transported load with the acreage of the watershed and are expressed in lbs/acre. This allows for easy watershed comparisons. This project reports loads and yields for the constituents listed in Table 6 as computed by the Minimum Variance Unbiased Estimator (ESTIMATOR) described by Cohn and others (1989). This estimator relates the constituent concentration to water discharge, seasonal effects, and long-term trends, and computes the best-fit regression equation. Daily loads of the constituents then were calculated from the daily mean water discharge records. The loads were reported along with the estimates of accuracy.

Identifying sites where the percentage of LTM for a constituent was different than the percentage of LTM for discharge may show

potential areas where improvements or degradations have occurred for that particular constituent. One item to note is that nutrients and SS increase with increased flow (Ott and others, 1991; Takita, 1996, 1998). This increase, however, is not as linear at higher flows as at lower ones. Individual high flow events, such as Ernesto in New York, tend to produce higher loads, especially for TP and SS, than would be predicted by a simple comparison with the LTM.

Tables 7-19 show the loads and yields for the Group A monitoring stations, as well as an associated error value. They also show the average annual concentration for each constituent. Comparisons have been made to the LTMs for all constituents. Seasonal loads and yields for all parameters and all sites are listed in Table 20 for loads and Table 21 for yields. For the purposes of this project, January through March is winter, April through June is spring, July through September is summer, and October through December is fall. Monthly loads and yields for TN, TP, and SS at all long-term sites are listed in Tables 22 and 23.

Table 6. List of Analyzed Parameters, Abbreviations, and STORET Codes

Parameter	Abbreviation	STORET Code
Discharge	Q	00060
Total Nitrogen as N	TN	00600
Dissolved Nitrogen as N	DN	00602
Total Organic Nitrogen as N	TON	00605
Dissolved Organic Nitrogen as N	DON	00607
Total Ammonia as N	TNH ₃	00610
Dissolved Ammonia as N	DNH ₃	00608
Total Nitrate + Nitrite as N	TNOx	00630
Dissolved Nitrate + Nitrite as N	DNOx	00631
Total Phosphorus as P	TP	00665
Dissolved Phosphorus as P	DP	00666
Dissolved Orthophosphate as P	DOP	00671
Total Organic Carbon	TOC	00680
Suspended sediment (fine)	SSF	70331
Suspended sediment (sand)	SSS	70335
Suspended Sediment (total)	SS	80154

Table 7. Annual Water Discharges, Annual Loads, Yields, and Average Concentration of Total Nitrogen, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	28,333	98.8	3.0	0.93	1.22	5.68	5.75
Danville	21,856	132.4	41,578	93.0	3.4	0.97	1.37	5.79	6.22
Lewisburg	10,800	98.5	18,568	77.4	4.3	0.87	1.11	4.24	5.47
Newport	3,581	80.9	12,865	78.5	3.1	1.83	1.88	6.00	7.63
Marietta	44,624	113.7	130,166	97.5	4.0	1.48	1.73	7.83	8.02
Conestoga	802	117.9	12,022	111.3	3.2	7.61	8.07	40.00	35.90

Table 8. Annual Water Discharges and Annual Loads and Yields of Total Phosphorus, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	4,129	163.2	9.9	0.136	0.105	0.83	0.49
Danville	21,856	132.4	7,856	206.2	11.2	0.183	0.117	1.09	0.53
Lewisburg	10,800	98.5	1,466	106.5	12.2	0.069	0.064	0.33	0.31
Newport	3,581	80.9	301	37.6	10.0	0.043	0.092	0.14	0.37
Marietta	44,624	113.7	6,281	78.9	9.5	0.072	0.103	0.38	0.48
Conestoga	802	117.9	431	64.1	10.8	0.273	0.503	1.43	2.24

Table 9. Annual Water Discharges and Annual Loads and Yields of Total Suspended Sediment, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	6,906,798	201.8	18.4	228.2	146.1	1,384	686
Danville	21,856	132.4	9,793,449	282.4	17.1	227.6	106.6	1,364	483
Lewisburg	10,800	98.5	455,030	36.3	21.4	21.4	58.0	104	286
Newport	3,581	80.9	120,308	23.8	16.4	17.1	58.0	56	235
Marietta	44,624	113.7	6,426,641	87.4	20.2	73.2	95.1	386	442
Conestoga	802	117.9	236,195	63.8	22.3	149.6	276.4	785	1,231

Table 10. Annual Water Discharges and Annual Loads and Yields of Total Ammonia, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	1,722	117.2	11.9	0.06	0.06	0.35	0.29
Danville	21,856	132.4	2,723	121.2	13.2	0.06	0.07	0.38	0.31
Lewisburg	10,800	98.5	1,141	101.5	13.0	0.05	0.05	0.26	0.26
Newport	3,581	80.9	385	99.3	14.0	0.06	0.04	0.18	0.18
Marietta	44,624	113.7	6,362	129.7	13.9	0.07	0.06	0.38	0.29
Conestoga	802	117.9	139	54.4	14.9	0.09	0.19	0.46	0.85

Table 11. Annual Water Discharges and Annual Loads and Yields of Total NOx Nitrogen, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	17,220	102.5	3.6	0.57	0.72	3.45	3.37
Danville	21,856	132.4	24,640	94.6	3.7	0.57	0.80	3.43	3.63
Lewisburg	10,800	98.5	14,020	91.6	4.0	0.66	0.71	3.20	3.50
Newport	3,581	80.9	11,086	90.0	3.3	1.57	1.41	5.17	5.74
Marietta	44,624	113.7	101,623	109.0	4.6	1.16	1.21	6.11	5.61
Conestoga	802	117.9	10,293	120.3	4.5	6.52	6.39	34.22	28.44

Table 12. Annual Water Discharges and Annual Loads and Yields of Total Organic Nitrogen, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	9,994	93.9	7.0	0.33	0.45	2.00	2.13
Danville	21,856	132.4	15,092	91.1	7.2	0.35	0.51	2.10	2.31
Lewisburg	10,800	98.5	3,926	49.9	11.2	0.18	0.36	0.90	1.80
Newport	3,581	80.9	1,863	46.9	11.2	0.26	0.46	0.87	1.85
Marietta	44,624	113.7	26,534	62.8	9.0	0.30	0.55	1.60	2.54
Conestoga	802	117.9	2,060	95.6	11.2	1.30	1.61	6.85	7.17

Table 13. Annual Water Discharges and Annual Loads and Yields of Dissolved Phosphorus, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	1,578	183.0	10.2	0.052	0.037	0.32	0.17
Danville	21,856	132.4	2,978	262.0	11.3	0.069	0.035	0.42	0.16
Lewisburg	10,800	98.5	816	152.6	11.4	0.038	0.025	0.19	0.12
Newport	3,581	80.9	182	46.5	9.8	0.026	0.045	0.09	0.18
Marietta	44,624	113.7	1,575	62.5	9.2	0.018	0.033	0.09	0.15
Conestoga	802	117.9	181	68.2	7.3	0.115	0.198	0.60	0.88

Table 14. Annual Water Discharges and Annual Loads and Yields of Dissolved Orthophosphate, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	1,273	286.7	11.3	0.042	0.019	0.26	0.09
Danville	21,856	132.4	2,574	447.3	12.5	0.060	0.018	0.36	0.08
Lewisburg	10,800	98.5	769	323.0	14.7	0.036	0.011	0.18	0.05
Newport	3,581	80.9	157	70.5	11.1	0.022	0.025	0.07	0.10
Marietta	44,624	113.7	1,230	94.2	10.9	0.014	0.017	0.07	0.08
Conestoga	802	117.9	166	78.3	7.6	0.105	0.159	0.55	0.71

Table 15. Annual Water Discharges and Annual Loads and Yields of Dissolved Ammonia, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	1,412	121.7	8.9	0.05	0.05	0.28	0.23
Danville	21,856	132.4	2,227	117.6	9.5	0.05	0.06	0.31	0.26
Lewisburg	10,800	98.5	943	98.8	8.7	0.04	0.04	0.22	0.22
Newport	3,581	80.9	287	86.7	8.4	0.04	0.04	0.13	0.15
Marietta	44,624	113.7	4,744	116.9	10.1	0.05	0.05	0.29	0.24
Conestoga	802	117.9	125	55.0	12.8	0.08	0.17	0.42	0.76

Table 16. Annual Water Discharges and Annual Loads and Yields of Dissolved Nitrogen, Calendar Year 2006

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	22,657	91.0	3.4	0.75	1.06	4.54	4.99
Danville	21,856	132.4	33,355	87.8	3.5	0.78	1.17	4.65	5.29
Lewisburg	10,800	98.5	16,478	78.0	4.0	0.78	0.98	3.76	4.82
Newport	3,581	80.9	12,035	80.7	2.9	1.71	1.71	5.61	6.95
Marietta	44,624	113.7	114,147	98.3	4.2	1.30	1.50	6.86	6.98
Conestoga	802	117.9	11,646	119.0	3.6	7.38	7.31	38.72	32.43

**Table 17. Annual Water Discharges and Annual Loads and Yields of Dissolved NOx Nitrogen,
Calendar Year 2006**

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	16,664	100.0	3.8	0.55	0.71	3.34	3.34
Danville	21,856	132.4	24,258	93.9	3.7	0.56	0.79	3.38	3.60
Lewisburg	10,800	98.5	13,835	91.3	4.0	0.65	0.70	3.16	3.46
Newport	3,581	80.9	10,918	89.5	3.3	1.55	1.40	5.09	5.68
Marietta	44,624	113.7	99,228	107.6	4.7	1.13	1.19	5.97	5.55
Conestoga	802	117.9	10,272	123.4	4.6	6.51	6.21	34.15	27.67

**Table 18. Annual Water Discharges and Annual Loads and Yields of Dissolved Organic Nitrogen,
Calendar Year 2006**

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	5,590	76.2	6.9	0.18	0.31	1.12	1.47
Danville	21,856	132.4	7,167	69.1	7.7	0.17	0.32	1.00	1.44
Lewisburg	10,800	98.5	2,775	51.2	9.9	0.13	0.25	0.63	1.24
Newport	3,581	80.9	1,242	46.6	11.0	0.18	0.31	0.58	1.24
Marietta	44,624	113.7	13,509	48.4	10.6	0.15	0.36	0.81	1.68
Conestoga	802	117.9	1,939	146.7	10.8	1.23	0.99	6.45	4.39

**Table 19. Annual Water Discharges and Annual Loads and Yields of Total Organic Carbon,
Calendar Year 2006**

Site	2006 Discharge cfs	Discharge % of LTM	2006 Load thousands of lbs	Load % of LTM	Prediction Error %	2006 Ave. Conc. mg/l	LTM Conc. mg/l	2006 Yield lbs/ac/yr	LTM Yield lb/ac/yr
Towanda	15,404	129.4	123,583	146.6	2.8	4.08	3.60	24.77	16.89
Danville	21,856	132.4	174,979	150.8	2.8	4.07	3.57	24.37	16.16
Lewisburg	10,800	98.5	44,903	97.5	4.0	2.11	2.13	10.25	10.51
Newport	3,581	80.9	19,658	68.8	4.5	2.79	3.28	9.16	13.32
Marietta	44,624	113.7	276,431	114.3	3.8	3.15	3.13	16.62	14.55
Conestoga	802	117.9	6,842	90.0	5.3	4.33	5.68	22.75	25.28

Table 20. Seasonal Mean Water Discharges and Loads of Nutrients and Suspended Sediment, Calendar Year 2006

Station	Season	Mean Q cfs	TN	DN	NH ₃	DNH ₃	TON	DON	TNOX	DNOX	TP	DP	DOP	TOC	SS
Thousands of pounds															
Towanda	Winter	18,351	9,671	8,274	601	492	2,338	1,577	6,770	6,606	800	388	327	26,720	468,516
	Spring	14,860	6,390	4,774	318	277	3,177	1,490	3,393	3,266	1,421	374	295	33,143	4,351,597
	Summer	12,453	4,919	3,716	264	229	2,264	1,215	2,498	2,400	931	363	282	31,050	1,218,108
	Fall	15,952	7,353	5,893	539	414	2,215	1,308	4,559	4,392	976	453	368	32,670	868,577
Danville	Winter	26,286	14,465	12,689	1,024	816	3,534	2,127	9,905	9,797	1,593	799	693	37,902	637,758
	Spring	20,780	8,869	6,432	476	413	4,965	1,834	4,384	4,291	2,595	640	529	48,084	6,258,484
	Summer	17,197	6,899	5,039	362	327	3,315	1,456	3,372	3,296	1,650	604	520	42,182	1,696,086
	Fall	23,163	11,345	9,196	861	671	3,277	1,750	6,980	6,875	2,017	934	830	46,812	1,201,122
Lewisburg	Winter	14,651	7,112	6,416	467	375	1,452	1,042	5,429	5,379	477	239	207	13,195	145,322
	Spring	8,219	3,197	2,879	157	150	734	532	2,325	2,286	222	148	136	7,431	54,602
	Summer	7,502	2,730	2,360	130	122	635	436	1,990	1,952	254	155	155	9,166	72,534
	Fall	12,828	5,530	4,823	387	296	1,105	766	4,275	4,219	513	274	272	15,110	182,571
Newport	Winter	6,107	5,875	5,496	146	113	800	514	5,125	5,064	128	70	60	7,688	55,395
	Spring	3,326	2,534	2,359	89	67	445	293	2,113	2,075	67	39	32	4,367	29,757
	Summer	1,729	1,329	1,230	55	39	240	169	1,074	1,051	42	29	25	2,845	11,960
	Fall	3,161	3,128	2,950	96	68	379	267	2,774	2,728	64	44	39	4,759	23,196
Marietta	Winter	58,806	46,488	42,306	2,440	1,817	7,576	4,608	38,183	37,358	1,672	495	387	73,060	916,791
	Spring	38,825	23,019	19,323	960	794	6,681	2,937	16,660	16,236	1,795	315	237	62,603	3,311,798
	Summer	33,643	21,918	18,257	851	687	5,589	2,531	15,740	15,337	1,298	358	272	63,151	1,119,974
	Fall	47,223	38,741	34,260	2,112	1,446	6,689	3,433	31,040	30,297	1,517	441	334	77,617	1,078,079
Conestoga	Winter	949	3,794	3,677	40	38	608	641	3,148	3,107	62	37	32	1,660	18,704
	Spring	828	2,585	2,394	46	38	624	447	2,099	2,042	243	62	57	2,387	179,068
	Summer	618	2,380	2,391	17	16	281	306	2,256	2,183	45	35	33	1,164	10,162
	Fall	814	3,263	3,184	37	34	546	545	2,789	2,702	81	48	44	1,630	28,261

Table 21. Seasonal Mean Water Discharges and Yields of Nutrients and Suspended Sediment, Calendar Year 2006

Station	Season	Mean Q cfs	TN	DN	NH ₃	TON	DON	TNOX	DNOx	TP	DP	DOP	TOC	SS	
			lbs/acre												
Towanda	Winter	18,351	1.94	1.66	0.12	0.10	0.47	0.32	1.36	0.160	0.078	0.066	5.4	94	
	Spring	14,860	1.28	0.96	0.06	0.06	0.64	0.30	0.68	0.65	0.285	0.075	0.059	6.6	872
	Summer	12,453	0.99	0.74	0.05	0.05	0.45	0.24	0.50	0.48	0.187	0.073	0.057	6.2	244
	Fall	15,952	1.47	1.18	0.11	0.08	0.44	0.26	0.91	0.88	0.196	0.091	0.074	6.5	174
Danville	Winter	26,286	2.01	1.77	0.14	0.11	0.49	0.30	1.38	1.36	0.222	0.111	0.097	5.3	89
	Spring	20,780	1.24	0.90	0.07	0.06	0.69	0.26	0.61	0.60	0.361	0.089	0.074	6.7	872
	Summer	17,197	0.96	0.70	0.05	0.05	0.46	0.20	0.47	0.46	0.230	0.084	0.072	5.9	236
	Fall	23,163	1.58	1.28	0.12	0.09	0.46	0.24	0.97	0.96	0.281	0.130	0.116	6.5	167
Lewisburg	Winter	14,651	1.62	1.46	0.11	0.09	0.33	0.24	1.24	1.23	0.109	0.055	0.047	3.0	33
	Spring	8,219	0.73	0.66	0.04	0.03	0.17	0.12	0.53	0.52	0.051	0.034	0.031	1.7	12
	Summer	7,502	0.62	0.54	0.03	0.03	0.14	0.10	0.45	0.45	0.058	0.035	0.035	2.1	17
	Fall	12,828	1.26	1.10	0.09	0.07	0.25	0.17	0.98	0.96	0.117	0.063	0.062	3.4	42
Newport	Winter	6,107	2.74	2.56	0.07	0.05	0.37	0.24	2.39	2.36	0.060	0.033	0.028	3.6	26
	Spring	3,326	1.18	1.10	0.04	0.03	0.21	0.14	0.98	0.97	0.031	0.018	0.015	2.0	14
	Summer	1,729	0.62	0.57	0.03	0.02	0.11	0.08	0.50	0.49	0.020	0.014	0.012	1.3	6
	Fall	3,161	1.46	1.37	0.04	0.03	0.18	0.12	1.29	1.27	0.030	0.020	0.018	2.2	11
Marietta	Winter	58,806	2.79	2.54	0.15	0.11	0.46	0.28	2.30	2.25	0.101	0.030	0.023	4.4	55
	Spring	38,825	1.38	1.16	0.06	0.05	0.40	0.18	1.00	0.98	0.108	0.019	0.014	3.8	199
	Summer	33,643	1.32	1.10	0.05	0.04	0.34	0.15	0.95	0.92	0.078	0.022	0.016	3.8	67
	Fall	47,223	2.33	2.06	0.13	0.09	0.40	0.21	1.87	1.82	0.091	0.027	0.020	4.7	65
Conestoga	Winter	949	12.61	12.22	0.13	0.13	2.02	2.13	10.47	10.33	0.206	0.123	0.106	5.5	62
	Spring	828	8.59	7.96	0.15	0.13	2.07	1.49	6.98	6.79	0.808	0.206	0.189	7.9	595
	Summer	618	7.91	7.95	0.06	0.05	0.93	1.02	7.50	7.26	0.150	0.116	0.110	3.9	34
	Fall	814	10.85	10.59	0.12	0.11	1.82	1.81	9.27	8.98	0.269	0.160	0.146	5.4	94

Table 22. 2006 Monthly Flow in CFS and TN, TP, and SS in Thousands of Pounds

Station	Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Annual#
Towanda	Q	26,706	16,111	12,235	11,295	7,620	25,666	18,597	8,121	10,641	14,900	22,957	10,000	15,404
	TN	4,919	2,637	2,115	1,735	1,109	3,546	2,489	1,055	1,375	2,186	3,525	1,642	28,333
	TP	465	183	152	130	87	1,205	541	168	223	327	533	116	4,130
	SS	330,365	73,545	64,605	43,173	19,501	4,288,923	929,019	117,368	171,721	254,137	585,638	28,803	6,906,798
Danville	Q	40,332	23,946	14,579	15,356	10,926	36,057	28,328	8,739	14,524	19,123	35,260	15,105	21,836
	TN	7,890	4,072	2,504	2,323	1,541	5,006	3,858	1,118	1,923	2,946	5,808	2,591	41,580
	TP	1,004	385	204	217	141	2,237	1,104	180	366	548	1,207	261	7,854
	SS	480,505	112,986	44,267	51,704	22,514	6,184,266	1,461,343	61,837	172,905	270,999	879,679	50,444	9,793,449
Lewisburg	Q	24,413	13,060	6,481	7,902	7,184	9,571	7,648	3,603	11,254	11,135	19,274	8,074	10,800
	TN	4,079	1,972	1,061	1,113	964	1,120	915	471	1,344	1,533	2,699	1,299	18,570
	TP	311	116	51	62	58	102	73	38	142	151	281	81	1,466
	SS	112,313	26,090	6,919	9,974	8,910	35,718	14,344	7,780	50,410	49,653	120,002	12,917	455,030
Newport	Q	9,660	6,398	2,264	3,699	2,819	3,460	2,260	962	1,964	1,649	4,887	2,946	3,581
	TN	3,403	1,883	589	952	705	877	574	208	546	485	1,678	964	12,864
	TP	82	37	9	20	16	31	18	7	18	11	39	14	302
	SS	39,301	14,534	1,560	6,893	3,985	18,879	5,003	1,076	5,881	2,206	17,953	3,037	120,308
Marietta	Q	90,187	58,107	28,123	31,860	25,994	58,620	50,535	14,456	35,937	34,535	74,047	33,087	44,624
	TN	26,028	14,025	6,435	6,524	5,140	11,355	10,582	2,930	8,406	9,217	20,435	9,088	130,165
	TP	1,103	433	136	171	137	1,486	772	103	423	354	984	179	6,281
	SS	681,939	197,220	37,632	58,728	39,737	3,213,333	821,131	32,178	266,665	186,741	837,500	53,838	6,426,642
Conestoga	Q	1,275	1,081	491	534	373	1,578	889	343	622	449	1,385	608	802
	TN	1,745	1,349	700	695	501	1,389	1,122	459	799	632	1,723	909	12,023
	TP	35	21	7	9	5	229	22	7	17	10	62	9	433
	SS	11,356	6,362	985	2,316	678	176,074	5,844	694	3,623	1,423	25,481	1,357	236,193

Annual flow is average for the year; Annual loads are total for the year

Table 23. 2006 Monthly Flow in CFS and TN, TP, and SS Yields in lbs/acre

Station	Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Annual [#]
Towanda	Q	26.706	16,111	12,235	11,295	7,620	25,666	18,597	8,121	10,641	14,900	22,957	10,000	15,404
	TN	0.99	0.53	0.42	0.35	0.22	0.71	0.50	0.21	0.28	0.44	0.71	0.33	5.69
	TP	0.093	0.037	0.030	0.026	0.017	0.241	0.108	0.034	0.045	0.066	0.107	0.023	0.827
	SS	66.2	14.7	12.9	8.7	3.9	859.5	186.2	23.5	34.4	50.9	117.4	5.8	1,384.1
Danville	Q	40,332	23,946	14,579	15,356	10,926	36,057	28,328	8,739	14,524	19,123	35,260	15,105	21,856
	TN	1.10	0.57	0.35	0.32	0.21	0.70	0.54	0.16	0.27	0.41	0.81	0.36	5.80
	TP	0.140	0.054	0.028	0.030	0.020	0.312	0.154	0.025	0.051	0.076	0.168	0.036	1,094
	SS	66.9	15.7	6.2	7.2	3.1	861.2	203.5	8.6	24.1	37.7	122.5	7.0	1,363.7
Lewisburg	Q	24,413	13,060	6,481	7,902	7,184	9,571	7,648	3,603	11,254	11,135	19,274	8,074	10,800
	TN	0.93	0.45	0.24	0.25	0.22	0.26	0.21	0.11	0.31	0.35	0.62	0.30	4.25
	TP	0.071	0.026	0.012	0.014	0.013	0.023	0.017	0.009	0.032	0.034	0.064	0.018	0.333
	SS	25.6	6.0	1.6	2.3	2.0	8.2	3.3	1.8	11.5	11.3	27.4	2.9	103.9
Newport	Q	9,660	6,398	2,264	3,699	2,819	3,460	2,260	962	1,964	1,649	4,887	2,946	3,581
	TN	1.59	0.88	0.27	0.44	0.33	0.41	0.27	0.10	0.25	0.23	0.78	0.45	6.00
	TP	0.038	0.017	0.004	0.009	0.007	0.014	0.008	0.003	0.008	0.005	0.018	0.007	0.138
	SS	18.3	6.8	0.7	3.2	1.9	8.8	2.3	0.5	2.7	1.0	8.4	1.4	56.0
Marietta	Q	90,187	58,107	28,123	31,860	25,994	58,620	50,535	14,456	35,937	34,535	74,047	33,087	44,624
	TN	1.56	0.84	0.39	0.39	0.31	0.68	0.64	0.18	0.51	0.55	1.23	0.55	7.83
	TP	0.066	0.026	0.008	0.010	0.008	0.089	0.046	0.006	0.025	0.021	0.059	0.011	0.375
	SS	41.0	11.9	2.3	3.5	2.4	193.2	49.4	1.9	16.0	11.2	50.3	3.2	386.3
Conestoga	Q	1,275	1,081	491	534	373	1,578	889	343	622	449	1,385	608	802
	TN	5.80	4.48	2.33	2.31	1.67	4.62	3.73	1.53	2.66	2.10	5.73	3.02	39.98
	TP	0.116	0.070	0.023	0.030	0.017	0.761	0.073	0.023	0.057	0.033	0.206	0.030	1.439
	SS	37.8	21.2	3.3	7.7	2.3	585.4	19.4	2.3	12.0	4.7	84.7	4.5	785.3

Annual flow is average for the year