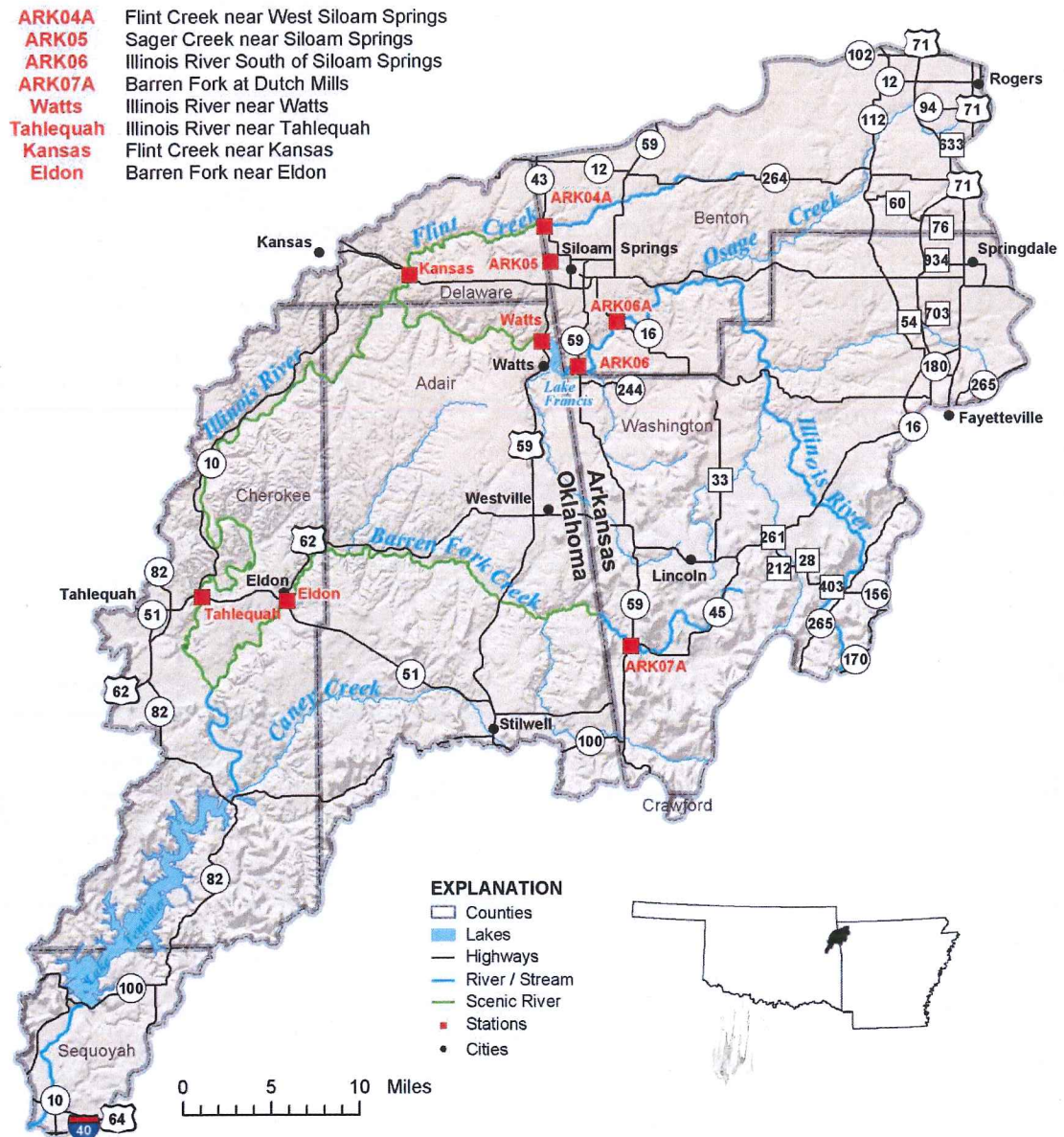
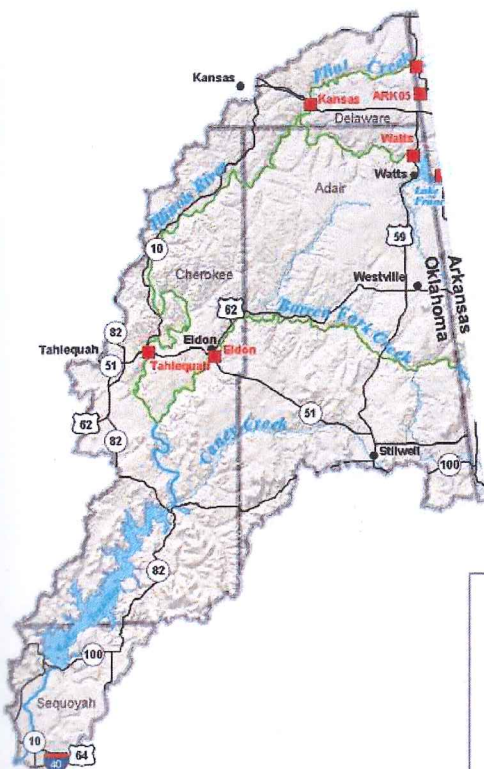


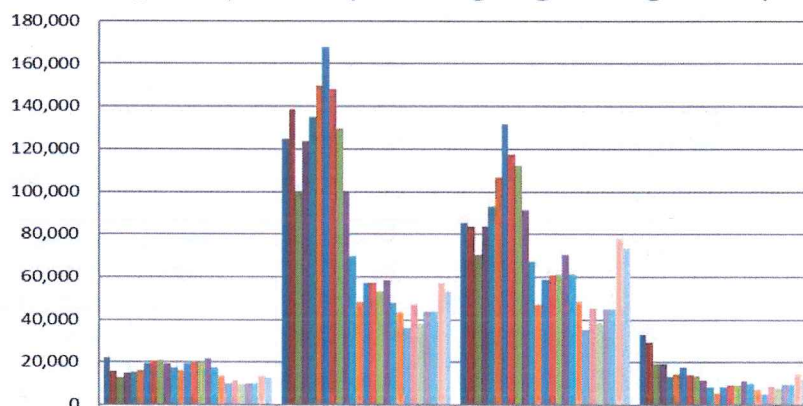
Water Quality Monitoring Report for the Illinois River Basin Illinois River Basin Arkansas – Oklahoma Compact



CY 2020



Oklahoma's Average Annual Total P Loading in Kilograms per Year (excluding targeted high flows)



	Flint Creek near Kansas	Illinois River near Watts	Illinois River near Tahlequah	Barren Fork near Eldon
Total P 80-93	22,279	124,832	85,235	33,001
Total P 93-97	15,727	138,508	83,799	29,482
Total P 94-98	12,986	99,898	70,546	19,163
Total P 95-99	14,974	123,581	83,632	19,257
Total P 96-00	15,100	134,986	92,876	13,163
Total P 97-01	15,989	149,927	106,797	14,548
Total P 98-02	19,224	167,987	131,491	17,603
Total P 99-03	20,579	148,151	117,524	14,059
Total P 00-04	20,963	129,533	112,341	13,685
Total P 01-05	19,098	100,347	91,325	11,465
Total P 02-06	17,415	69,482	67,345	8,500
Total P 03-07	15,977	48,448	47,216	5,716
Total P 04-08	19,356	56,951	58,605	8,574
Total P 05-09	19,586	57,272	60,830	9,197
Total P 06-10	19,818	53,127	61,131	9,335
Total P 07-11	21,700	58,493	70,259	11,159
Total P 08-12	17,473	47,682	61,180	9,837
Total P 09-13	13,543	43,412	48,513	7,054
Total P 10-14	10,154	35,998	35,578	5,357
Total P 11-15	11,382	47,254	45,505	8,711
Total P 12-16	9,516	38,292	38,711	7,831
Total P 13-17	10,063	44,029	45,051	9,461
Total P 14-18	10,069	44,029	45,051	9,461
Total P 15-19	13,505	57,100	77,881	14,623
Total P 16-20	12,891	53,096	73,518	12,198

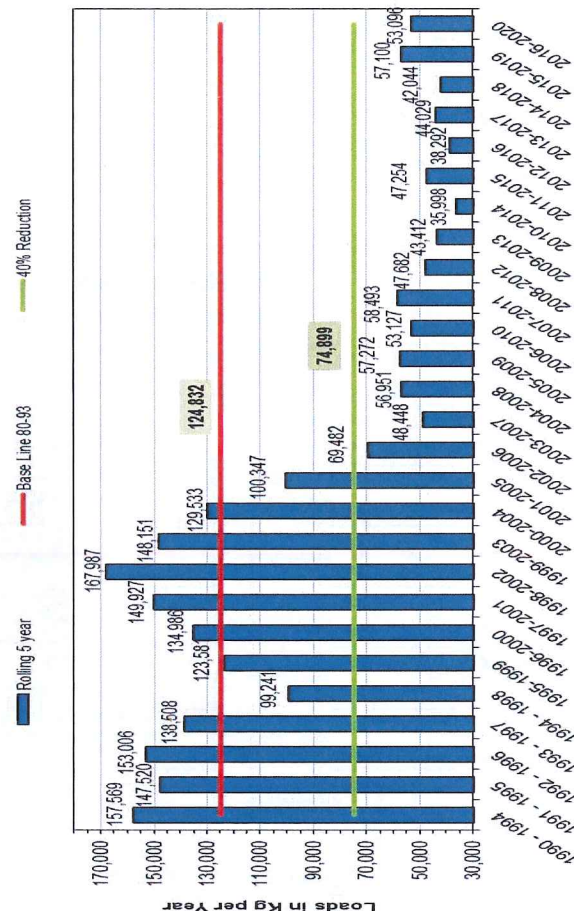
Values represent all available data, which is routinely collected and excludes targeted high flow events.

Illinois River near Watts

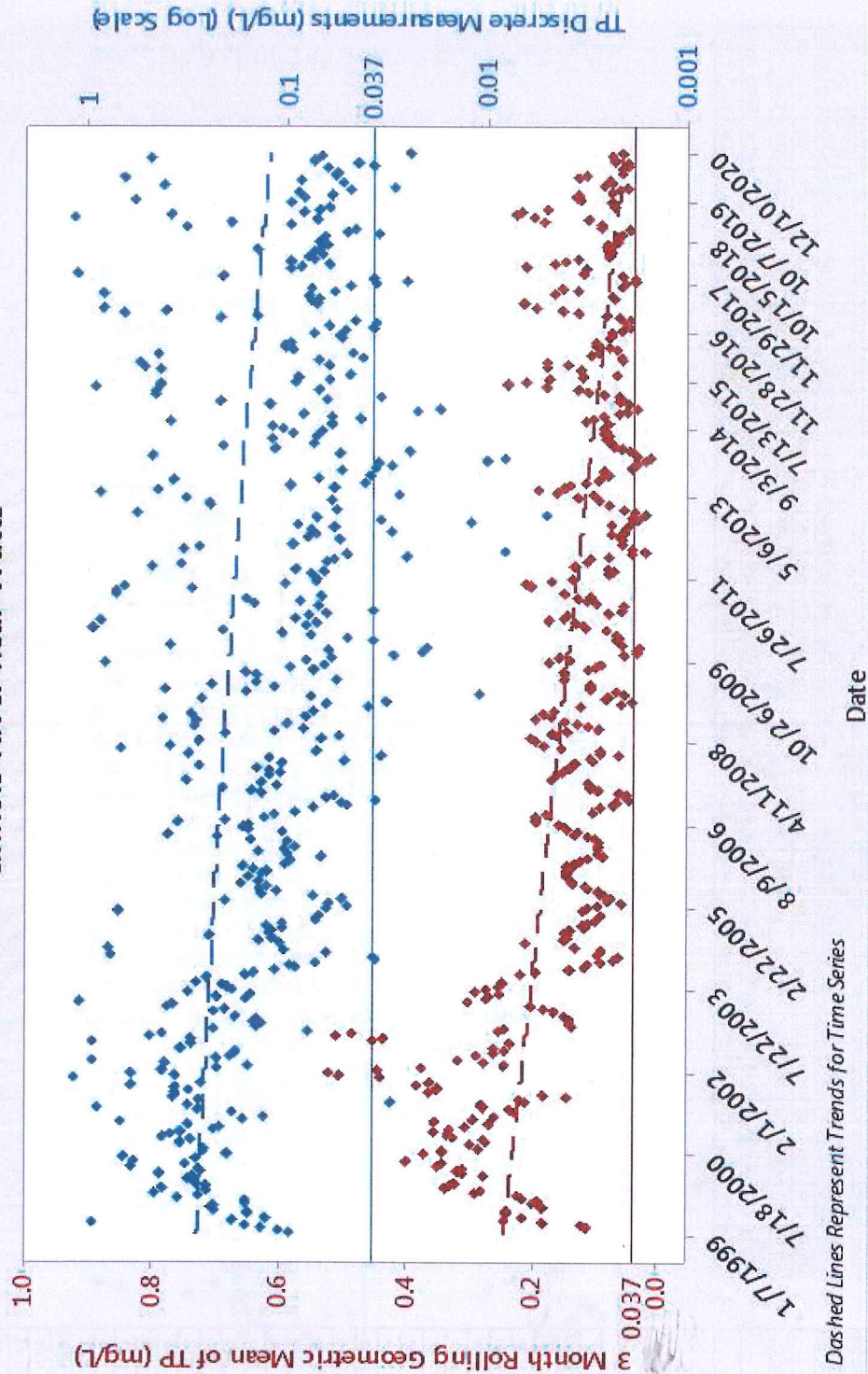
Illinois River near Watts			Loadings	
Year	Flow (cfs)	Total P (mg/L)	Total P (kg/year)	
1980	173	0.423	45,279	
1981	260	0.190	44,119	
1982	591			
1983	392			
1984	706			
1985	947			
1986	879			
1987	815			
1988	531			
1989	558	0.210	104,453	
1990	1,127	0.181	382,432	
1991	724	0.162	104,534	
1992	760	0.161	109,571	
1993	1,163	0.277	287,317	
1994	674	0.168	101,127	
1995	783	0.143	100,233	
1996	693	0.188	116,542	
1997	573	0.163	83,415	
1998	713	0.158	87,876	
1999	793	0.250	177,057	
2000	648	0.309	178,827	
2001	649	0.346	200,549	
2002	619	0.316	174,694	
2003	347	0.155	48,035	
2004	688	0.104	63,903	
2005	459	0.106	43,453	
2006	349	0.116	36,156	
2007	464	0.106	43,926	
2008	1,177	0.048	71,480	
2009	915	0.069	56,386	
2010	587	0.057	29,882	
2011	1,101	0.081	79,648	
2012	336	0.052	15,594	
2013	642	0.082	46,994	
2014	448	0.056	22,412	
2015	1,364	0.061	74,303	
2016	434	0.065	25,189	
2017	918	0.064	52,481	
2018	715	0.066	42,126	
2019	1,511	0.071	95,806	
2020	1,116	0.050	49,832	
Average	715	0.149	94,876	

Year	80-93	90-94	91-95	92-96	93-97	94-98	95-99	96-00	97-01	98-02	99-03	00-04	01-05	02-06	03-07	04-08	05-09	06-10	07-11	08-12	09-13	10-14	11-15	12-16	13-17	14-18	15-19	16-20
Pt (mg/l)	0.204	0.198	0.201	0.210	0.210	0.162	0.195	0.221	0.249	0.275	0.271	0.246	0.203	0.158	0.118	0.102	0.095	0.085	0.077	0.065	0.068	0.066	0.068	0.062	0.065	0.061	0.065	0.063
Flow (cfs)	685	890	821	815	777	687	711	684	675	684	611	590	592	492	461	627	673	698	849	823	716	746	778	690	761	776	988	939
Pt (kg/yr)	124,832	157,569	147,520	153,006	138,508	99,241	123,581	134,986	149,527	167,987	148,151	129,533	100,347	69,482	48,448	56,951	57,272	53,127	58,493	47,682	43,412	36,806	47,254	38,287	44,029	42,044	57,100	53,096
Decrease	0.0%	-26.2%	-18.2%	-22.6%	-11.0%	20.5%	1.0%	-8.1%	-20.1%	-34.6%	-18.7%	-3.8%	19.6%	44.3%	61.2%	54.4%	54.1%	57.4%	53.1%	61.8%	65.2%	70.5%	62.1%	69.3%	64.7%	66.3%	54.3%	57.5%

Illinois River near Watts (excluding targeted high flows)



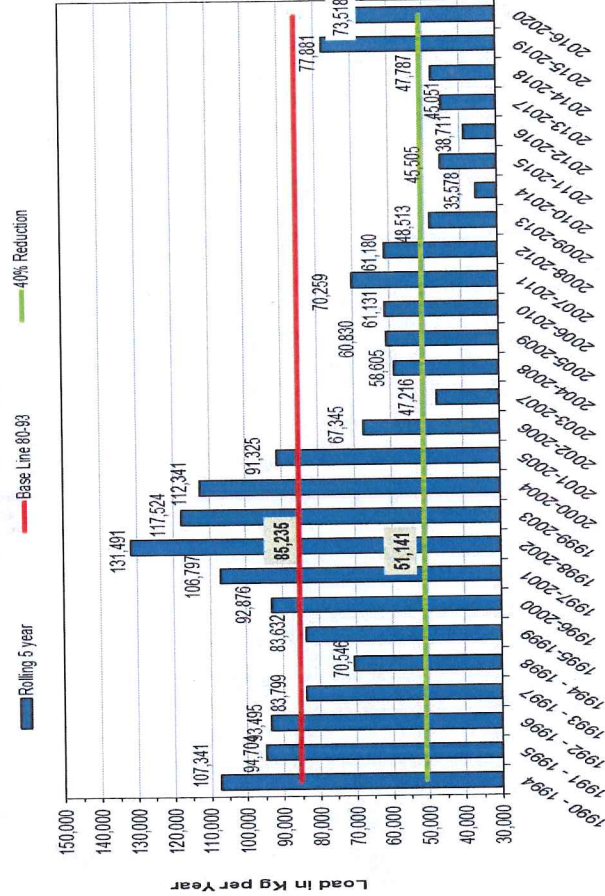
Total Phosphorus (TP) and Scenic River Criterion Implementation (1999-2020) Illinois River near Watts



Illinois River near Tahlequah

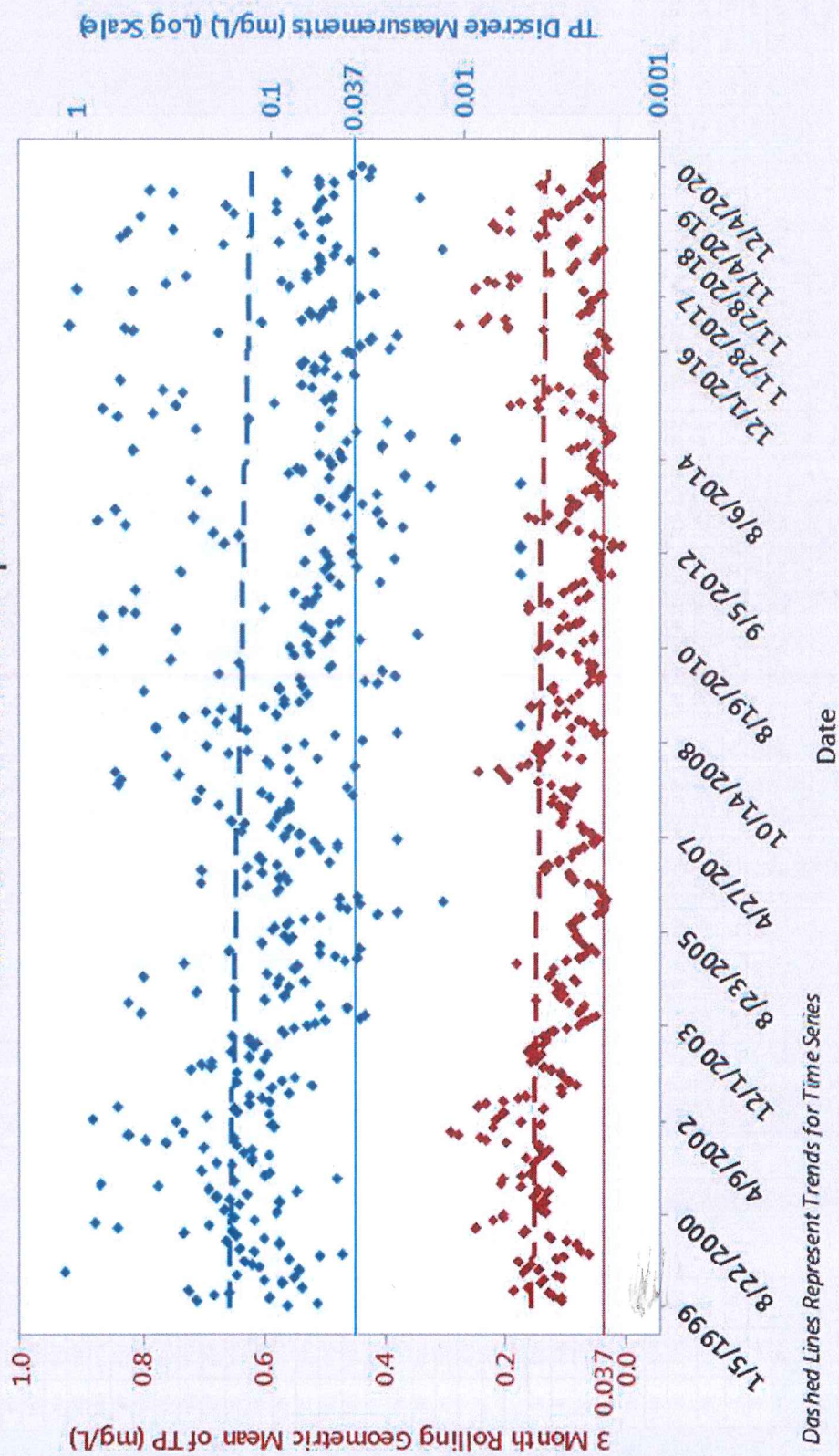
Year	80-83	90-94	91-95	92-95	93-97	94-98	95-99	96-00	97-01	98-02	99-03	00-04	01-05	02-06	03-07	04-08	05-09	06-10	07-11	08-12	09-13	10-14	11-15	12-16	13-17	14-18	15-19	16-20
Pt (mg/l)	0.090	0.088	0.085	0.085	0.082	0.079	0.093	0.104	0.117	0.143	0.143	0.137	0.121	0.104	0.075	0.067	0.067	0.065	0.062	0.056	0.052	0.046	0.045	0.042	0.044	0.047	0.059	0.060
Flow (cfs)	1060	1364	1249	1218	1139	998	1012	1004	1023	1031	918	920	846	725	702	974	1024	1046	1269	1220	1041	892	1163	994	1140	1148	1510	1377
Pt (kg/yr)	85,235	107,341	94,704	93,495	83,799	70,546	83,632	92,876	106,797	131,491	117,524	112,341	91,323	67,245	47,216	58,605	60,830	61,131	70,259	61,180	48,513	35,578	45,505	37,303	45,051	47,787	77,881	73,518
Decrease	0.0%	-25.5%	-11.1%	-9.7%	1.7%	17.2%	1.9%	-9.0%	-25.3%	-54.3%	-37.9%	-31.8%	-7.1%	21.0%	44.6%	31.2%	28.6%	26.3%	17.6%	28.2%	43.1%	58.3%	46.6%	56.2%	47.1%	43.9%	8.6%	13.7%

Illinois River near Tahlequah (excluding targeted high flows)



Year	Flow (cfs)	Total P (mg/L)	Leadings Total P (kg/yr)
1980	249		
1981	384		
1982	812		
1983	537		
1984	1,157		
1985	1,651		
1986	1,452		
1987	1,218		
1988	820		
1989	808		
1990	1,695	0.098	147,579
1991	1,094	0.079	74,796
1992	1,207	0.080	86,205
1993	1,751	0.099	154,447
1994	1,071	0.084	80,223
1995	1,123	0.080	80,229
1996	938	0.085	71,207
1997	812	0.069	49,797
1998	1,044	0.081	75,524
1999	1,143	0.121	223,518
2000	1,083	0.136	31,543
2001	1,033	0.158	145,746
2002	851	0.211	160,366
2003	478	0.100	42,990
2004	1,157	0.075	77,499
2005	712	0.060	38,448
2006	426	0.074	28,154
2007	736	0.066	43,383
2008	1,839	0.062	101,829
2009	1,407	0.072	90,475
2010	819.8	0.050	36,608
2011	1,540.8	0.058	79,813
2012	491.8	0.038	16,689
2013	946.1	0.043	36,331
2014	659.4	0.038	22,378
2015	2,174.6	0.041	79,628
2016	700.6	0.050	31,286
2017	1,219.7	0.050	54,445
2018	987.2	0.054	47,610
2019	2,308.0	0.100	206,129
2020	1,670.3	0.047	70,112
Average	1,078	0.079	76,337

Total Phosphorus (TP) and Scenic River Criterion Implementation (1999-2020) Illinois River near Tahlequah



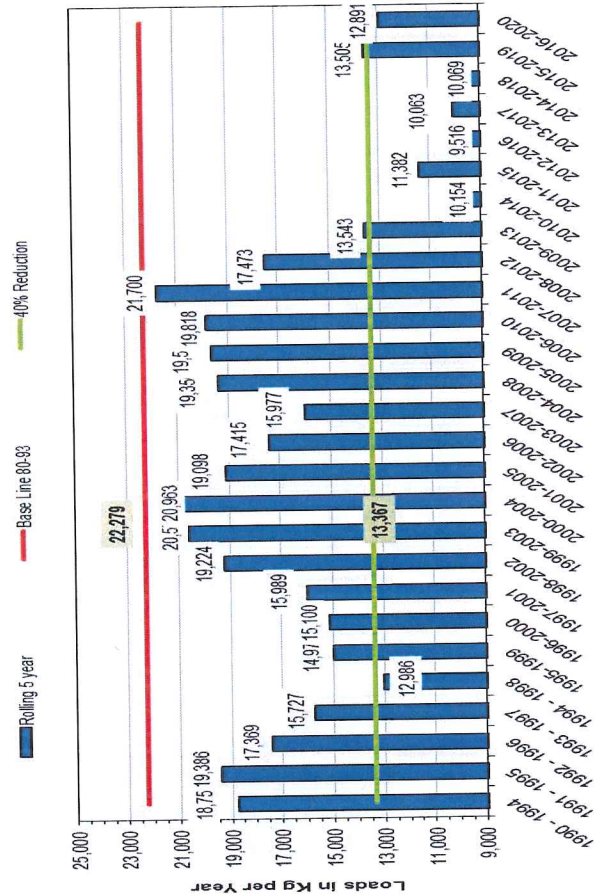
Dashed Lines Represent Trends for Time Series

Flint Creek near Kansas

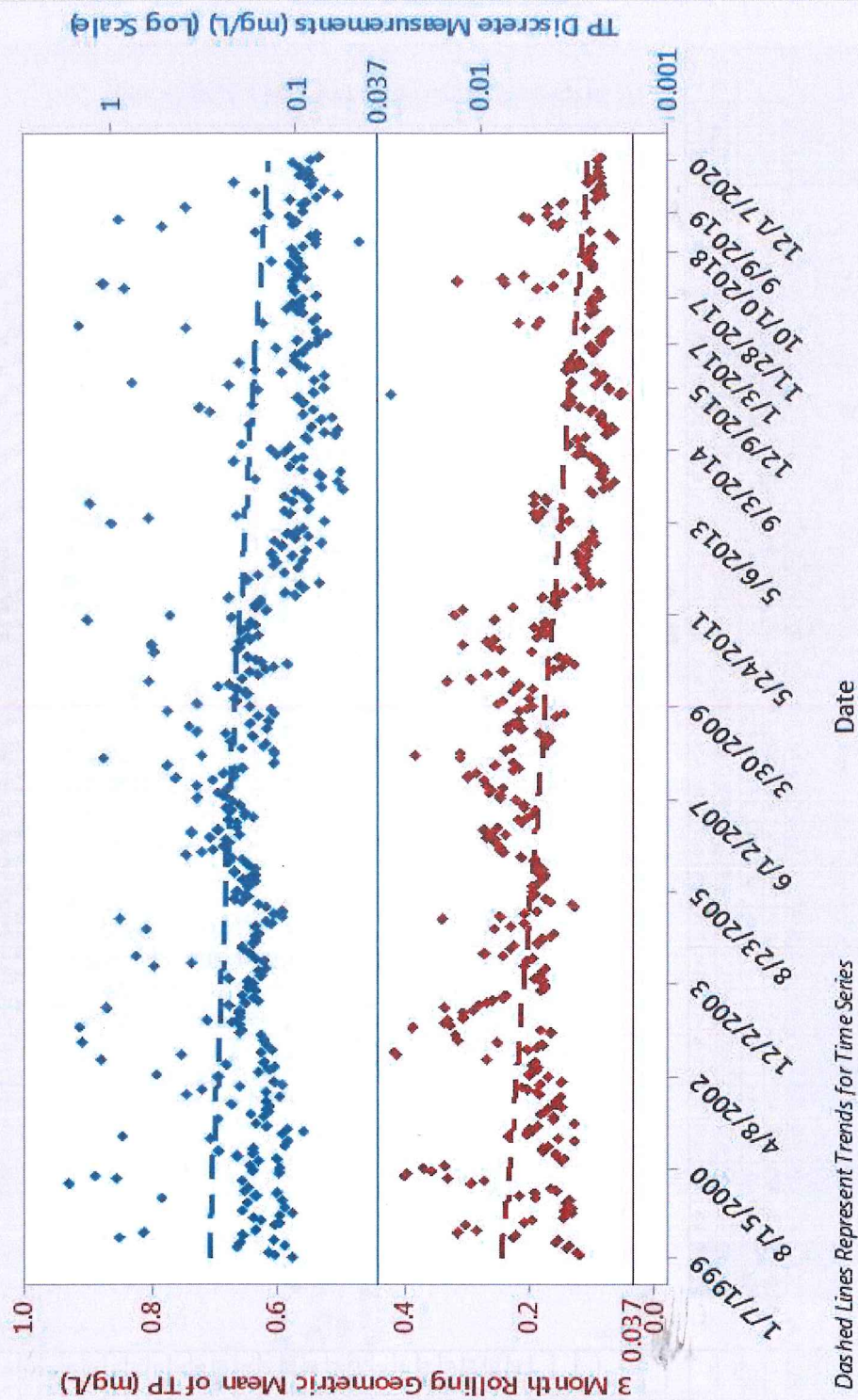
Flint Creek Near Kansas			Loadings
Year	Flow (cfs)	Total P (mg/L)	Total P (kg/year)
1980	32	0.189	5,654
1981	57	0.178	9,977
1982	69	0.186	11,337
1983	49	0.284	12,415
1984	143	0.240	30,532
1985	237	0.224	47,591
1986	183	0.223	36,430
1987	141	0.157	19,840
1988	97	0.265	22,946
1989	90	0.557	44,981
1990		0.114	
1991		0.120	
1992		0.118	
1993	182	0.156	25,359
1994	116	0.127	15,418
1995	140	0.185	23,207
1996	76	0.152	10,294
1997	957	0.117	9,964
1998	965	0.127	10,945
1999	137	0.186	22,758
2000	132	0.178	20,984
2001	101	0.164	14,793
2002	82	0.310	22,675
2003	49.8	0.316	14,095
2004	149.0	0.165	21,957
2005	91.8	0.168	13,774
2006	36.8	0.228	7,428
2007	70.3	0.240	15,068
2008	218.0	0.157	30,567
2009	141.6	0.187	23,649
2010	91.7	0.171	14,004
2011	137.8	0.152	18,707
2012	48.1	0.107	4,598
2013	121.2	0.093	10,070
2014	72.4	0.096	6,206
2015	253.8	0.070	15,864
2016	82.7	0.092	6,796
2017	130.1	0.085	9,877
2018	115.2	0.097	9,978
2019	289.9	0.090	23,299
2020	190.7	0.082	13,962
Average	120	0.174	18,727

Year	80-93	90-94	91-95	92-96	93-97	94-98	95-99	96-00	97-01	98-02	99-03	00-04	01-05	02-06	03-07	04-08	05-09	06-10	07-11	08-12	09-13	10-14	11-15	12-16	13-17	14-18	15-19	16-20
Pt (mg/l)	0.214	0.132	0.142	0.146	0.140	0.133	0.154	0.157	0.159	0.196	0.230	0.228	0.226	0.238	0.225	0.191	0.196	0.199	0.184	0.154	0.140	0.121	0.101	0.090	0.085	0.086	0.087	0.089
Flow (cfs)	117	159	153	134	126	109	109	107	112	110	101	103	95	82	80	113	112	112	132	127	108	94	127	118	132	131	174	162
Pt (kg/yr)	22,279	18,758	19,386	17,369	15,727	12,986	14,974	15,100	15,989	19,224	20,579	20,963	19,098	17,415	15,977	19,356	19,586	19,818	21,700	17,473	13,543	10,154	11,382	9,513	10,063	10,069	13,505	12,891
Decrease	0.0%	15.8%	13.0%	22.0%	29.4%	41.7%	32.8%	32.2%	28.2%	13.7%	7.6%	5.9%	14.3%	21.8%	28.3%	13.1%	12.1%	11.0%	2.6%	21.6%	39.2%	54.4%	48.9%	57.3%	54.8%	54.8%	39.4%	42.1%

Flint Creek near Kansas (excluding targeted high flows)



Total Phosphorus (TP) and Scenic River Criterion Implementation (1999-2020) Flint Creek near Kansas



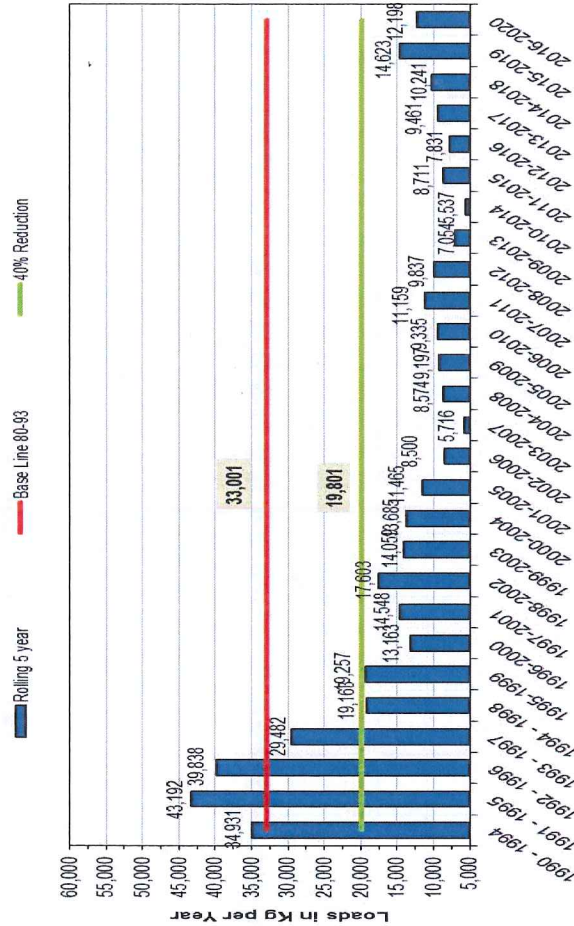
Dashed Lines Represent Trends for Time Series

Barren Fork at Eldon

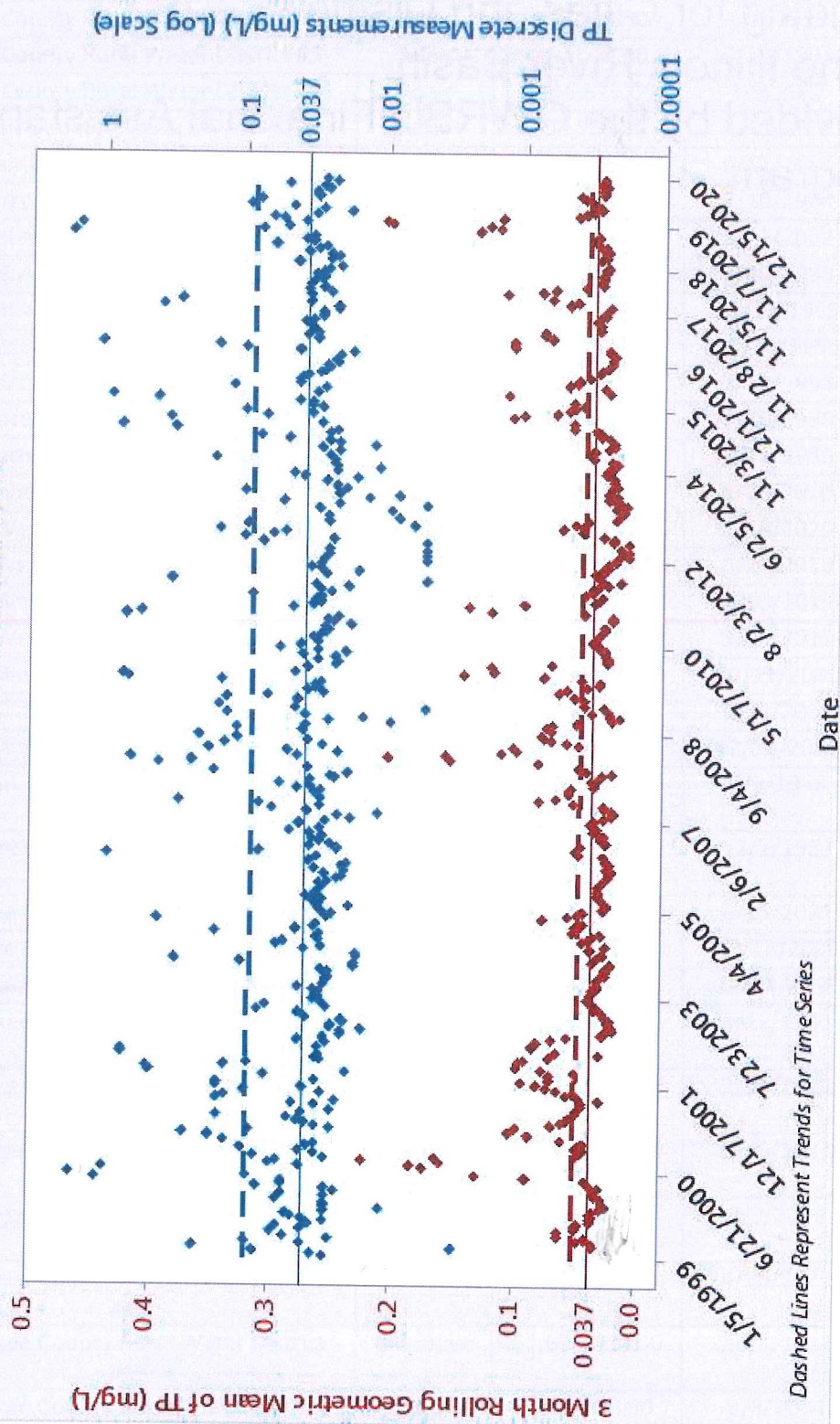
Barren Fork at Eldon			Loadings	
Year	Flow (cfs)	Phos. (mg/L)	Total P (kg/year)	
1980	77			
1981	201			
1982	296			
1983	184			
1984	364			
1985	593			
1986	536			
1987	491			
1988	269			
1989	320			
1990	666			
1991	451	0.060	24,145	
1992	440	0.095	37,315	
1993	700	0.108	67,234	
1994	328	0.037	10,878	
1995	422	0.263	98,819	
1996	432	0.025	9,645	
1997	332	0.023	6,671	
1998	409	0.033	12,054	
1999	361	0.048	15,476	
2000	376	0.043	14,440	
2001	343	0.064	19,605	
2002	242	0.068	20,591	
2003	145	0.025	3,237	
2004	403	0.029	10,438	
2005	228	0.027	5,498	
2006	169	0.027	4,075	
2007	254	0.026	5,898	
2008	559	0.045	22,466	
2009	460	0.033	13,557	
2010	225	0.027	5,426	
2011	471	0.028	11,783	
2012	130	0.019	2,201	
2013	219	0.026	5,083	
2014	184	0.024	3,938	
2015	872	0.040	31,544	
2016	214	0.033	6,309	
2017	320	0.028	8,013	
2018	318	0.029	8,225	
2019	761	0.038	25,816	
2020	549	0.031	15,194	
Average	374	0.047	15,817	

Year	80-93	90-94	91-95	92-96	93-97	94-98	95-99	96-00	97-01	98-02	99-03	00-04	01-05	02-06	03-07	04-08	05-09	06-10	07-11	08-12	09-13	10-14	11-15	12-16	13-17	14-18	15-19	16-20
Pt (mg/l)	0.083	0.076	0.103	0.096	0.075	0.056	0.055	0.039	0.045	0.056	0.053	0.050	0.046	0.039	0.027	0.030	0.031	0.031	0.032	0.030	0.026	0.024	0.026	0.027	0.029	0.030	0.033	0.032
Flow (cfs)	399	517	468	464	443	384	391	382	364	350	297	306	276	241	24	323	334	333	394	369	301	246	375	323	362	382	497	432
Pt (kg/yr)	33,001	34,931	43,192	39,838	29,482	19,163	19,257	13,163	14,548	17,603	14,059	13,685	11,465	8,500	5,716	8,574	9,197	9,335	11,159	9,837	7,054	5,357	7,831	7,831	9,461	10,241	14,623	12,198
Decrease	0.0%	-5.8%	-30.9%	-20.7%	10.7%	41.9%	41.6%	60.1%	55.9%	46.7%	57.4%	58.5%	65.3%	74.2%	82.7%	74.0%	72.1%	71.7%	66.2%	70.2%	78.6%	83.8%	73.6%	76.3%	71.3%	69.0%	55.7%	63.0%

Barren Fork at Eldon (excluding targeted high flows)



Total Phosphorus (TP) and Scenic River Criterion Implementation (1999-2020) Barren Fork River near Eldon

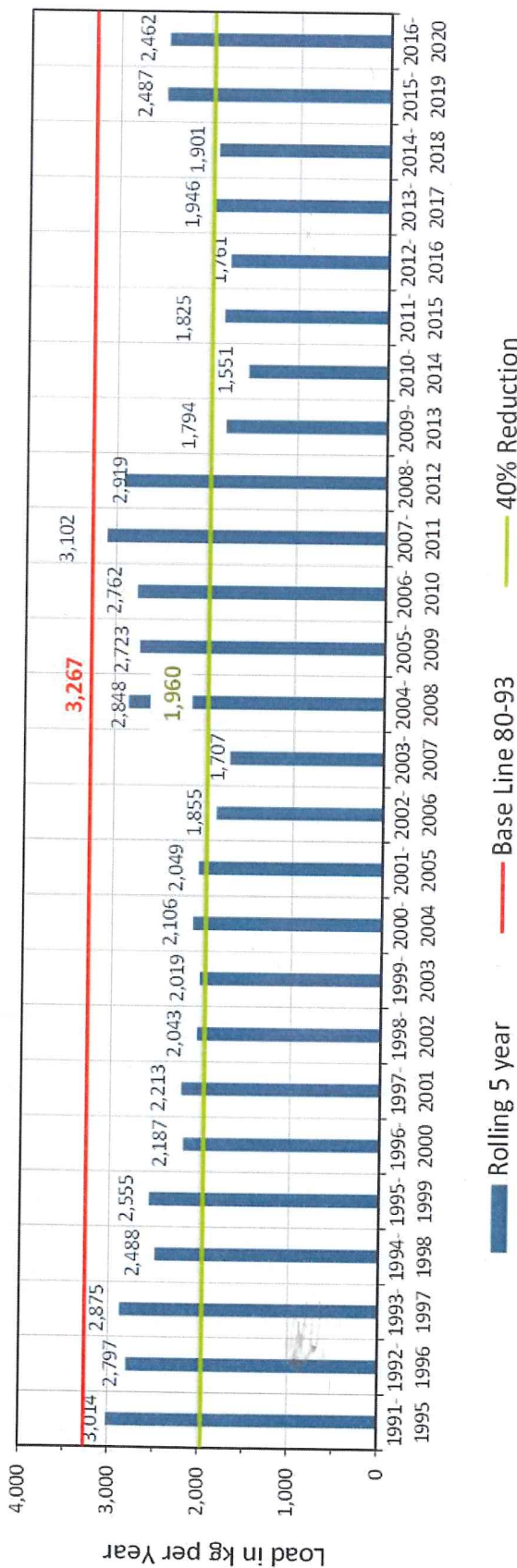


Monitoring Station: Flint Creek
Northwest of West Siloam Springs, Oklahoma

Table 4 - Five-Year Rolling Average Phosphorus Loading

Year	91-95	92-96	93-97	94-98	95-99	96-00	97-01	98-02	99-03	00-04	01-05	02-06	03-07	04-08	05-09	06-10	07-11	08-12	09-13	10-14	11-15	12-16	13-17	14-18	15-19	16-20
Pt (mg/l)	0.054	0.054	0.059	0.061	0.060	0.053	0.052	0.046	0.050	0.052	0.054	0.056	0.058	0.073	0.072	0.073	0.070	0.067	0.047	0.046	0.046	0.048	0.048	0.047	0.047	0.047
Flow (cfs)	62.0	58.4	54.7	45.6	47.7	46.6	47.7	49.2	44.9	45.1	47.6	37.2	32.8	43.9	42.1	42.4	49.5	48.9	42.5	37.6	44.4	41.1	45.3	45.4	59.1	58.4
Pt (kg/yr)	3014	2797	2875	2488	2555	2187	2213	2043	2019	2106	2049	1855	1707	2848	2723	2762	3102	2919	1794	1551	1825	1761	1946	1901	2487	2462
% Decrease	8%	14%	12%	24%	22%	33%	32%	37%	38%	36%	37%	43%	48%	13%	17%	15%	5%	11%	45%	53%	44%	46%	40%	42%	24%	25%

Figure 4 – Five-Year Rolling Average Phosphorus Loading Bar Chart

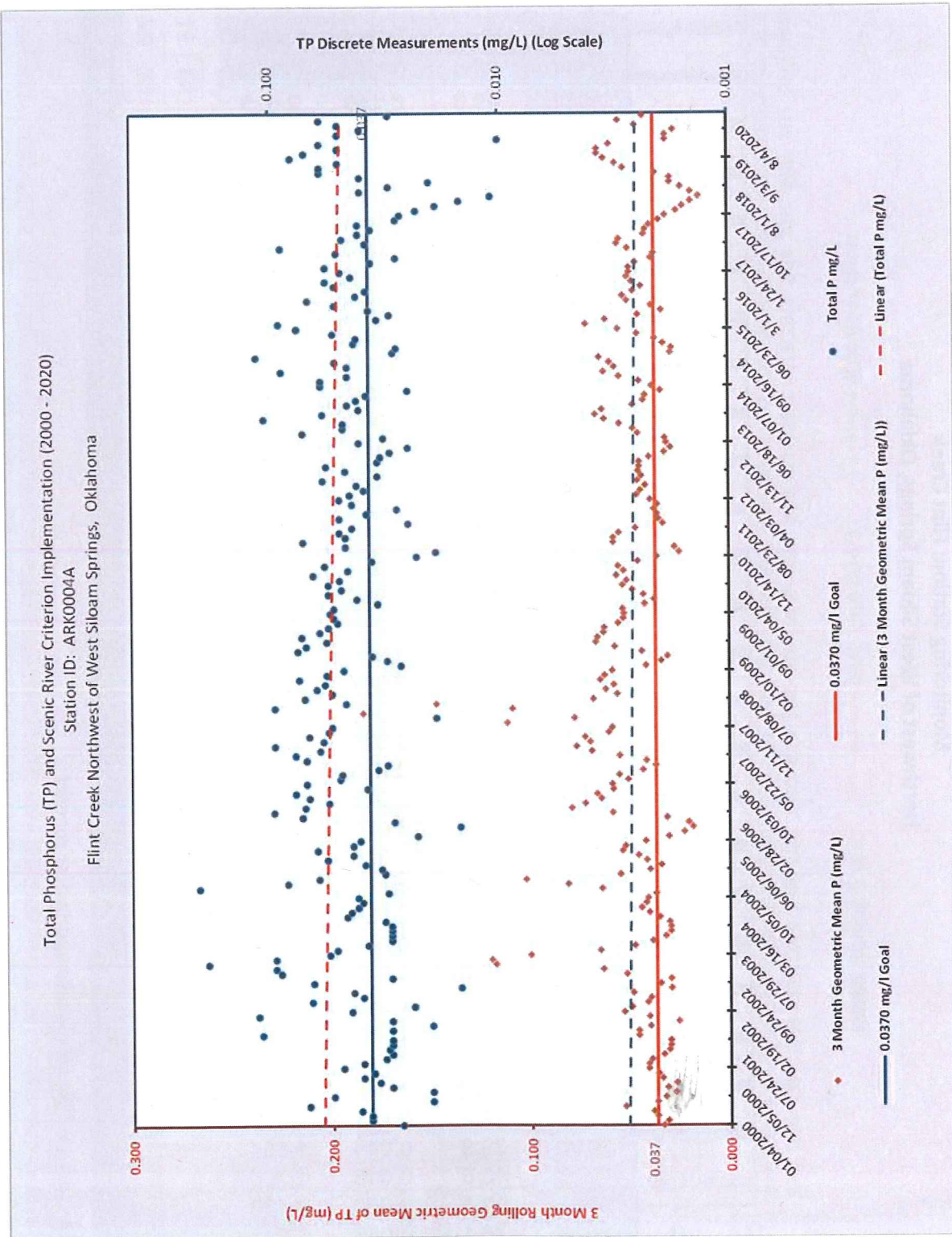


Monitoring Station: Flint Creek
Northwest of West Siloam Springs, Oklahoma

Table 5-Annual Total Phosphorus Loading

ARK04A Year	Flow (cfs)	Total P (mg/L)	Total P (kg/yr)
1981	19.8	0.149	2,635
1982	29.9	0.171	4,566
1983	19.0	0.073	1,239
1984	53.5	0.112	5,351
1985	91.3	0.063	5,137
1986	78.4	0.067	4,691
1987	58.3	0.049	2,551
1988	41.8	0.031	1,157
1989	38.0	0.050	1,697
1990	71.3	0.060	3,821
1991	51.6	0.054	2,489
1992	56.1	0.047	2,355
1993	88.2	0.045	3,545
1994	53.0	0.051	2,414
1995	61.3	0.075	4,106
1996	33.5	0.050	1,496
1997	37.3	0.074	2,448
1998	42.9	0.056	2,142
1999	63.5	0.045	2,578
2000	55.6	0.038	1,893
2001	39.4	0.047	1,636
2002	44.6	0.047	1,850
2003	21.4	0.075	1,438
2004	64.6	0.055	3,173
2005	43.0	0.046	1,772
2006	12.6	0.056	630
2007	22.4	0.059	1,180
2008	76.9	0.147	10,096
2009	55.6	0.054	2,681
2010	44.3	0.049	1,939
2011	48.5	0.042	1,798
2012	19.2	0.043	732
2013	45.1	0.049	1,973
2014	30.7	0.049	1,343
2015	103.8	0.048	4,449
2016	32.2	0.051	1,467
2017	39.9	0.044	1,554
2018	45.6	0.043	1,750
2019	99.3	0.050	4,433
2020	75.1	0.048	3,243
Avg.	50.2	0.062	2,758

Figure 5 - Total Phosphorus Versus 3-Month Geometric Mean

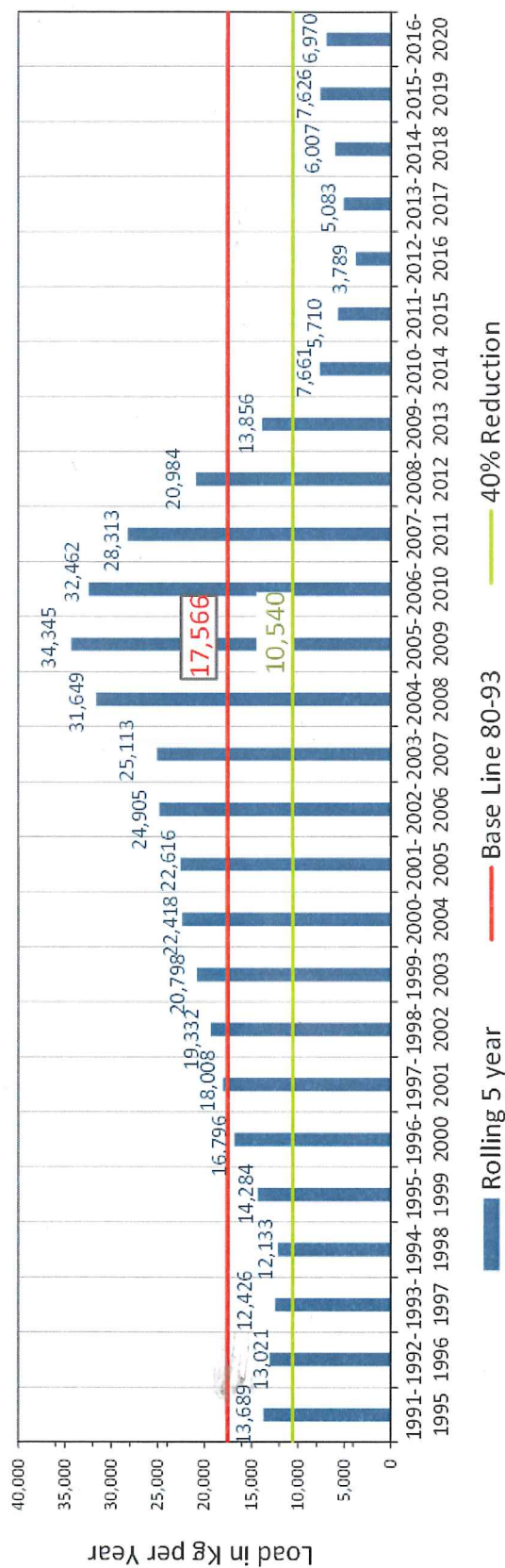


**Monitoring Station: Sager Creek
Near West Siloam Springs, Arkansas**

Table 6 – Five-Year Rolling Average Phosphorus Loading

Year	91-95	92-96	93-97	94-98	95-99	96-00	97-01	98-02	99-03	00-04	01-05	02-06	03-07	04-08	05-09	06-10	07-11	08-12	09-13	10-14	11-15	12-16	13-17	14-18	15-19	16-20
Pt (mg/l)	0.9	0.9	0.8	0.8	0.9	0.9	0.9	0.9	1.1	1.0	1.2	1.4	1.4	1.3	1.4	1.2	1.0	0.8	0.6	0.4	0.3	0.2	0.2	0.3	0.3	0.3
Flow (cfs)	18.0	17.1	17.4	16.1	17.8	20.4	22.5	23.3	22.0	24.0	21.6	20.3	20.1	27.6	28.3	29.2	31.7	29.7	24.0	20.0	23.3	21.0	23.1	23.5	29.1	26.7
Pt (kg/yr)	13889.3	13020.8	12426.1	12132.5	14283.8	16796.3	18008.2	19331.7	20797.6	22408.2	22615.8	24904.7	25112.8	31649.1	34945.2	32462.3	28313.4	20984.1	13855.7	7661.0	5708.5	3788.7	5083.3	6007.0	7625.7	6969.8
% Decrease	22%	26%	29%	31%	19%	4%	-3%	-10%	-18%	-28%	-29%	-42%	-43%	-80%	-96%	-85%	-61%	-19%	21%	56%	67%	78%	71%	66%	57%	60%

Figure 6 – Five-Year Rolling Average Phosphorus Loading Chart

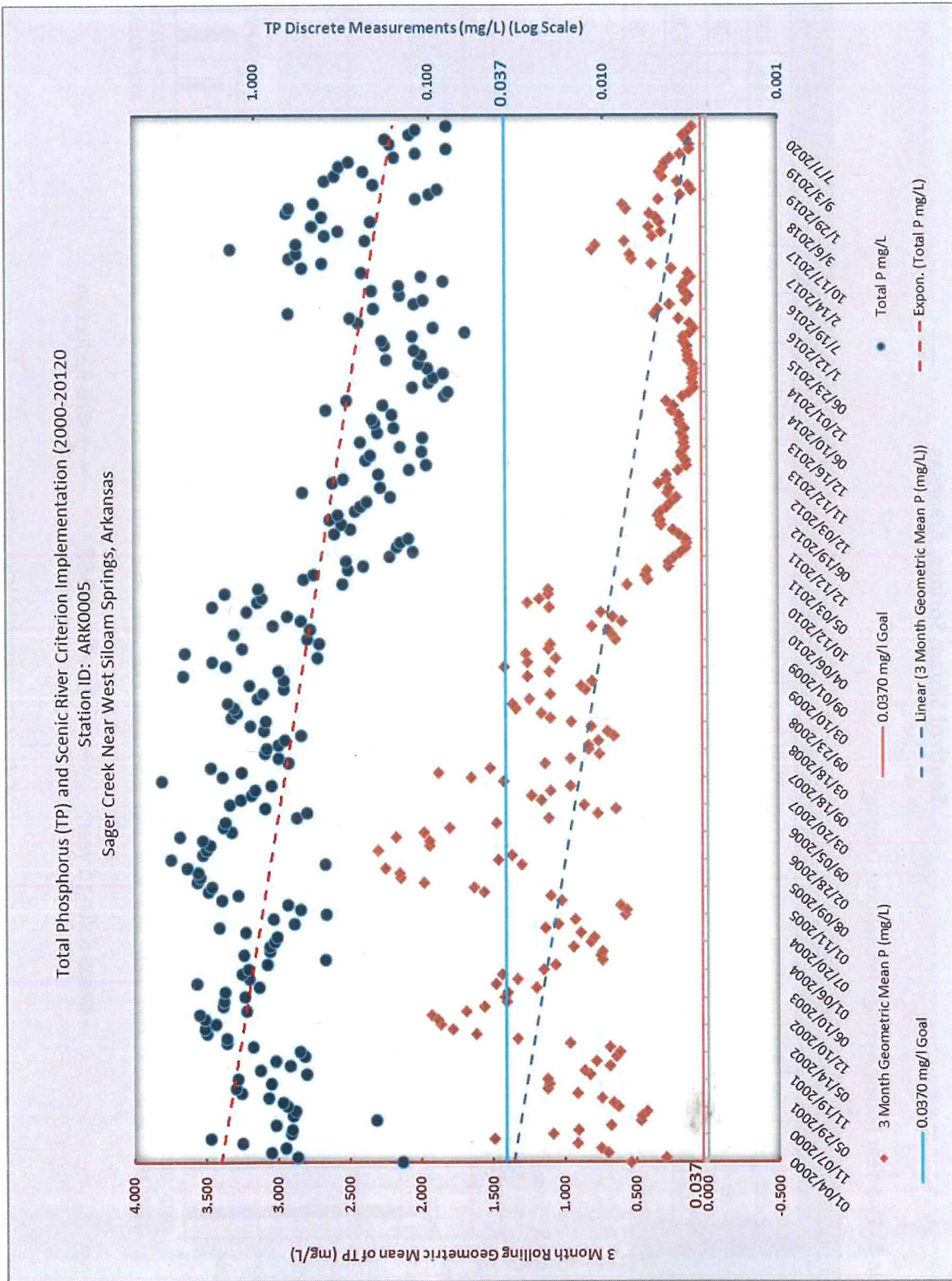


Monitoring Station: Sager Creek
Near West Siloam Springs, Arkansas

Table 7 – Annual Total Phosphorus Loading

ARK05 Year	Flow (cfs)	Total P (mg/L)	Total P (kg/yr)
1981	6.5	2.125	12,336
1982	9.0	2.025	16,277
1983	6.3	1.964	11,050
1984	15.4	0.950	13,066
1985	24.8	1.736	38,450
1986	21.1	0.834	15,716
1987	16.7	0.948	14,136
1988	12.6	1.154	12,986
1989	11.7	1.227	12,821
1990	20.2	0.860	15,515
1991	15.5	0.914	12,653
1992	16.5	1.284	18,921
1993	24.6	0.637	13,995
1994	15.7	0.721	10,110
1995	17.8	0.697	11,080
1996	11.0	0.919	9,028
1997	17.8	1.029	16,354
1998	18.1	0.858	13,876
1999	24.5	0.979	21,429
2000	30.7	0.820	22,469
2001	21.2	0.803	15,201
2002	21.8	1.192	23,231
2003	11.7	1.503	15,700
2004	34.5	0.916	28,224
2005	18.5	1.461	24,200
2006	14.9	1.799	23,940
2007	21.0	1.306	24,494
2008	48.9	0.945	41,271
2009	38.1	1.286	43,759
2010	22.9	0.897	18,335
2011	27.4	0.573	14,027
2012	11.4	0.250	2,540
2013	20.2	0.228	4,105
2014	18.2	0.196	3,193
2015	39.1	0.128	4,470
2016	16.3	0.207	3,013
2017	21.7	0.473	9,179
2018	22.2	0.427	8,454
2019	46.4	0.230	9,531
2020	26.8	0.126	3,010
Avg.	21.0	0.941	17,635

Figure 7 – Sager Creek Total Phosphorus Versus 3-Month Geometric Mean

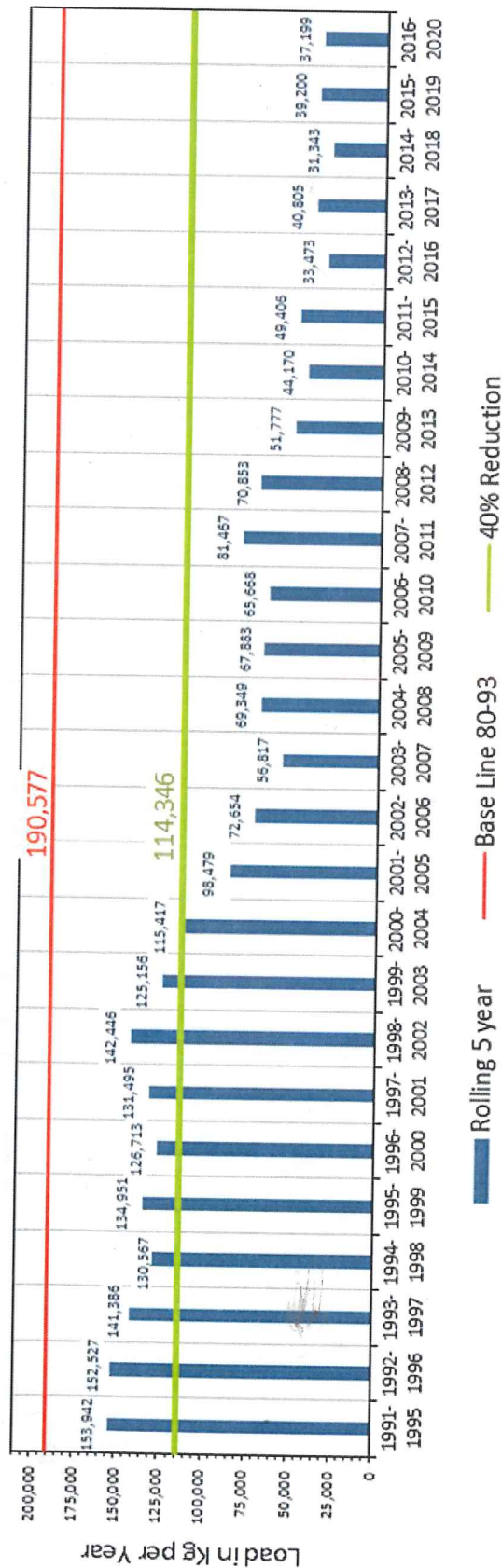


Monitoring Station: Illinois River
South of Siloam Springs, Arkansas

Table 8 - Five-Year Rolling Average Phosphorus Loading

Year	91-95	92-96	93-97	94-98	95-99	96-00	97-01	98-02	99-03	00-04	01-05	02-06	03-07	04-08	05-09	06-10	07-11	08-12	09-13	10-14	11-15	12-16	13-17	14-18	15-19	16-20
Pt (mg/l)	0.220	0.211	0.209	0.222	0.225	0.224	0.238	0.252	0.246	0.236	0.214	0.179	0.149	0.136	0.122	0.110	0.110	0.098	0.081	0.080	0.081	0.068	0.077	0.061	0.060	0.058
Flow (cfs)	821	809	757	658	570	633	619	634	569	548	516	455	428	569	624	668	830	811	718	621	686	551	591	579	734	721
Pt (kg/yr)	153,942	152,527	141,386	130,567	134,951	126,713	131,495	142,446	125,156	115,417	98,479	72,654	56,817	69,349	67,883	65,668	81,467	70,853	51,777	44,170	49,406	33,473	40,805	31,343	39,200	37,199
% Decrease	19%	20%	26%	31%	29%	34%	31%	25%	34%	39%	48%	62%	70%	64%	61%	68%	57%	63%	73%	77%	74%	82%	79%	84%	79%	80%

Figure 8 - Five-Year Rolling Average Phosphorus Loading Chart

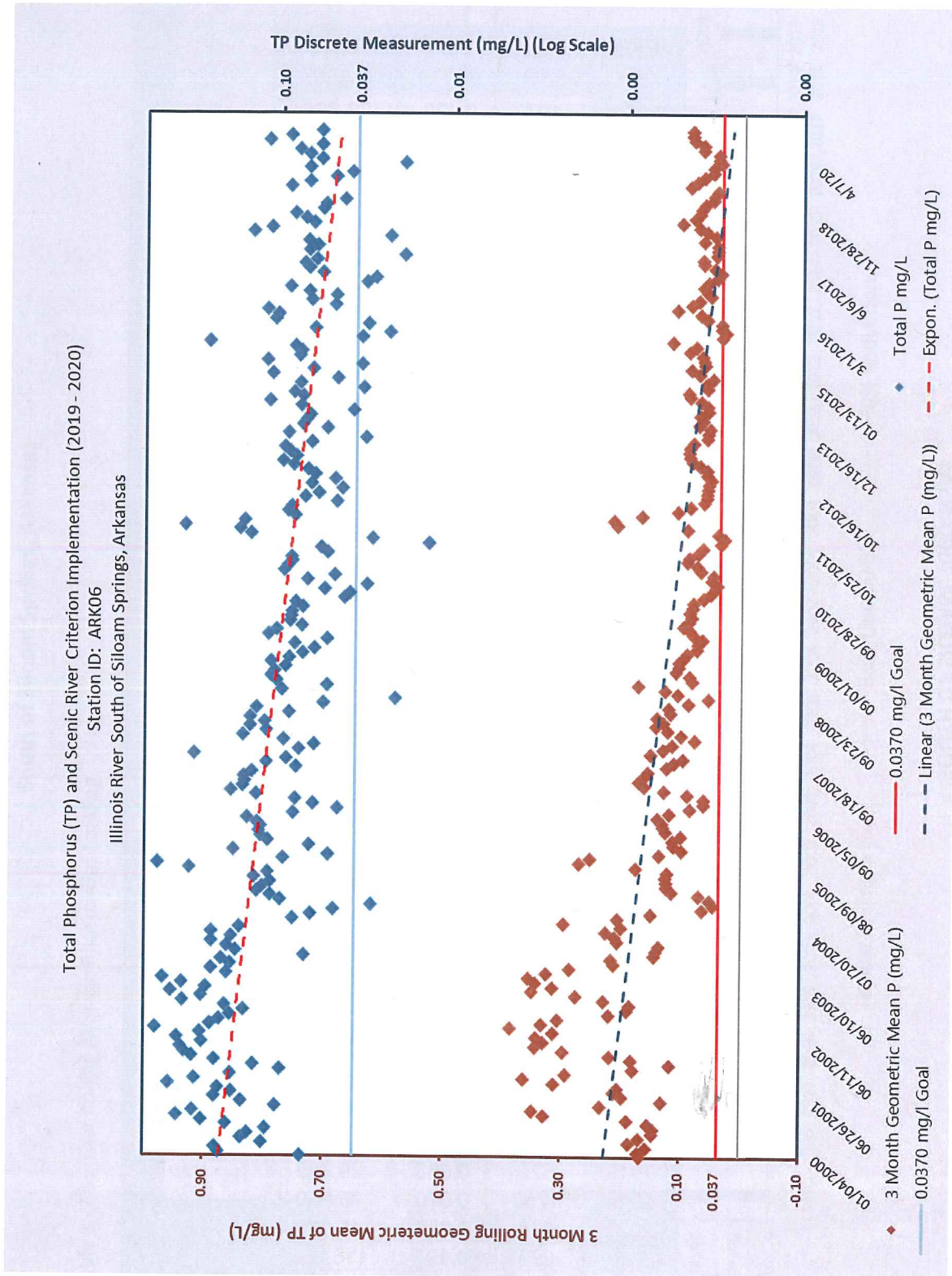


MONITORING STATION: ILLINOIS RIVER
SOUTH OF SILOAM, ARKANSAS

Table 9 - Annual Total Phosphorus Loading

ARK06 Year	Flow (cfs)	Total P (mg/L)	Total P (kg/yr)
1981	197	0.420	73,895
1982	591	0.370	195,294
1983	352	0.386	121,347
1984	706	0.442	278,693
1985	947	0.289	244,426
1986	879	0.305	239,436
1987	815	0.294	213,996
1988	531	0.253	119,982
1989	558	0.291	145,020
1990	1127	0.204	205,331
1991	724	0.220	142,253
1992	760	0.222	150,684
1993	1163	0.181	188,000
1994	674	0.190	114,370
1995	783	0.237	165,733
1996	667	0.225	134,032
1997	497	0.213	94,504
1998	668	0.246	146,960
1999	737	0.206	135,413
2000	597	0.230	122,831
2001	598	0.293	156,581
2002	570	0.282	143,700
2003	344	0.219	67,422
2004	633	0.153	86,496
2005	436	0.120	46,785
2006	290	0.120	31,048
2007	436	0.131	51,022
2008	1051	0.158	148,306
2009	907	0.080	64,782
2010	659	0.061	35,885
2011	1097	0.120	117,154
2012	343	0.070	21,547
2013	583	0.073	37,984
2014	426	0.074	28,014
2015	1334	0.066	78,651
2016	418	0.057	21,264
2017	547	0.043	21,003
2018	521	0.063	29,333
2019	1200	0.070	75,030
2020	917	0.056	45,860
Avg.	673	0.193	116,261

Figure 9 – Illinois River Total Phosphorus Versus 3-Month Geometric Mean

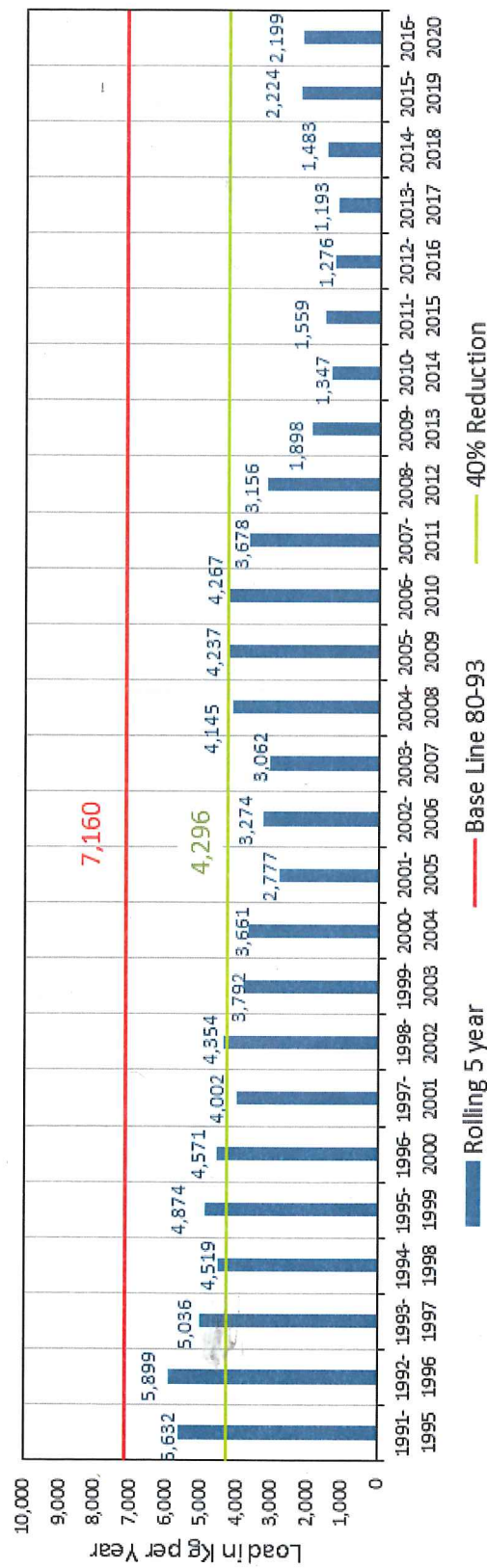


**Monitoring Station: Baron Fork
at Dutch Mills, Arkansas**

Table 10 - Five-Year Rolling Average Phosphorus Loading

Year	91-95	92-96	93-97	94-98	95-99	96-00	97-01	98-02	99-03	00-04	01-05	02-06	03-07	04-08	05-09	06-10	07-11	08-12	09-13	10-14	11-15	12-16	13-17	14-18	15-19	16-20
Pt (mg/l)	0.108	0.107	0.095	0.100	0.104	0.099	0.095	0.102	0.107	0.104	0.091	0.096	0.093	0.093	0.088	0.085	0.080	0.072	0.057	0.053	0.052	0.050	0.048	0.061	0.066	0.072
Flow (cfs)	58.5	61.5	59.1	50.5	52.3	52.0	47.4	47.8	39.6	39.3	34.0	38.1	37.0	50.2	53.7	55.9	51.6	49.1	37.1	28.2	33.4	28.5	27.6	27.0	37.8	34.1
Pt (kg/yr)	5632	5899	5036	4519	4874	4571	4002	4354	3792	3661	2777	3274	3062	4145	4237	4267	3678	3156	1898	1347	1559	1276	1193	1483	2224	2199
% Decrease	21%	18%	30%	37%	32%	36%	44%	39%	47%	49%	61%	54%	57%	42%	41%	40%	49%	55%	73%	81%	78%	82%	83%	79%	69%	69%

Figure 10 - Five-Year Rolling Average Phosphorus Loading Chart



Monitoring Station: Baron Fork
at Dutch Mills, Arkansas

Table 11 – Annual Total Phosphorus Loading

ARK07A Year	Flow (cfs)	Total P (mg/L)	Total P (kg/yr)
1981	18.4	0.135	2,218
1982	37.4	0.484	16,167
1983	27.2	0.125	3,037
1984	51.8	0.183	8,466
1985	79.4	0.211	14,962
1986	64.0	0.147	8,402
1987	63.2	0.134	7,563
1988	31.8	0.097	2,755
1989	50.2	0.124	5,559
1990	102.0	0.109	9,929
1991	49.4	0.086	3,794
1992	47.9	0.127	5,433
1993	104.0	0.083	7,709
1994	37.0	0.081	2,677
1995	54.2	0.162	7,842
1996	64.4	0.084	4,831
1997	35.9	0.067	2,151
1998	61.1	0.107	5,822
1999	45.8	0.102	4,176
2000	52.6	0.133	6,230
2001	41.4	0.065	2,387
2002	38.0	0.104	3,536
2003	20.1	0.133	2,386
2004	44.5	0.087	3,458
2005	26.1	0.069	1,595
2006	62.0	0.088	4,873
2007	32.3	0.087	2,510
2008	86.0	0.132	10,138
2009	62.3	0.066	3,672
2010	37.1	0.054	1,789
2011	40.2	0.060	2,161
2012	19.7	0.048	845
2013	26.3	0.058	1,364
2014	17.8	0.049	778
2015	101.8	0.050	4,546
2016	22.1	0.050	987
2017	36.9	0.039	1,290
2018	39.8	0.123	4,374
2019	94.2	0.069	5,804
2020	55.6	0.080	3,969
Avg.	49.5	0.107	4,747

Figure 11 – Baron Fork Total Phosphorus versus 3 Month Geometric Mean

