Appendix B: Water Quality Calibration and Validation for the Floyds Fork Watershed

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Table B-1 LSPC Watershed Water Quality Calibration Stations

Station	Agency	Site Name	USGS Drainage Area (mi^2)	USGS Drainage Area (acres)	LSPC Watershed	LSPC Drainage Area (acres)	Type	Parameter
03297830	USGS	Floyds Fork at Highway 53	20	12736	244	12095	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297845	USGS	Floyds Fork near Crestwood	47	29888	229	29972	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297850	USGS	South Fork Curry's Fork at Moody Lane	1	742	220	689	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297855	USGS	South Fork Curry's Fork at Highway 393	9	5939	215	4707	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297860	USGS	North Fork Curry's Fork at Stone Ridge road	10	6464	210	6464	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297875	USGS	Ashers Run at Abbott lane near Crestwood	3	2150	225	1812	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297880	USGS	Currys Fork near Crestwood	29	18240	617	18202	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297900	USGS	Floyds Fork near Peewee Valley	80	51136	615	53084	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297930	USGS	Floyds Fork at Echo trail bridge	104	66560	185	66898	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297950	USGS	Long Run at Old stage coach road	6	3571	263	3549	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297975	USGS	South Long Run at Hobbs Lane	8	4890	274	4341	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03297980	USGS	Long Run near Fisherville	23	14400	258	15297	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298000	USGS	Floyds Fork at Fisherville	138	88320	180	88803	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298005	USGS	Pope lick at South poope lick road near Fisherville	10	6202	174	6196	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298020	USGS	Chenoweth Run at Gelhaus Lane	14	9088	283	8954	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298100	USGS	Pope lick at pope lick road near Middletown	3	1856	178	1894	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298110	USGS	Pope lick at Rehl road near Fisherville	1	858	176	869	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298120	USGS	Floyds Fork at Seatonville Road	172	110080	169	110308	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298135	USGS	Chenoweth Run at Ruckriegal Parkway	5	3501	167	3449	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298138	USGS	Chenoweth Run at Jeffersontown STP at Jeffersontown	6	4096	610	4009	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298150	USGS	Chenoweth Run at Gelhaus Lane near Fern creek	12	7424	609	8176	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298160	USGS	Chenoweth Run at Seatonville road near Jeffersontown	17	10707	158	10689	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298200	USGS	Floyds Fork near Mt. Washington	213	136320	606	137052	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298250	USGS	Cedar Creek at Thixton Road	11	7104	134	7212	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298300	USGS	Pennsylvania Run at Mt. Washington	6	4096	130	4182	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS
03298470	USGS	Floyds Fork near Shepherdsville	283	181120	102	182087	**Calibration**	TEMP, DO,BOD5,TN, TP, TSS

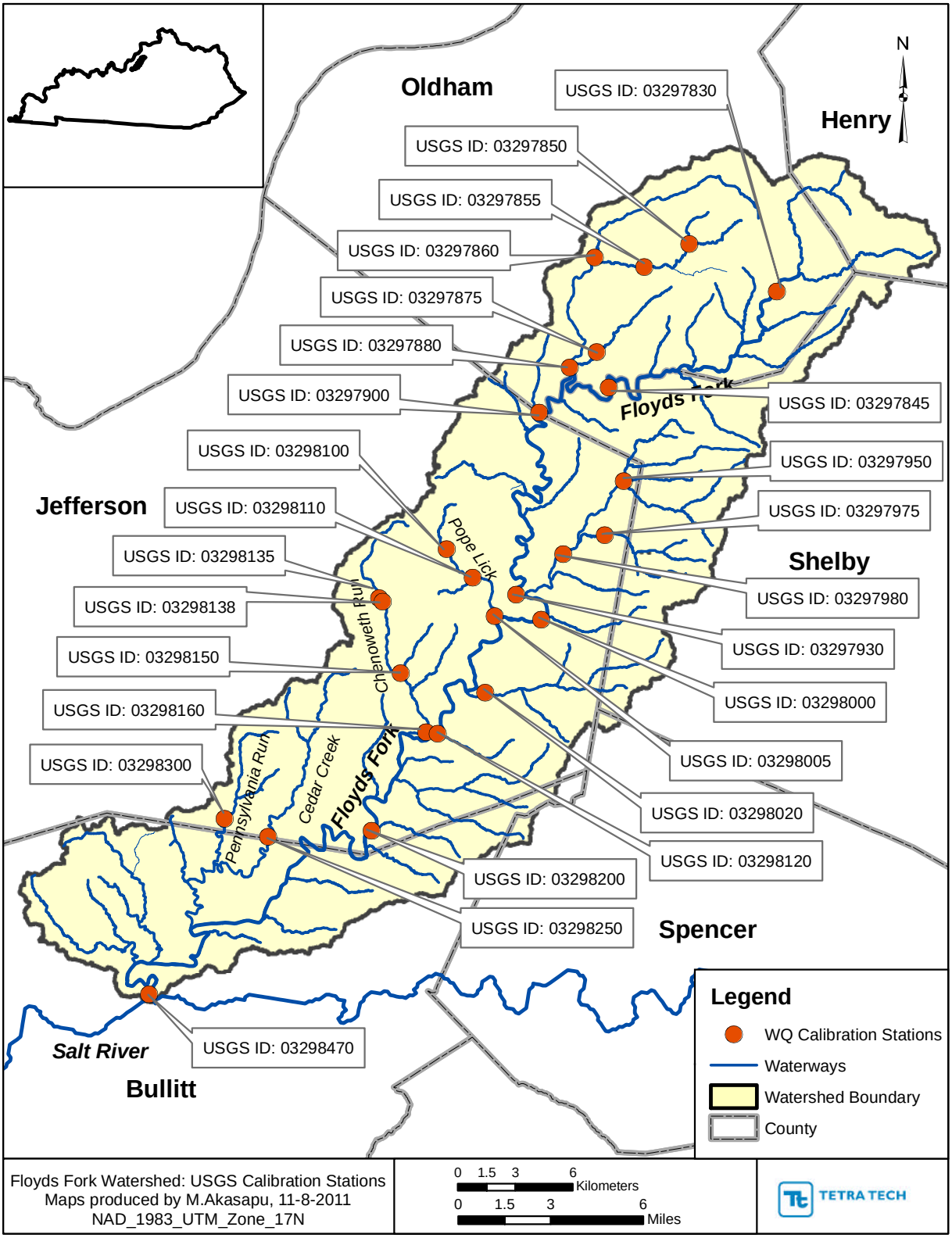

Figure B-1 USGS Water Quality Calibration Stations Utilized in the Floyds Fork Watershed Model

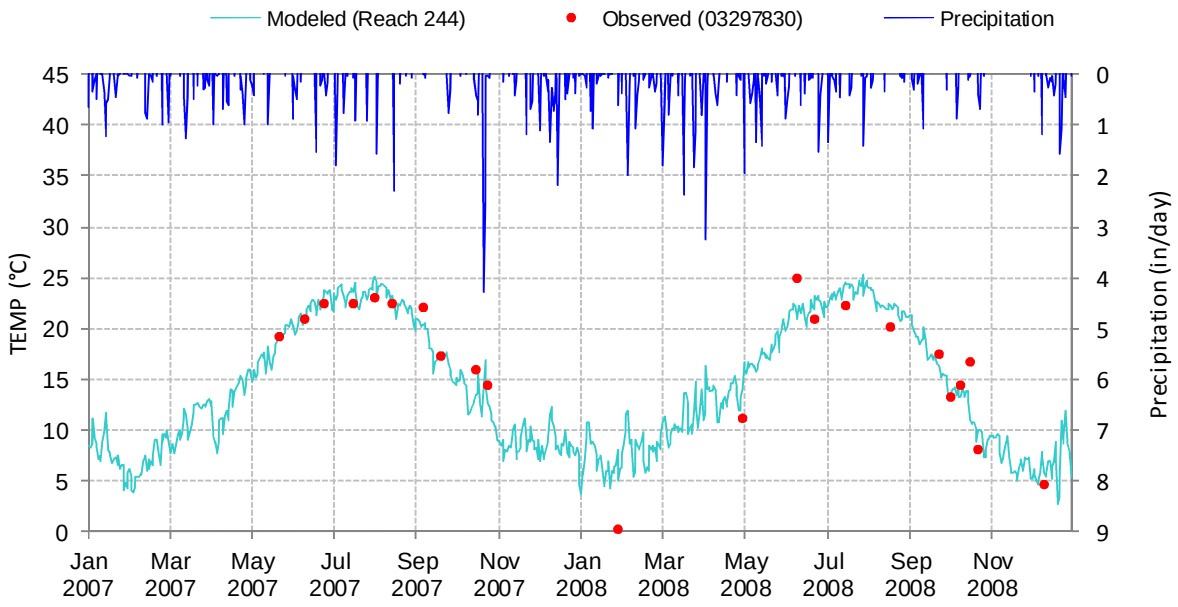

Figure B-2 Modeled vs. Observed TEMP (°C) at 03297830

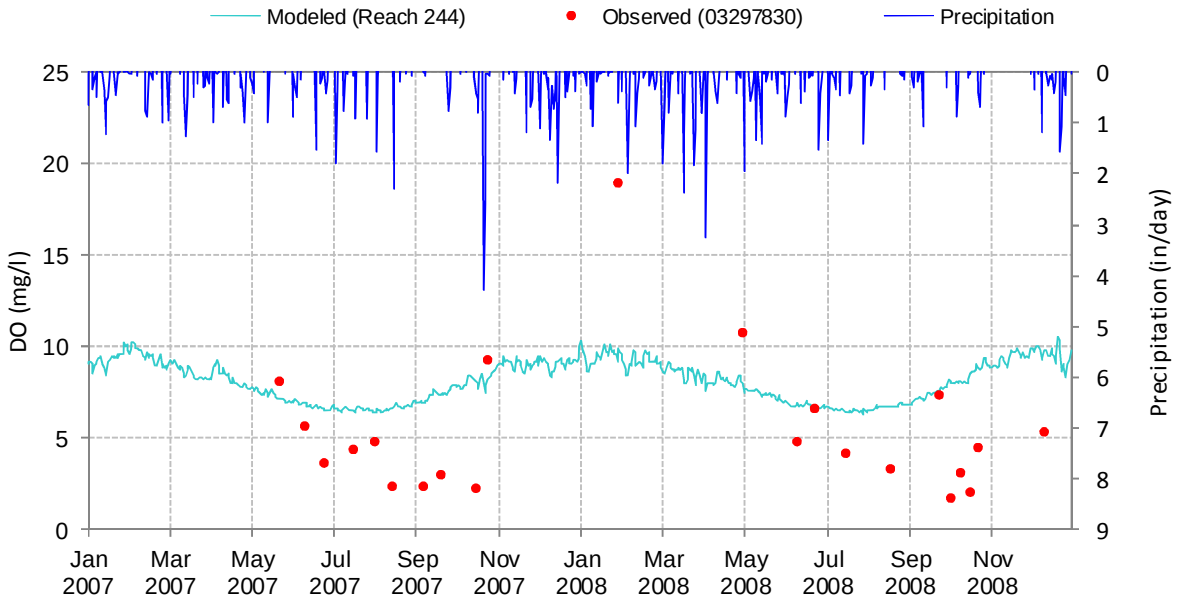

Figure B-3 Modeled vs. Observed DO (mg/l) at 03297830

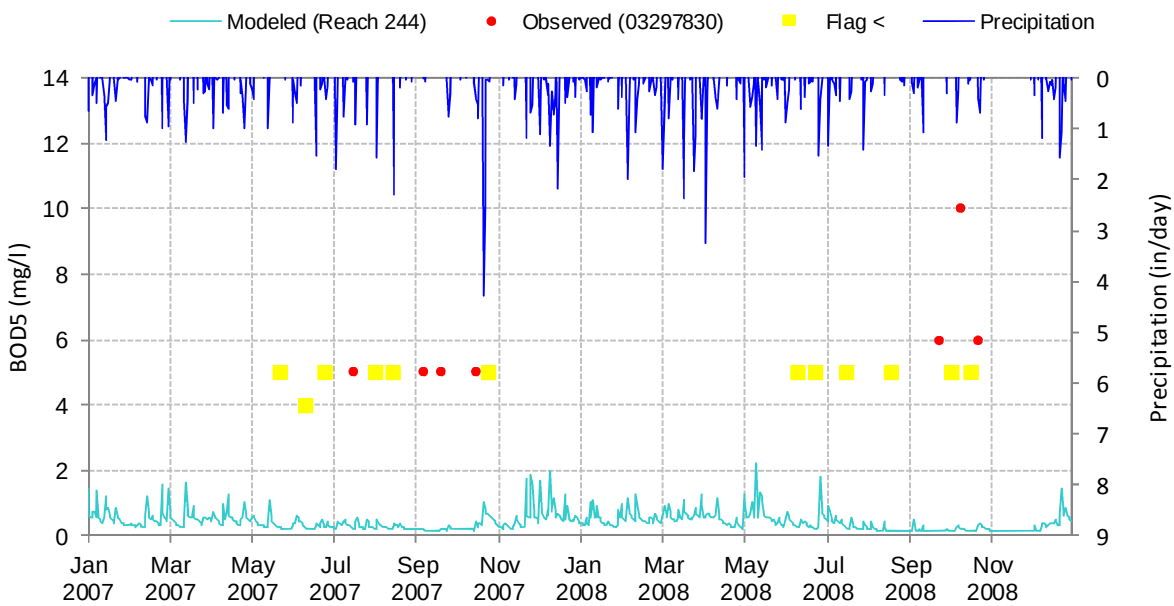

Figure B-4 Modeled vs. Observed BOD5 (mg/l) at 03297830

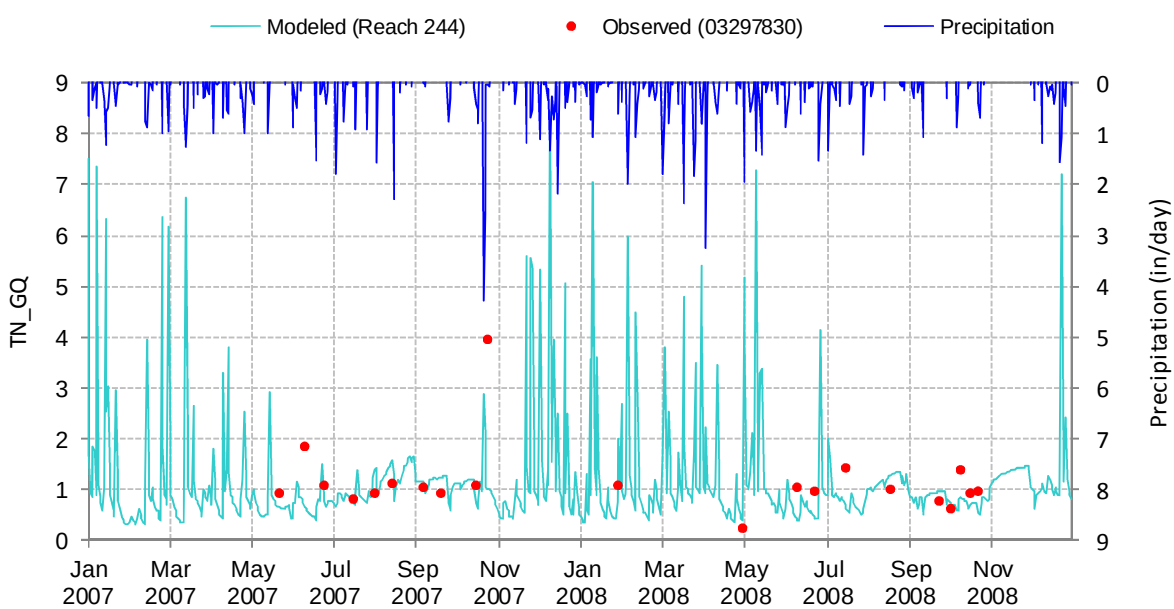

Figure B-5 Modeled vs. Observed TN_GQ at 03297830

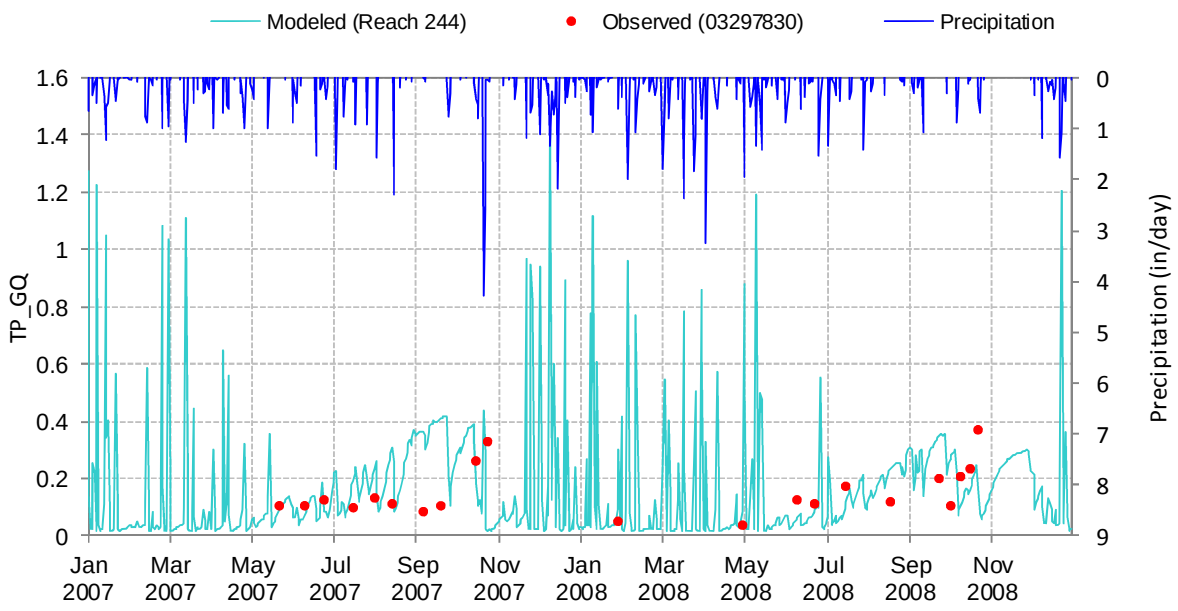

Figure B-6 Modeled vs. Observed TP_GQ at 03297830

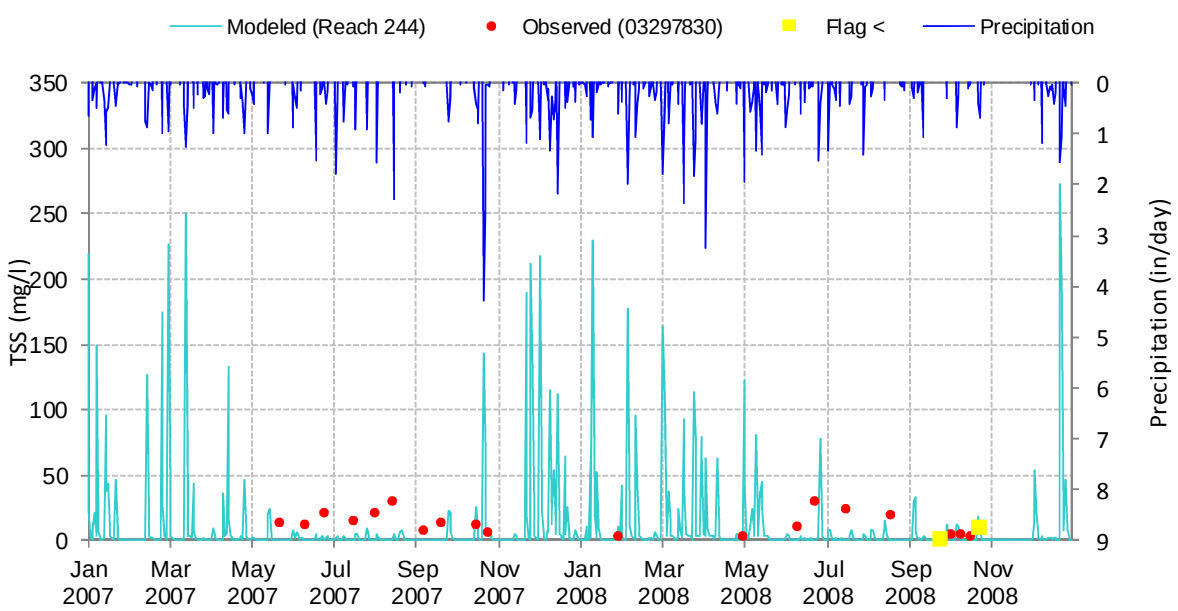

Figure B-7 Modeled vs. Observed TSS (mg/l) at 03297830

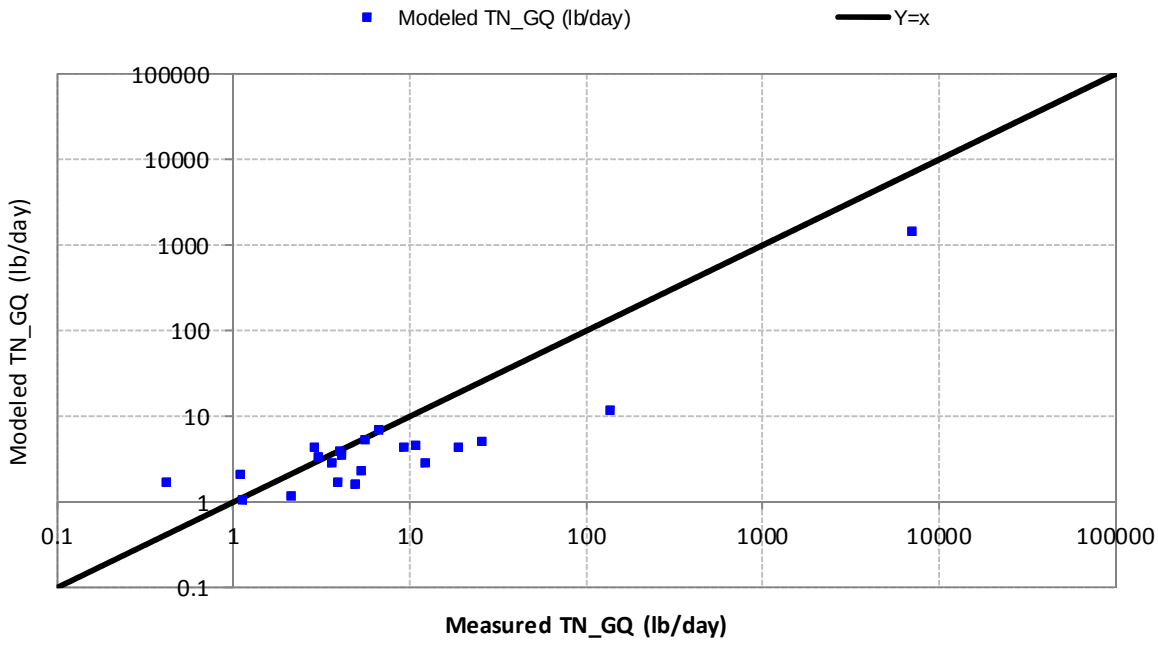

Figure B-8 Modeled vs. Observed Load TN_GQ at 03297830

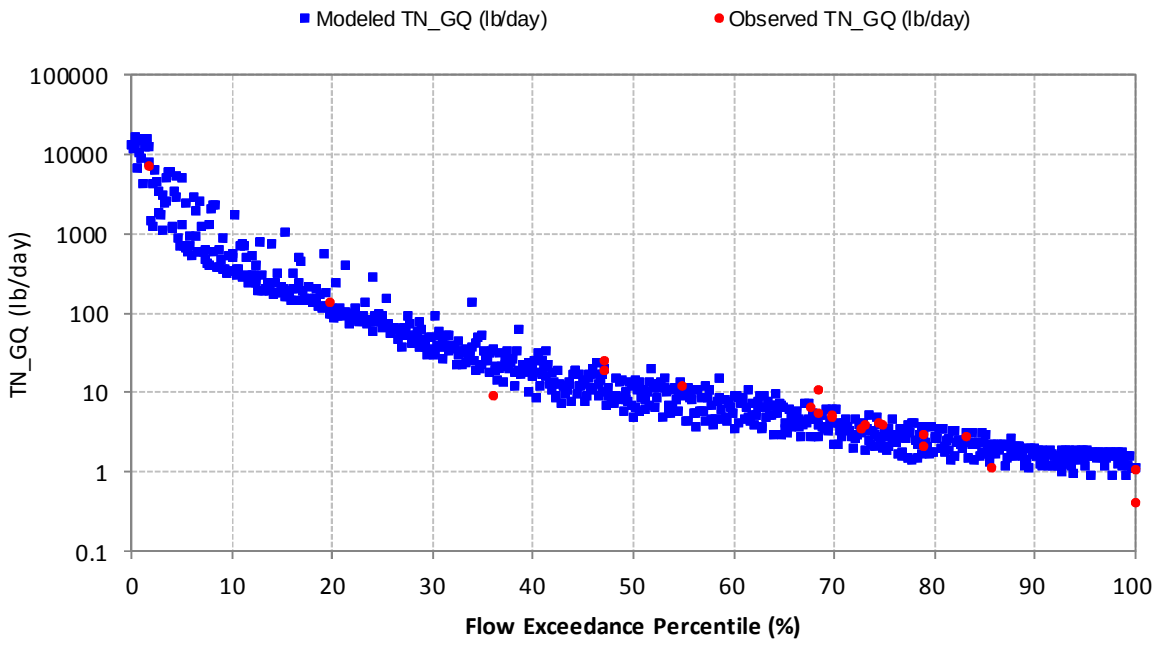

Figure B-9 Modeled vs. Observed Load TN_GQ at 03297830

Table B-2 Modeled vs. Observed Load TN_GQ at 03297830

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	131,567	115,920	13.5	97,909	34.38
2008	172,032	85,810	100.48	55,559	209.64

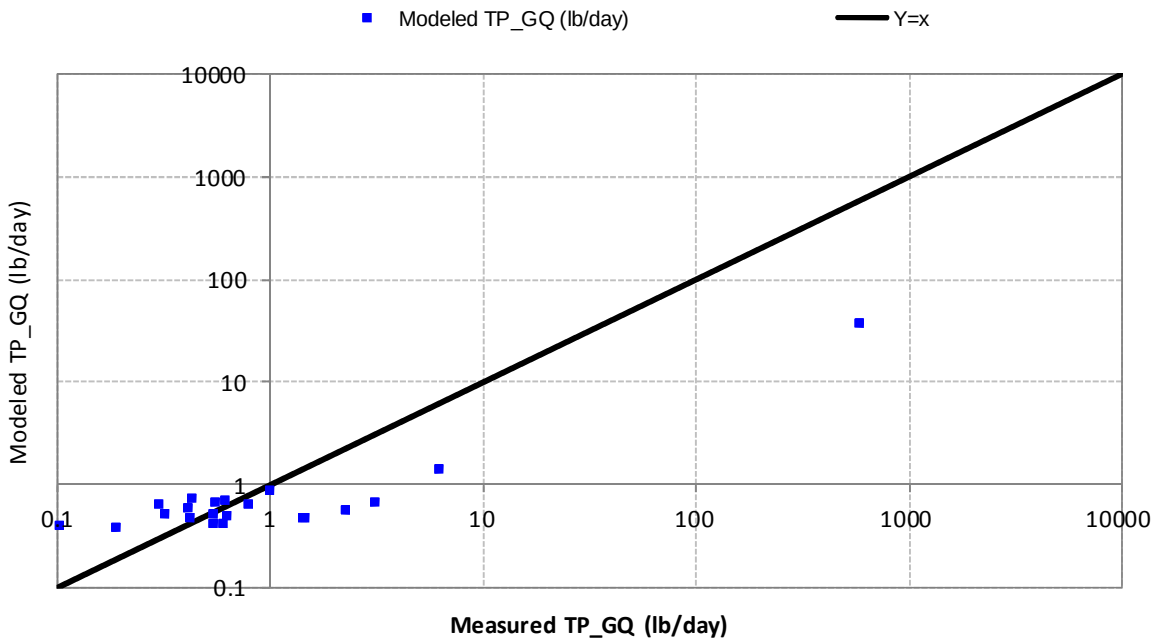

Figure B-10 Modeled vs. Observed Load TP_GQ at 03297830

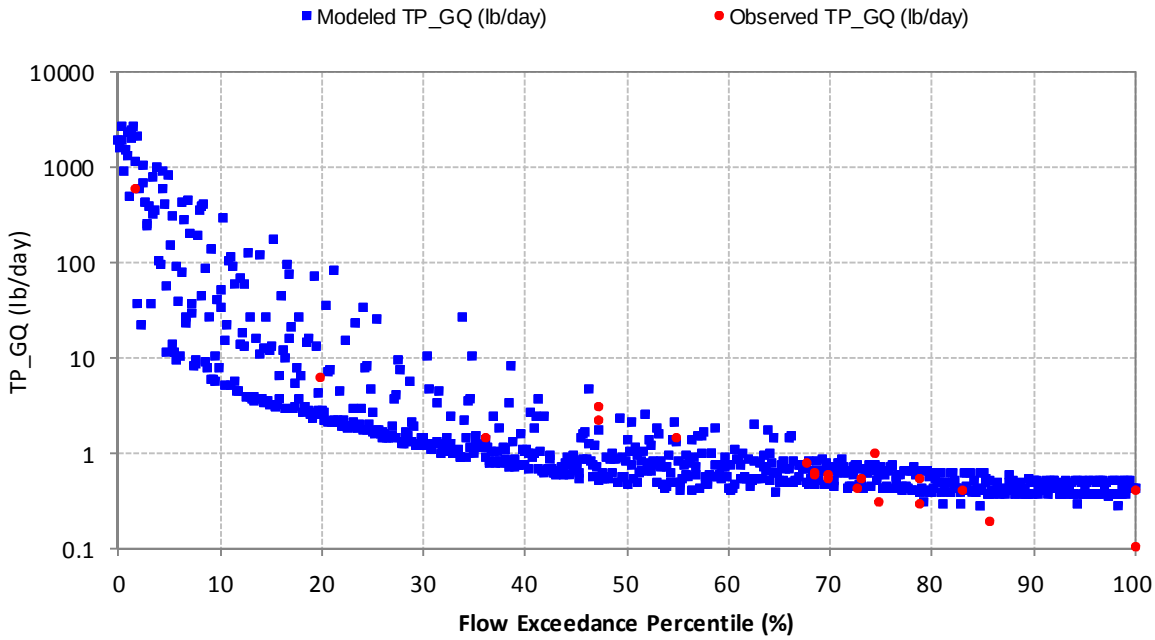

Figure B-11 Modeled vs. Observed Load TP_GQ at 03297830

Table B-3 Modeled vs. Observed Load TP_GQ at 03297830

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	18,514	11,010	68.16	8,719	112.32
2008	23,969	6,323	279.06	5,145	365.86

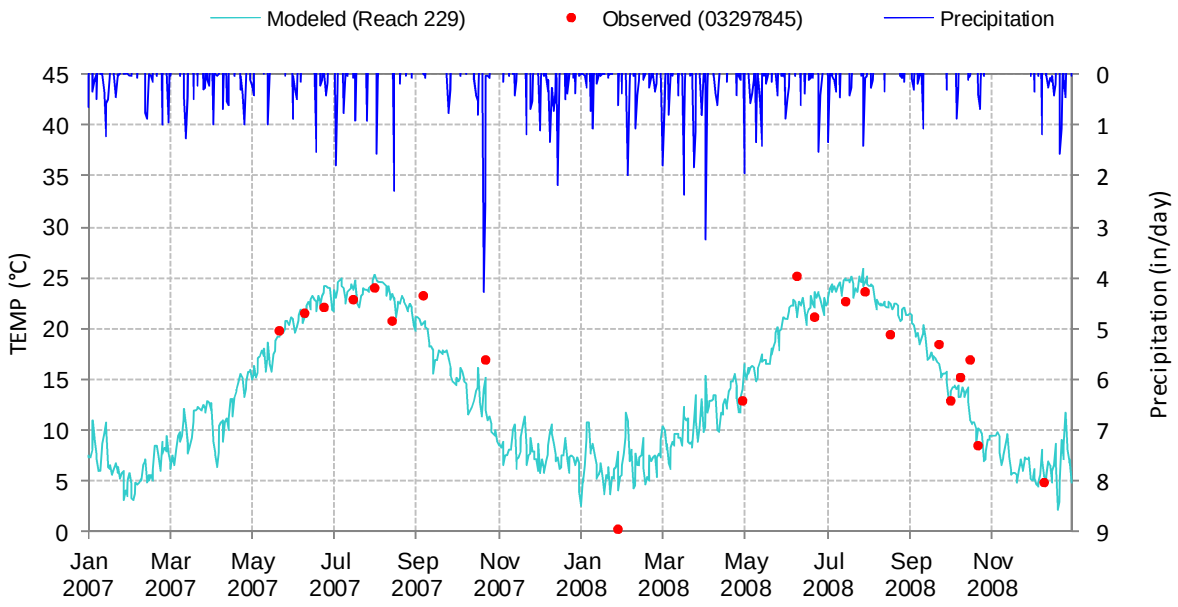

Figure B-12 Modeled vs. Observed TEMP (°C) at 03297845

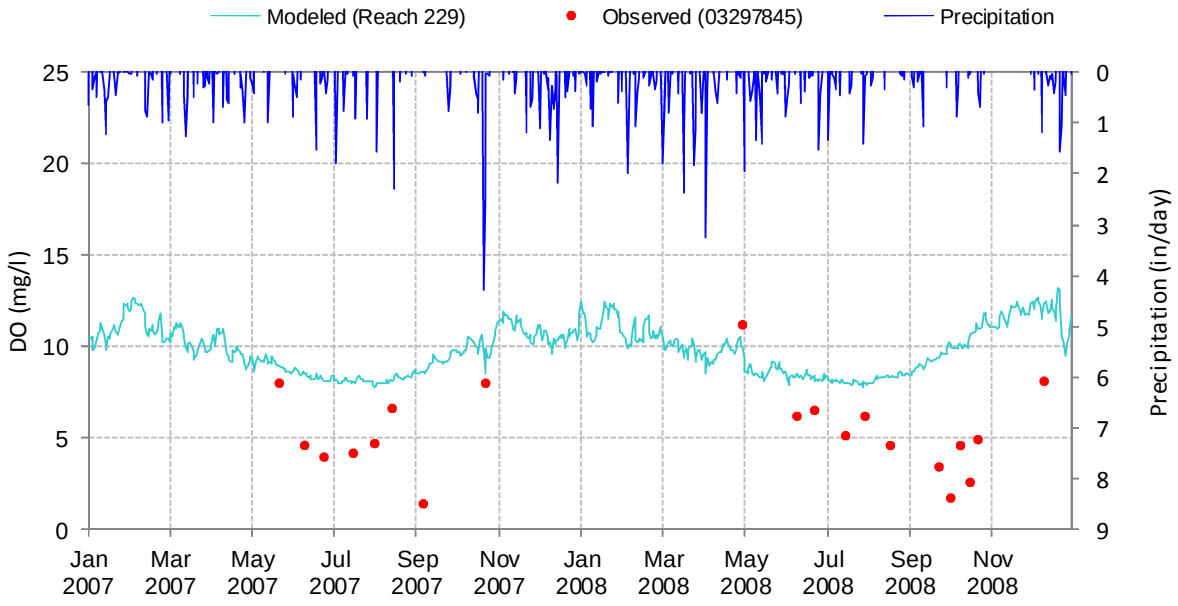

Figure B-13 Modeled vs. Observed DO (mg/l) at 03297845

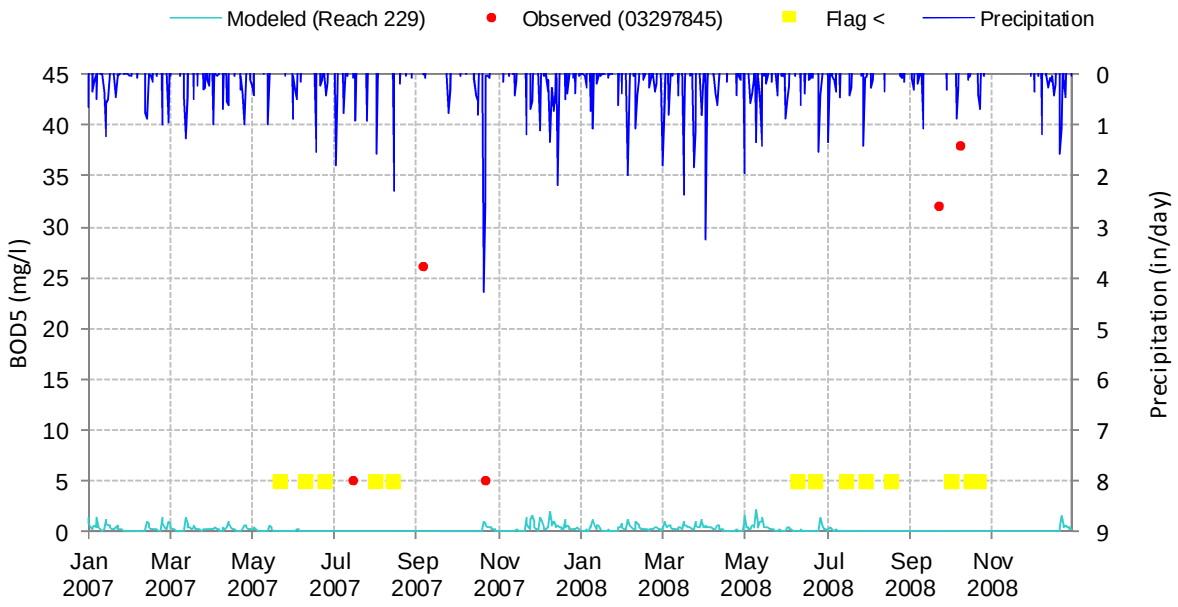

Figure B-14 Modeled vs. Observed BOD5 (mg/l) at 03297845

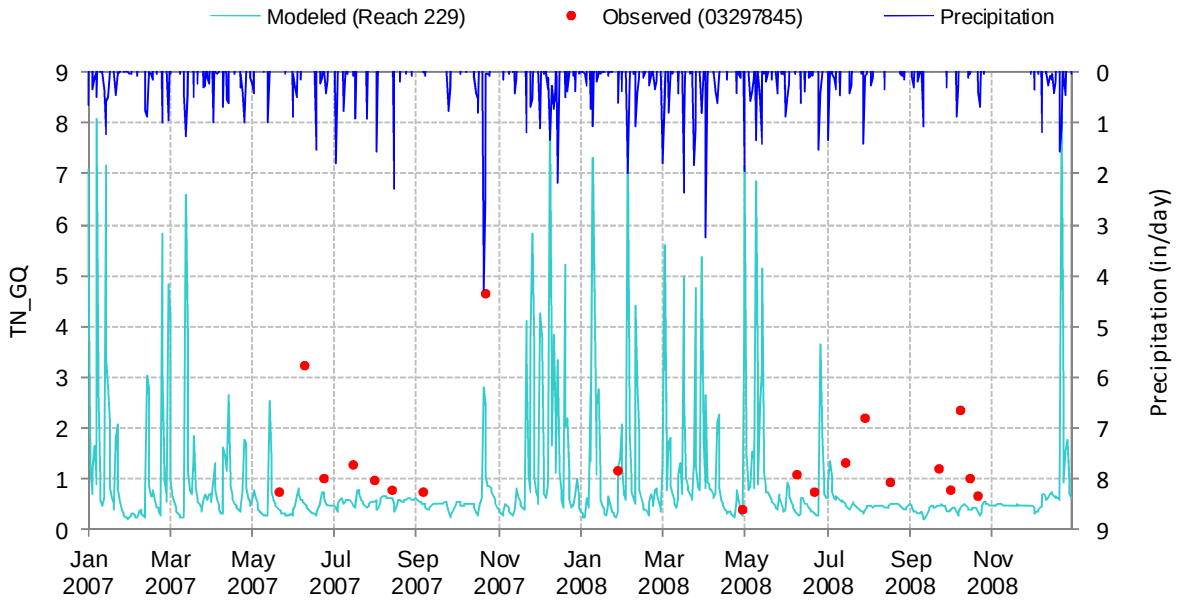

Figure B-15 Modeled vs. Observed TN_GQ at 03297845

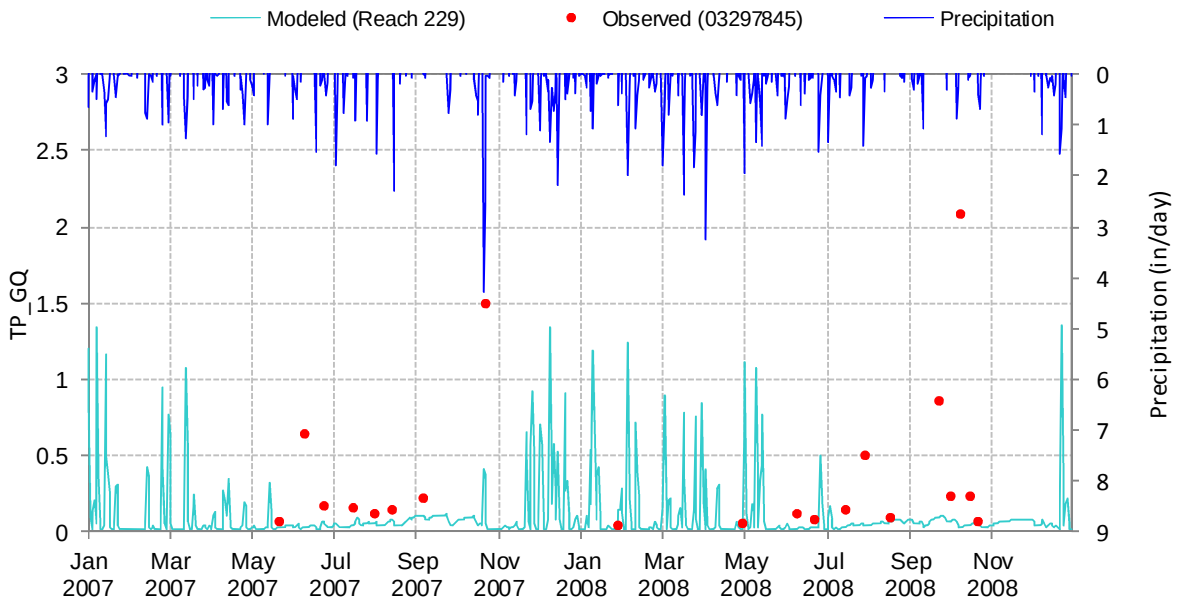

Figure B-16 Modeled vs. Observed TP_GQ at 03297845

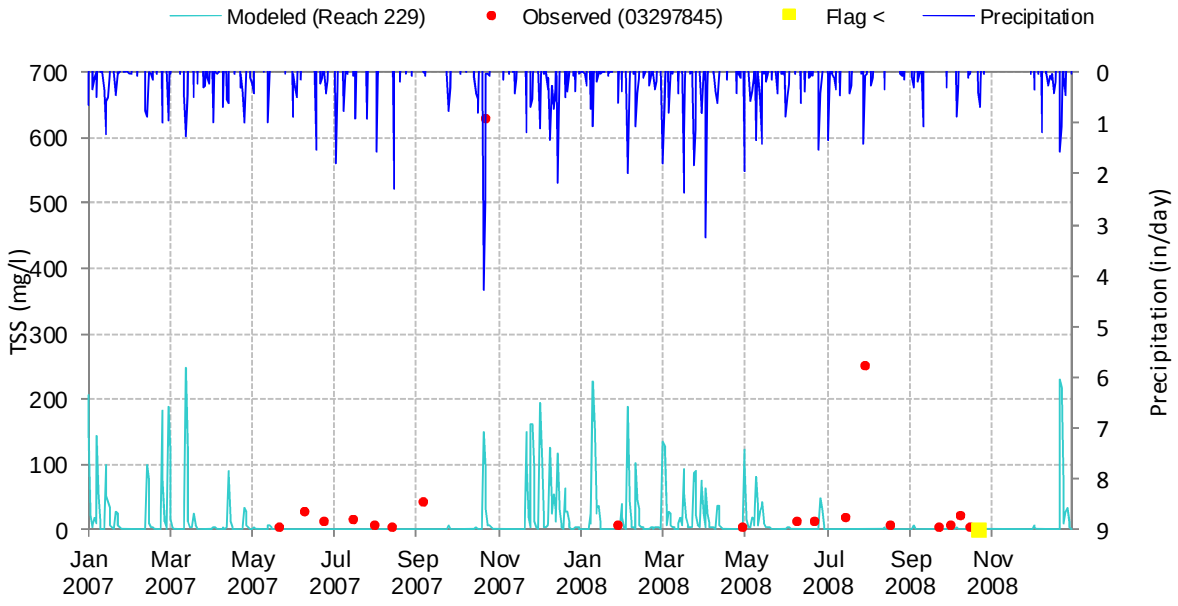

Figure B-17 Modeled vs. Observed TSS (mg/l) at 03297845

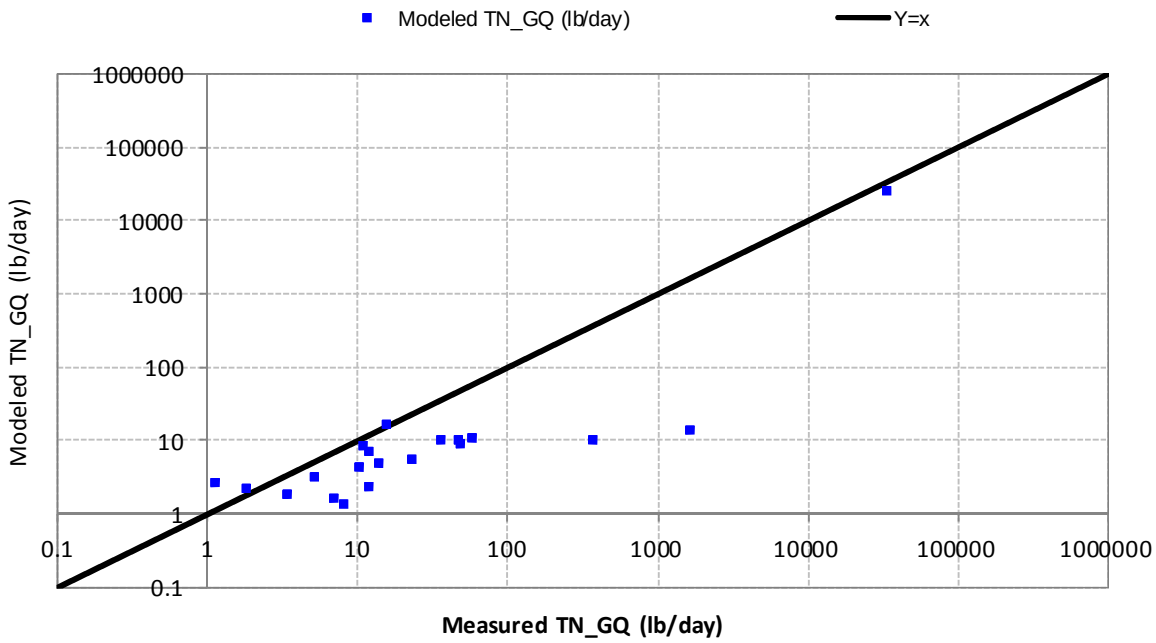

Figure B-18 Modeled vs. Observed Load TN_GQ at 03297845

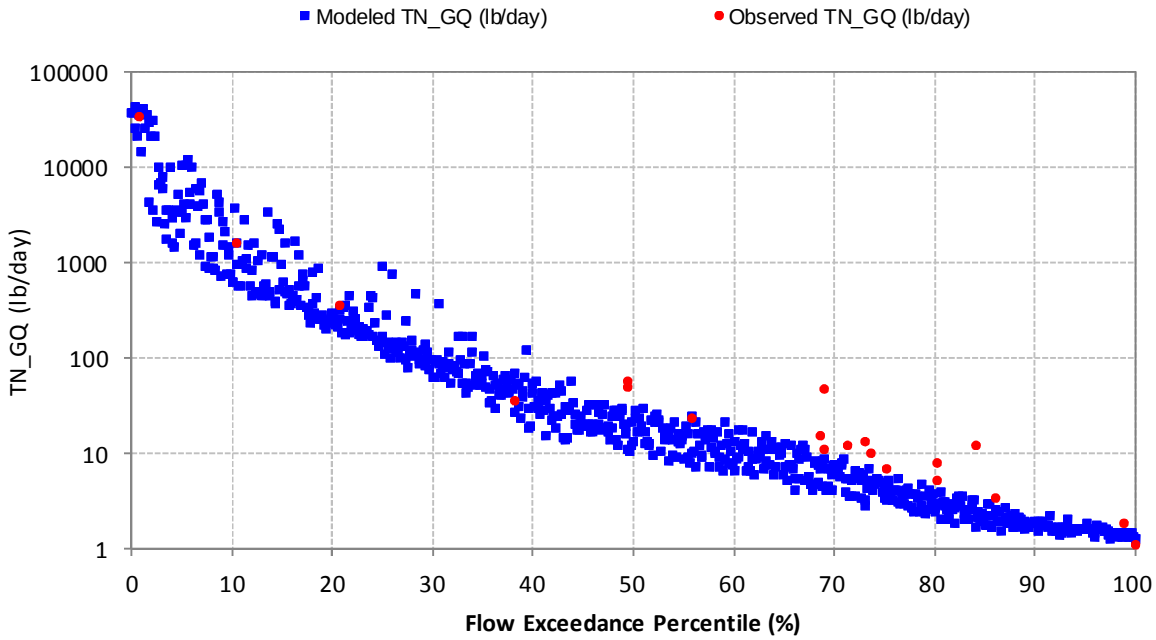

Figure B-19 Modeled vs. Observed Load TN_GQ at 03297845

Table B-4 Modeled vs. Observed Load TN_GQ at 03297845

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	323,475	333,153	-2.9	259,545	24.63
2008	479,125	232,926	105.7	156,763	205.64

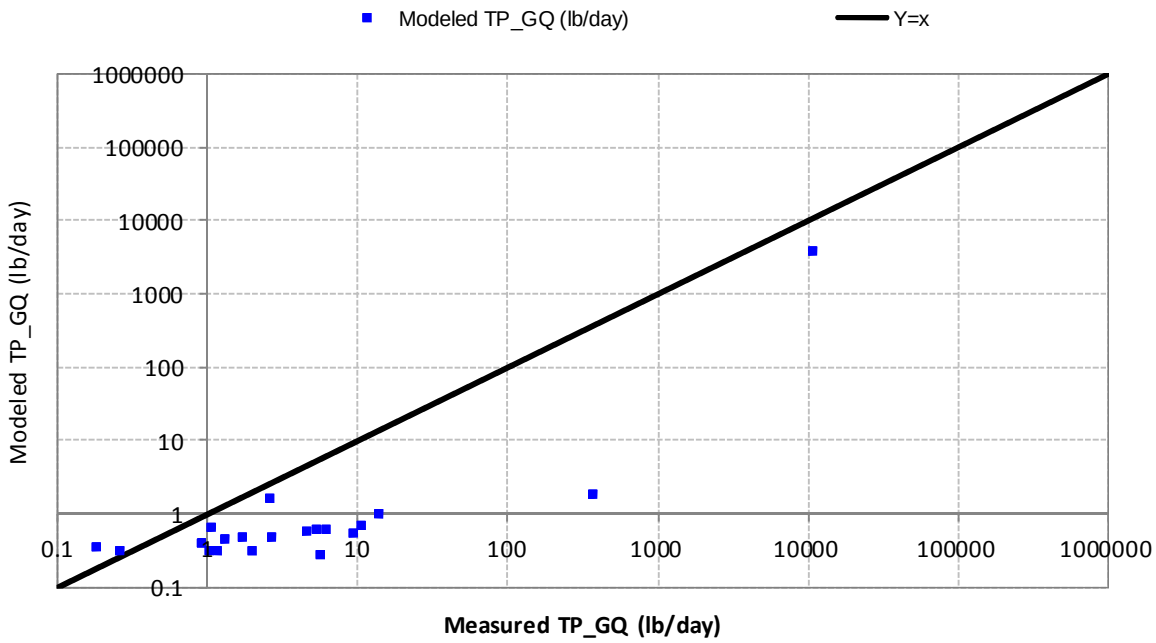

Figure B-20 Modeled vs. Observed Load TP_GQ at 03297845

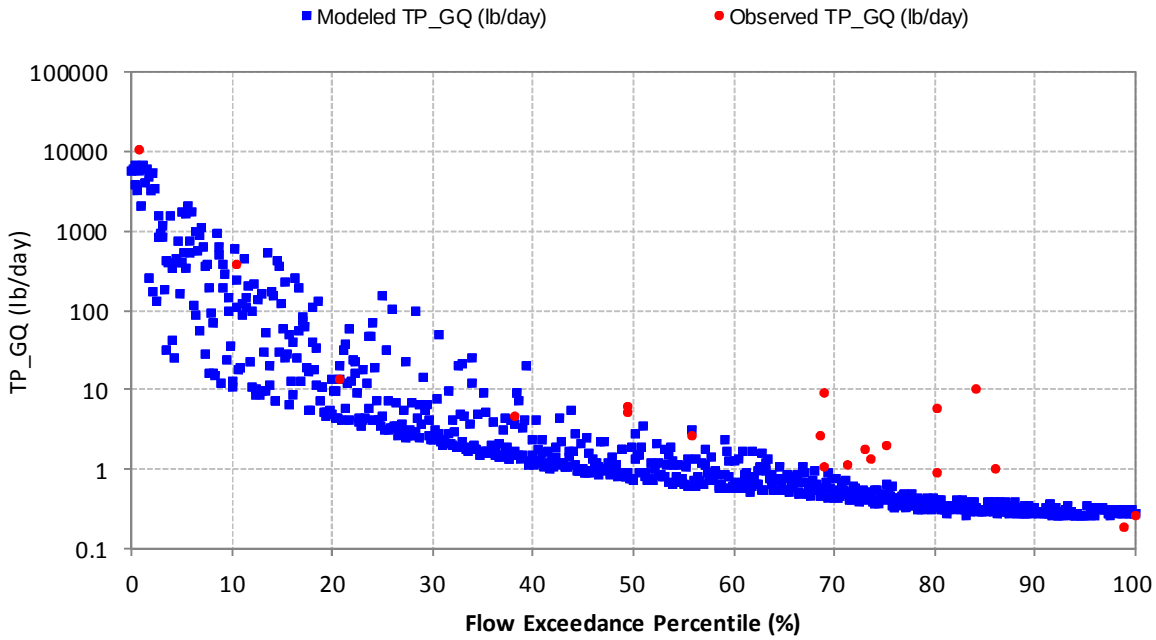

Figure B-21 Modeled vs. Observed Load TP_GQ at 03297845

Table B-5 Modeled vs. Observed Load TP_GQ at 03297845

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	46,381	93,702	-50.5	62,314	-25.57
2008	69,707	28,701	142.87	15,421	352.02

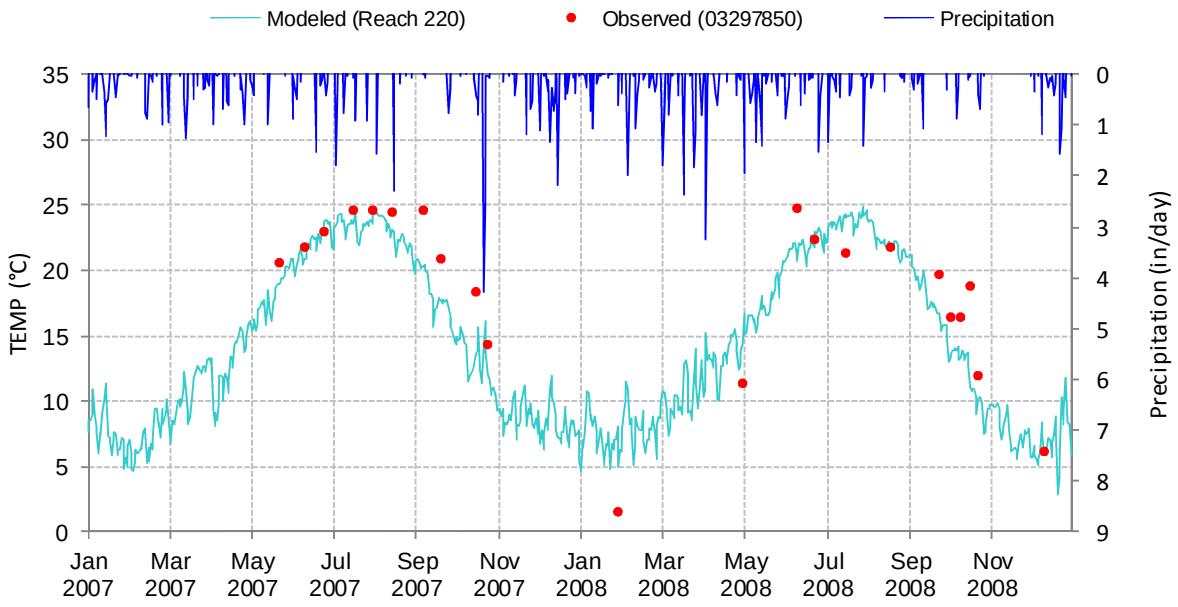

Figure B-22 Modeled vs. Observed TEMP (°C) at 03297850

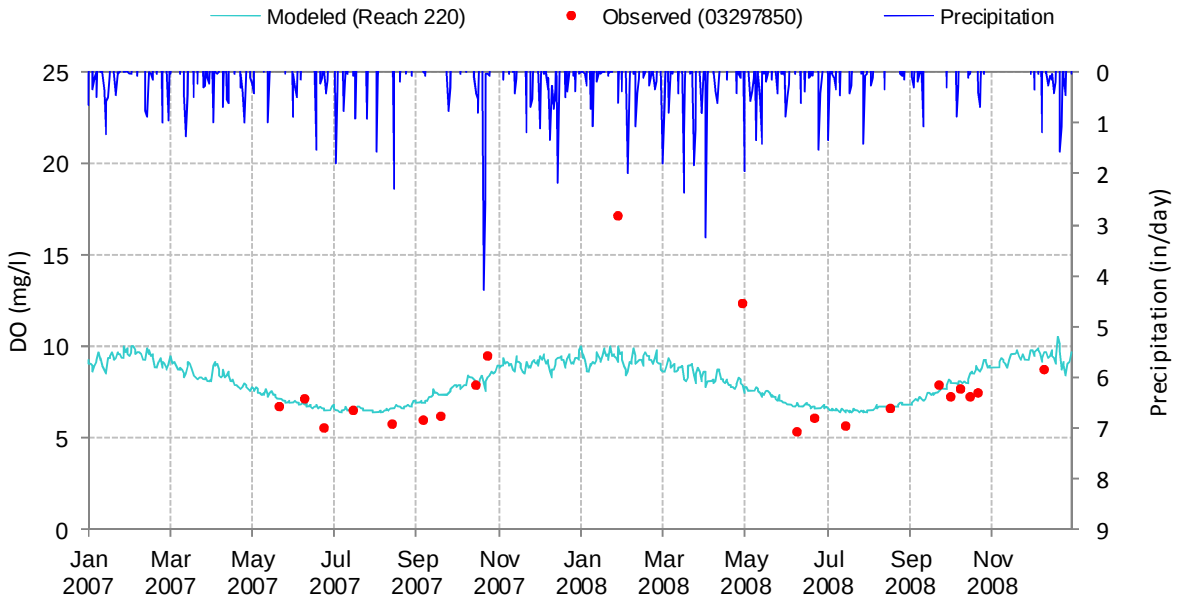

Figure B-23 Modeled vs. Observed DO (mg/l) at 03297850

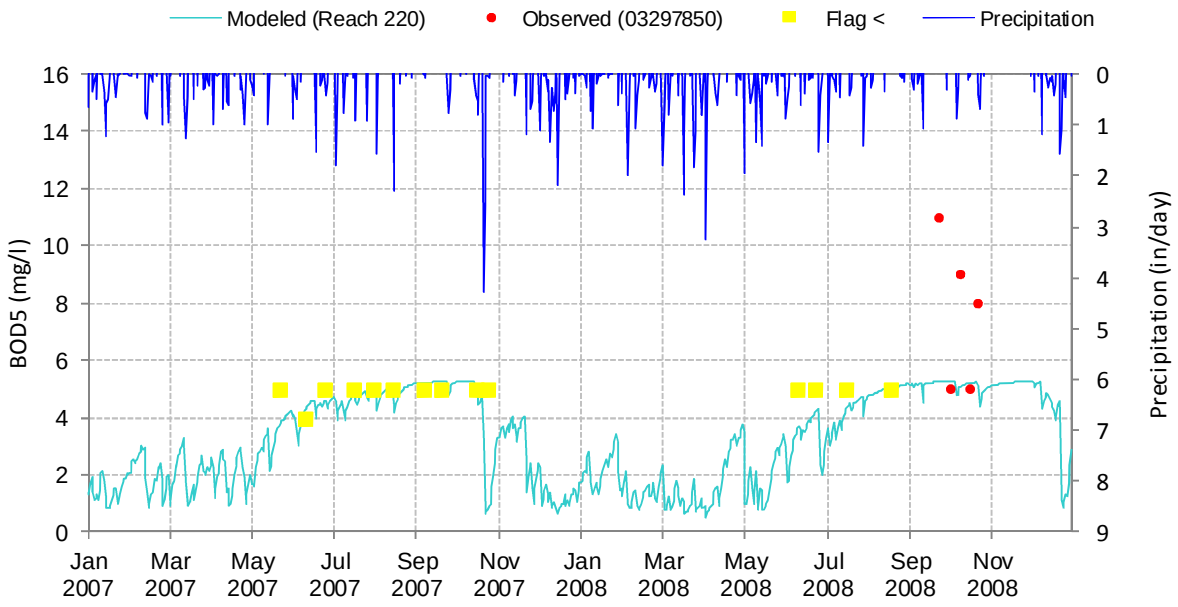

Figure B-24 Modeled vs. Observed BOD5 (mg/l) at 03297850

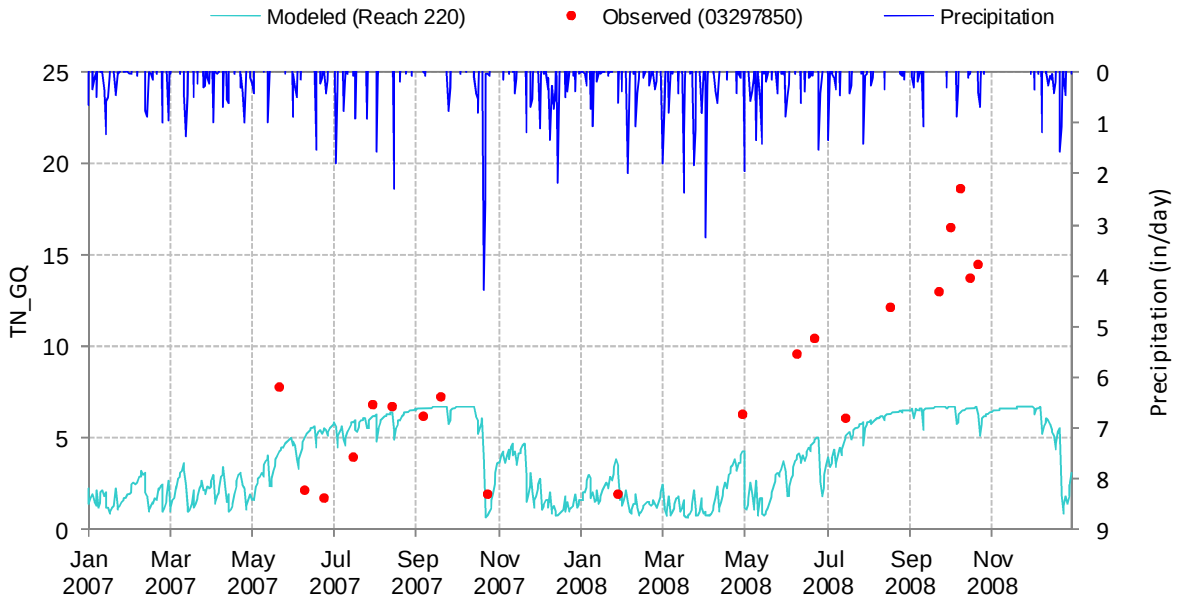

Figure B-25 Modeled vs. Observed TN_GQ at 03297850

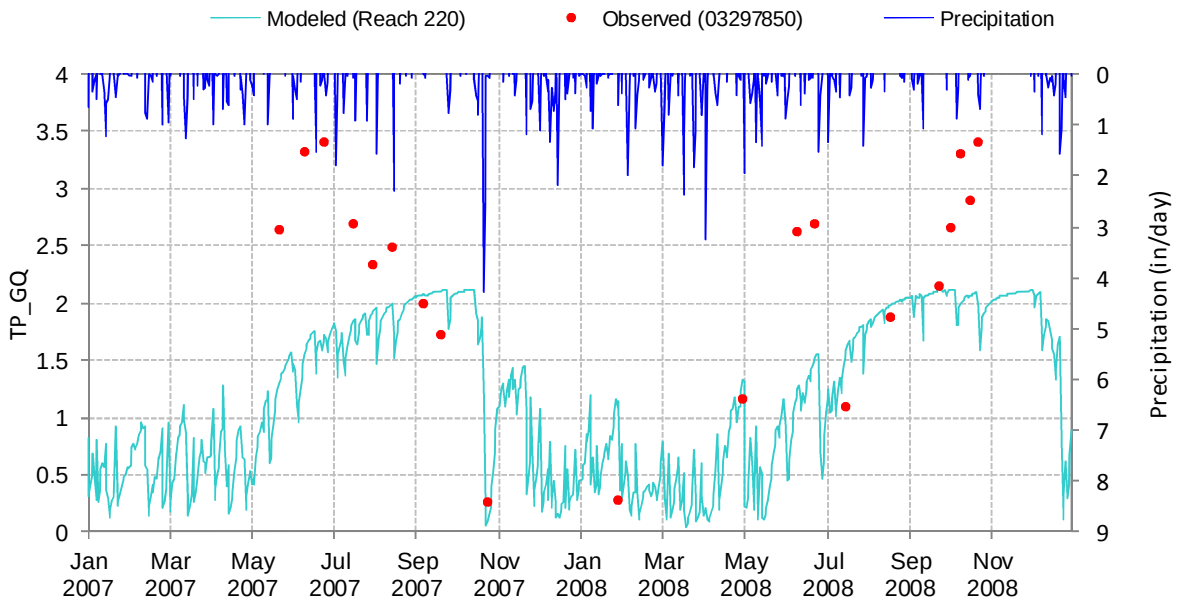

Figure B-26 Modeled vs. Observed TP_GQ at 03297850

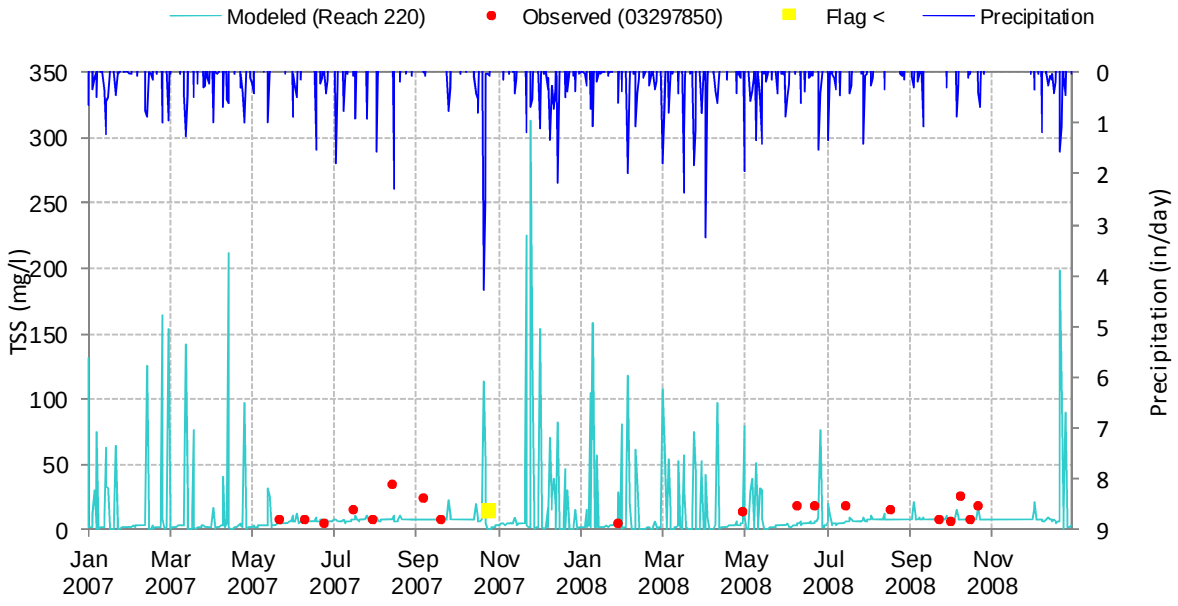

Figure B-27 Modeled vs. Observed TSS (mg/l) at 03297850

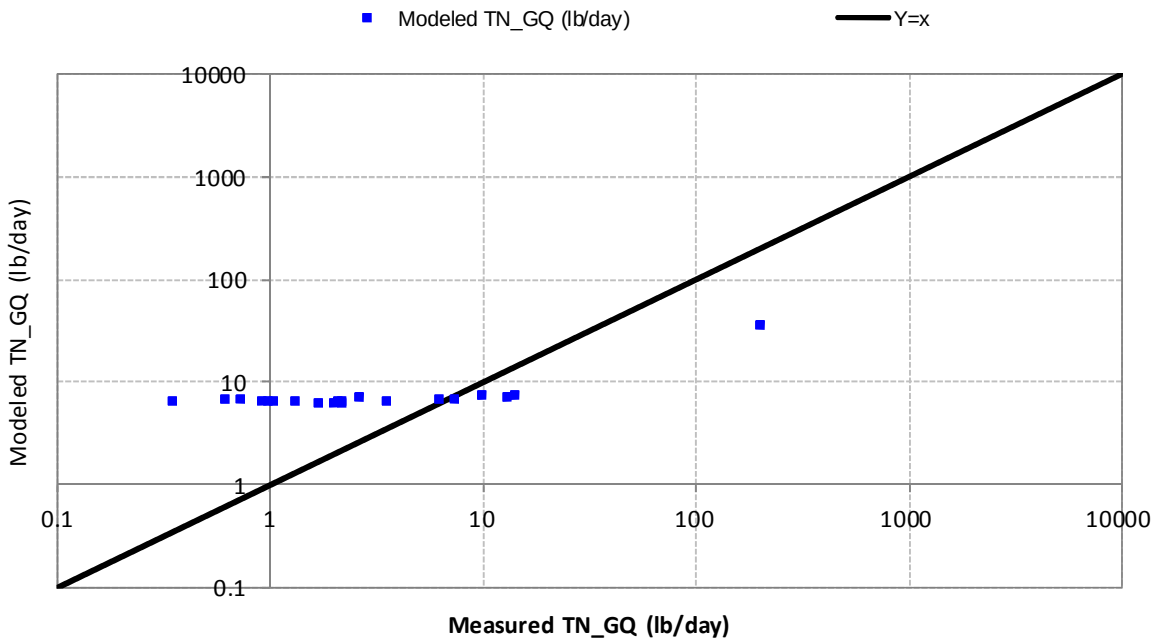

Figure B-28 Modeled vs. Observed Load TN_GQ at 03297850

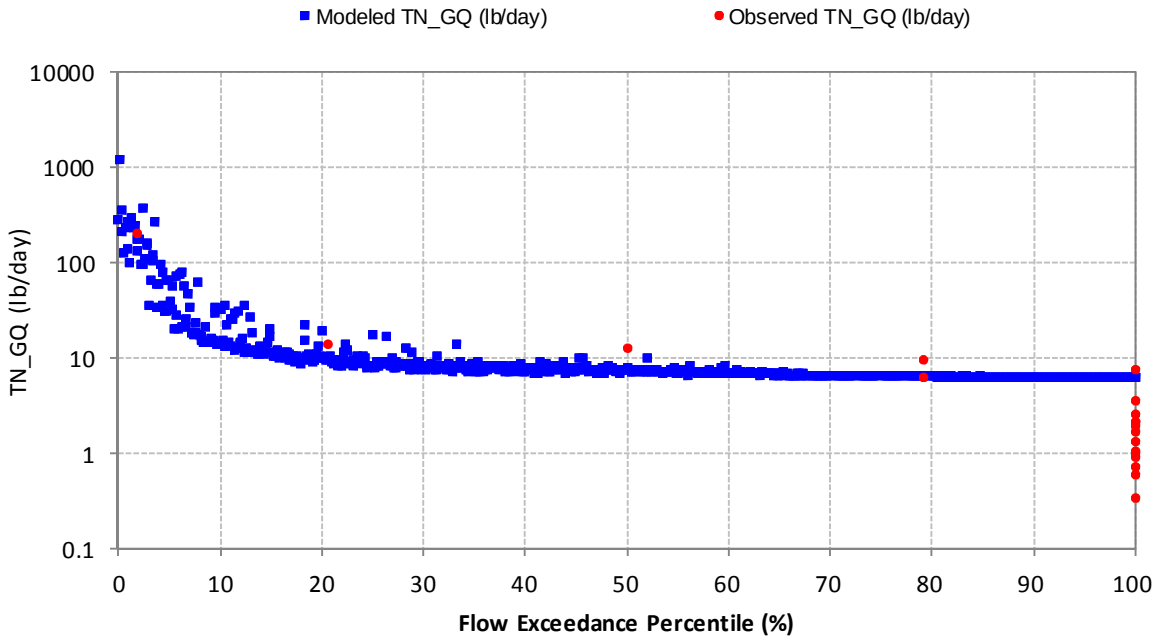

Figure B-29 Modeled vs. Observed Load TN_GQ at 03297850

Table B-6 Modeled vs. Observed Load TN_GQ at 03297850

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	6,205	17,909	-65.35	17,036	-63.58
2008	6,781	13,830	-50.96	20,554	-67.01

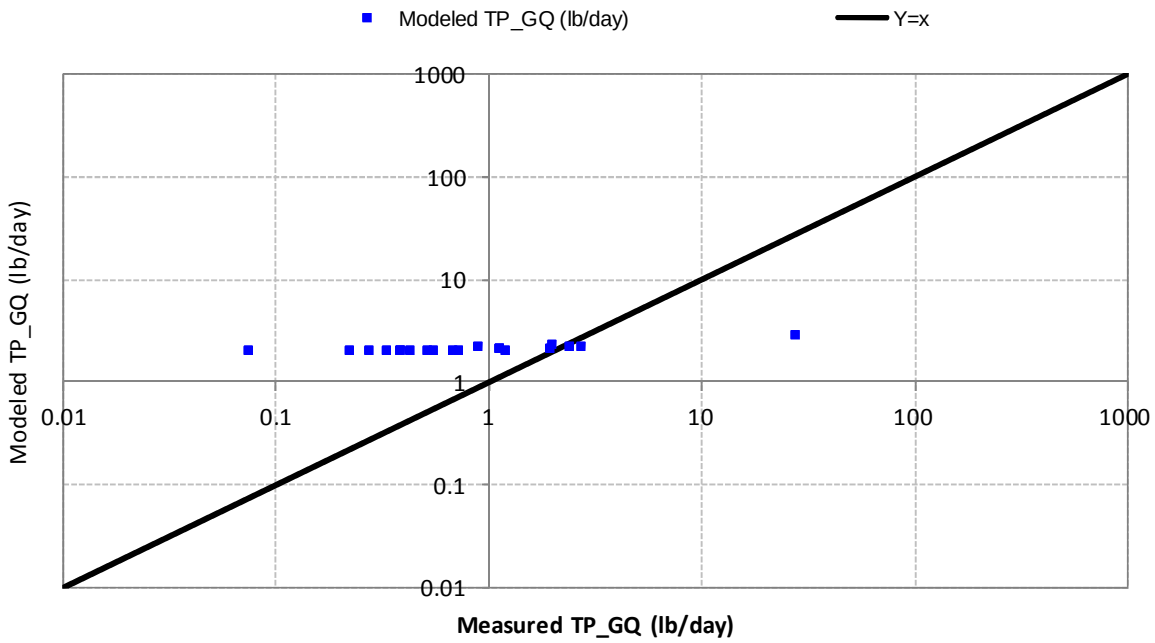

Figure B-30 Modeled vs. Observed Load TP_GQ at 03297850

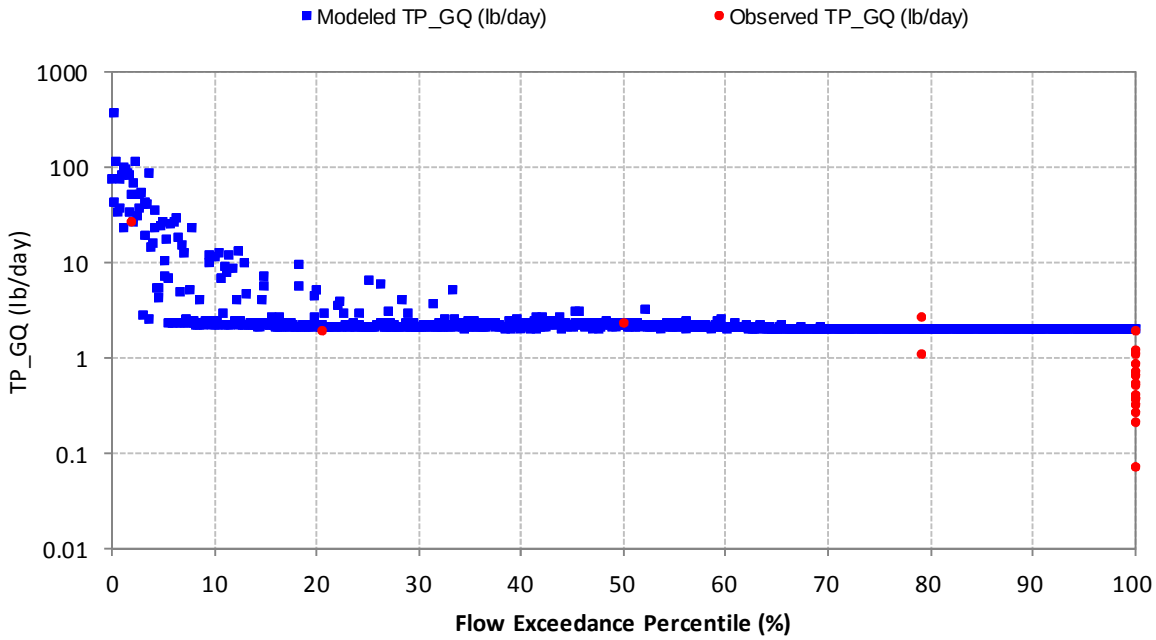

Figure B-31 Modeled vs. Observed Load TP_GQ at 03297850

Table B-7 Modeled vs. Observed Load TP_GQ at 03297850

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	1,871	5,669	-67	5,421	-65.49
2008	1,995	2,460	-18.91	3,927	-49.21

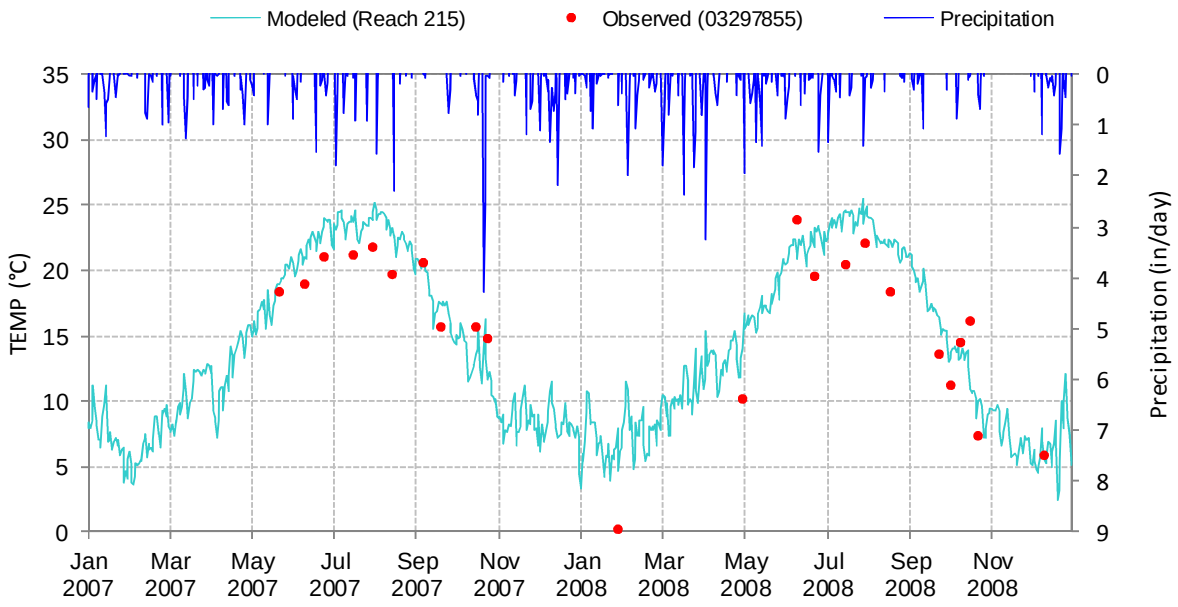

Figure B-32 Modeled vs. Observed TEMP (°C) at 03297855

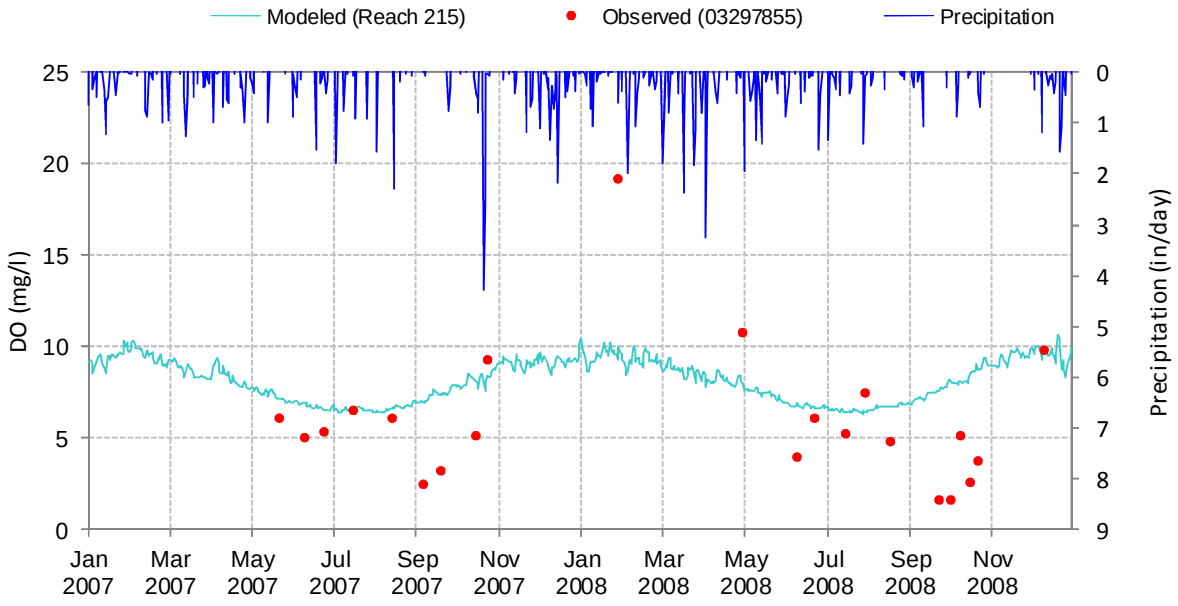

Figure B-33 Modeled vs. Observed DO (mg/l) at 03297855

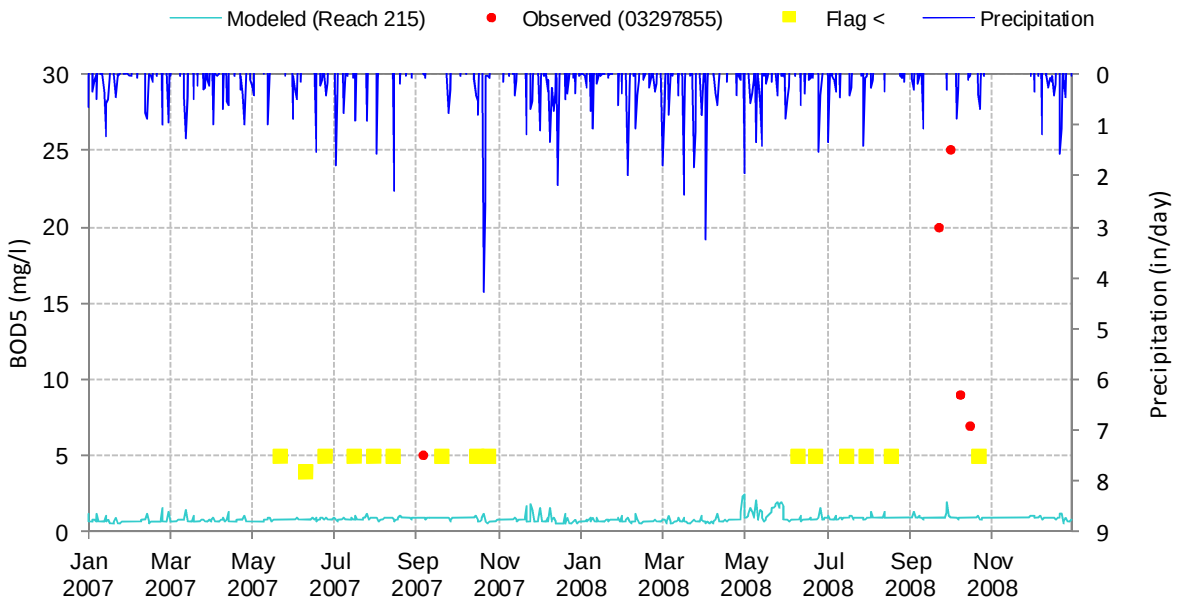

Figure B-34 Modeled vs. Observed BOD5 (mg/l) at 03297855

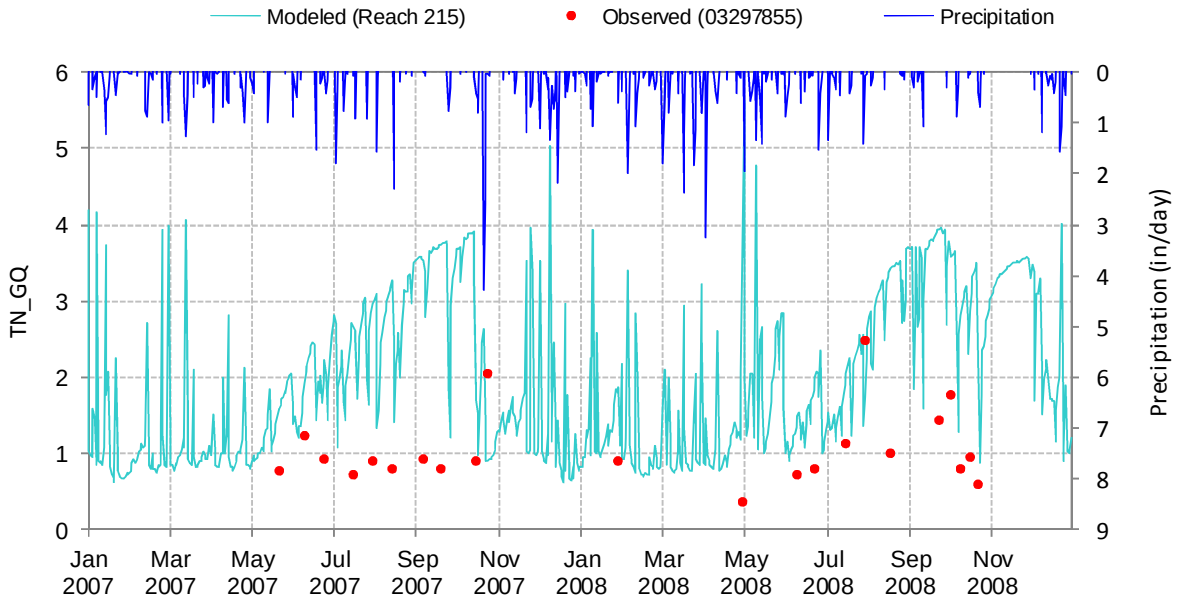

Figure B-35 Modeled vs. Observed TN_GQ at 03297855

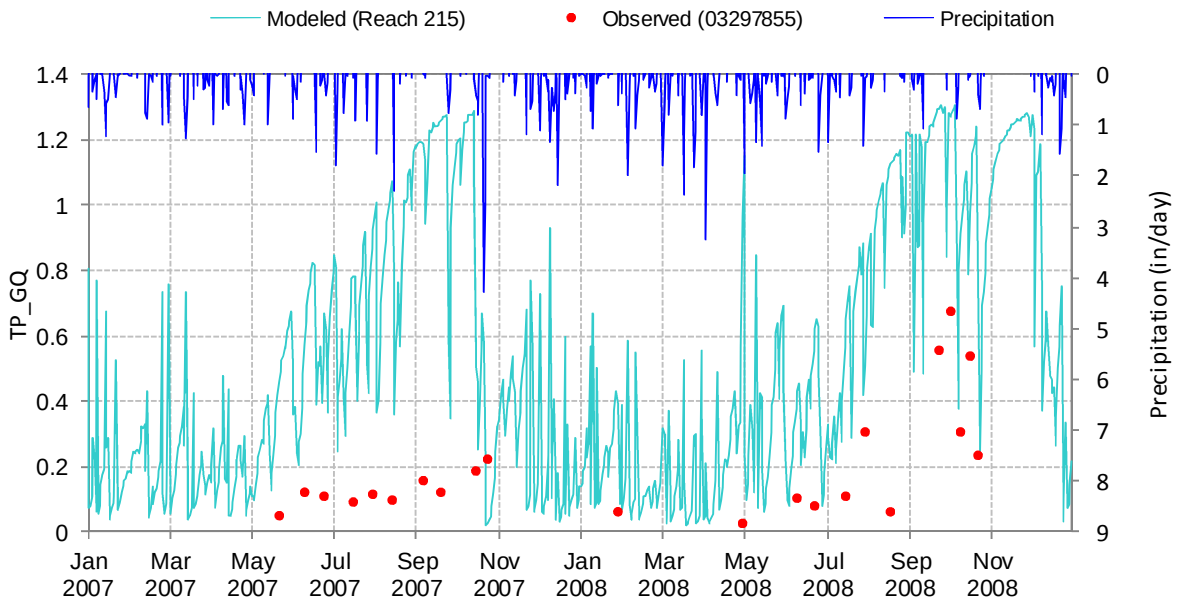

Figure B-36 Modeled vs. Observed TP_GQ at 03297855

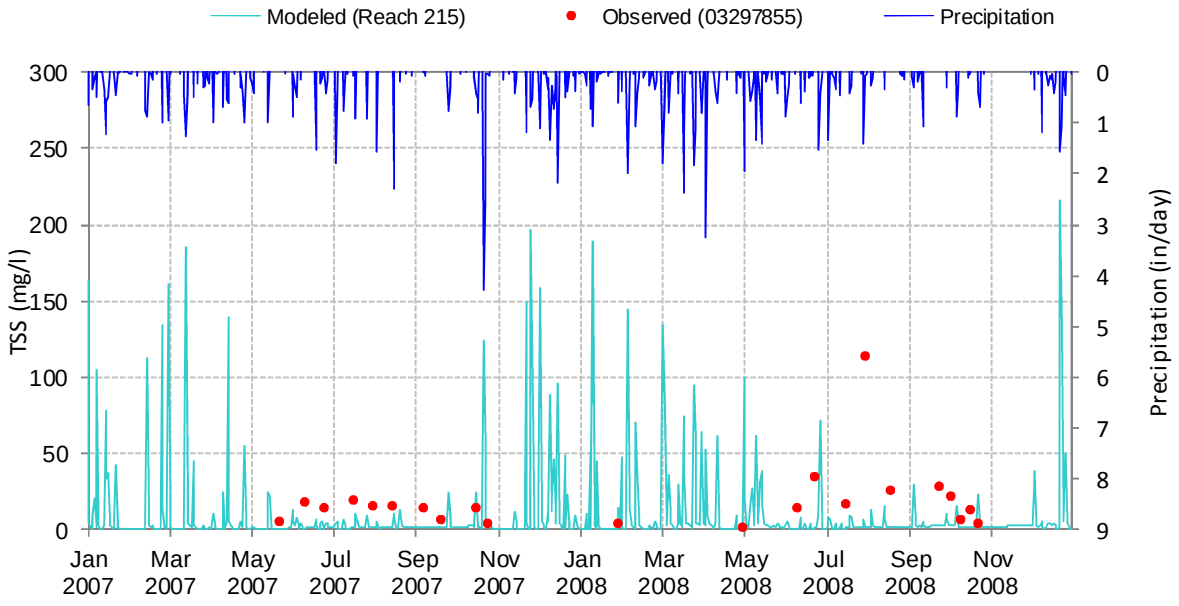

Figure B-37 Modeled vs. Observed TSS (mg/l) at 03297855

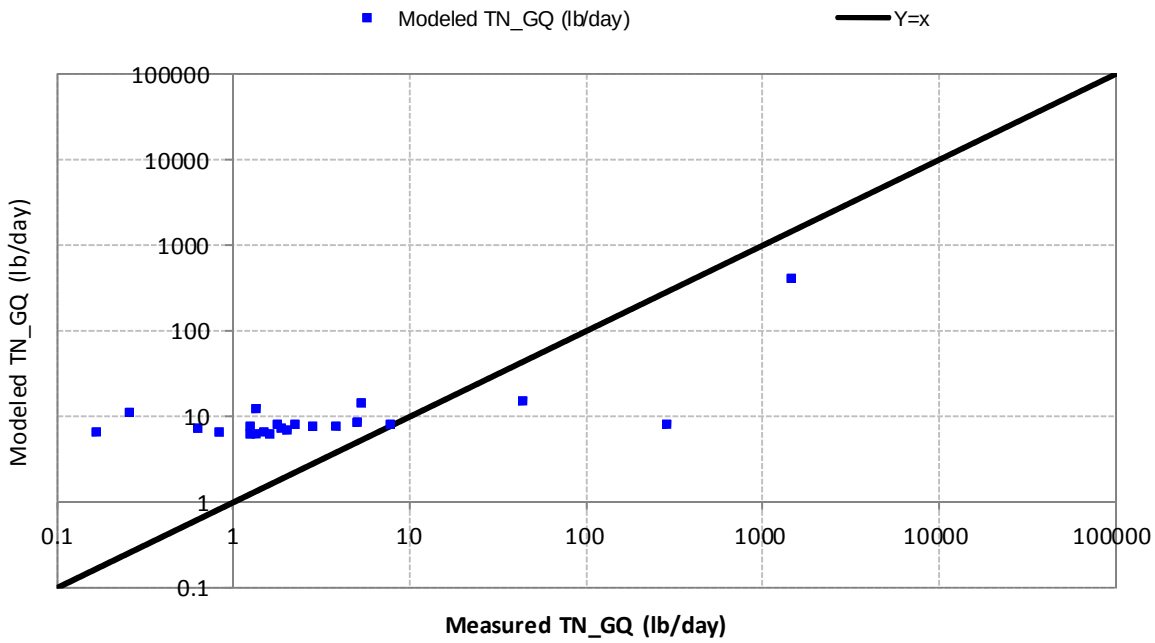

Figure B-38 Modeled vs. Observed Load TN_GQ at 03297855

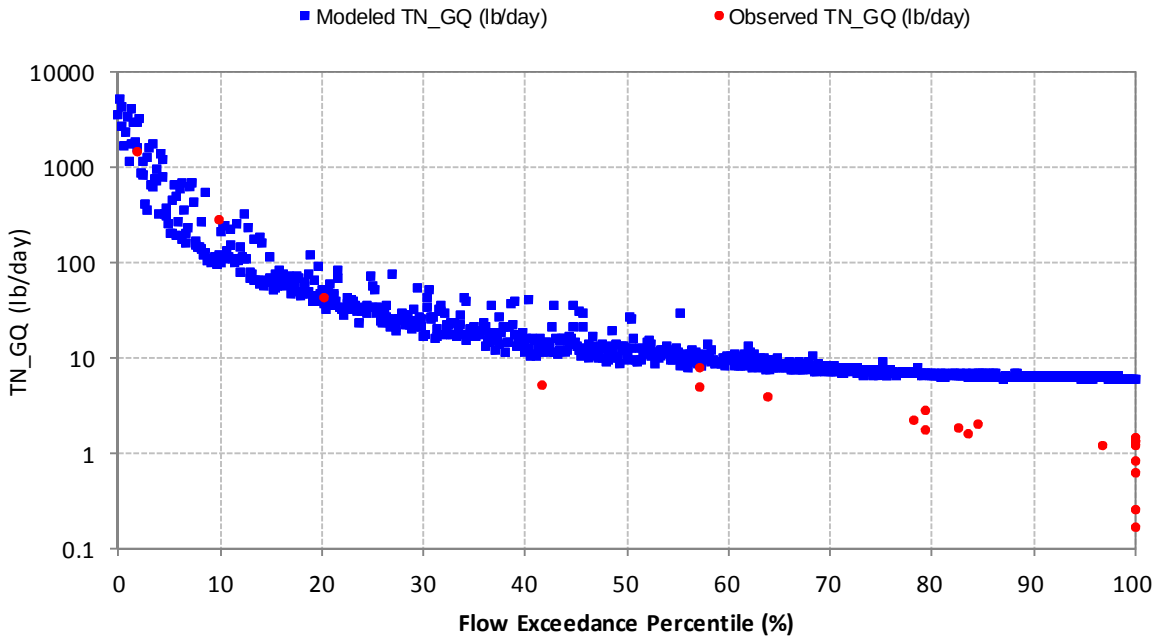

Figure B-39 Modeled vs. Observed Load TN_GQ at 03297855

Table B-8 Modeled vs. Observed Load TN_GQ at 03297855

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	38,756	27,720	39.82	24,834	56.06
2008	49,412	25,480	93.93	19,506	153.32

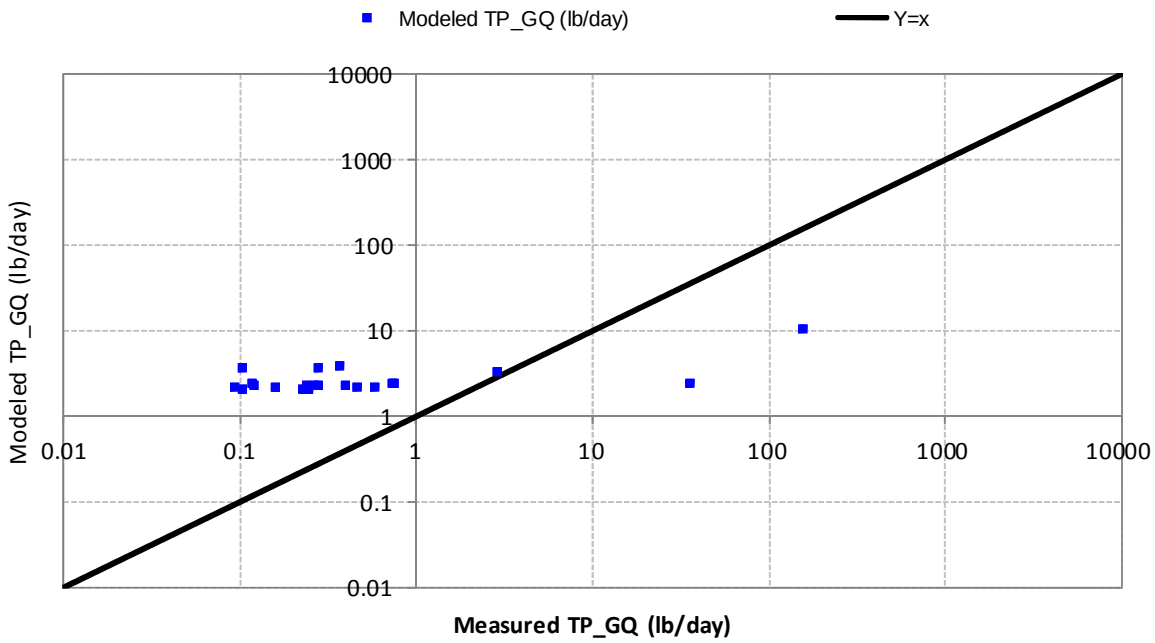

Figure B-40 Modeled vs. Observed Load TP_GQ at 03297855

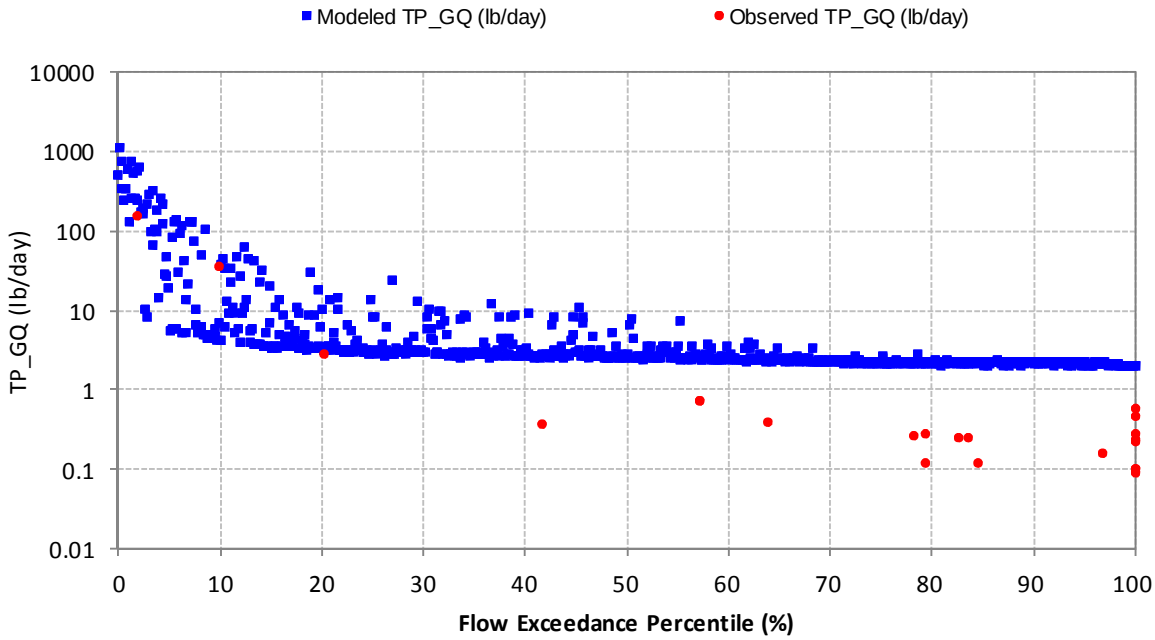

Figure B-41 Modeled vs. Observed Load TP_GQ at 03297855

Table B-9 Modeled vs. Observed Load TP_GQ at 03297855

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	6,581	2,701	143.65	2,179	201.97
2008	7,972	2,199	262.45	1,801	342.69

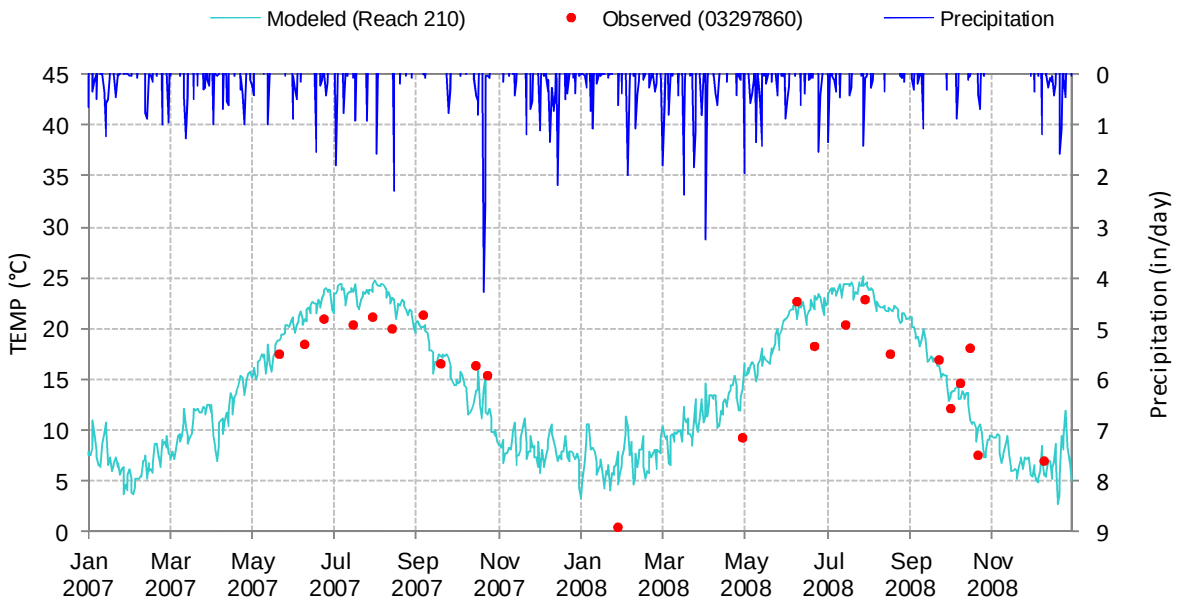

Figure B-42 Modeled vs. Observed TEMP (°C) at 03297860

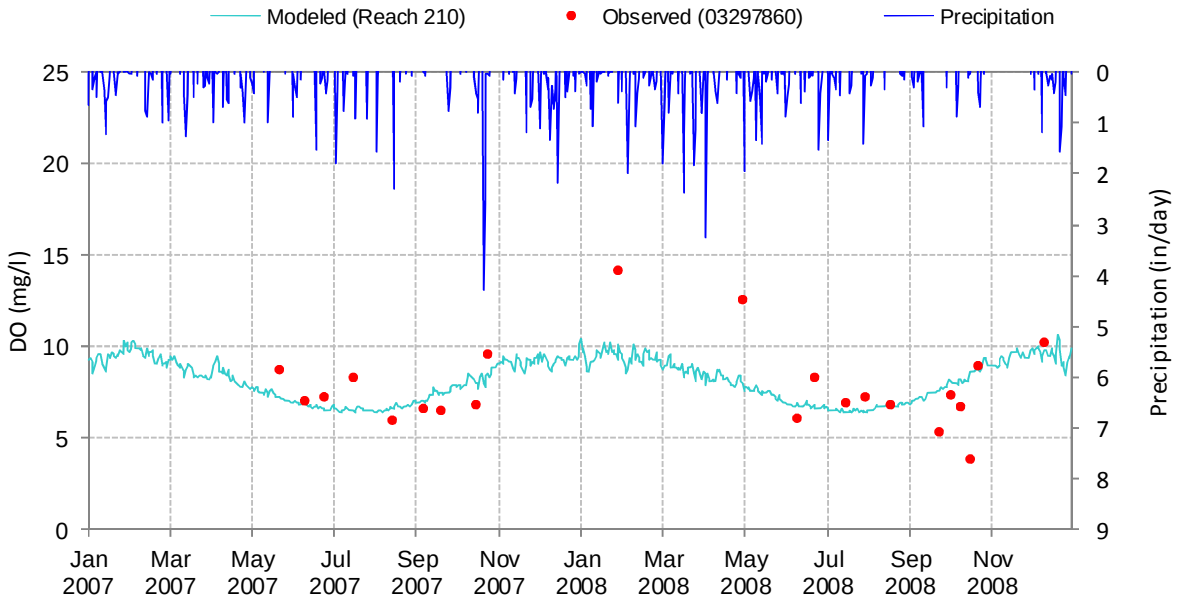

Figure B-43 Modeled vs. Observed DO (mg/l) at 03297860

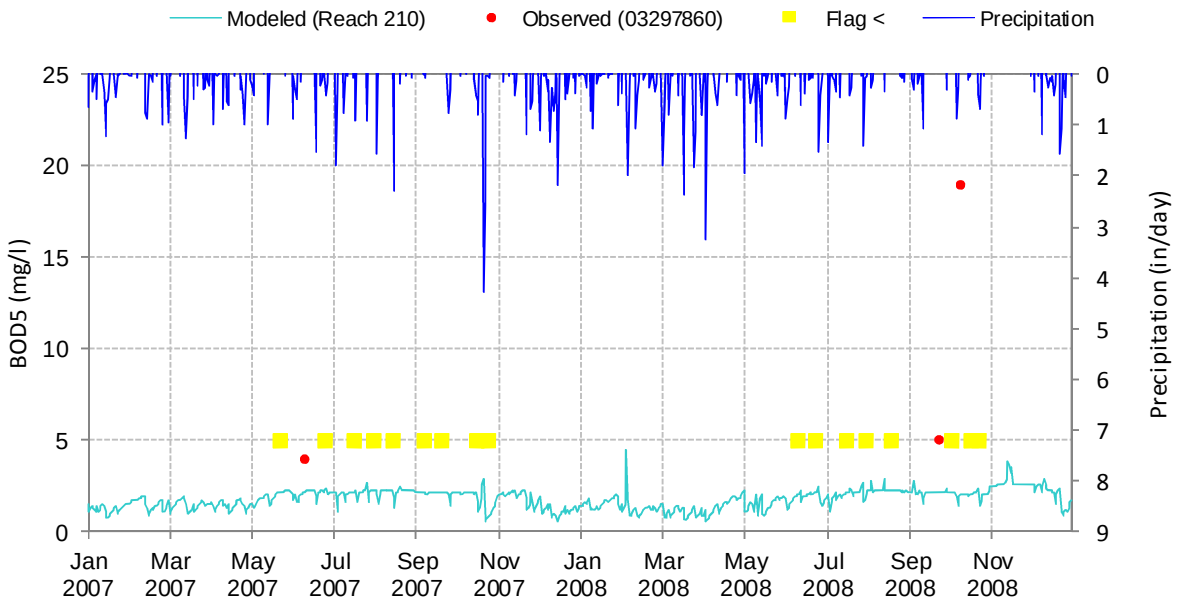

Figure B-44 Modeled vs. Observed BOD5 (mg/l) at 03297860

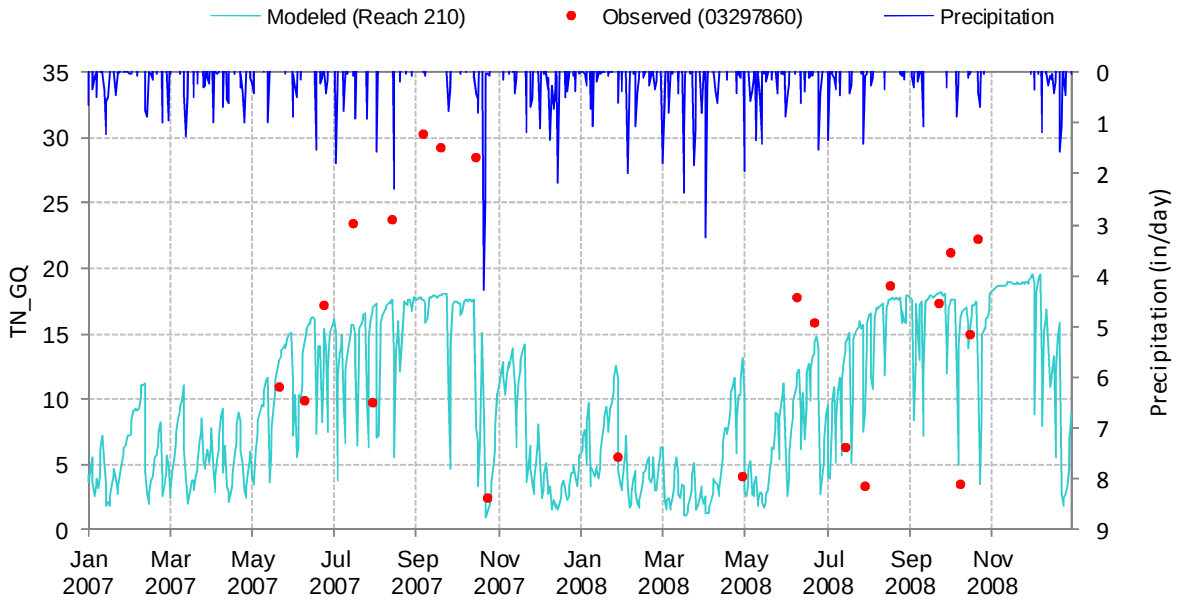

Figure B-45 Modeled vs. Observed TN_GQ at 03297860

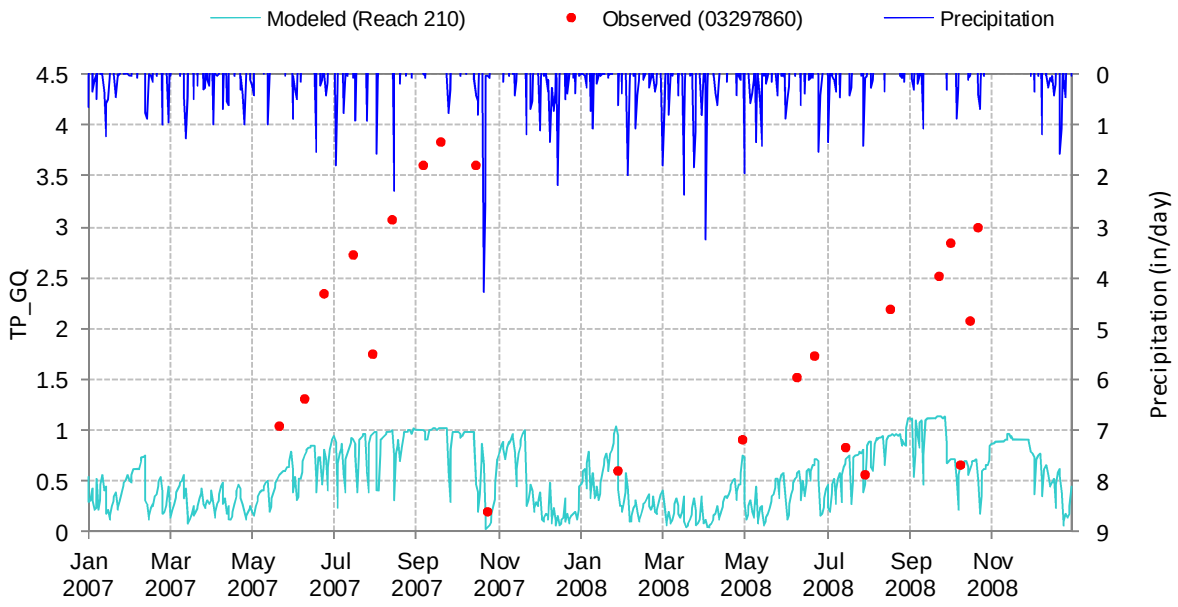

Figure B-46 Modeled vs. Observed TP_GQ at 03297860

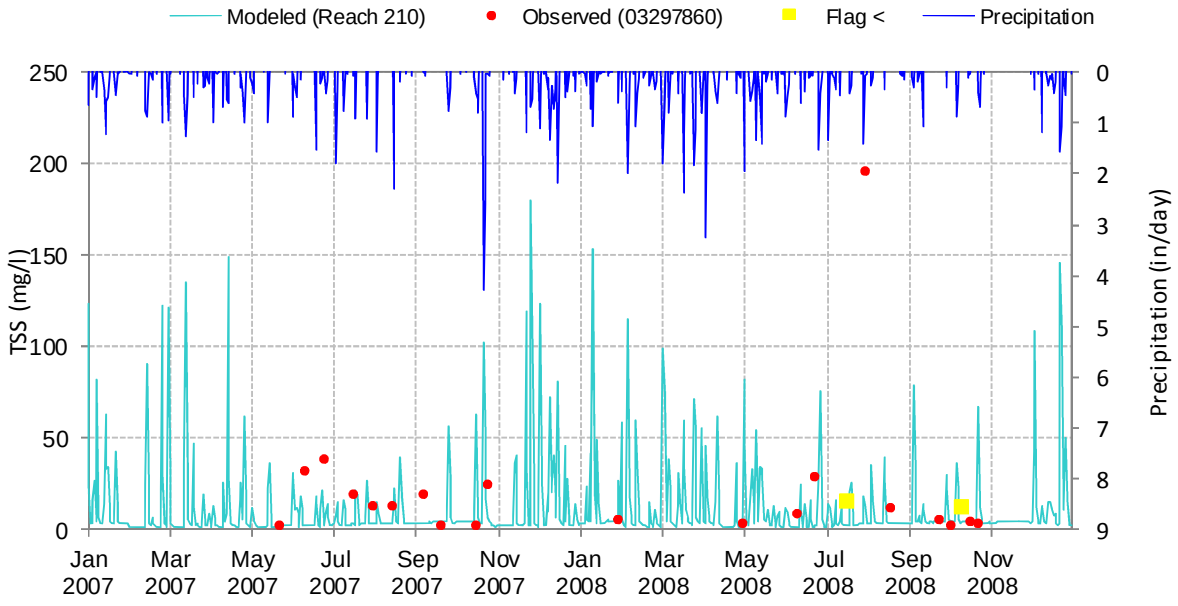

Figure B-47 Modeled vs. Observed TSS (mg/l) at 03297860

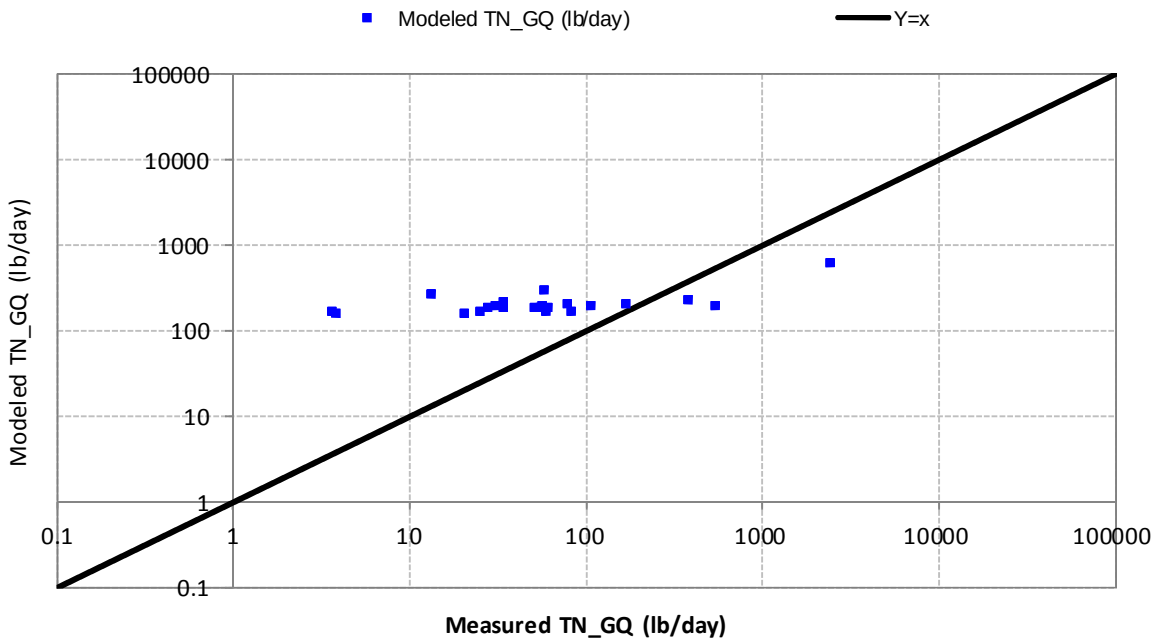

Figure B-48 Modeled vs. Observed Load TN_GQ at 03297860

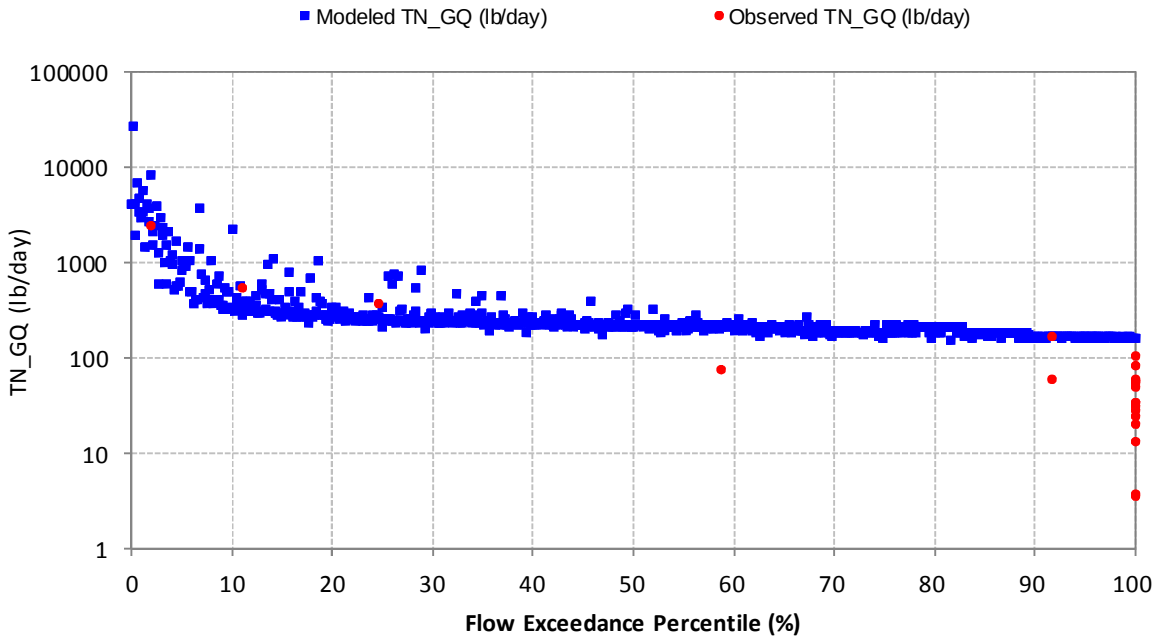

Figure B-49 Modeled vs. Observed Load TN_GQ at 03297860

Table B-10 Modeled vs. Observed Load TN_GQ at 03297860

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	147,828	275,419	-46.33	257,623	-42.62
2008	151,674	237,440	-36.12	246,004	-38.34

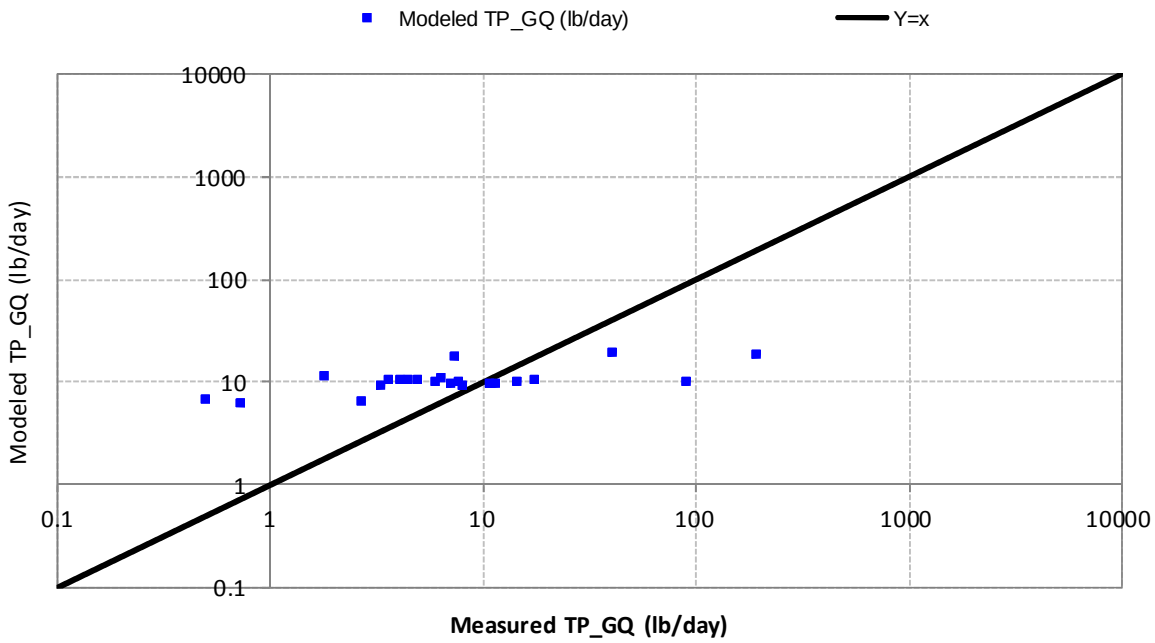

Figure B-50 Modeled vs. Observed Load TP_GQ at 03297860

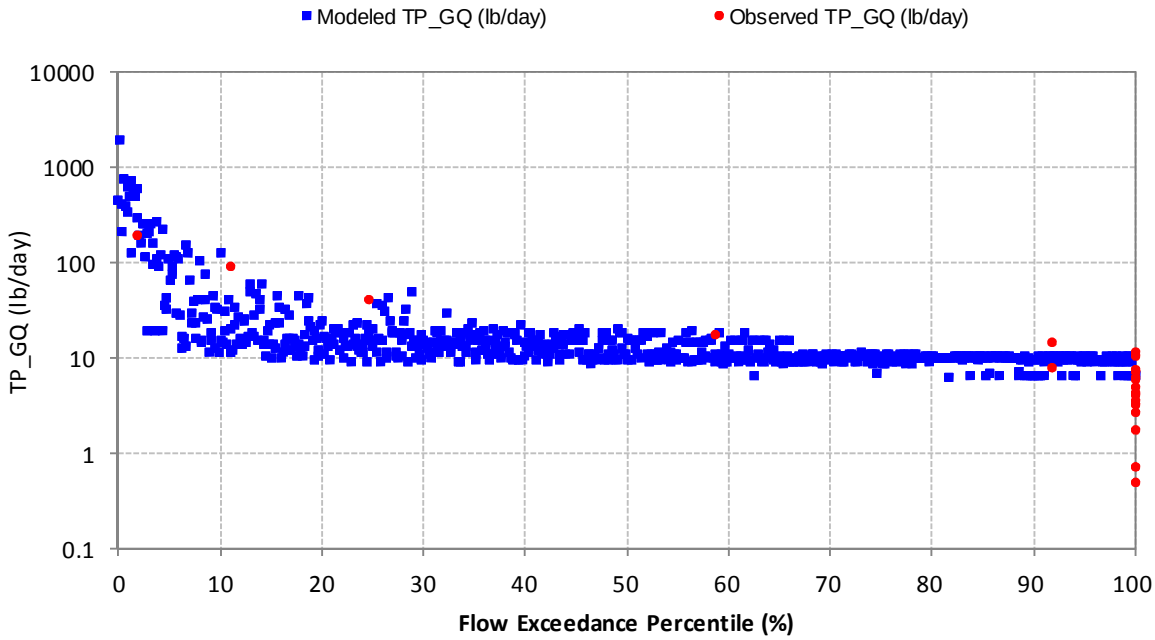

Figure B-51 Modeled vs. Observed Load TP_GQ at 03297860

Table B-11 Modeled vs. Observed Load TP_GQ at 03297860

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	10,684	28,106	-61.99	25,759	-58.52
2008	11,218	29,082	-61.43	34,927	-67.88

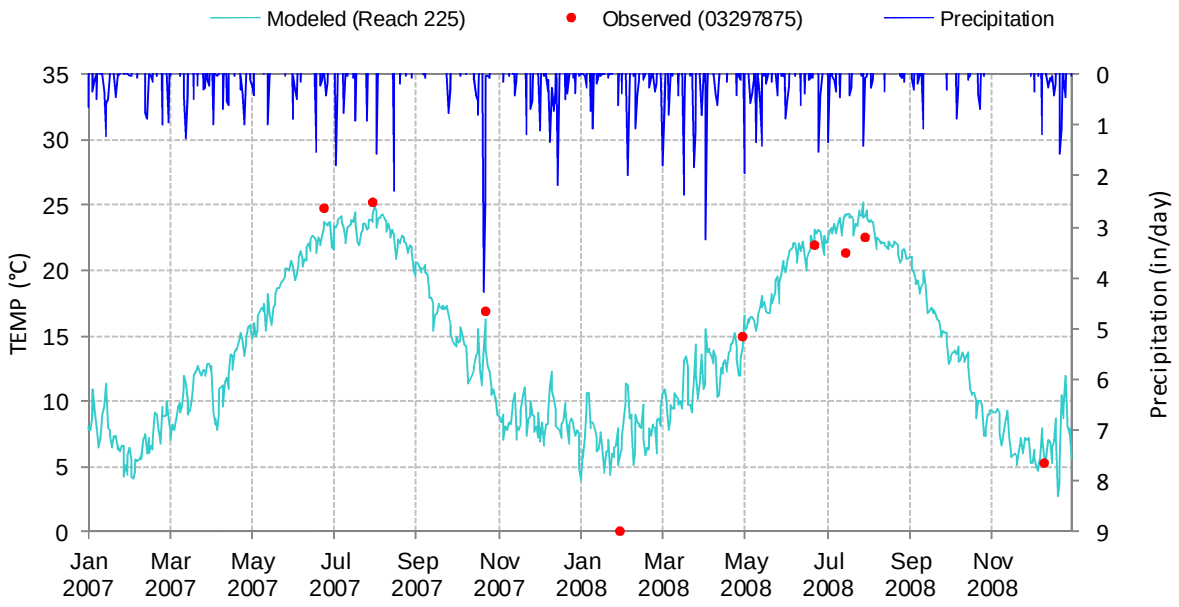

Figure B-52 Modeled vs. Observed TEMP (°C) at 03297875

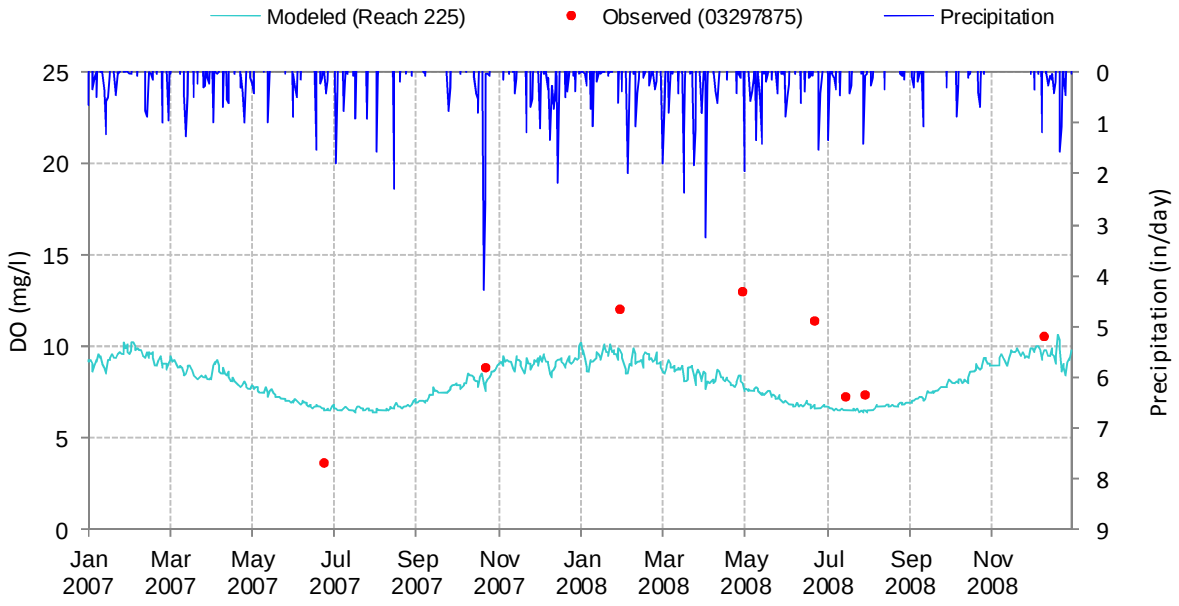

Figure B-53 Modeled vs. Observed DO (mg/l) at 03297875

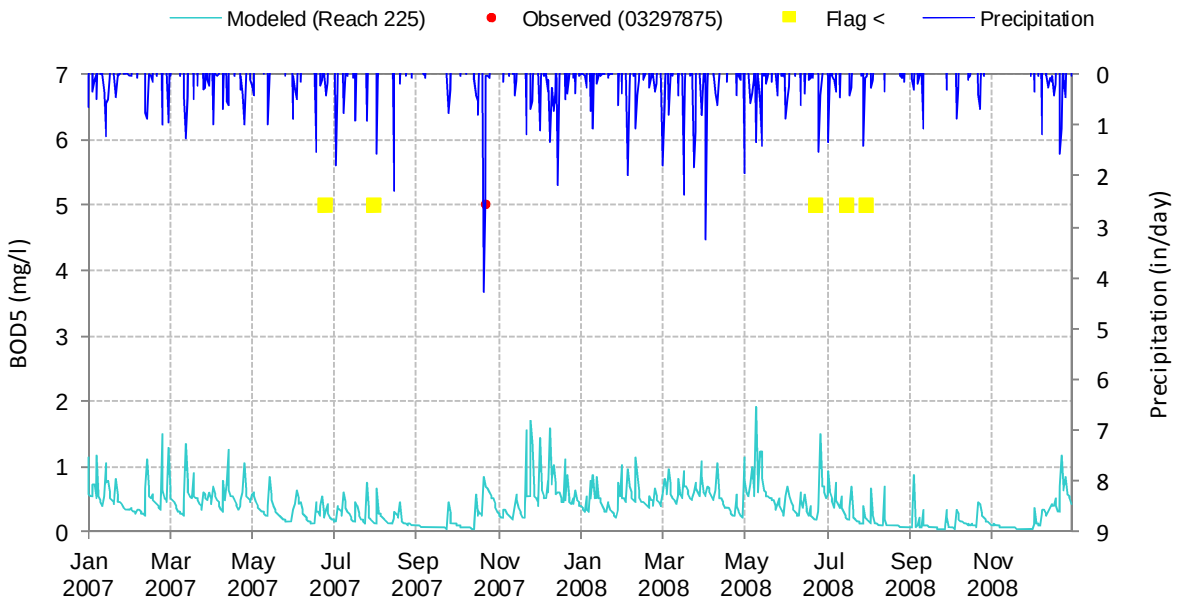

Figure B-54 Modeled vs. Observed BOD5 (mg/l) at 03297875

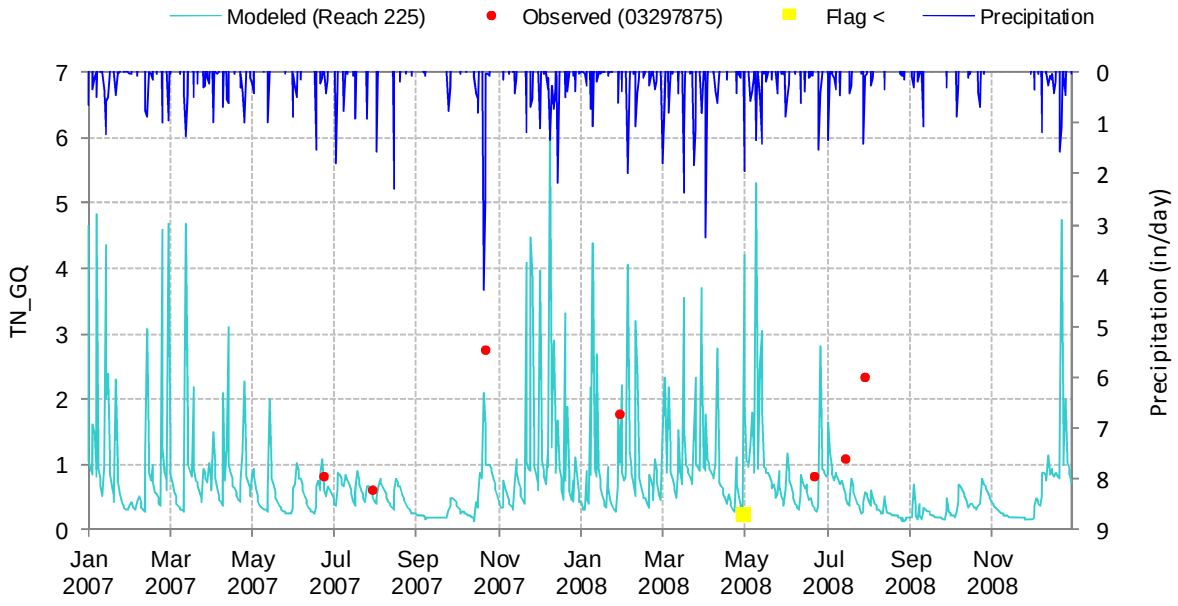

Figure B-55 Modeled vs. Observed TN_GQ at 03297875

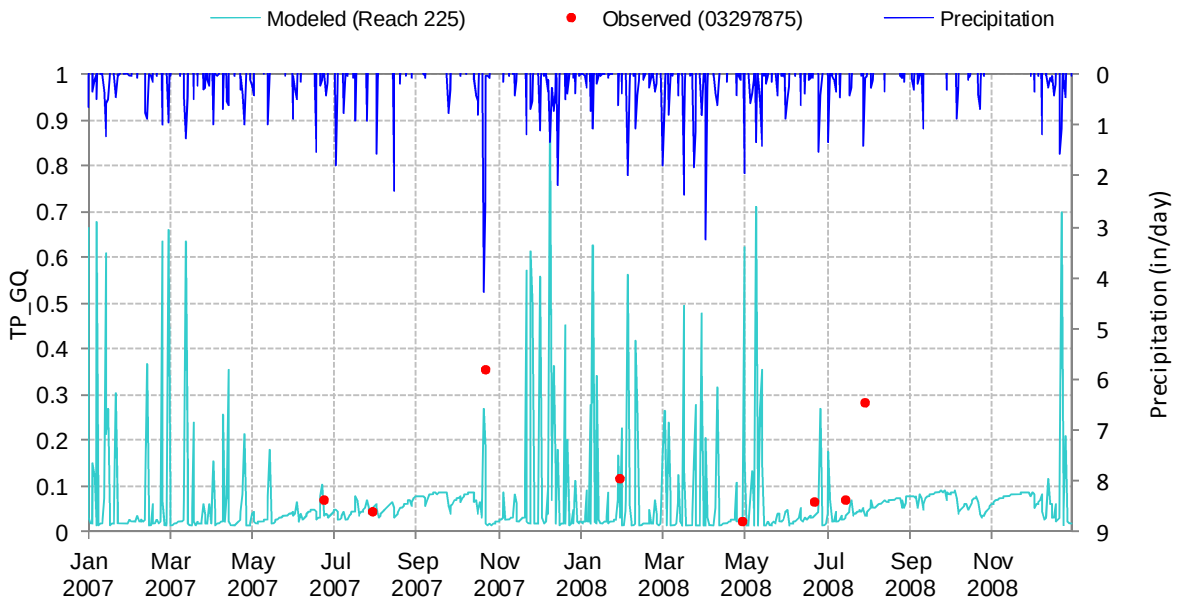

Figure B-56 Modeled vs. Observed TP_GQ at 03297875

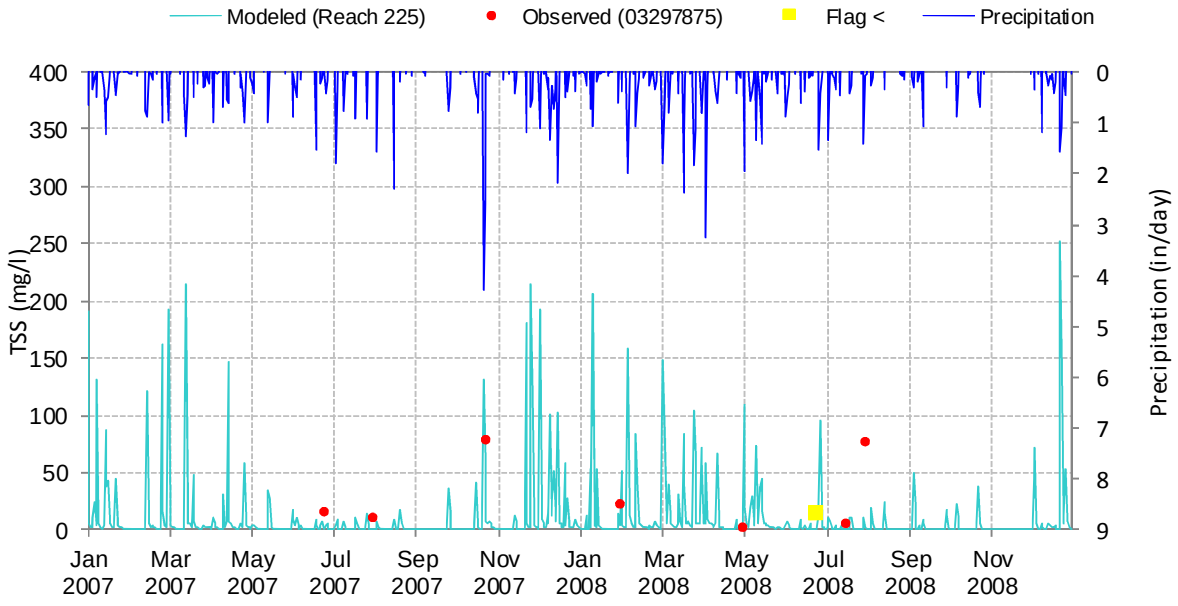

Figure B-57 Modeled vs. Observed TSS (mg/l) at 03297875

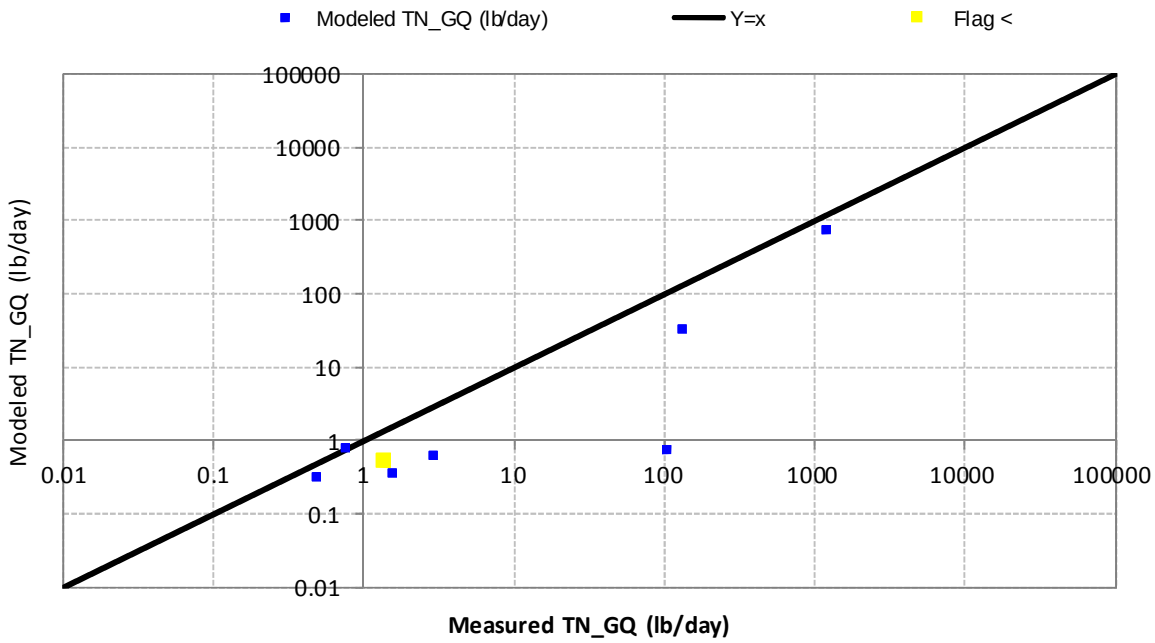

Figure B-58 Modeled vs. Observed Load TN_GQ at 03297875

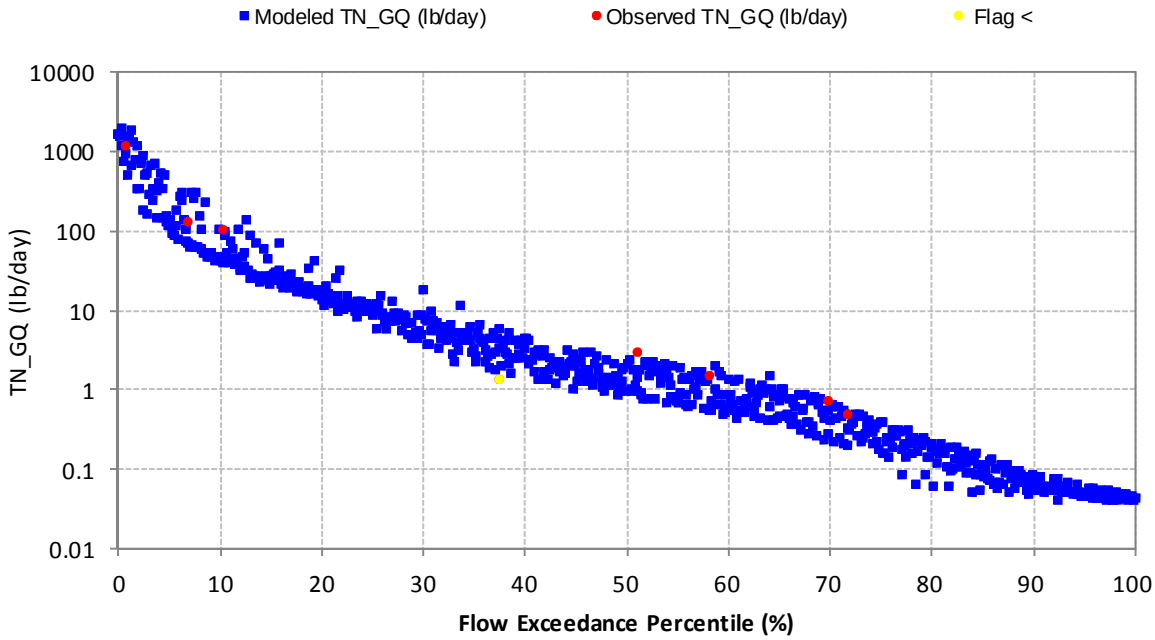

Figure B-59 Modeled vs. Observed Load TN_GQ at 03297875

Table B-12 Modeled vs. Observed Load TN_GQ at 03297875

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	15,137	13,647	10.92	12,456	21.52
2008	19,300	17,876	7.96	11,979	61.12

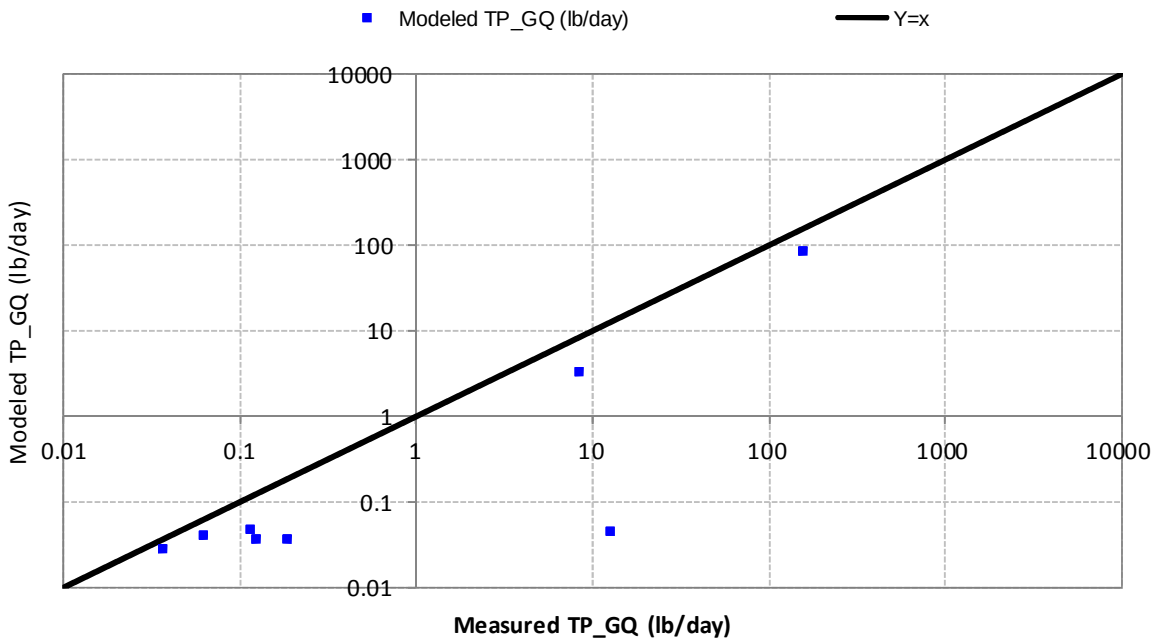

Figure B-60 Modeled vs. Observed Load TP_GQ at 03297875

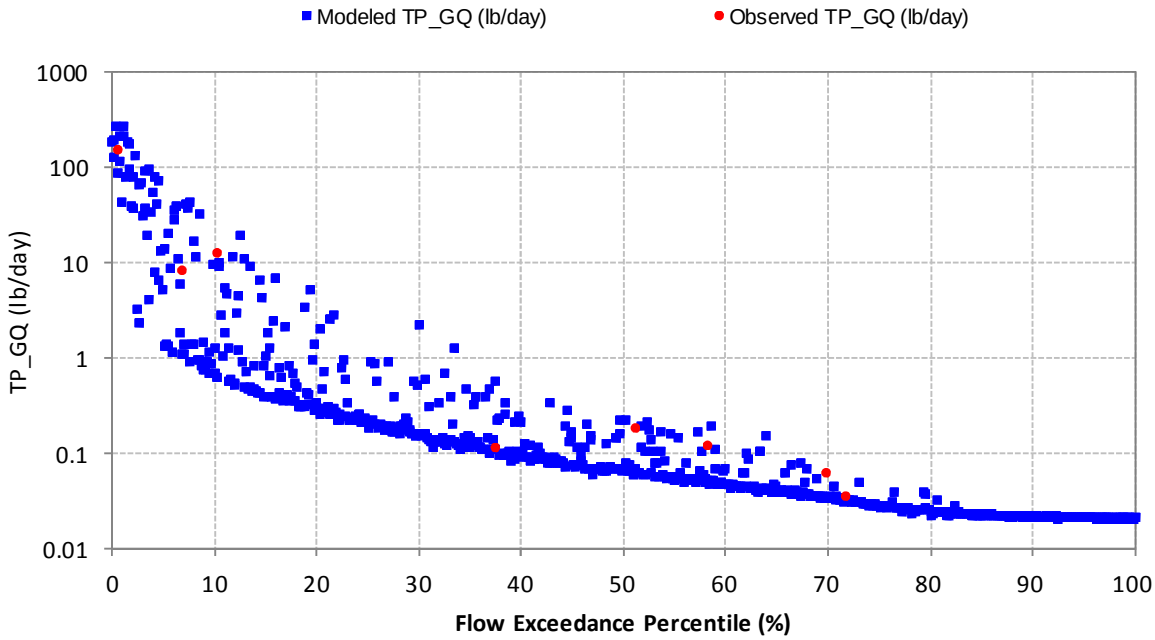

Figure B-61 Modeled vs. Observed Load TP_GQ at 03297875

Table B-13 Modeled vs. Observed Load TP_GQ at 03297875

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	1,719	1,588	8.27	1,282	34.09
2008	2,170	1,405	54.45	939	130.98

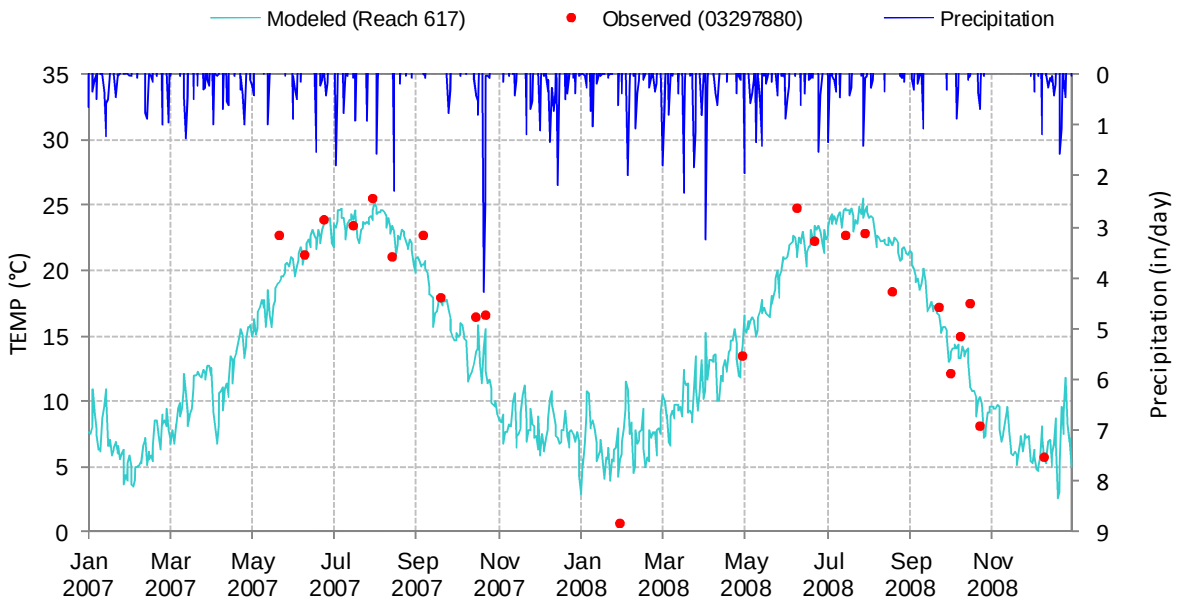

Figure B-62 Modeled vs. Observed TEMP (°C) at 03297880

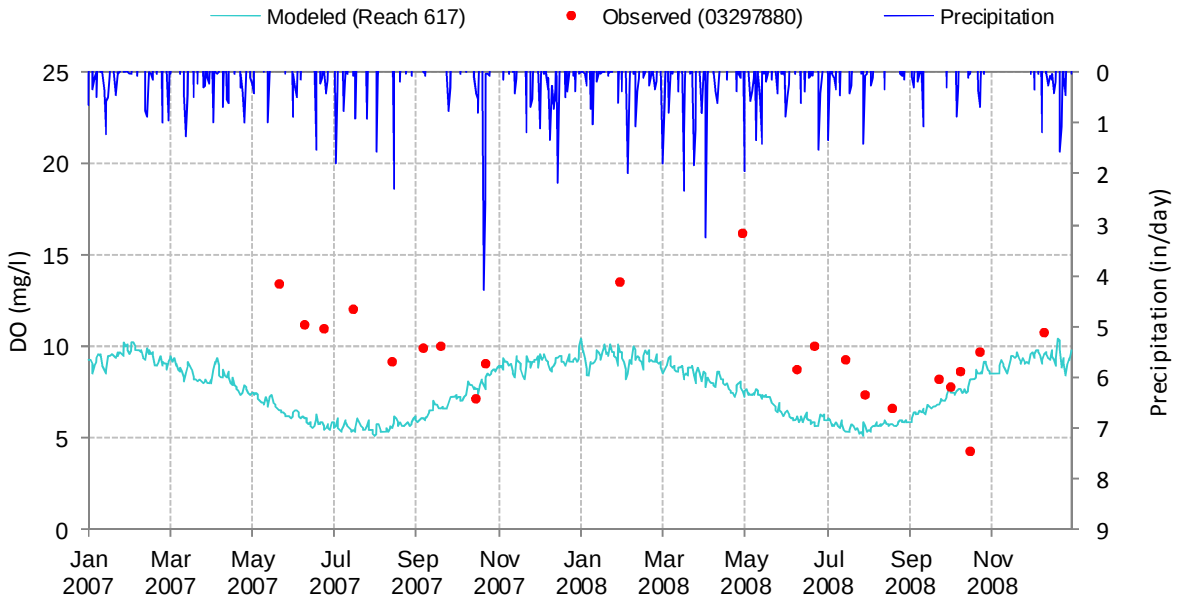

Figure B-63 Modeled vs. Observed DO (mg/l) at 03297880

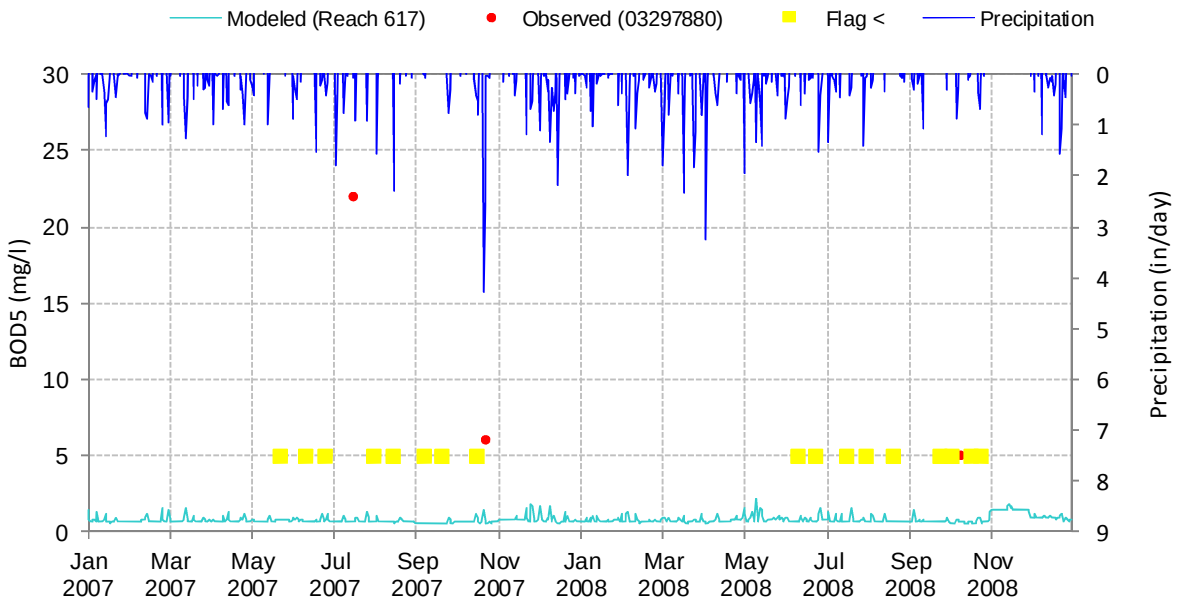

Figure B-64 Modeled vs. Observed BOD5 (mg/l) at 03297880

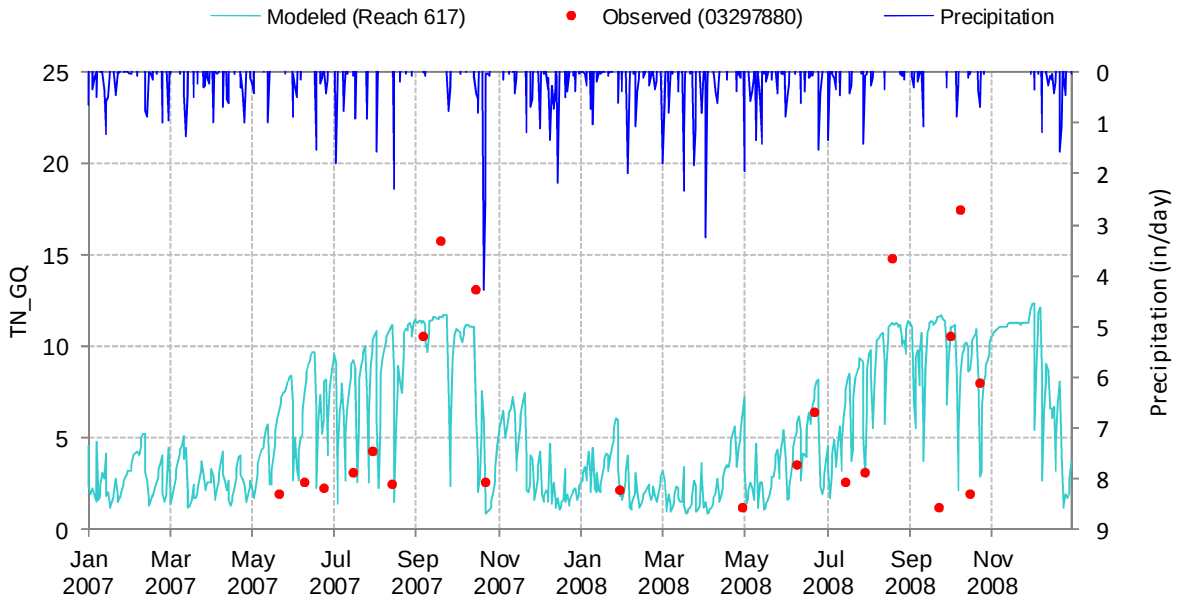

Figure B-65 Modeled vs. Observed TN_GQ at 03297880

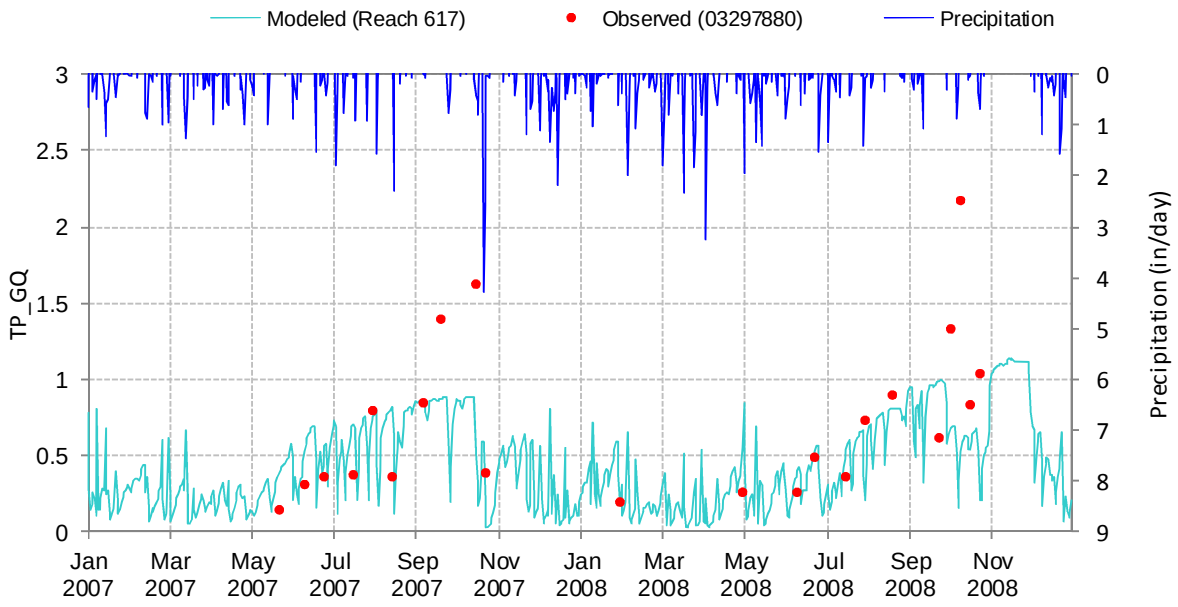

Figure B-66 Modeled vs. Observed TP_GQ at 03297880

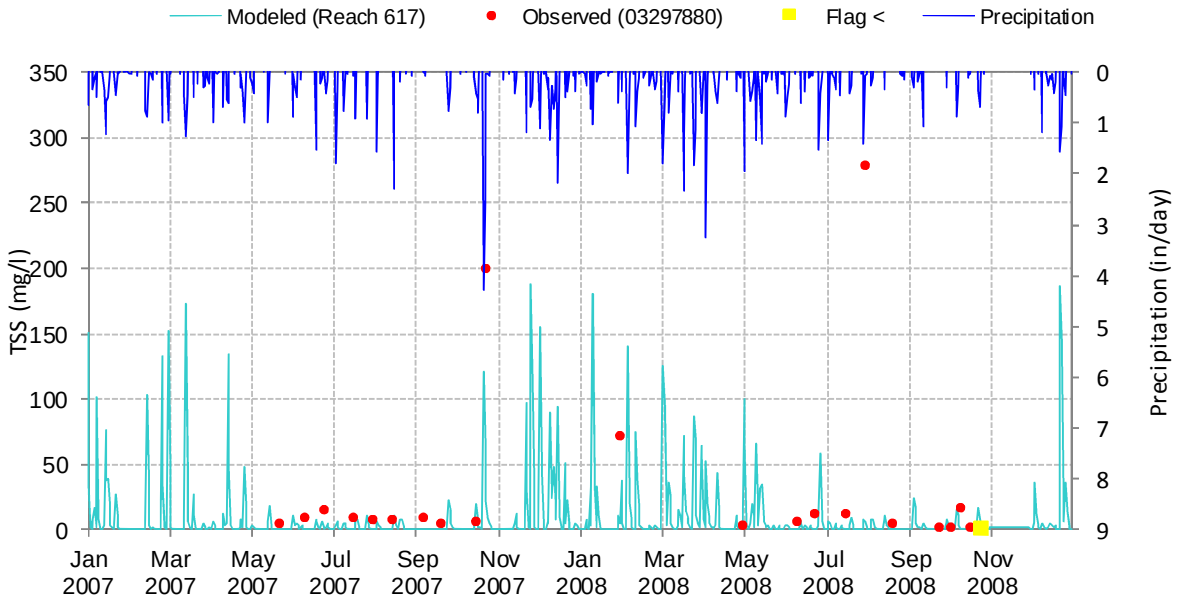

Figure B-67 Modeled vs. Observed TSS (mg/l) at 03297880

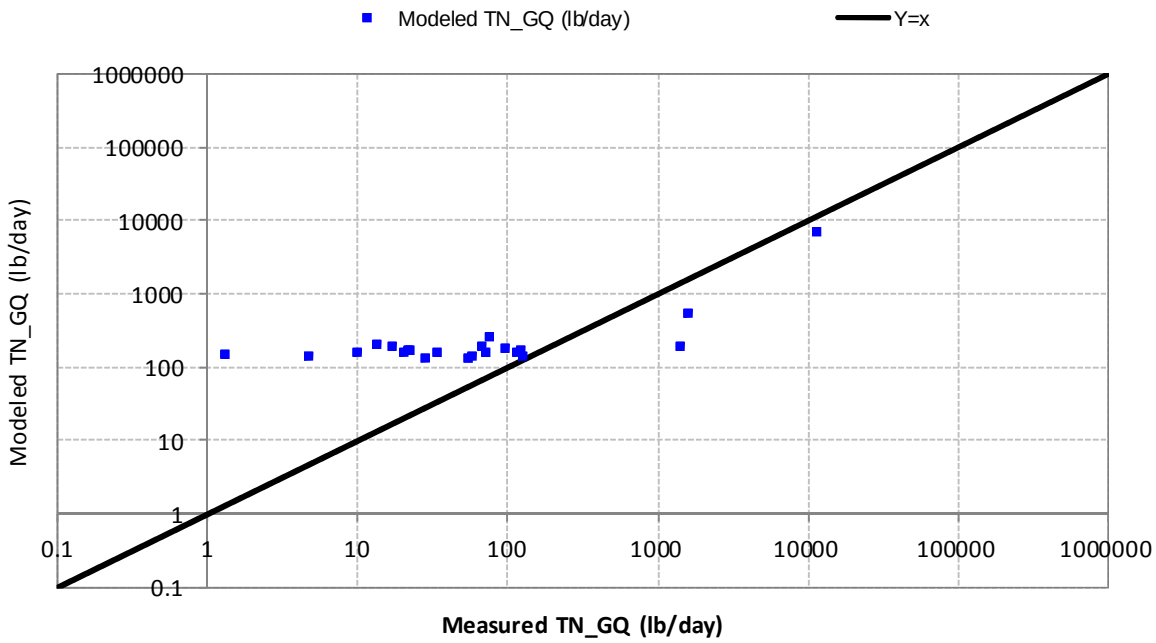

Figure B-68 Modeled vs. Observed Load TN_GQ at 03297880

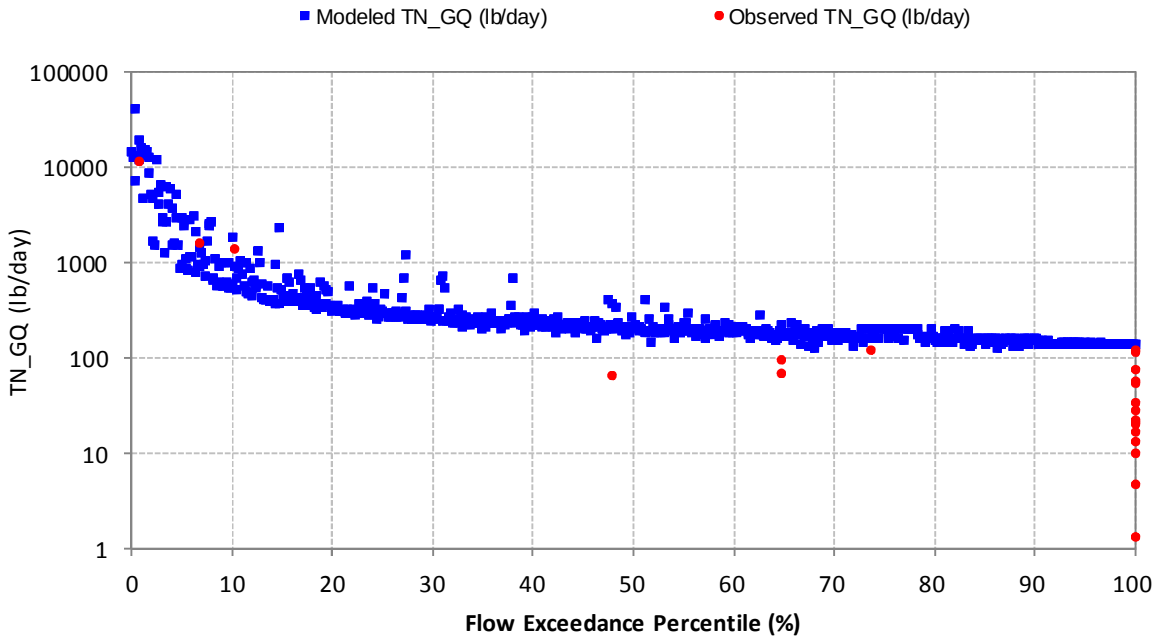

Figure B-69 Modeled vs. Observed Load TN_GQ at 03297880

Table B-14 Modeled vs. Observed Load TN_GQ at 03297880

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	234,350	195,818	19.68	189,658	23.56
2008	267,811	266,372	0.54	243,078	10.18

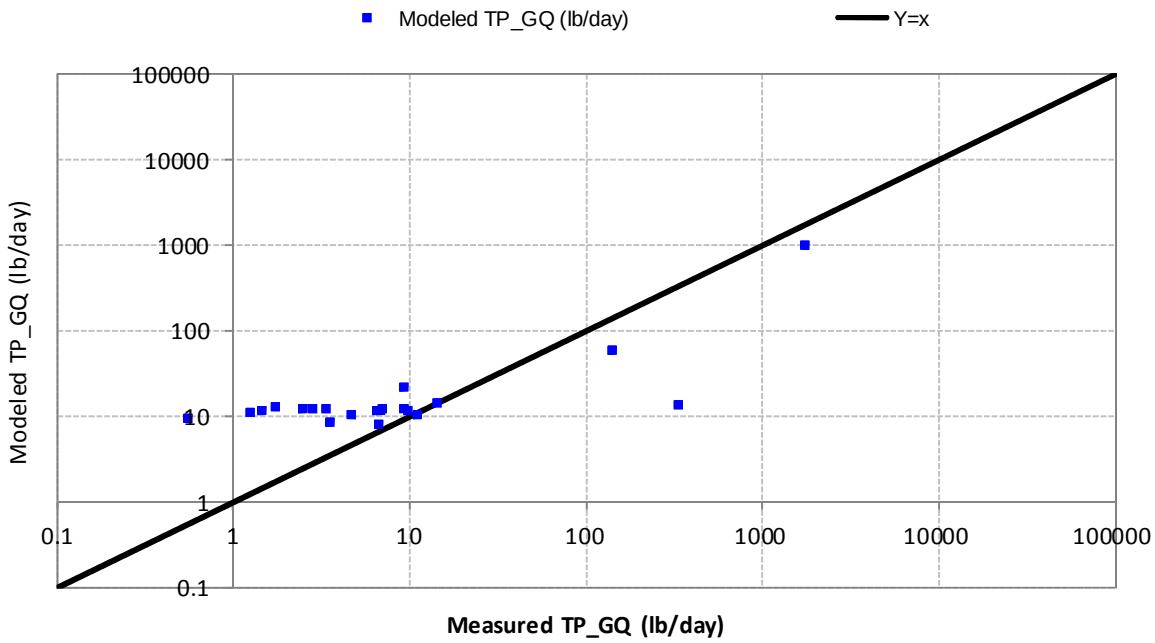

Figure B-70 Modeled vs. Observed Load TP_GQ at 03297880

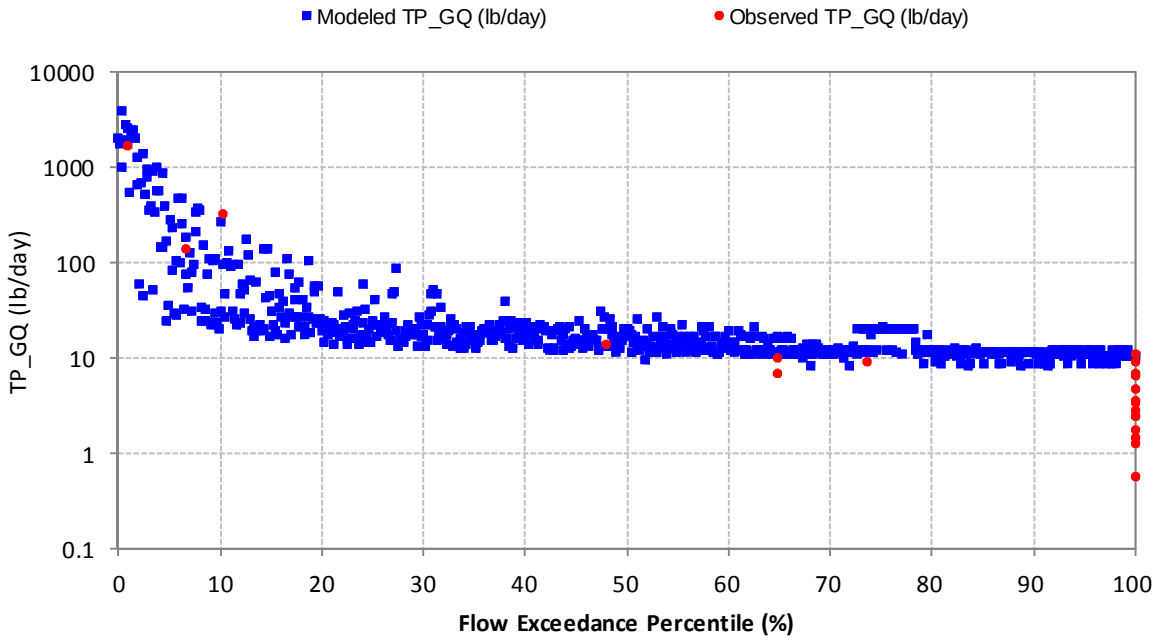

Figure B-71 Modeled vs. Observed Load TP_GQ at 03297880

Table B-15 Modeled vs. Observed Load TP_GQ at 03297880

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	26,110	22,031	18.51	19,421	34.44
2008	31,705	29,270	8.32	30,963	2.4

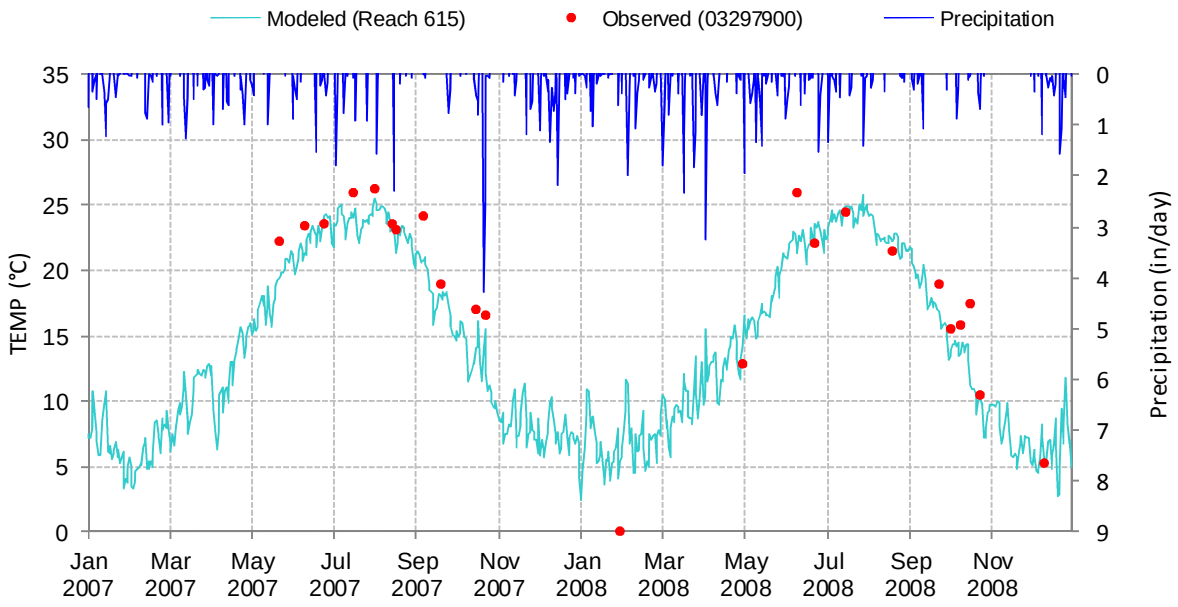

Figure B-72 Modeled vs. Observed TEMP (°C) at 03297900

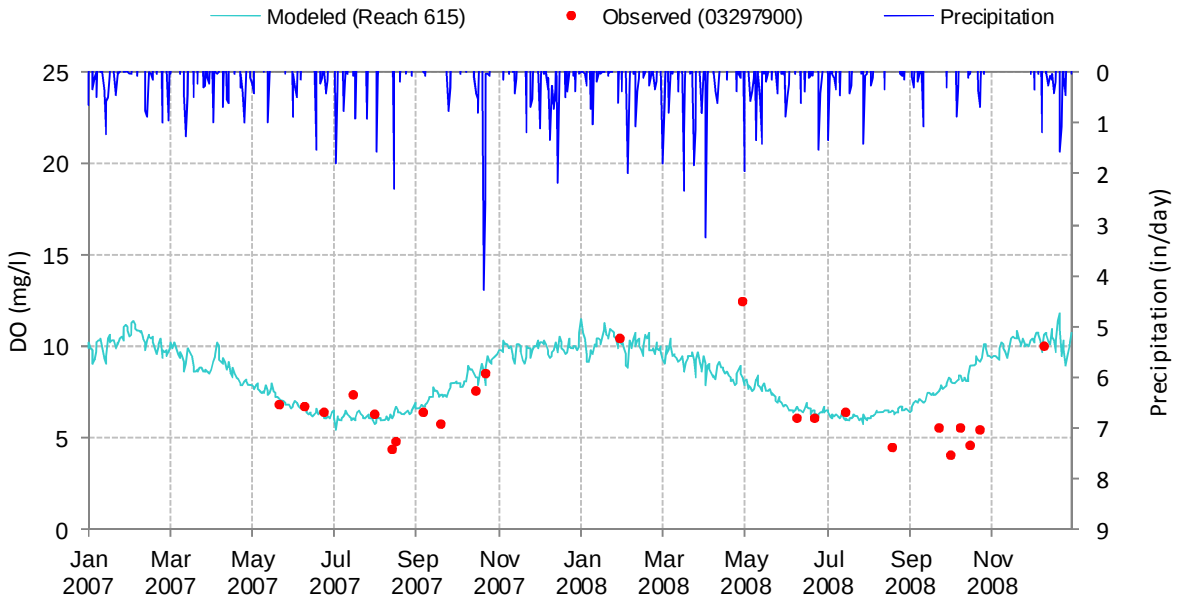

Figure B-73 Modeled vs. Observed DO (mg/l) at 03297900

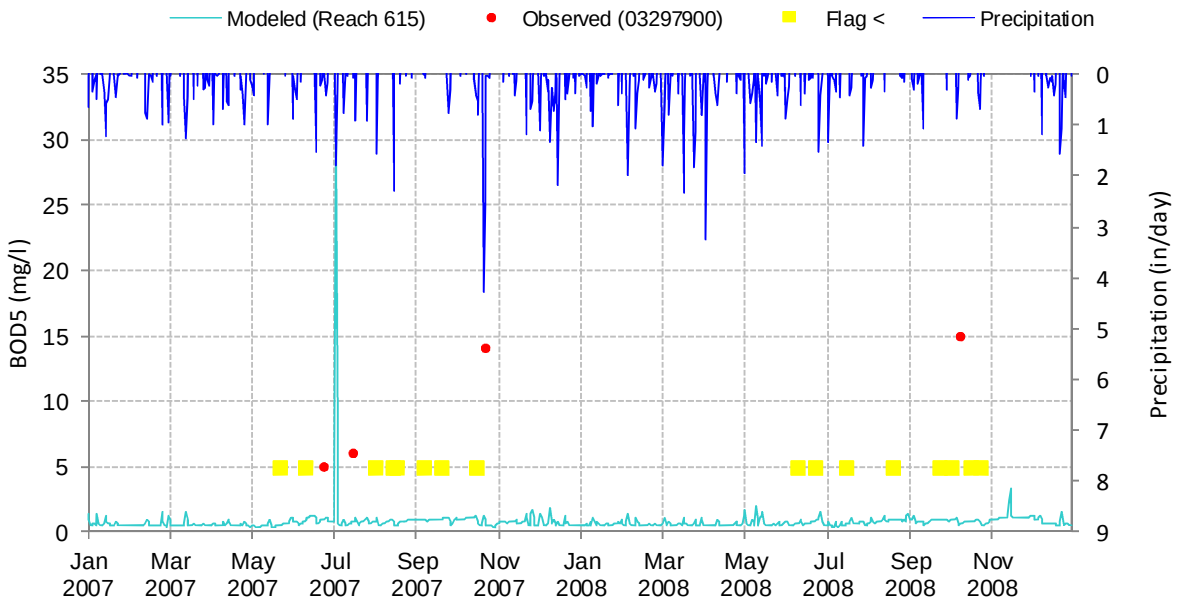

Figure B-74 Modeled vs. Observed BOD5 (mg/l) at 03297900

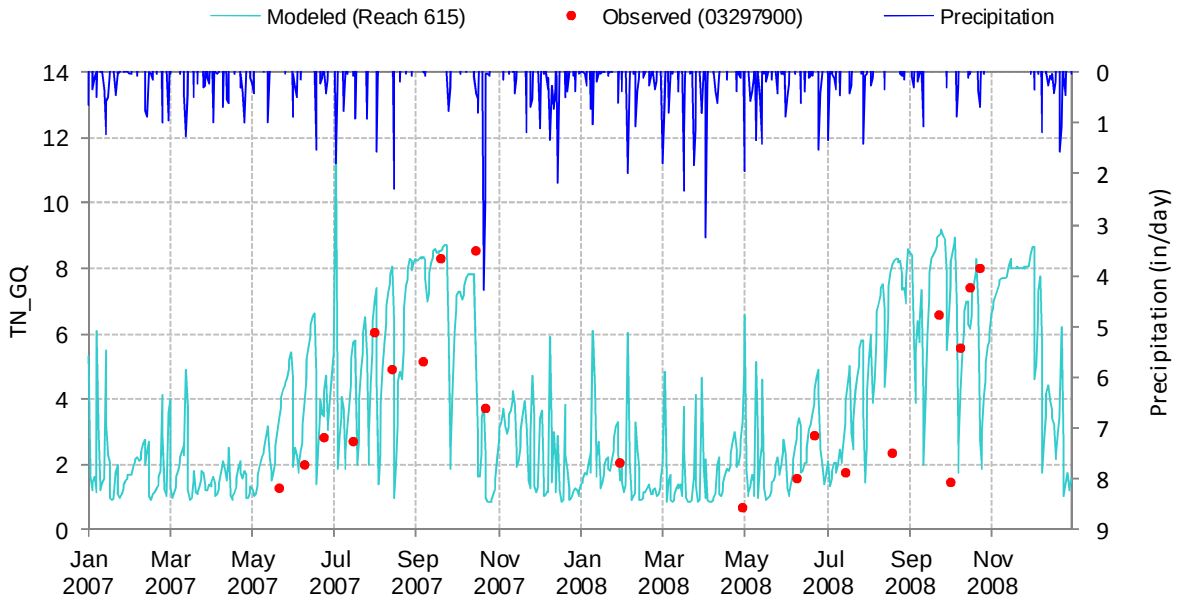

Figure B-75 Modeled vs. Observed TN_GQ at 03297900

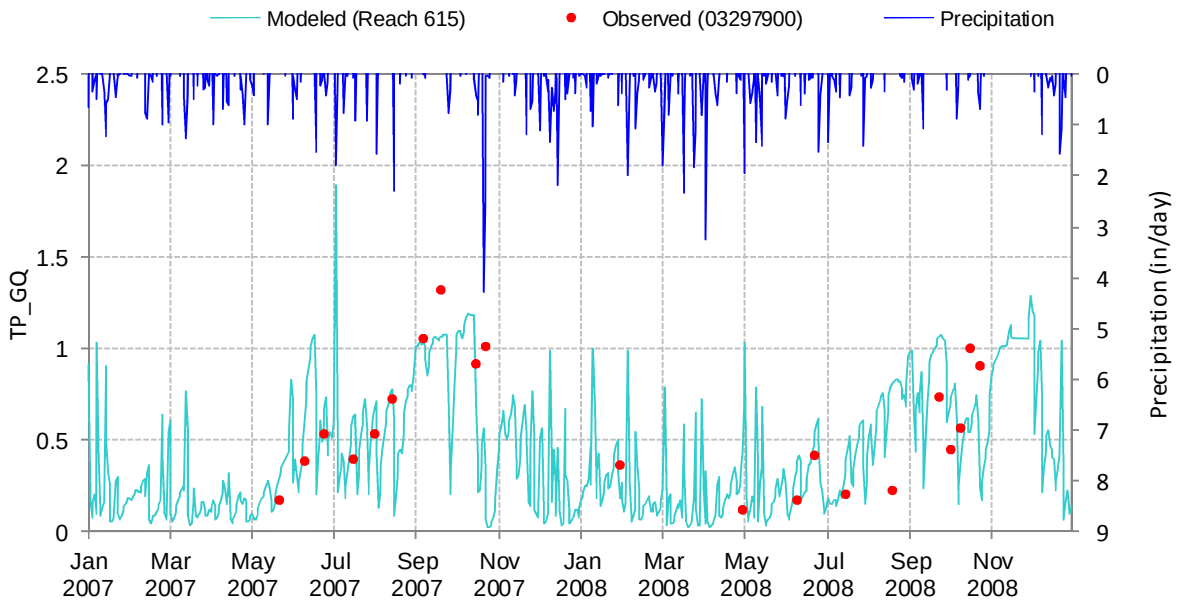

Figure B-76 Modeled vs. Observed TP_GQ at 03297900

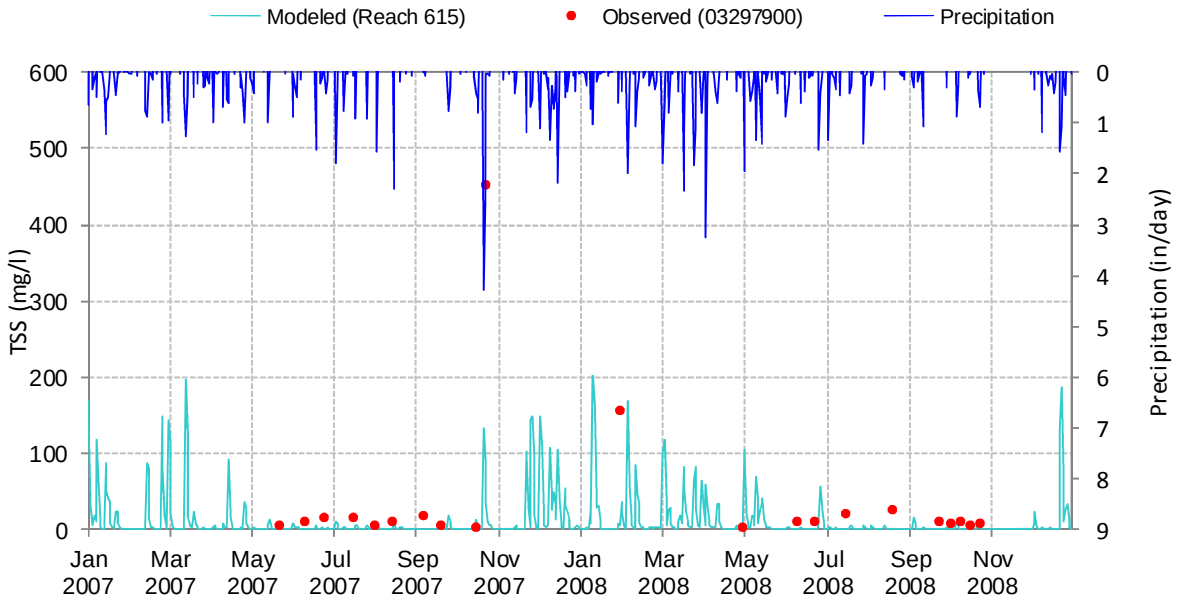

Figure B-77 Modeled vs. Observed TSS (mg/l) at 03297900

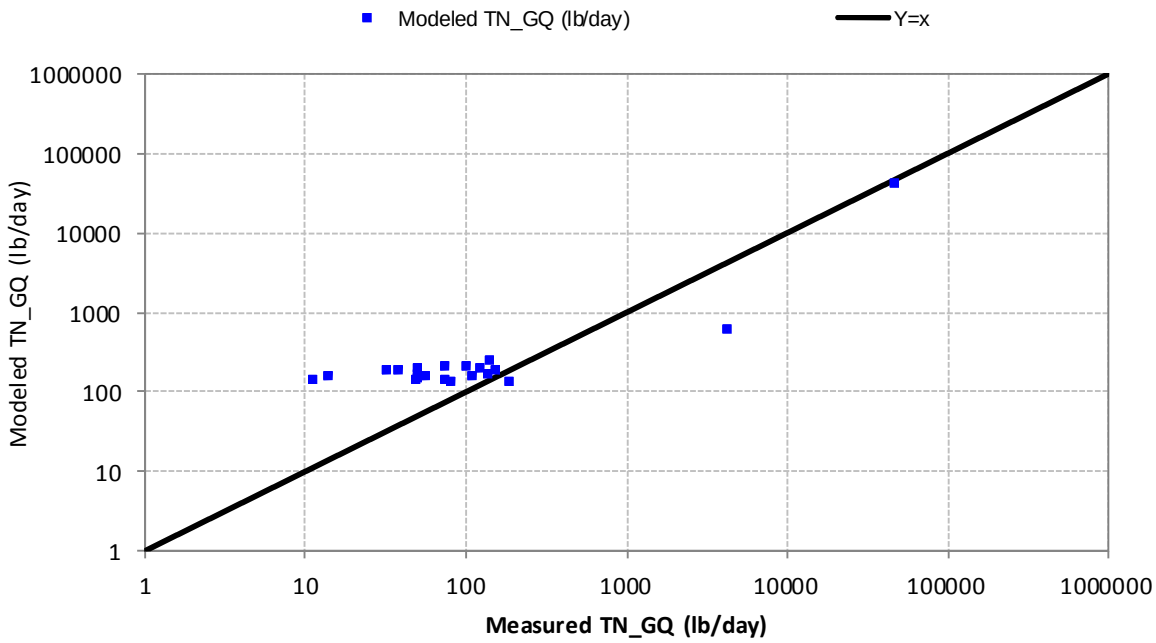

Figure B-78 Modeled vs. Observed Load TN_GQ at 03297900

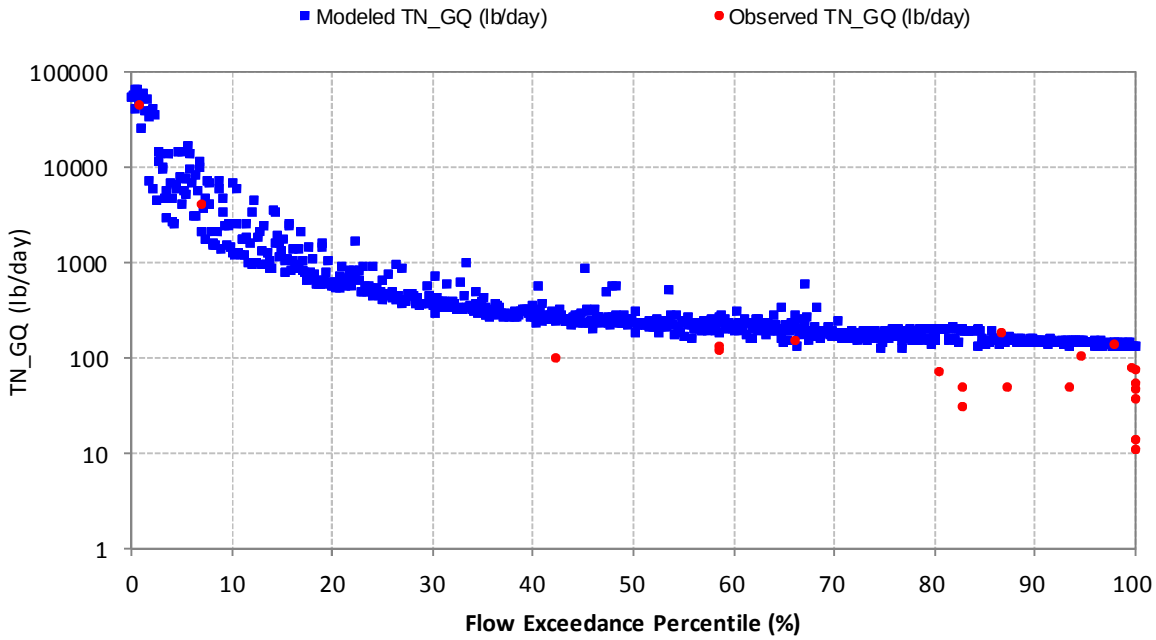

Figure B-79 Modeled vs. Observed Load TN_GQ at 03297900

Table B-16 Modeled vs. Observed Load TN_GQ at 03297900

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	578,432	568,866	1.68	505,628	14.4
2008	806,584	690,973	16.73	534,636	50.87

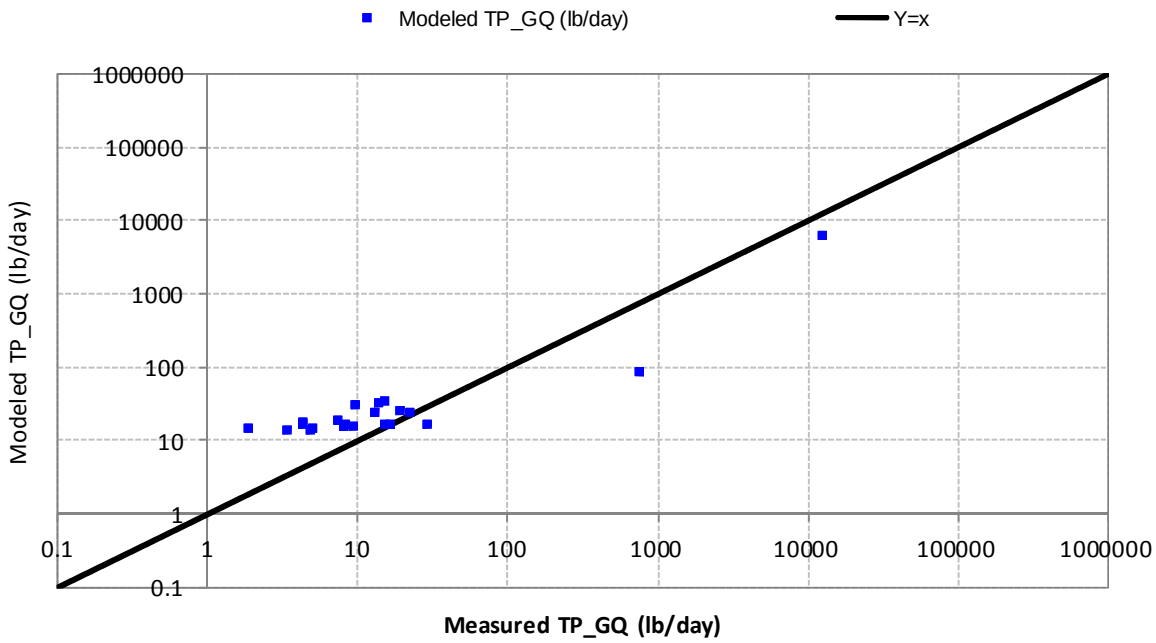

Figure B-80 Modeled vs. Observed Load TP_GQ at 03297900

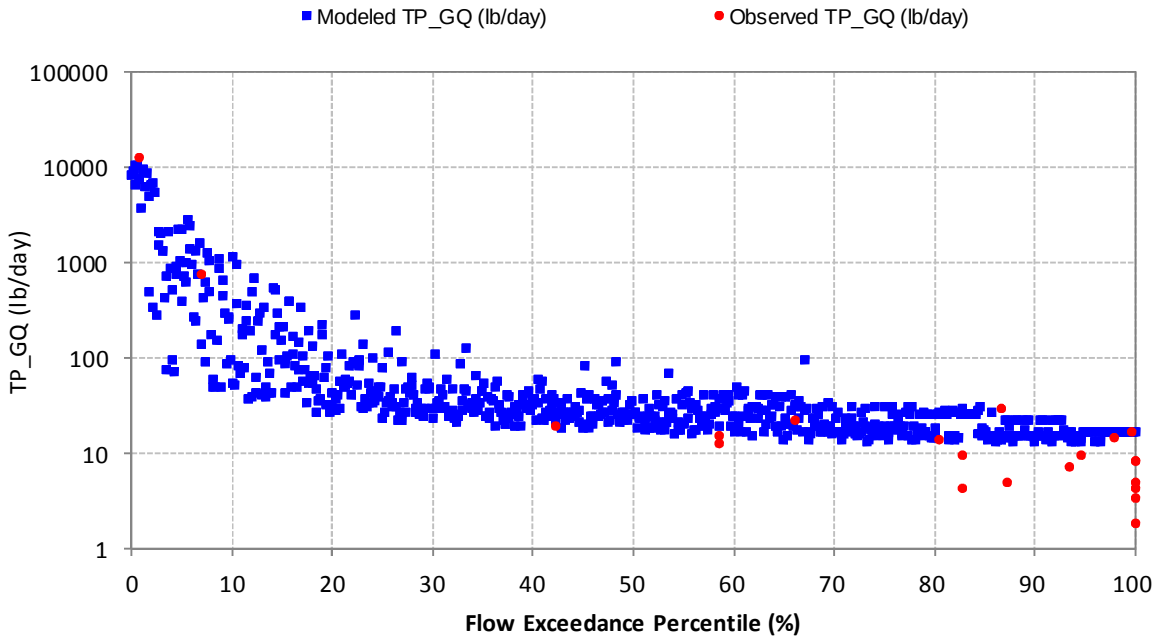

Figure B-81 Modeled vs. Observed Load TP_GQ at 03297900

Table B-17 Modeled vs. Observed Load TP_GQ at 03297900

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	81,597	127,893	-36.2	104,104	-21.62
2008	116,312	124,603	-6.65	89,418	30.08

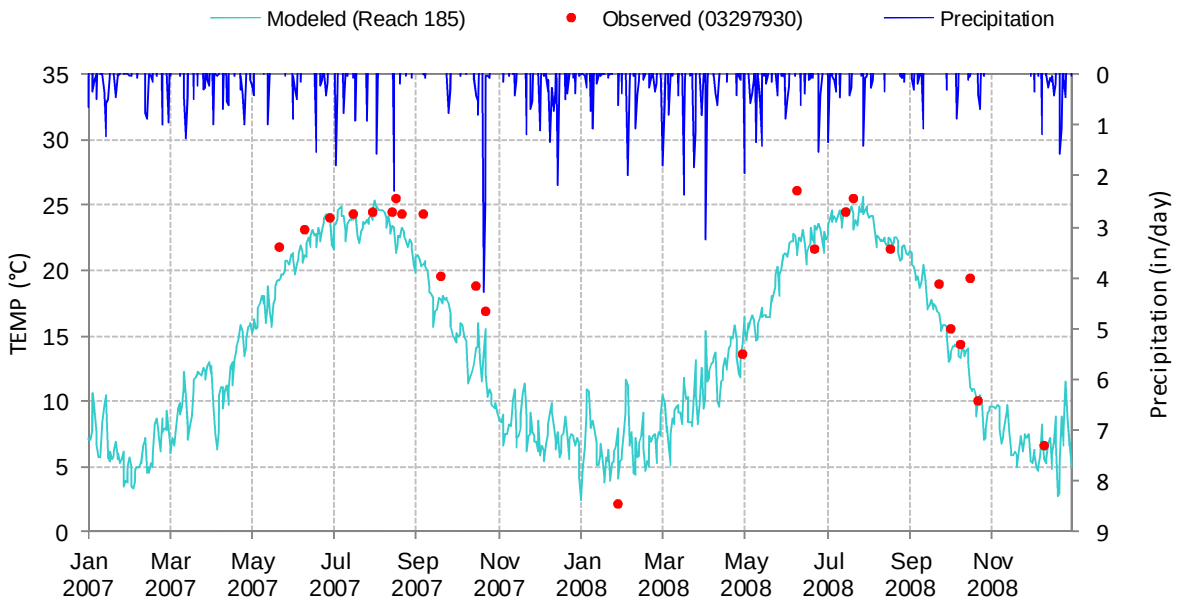

Figure B-82 Modeled vs. Observed TEMP (°C) at 03297930

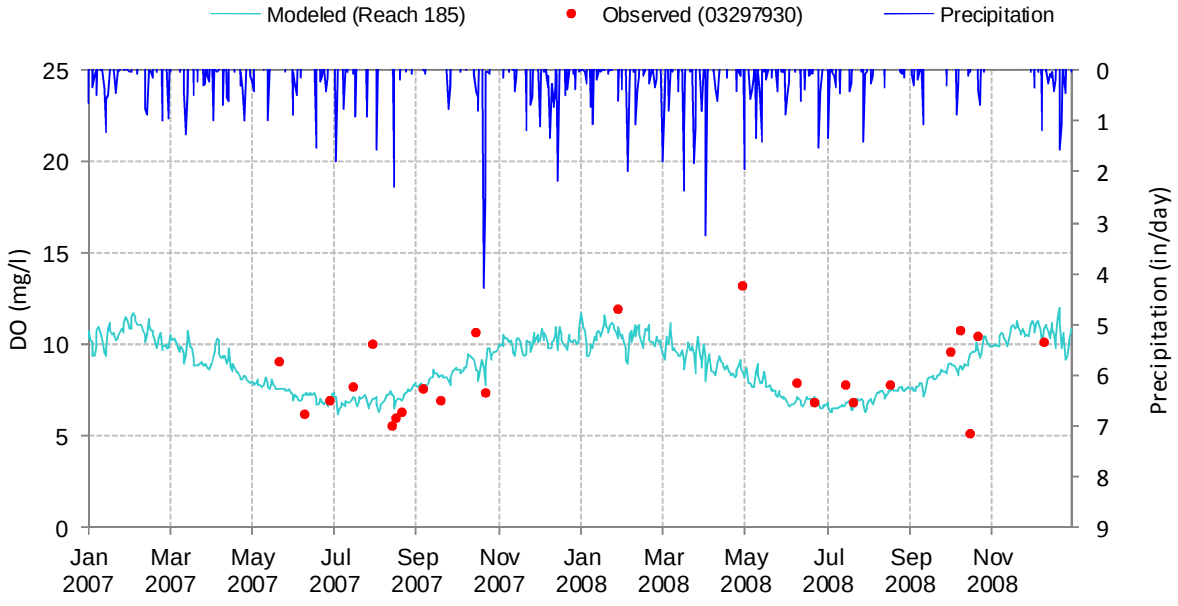

Figure B-83 Modeled vs. Observed DO (mg/l) at 03297930

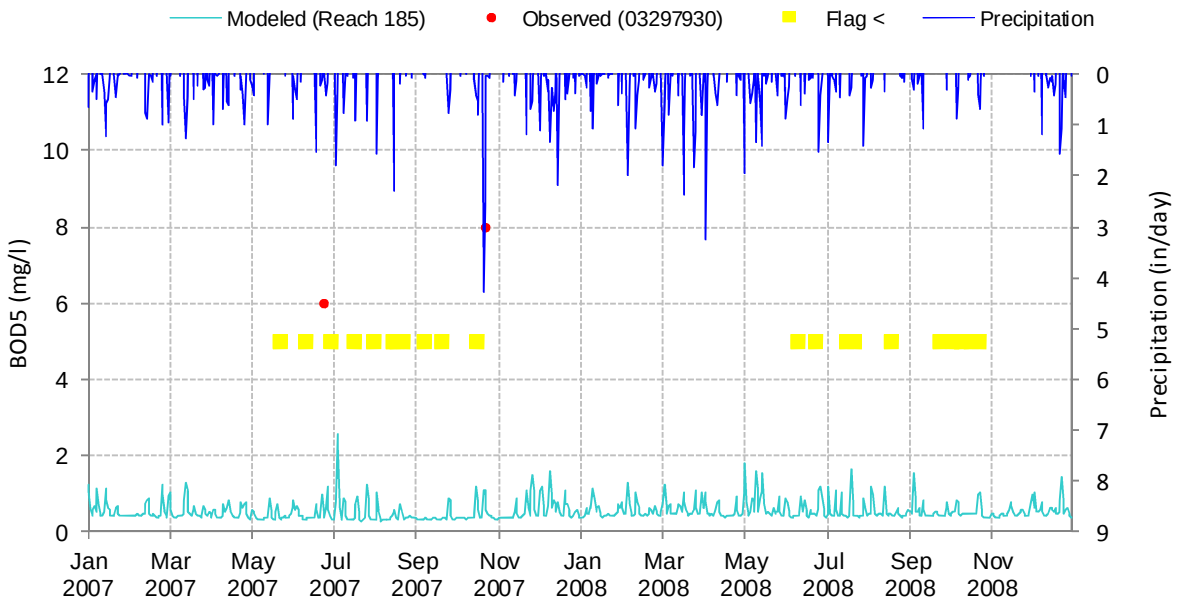

Figure B-84 Modeled vs. Observed BOD5 (mg/l) at 03297930

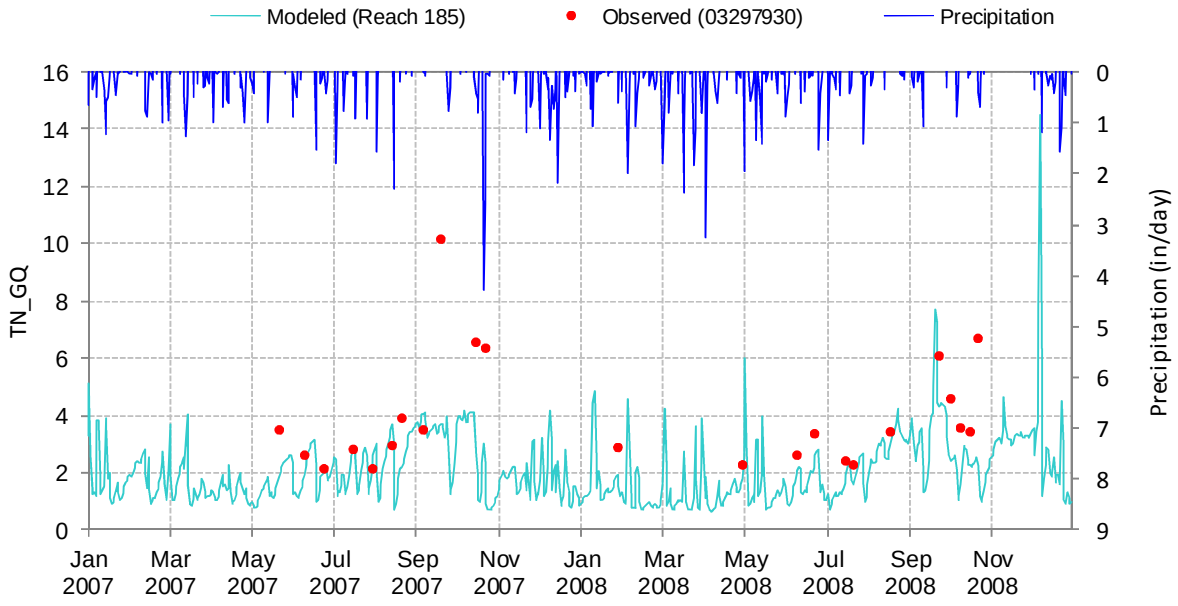

Figure B-85 Modeled vs. Observed TN_GQ at 03297930

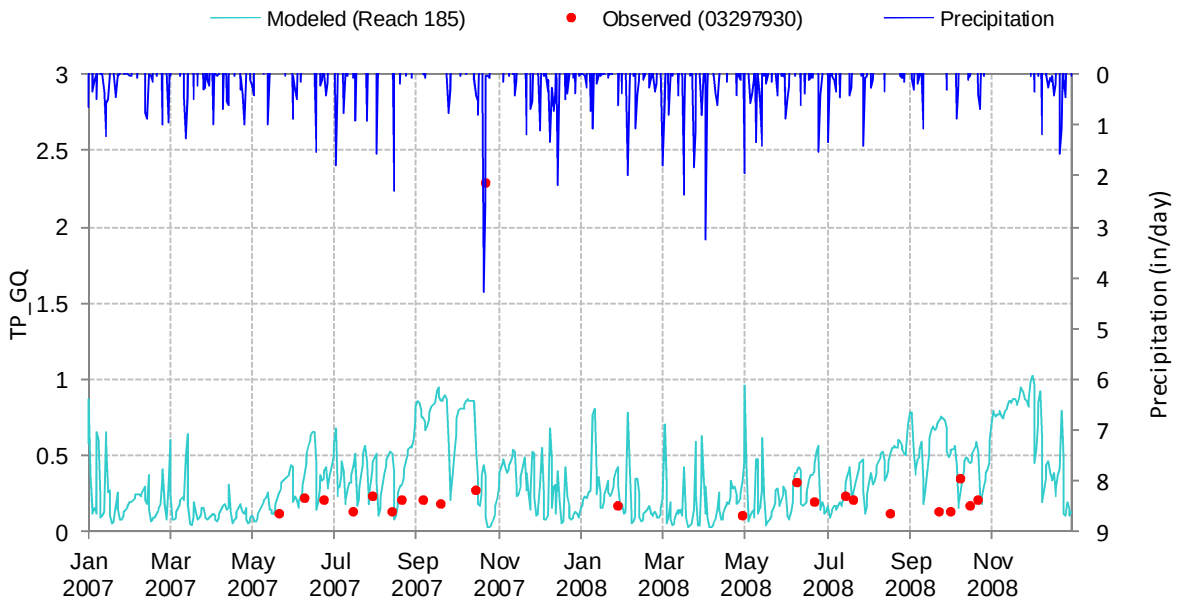

Figure B-86 Modeled vs. Observed TP_GQ at 03297930

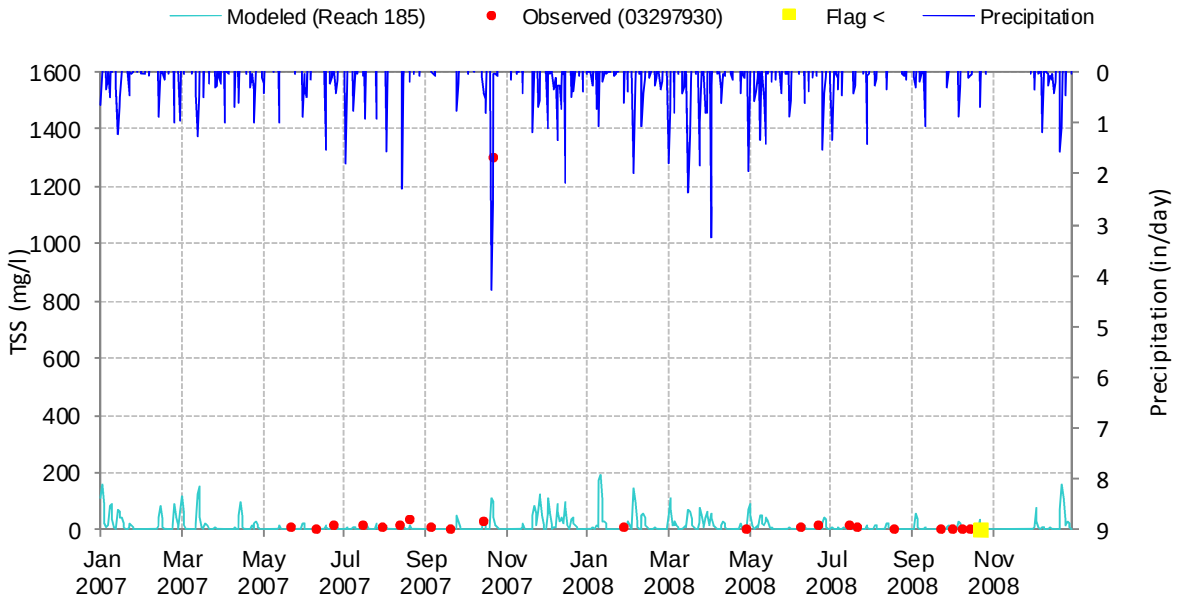

Figure B-87 Modeled vs. Observed TSS (mg/l) at 03297930

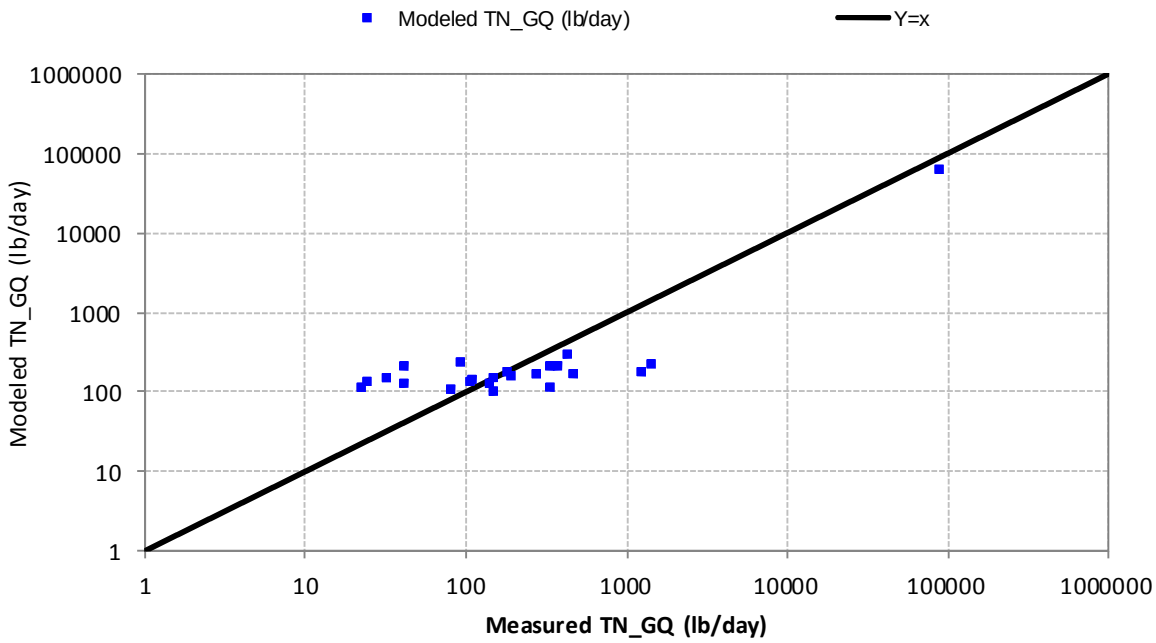

Figure B-88 Modeled vs. Observed Load TN_GQ at 03297930

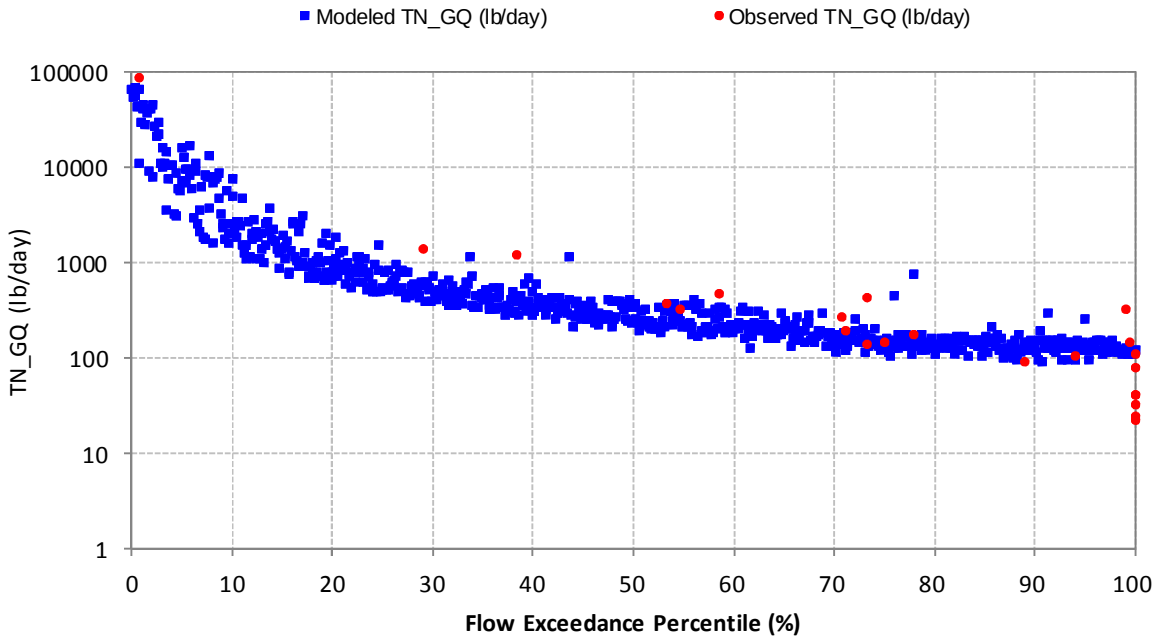

Figure B-89 Modeled vs. Observed Load TN_GQ at 03297930

Table B-18 Modeled vs. Observed Load TN_GQ at 03297930

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	617,968	1,495,328	-58.67	1,331,863	-53.6
2008	841,798	1,264,389	-33.42	1,120,443	-24.87

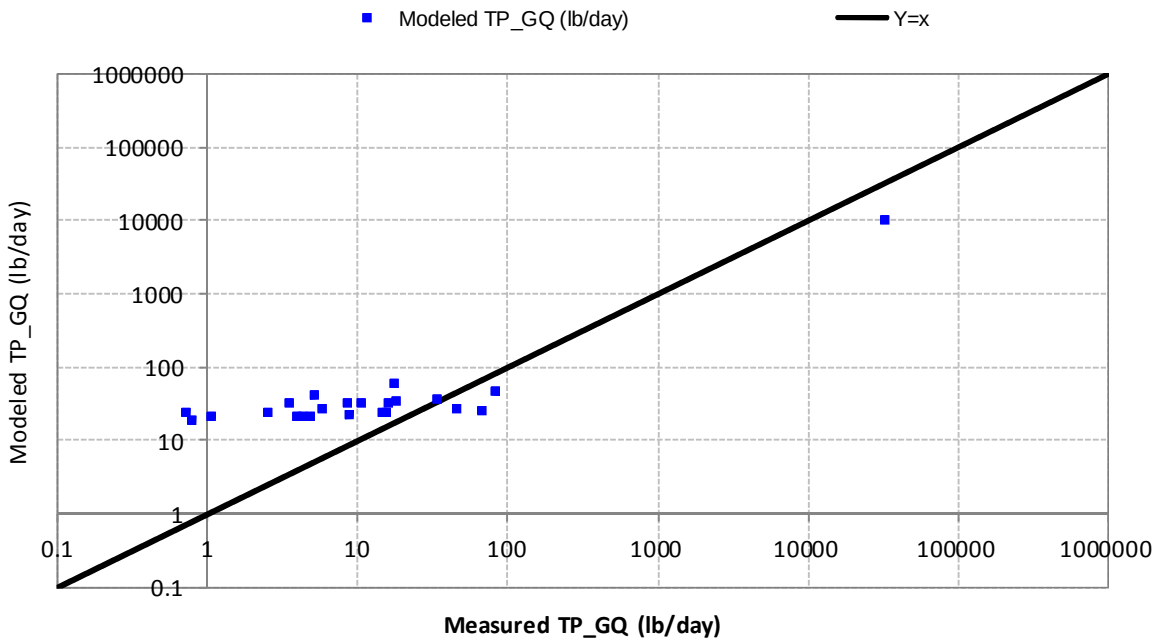

Figure B-90 Modeled vs. Observed Load TP_GQ at 03297930

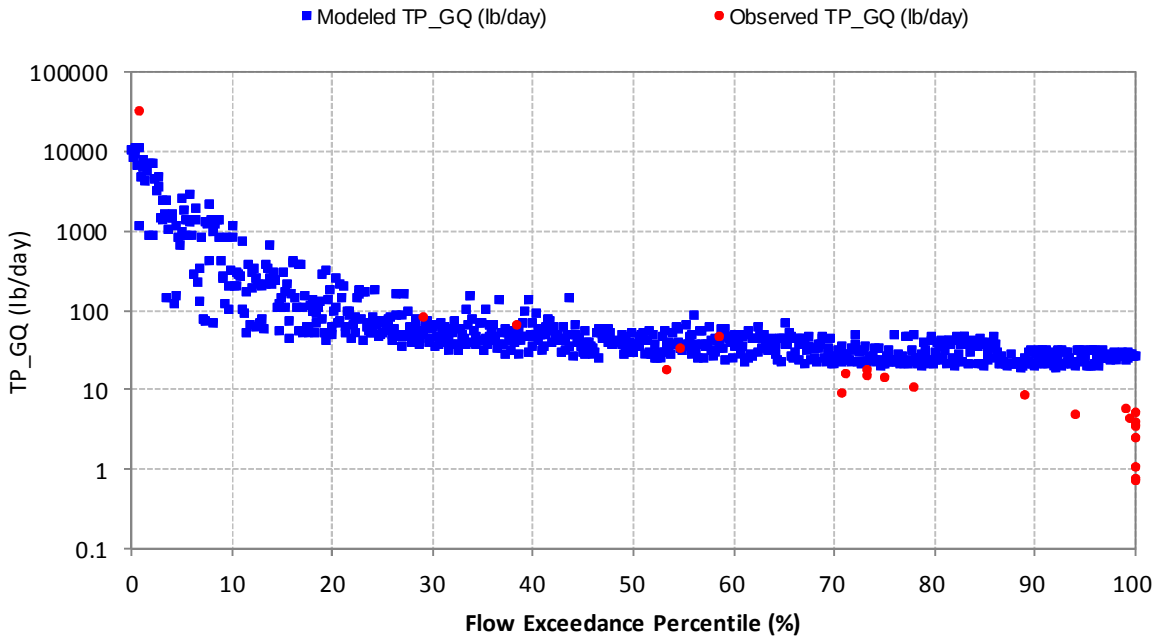

Figure B-91 Modeled vs. Observed Load TP_GQ at 03297930

Table B-19 Modeled vs. Observed Load TP_GQ at 03297930

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	89,674	306,717	-70.76	209,623	-57.22
2008	129,323	125,176	3.31	74,601	73.35

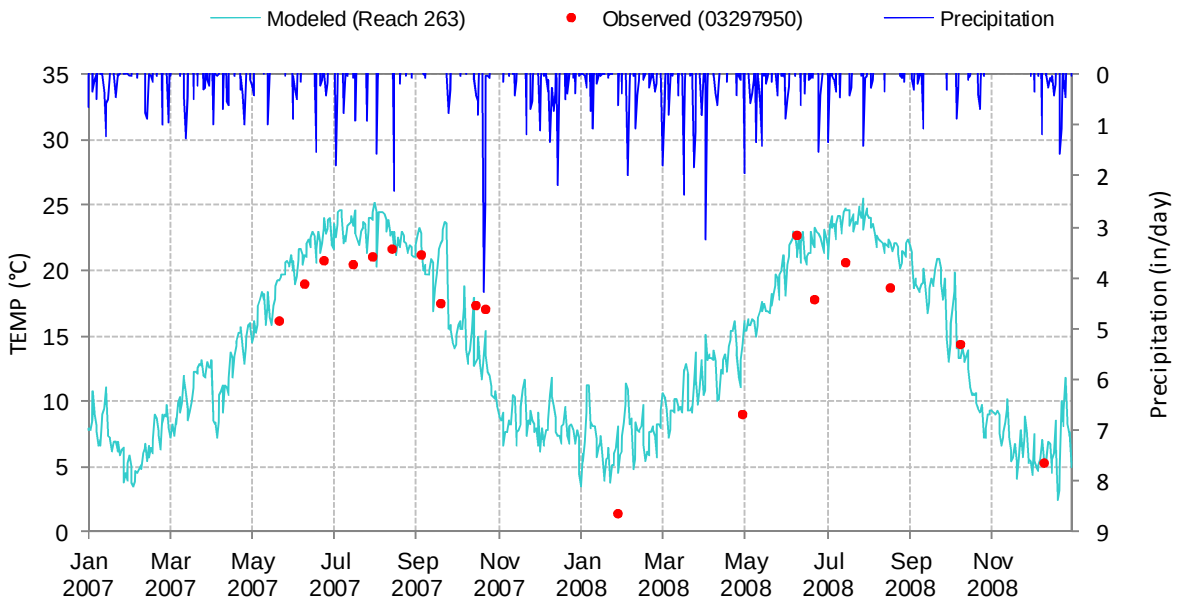

Figure B-92 Modeled vs. Observed TEMP (°C) at 03297950

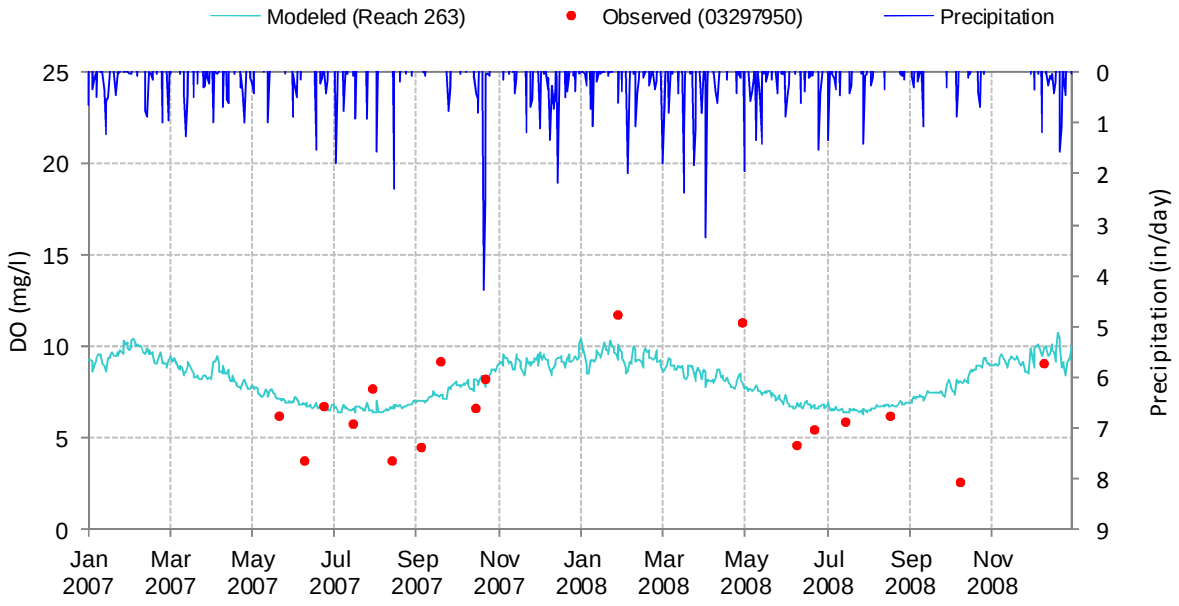

Figure B-93 Modeled vs. Observed DO (mg/l) at 03297950

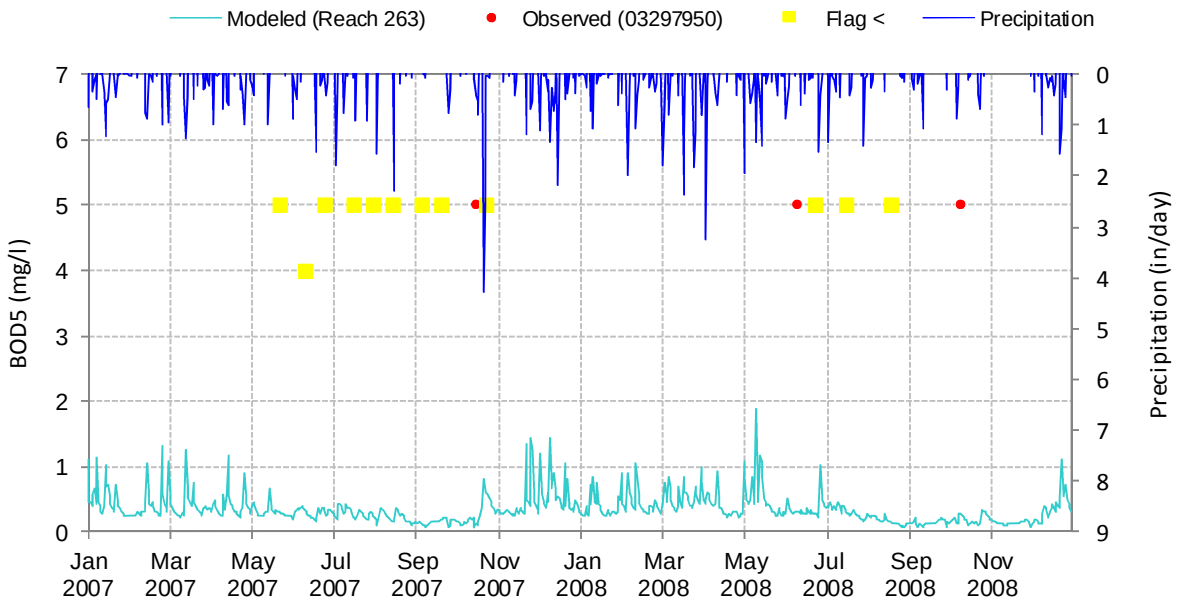

Figure B-94 Modeled vs. Observed BOD5 (mg/l) at 03297950

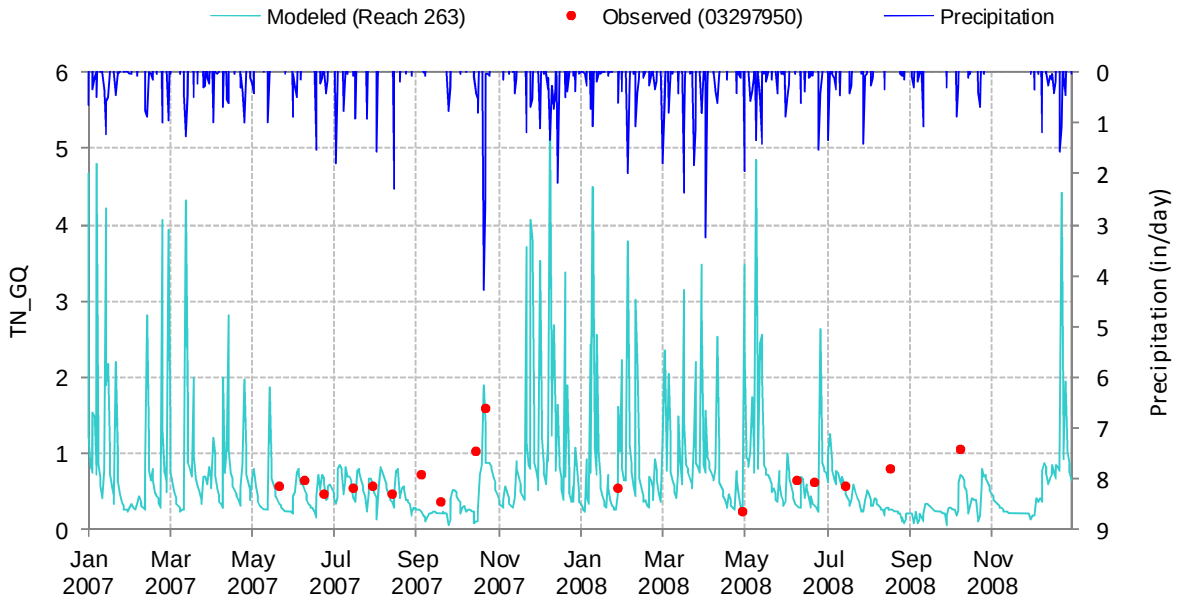

Figure B-95 Modeled vs. Observed TN_GQ at 03297950

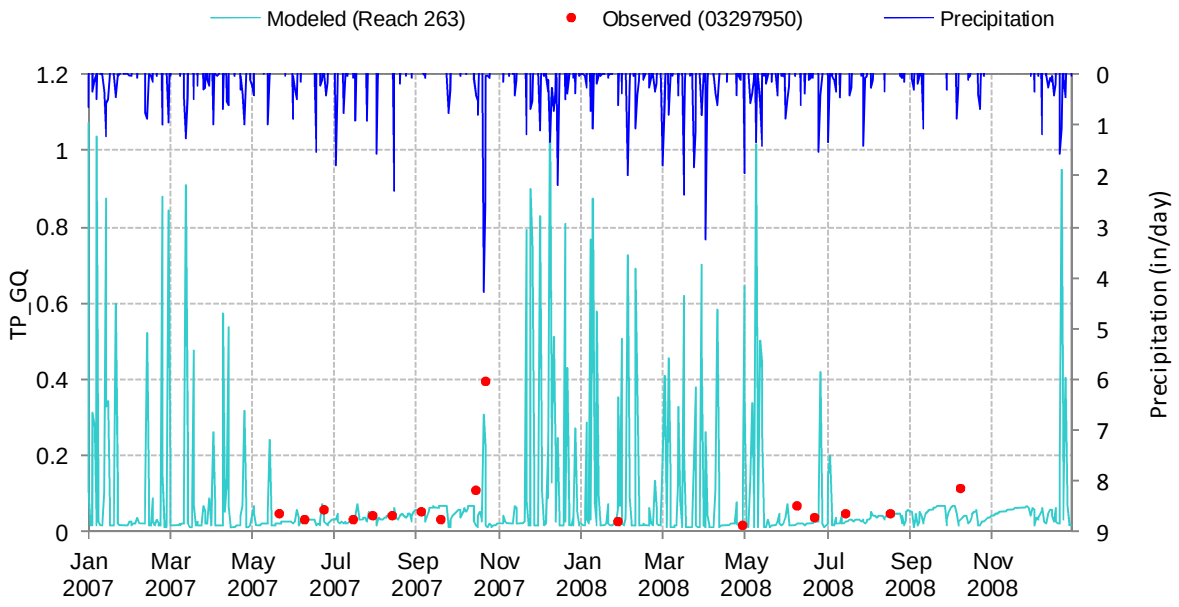

Figure B-96 Modeled vs. Observed TP_GQ at 03297950

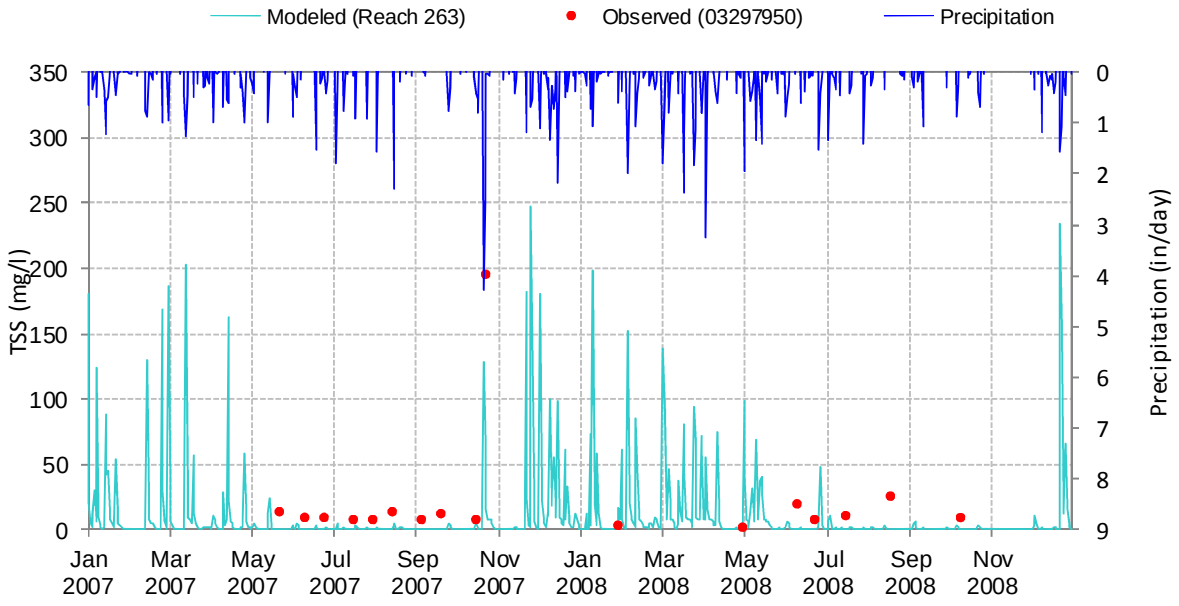

Figure B-97 Modeled vs. Observed TSS (mg/l) at 03297950

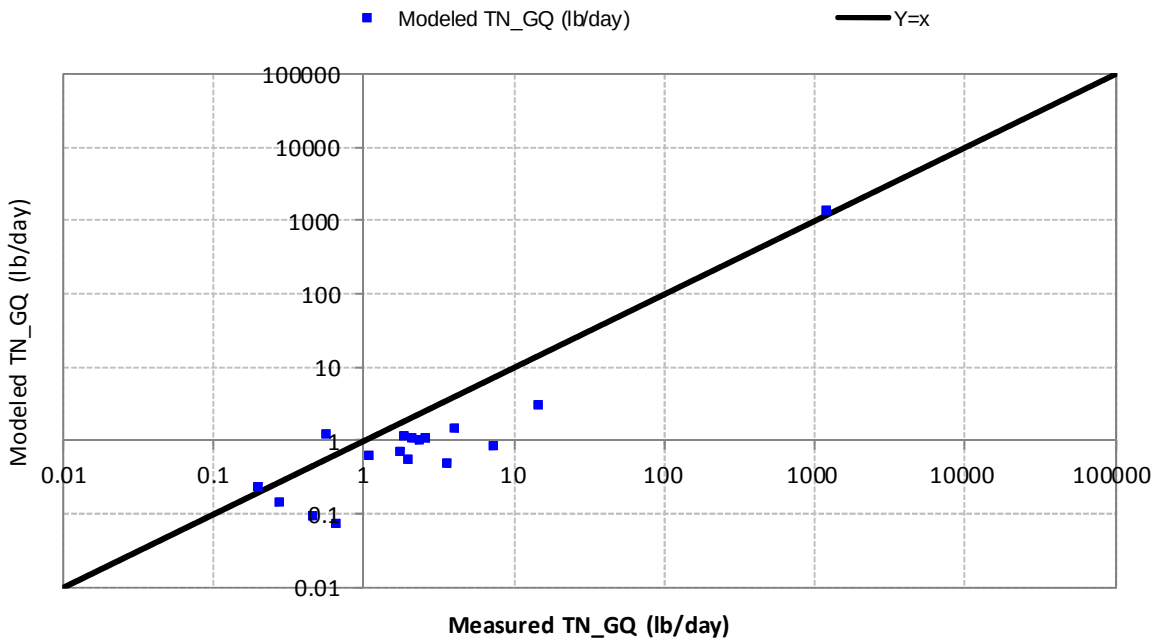

Figure B-98 Modeled vs. Observed Load TN_GQ at 03297950

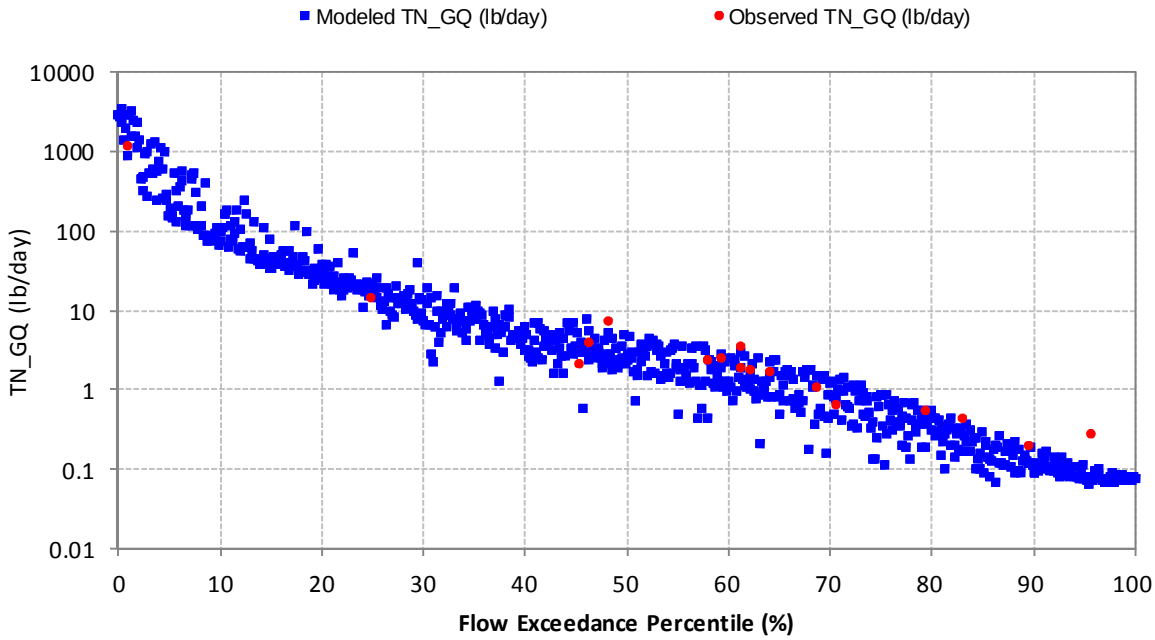

Figure B-99 Modeled vs. Observed Load TN_GQ at 03297950

Table B-20 Modeled vs. Observed Load TN_GQ at 03297950

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	27,546	16,545	66.5	14,010	96.62
2008	35,118	12,689	176.75	9,665	263.36

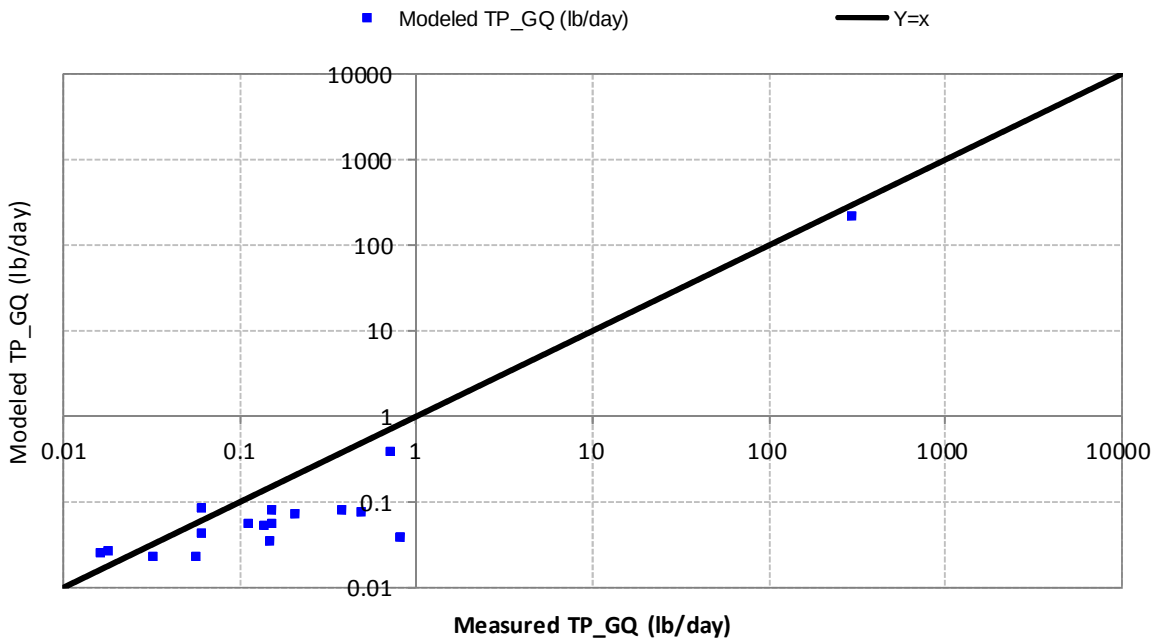

Figure B-100 Modeled vs. Observed Load TP_GQ at 03297950

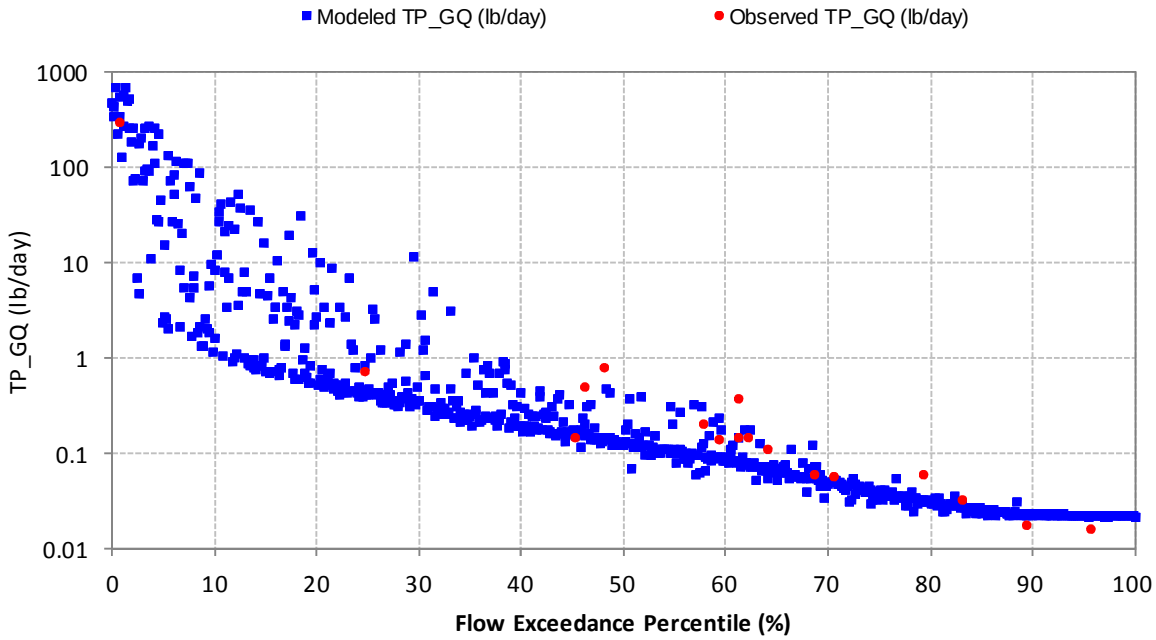

Figure B-101 Modeled vs. Observed Load TP_GQ at 03297950

Table B-21 Modeled vs. Observed Load TP_GQ at 03297950

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	4,728	3,108	52.12	2,210	113.93
2008	5,879	1,199	390.33	765	668.57

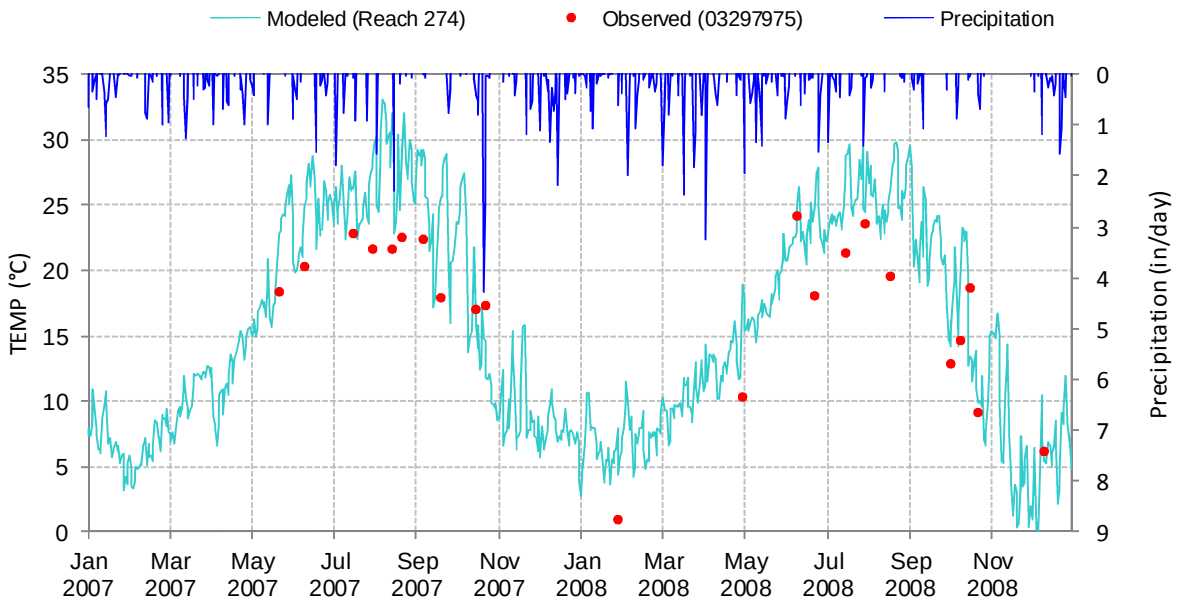

Figure B-102 Modeled vs. Observed TEMP (°C) at 03297975

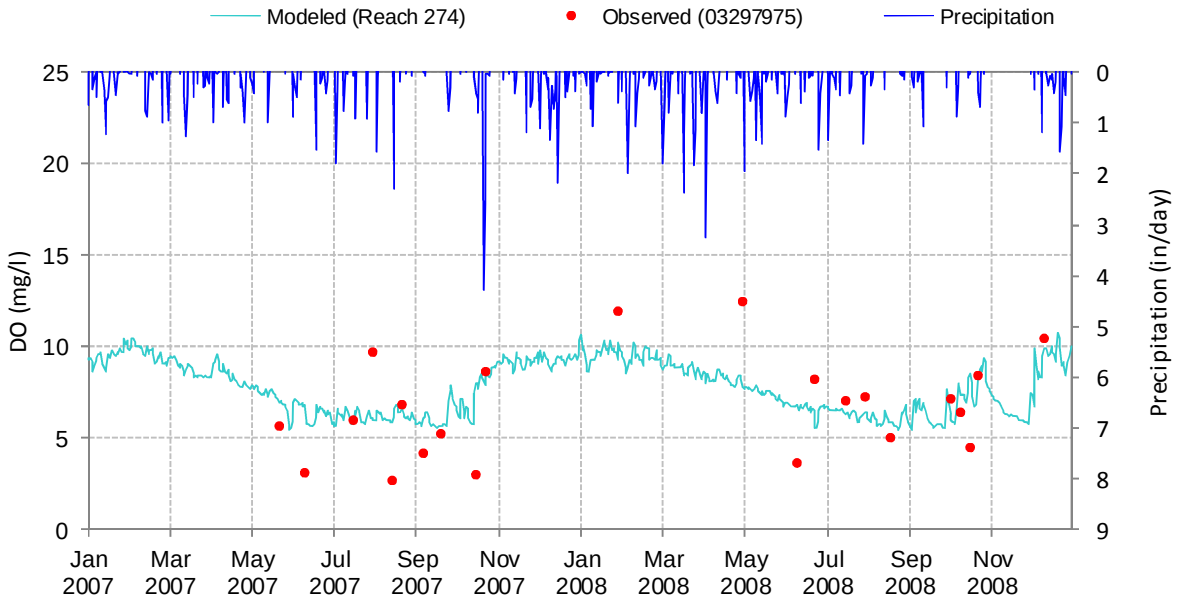

Figure B-103 Modeled vs. Observed DO (mg/l) at 03297975

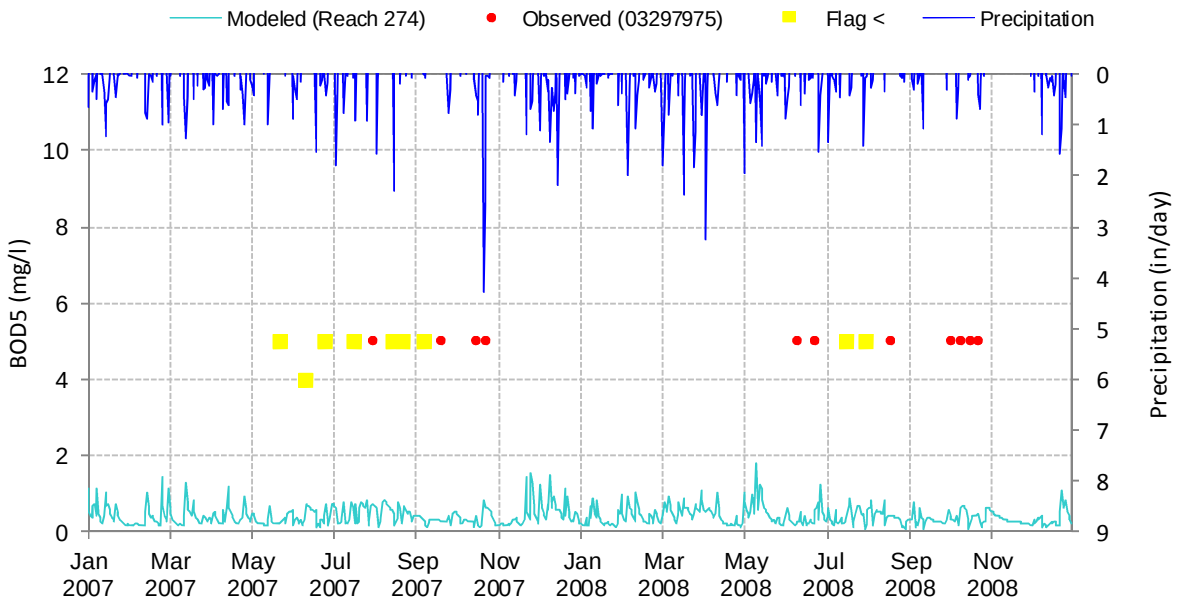

Figure B-104 Modeled vs. Observed BOD5 (mg/l) at 03297975

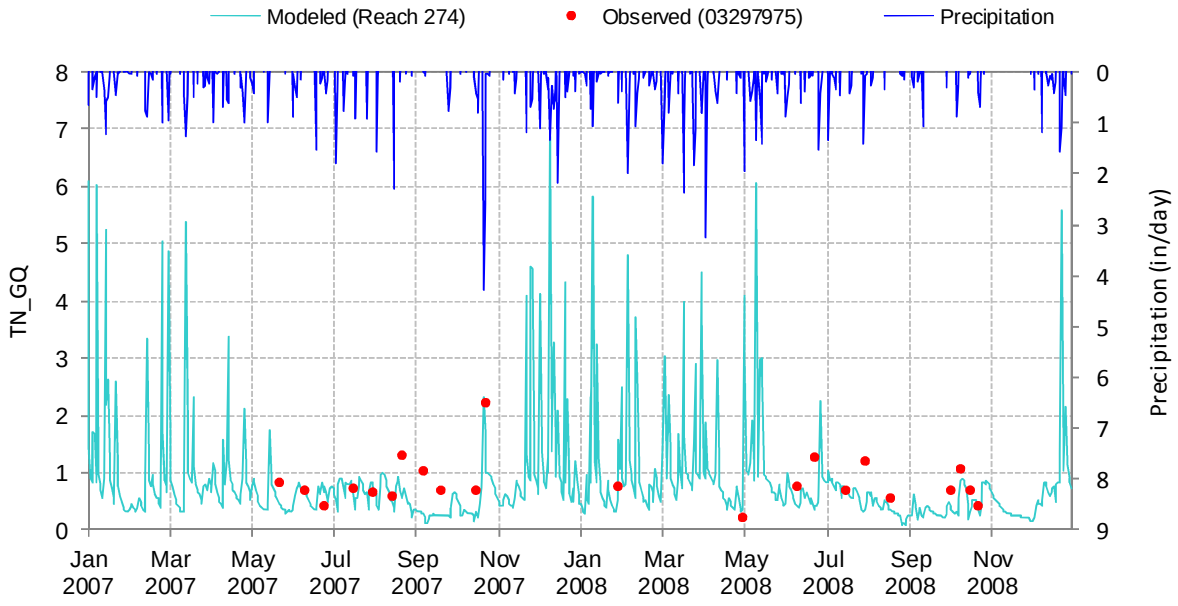

Figure B-105 Modeled vs. Observed TN_GQ at 03297975

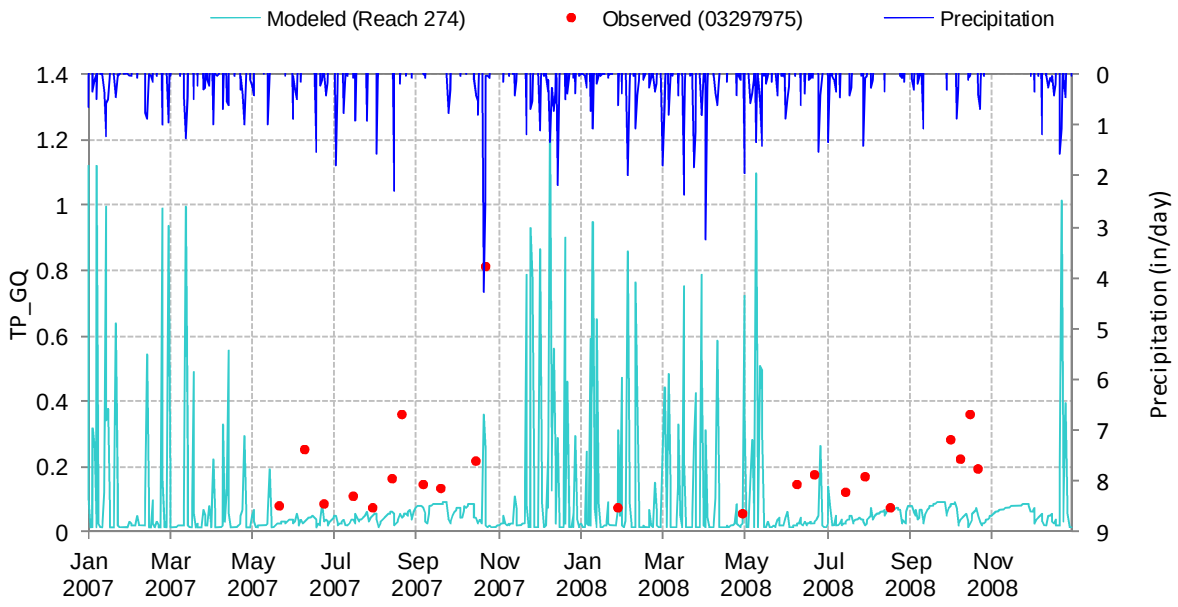

Figure B-106 Modeled vs. Observed TP_GQ at 03297975

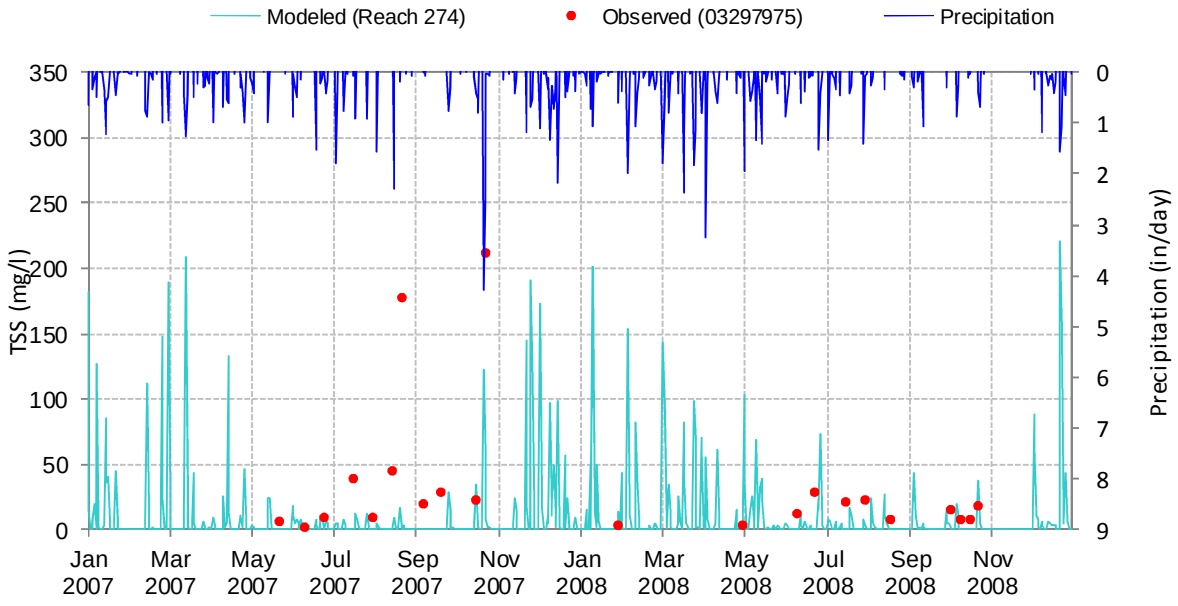

Figure B-107 Modeled vs. Observed TSS (mg/l) at 03297975

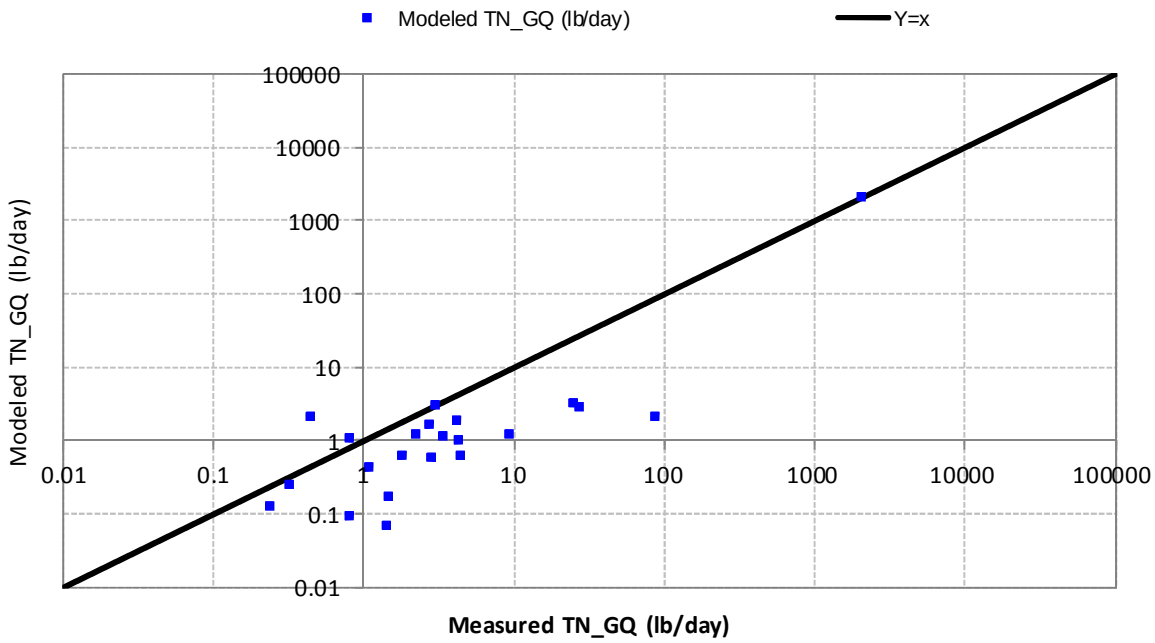

Figure B-108 Modeled vs. Observed Load TN_GQ at 03297975

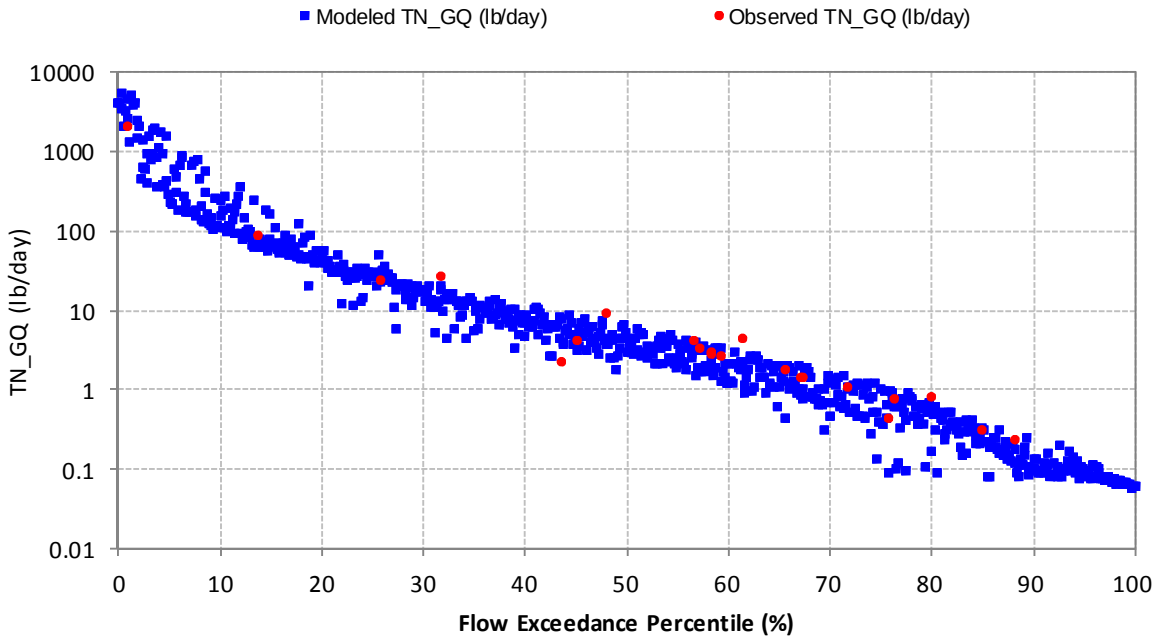

Figure B-109 Modeled vs. Observed Load TN_GQ at 03297975

Table B-22 Modeled vs. Observed Load TN_GQ at 03297975

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	41,725	28,634	45.72	24,318	71.58
2008	54,079	20,106	168.97	13,779	292.48

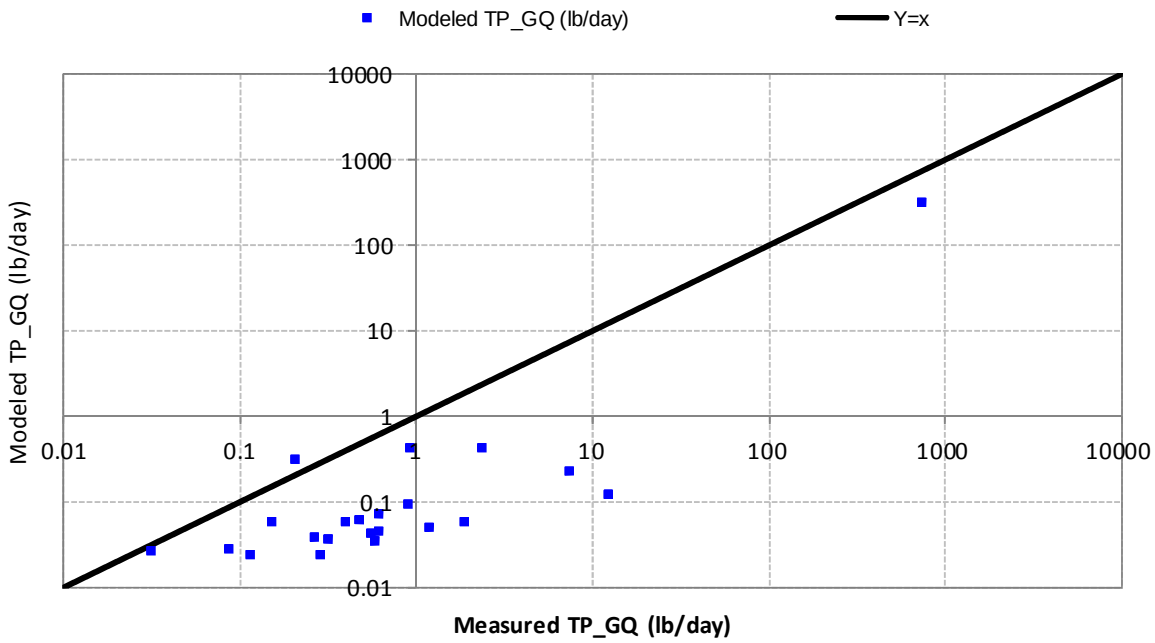

Figure B-110 Modeled vs. Observed Load TP_GQ at 03297975

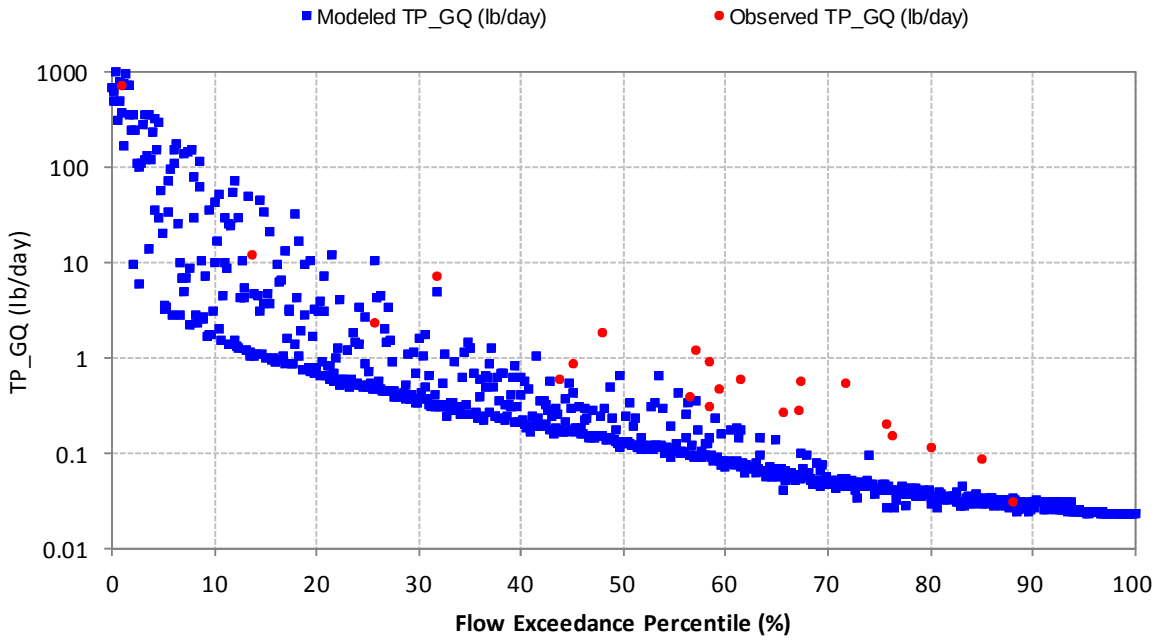

Figure B-111 Modeled vs. Observed Load TP_GQ at 03297975

Table B-23 Modeled vs. Observed Load TP_GQ at 03297975

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	6,411	7,586	-15.48	5,401	18.71
2008	8,170	3,385	141.38	2,279	258.44

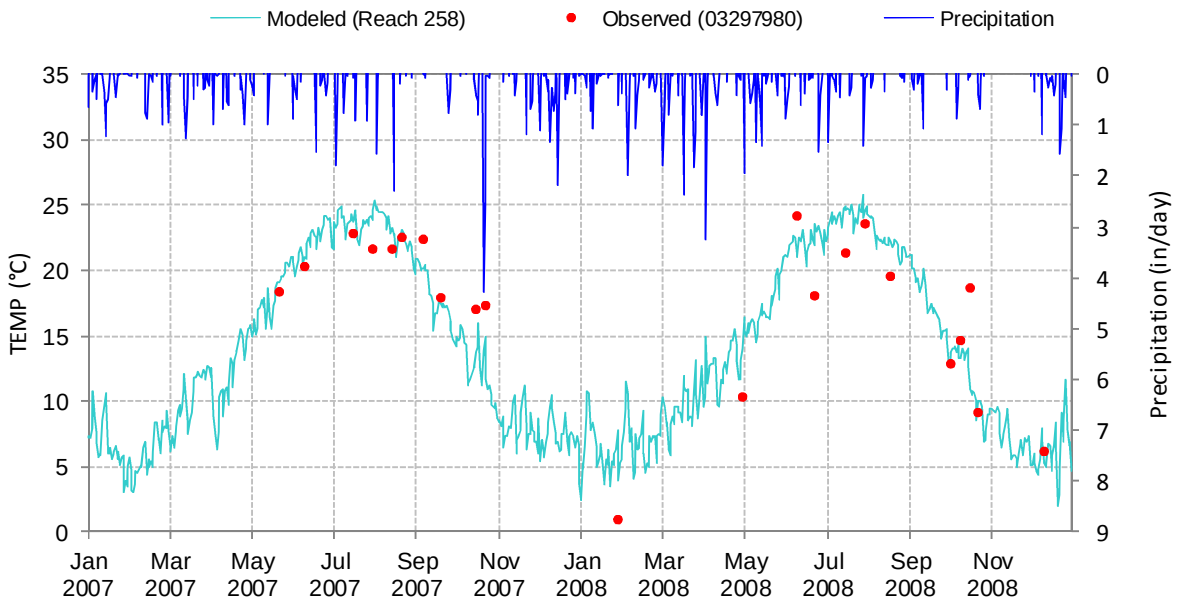

Figure B-112 Modeled vs. Observed TEMP (°C) at 03297980

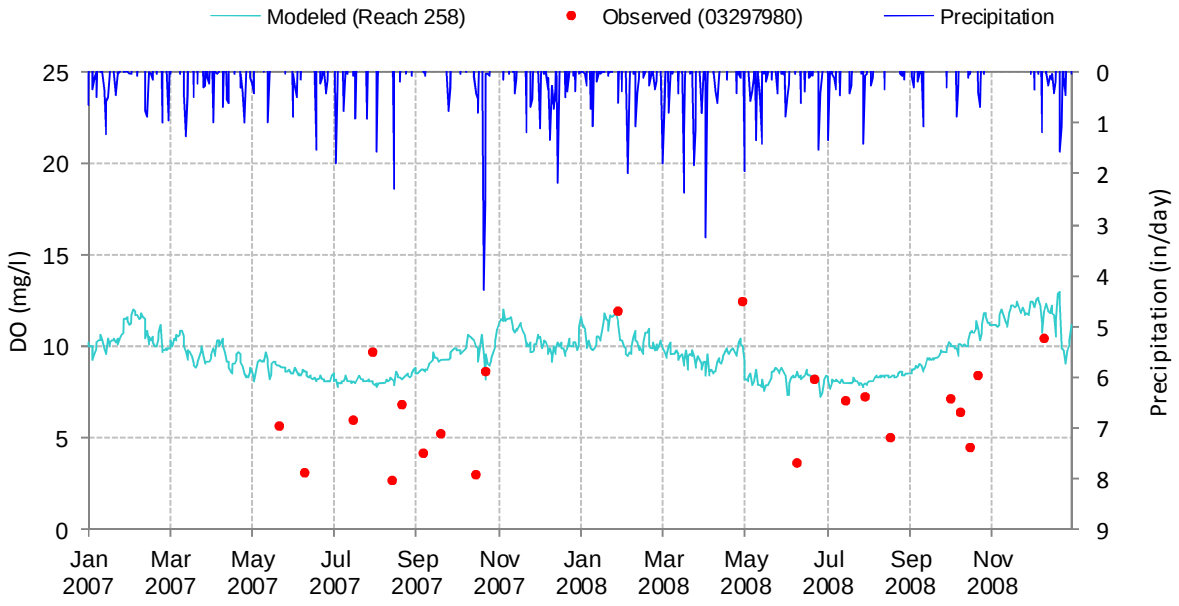

Figure B-113 Modeled vs. Observed DO (mg/l) at 03297980

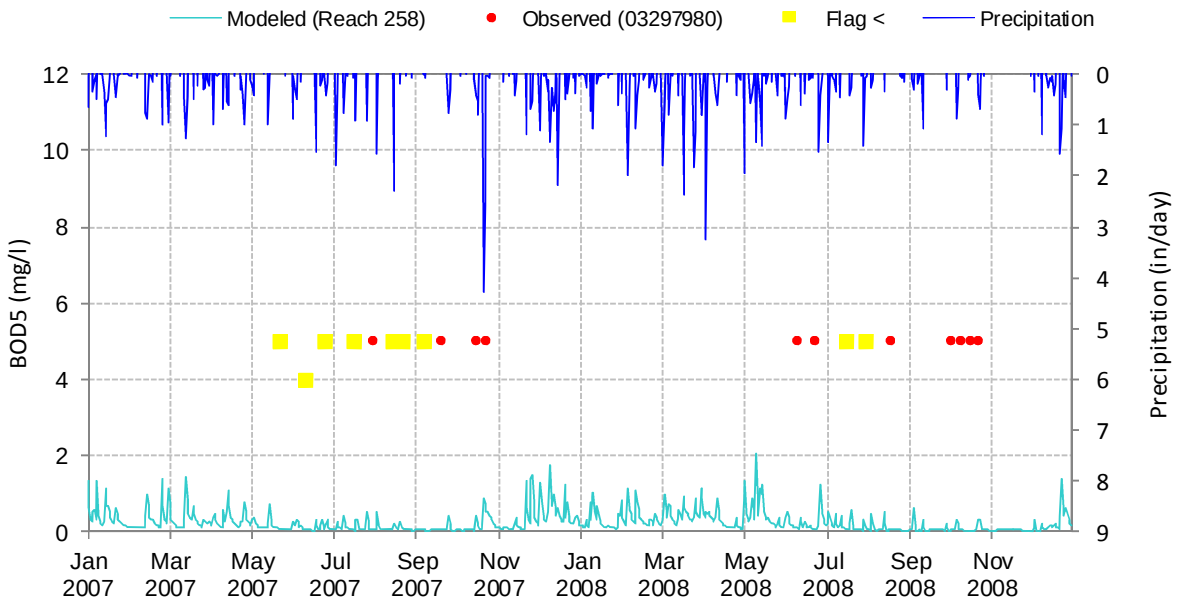

Figure B-114 Modeled vs. Observed BOD5 (mg/l) at 03297980

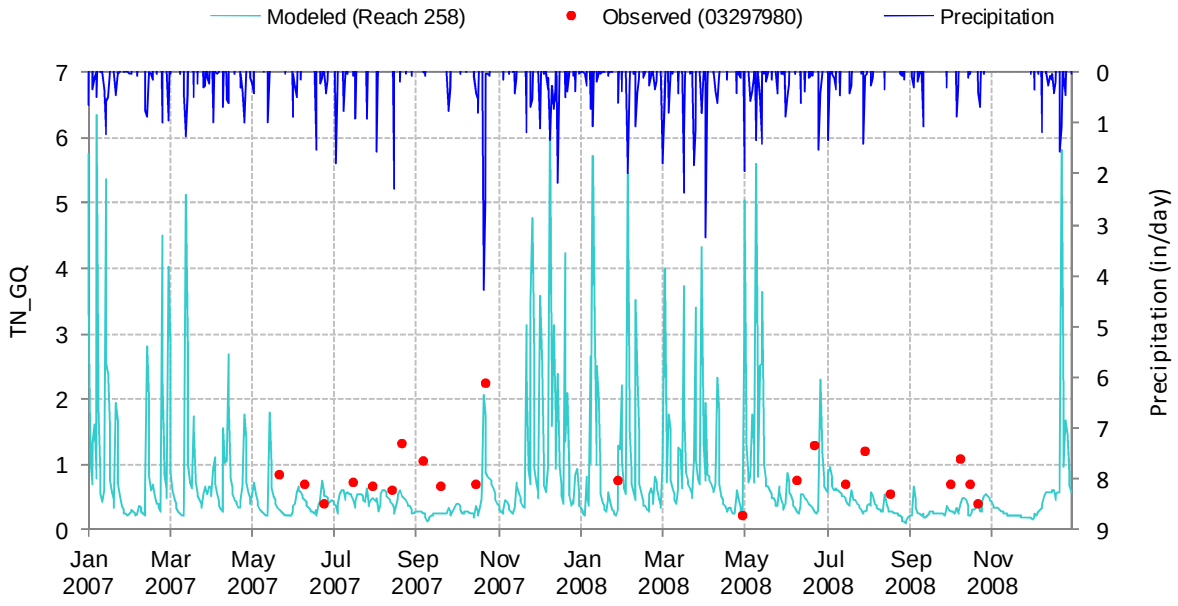

Figure B-115 Modeled vs. Observed TN_GQ at 03297980

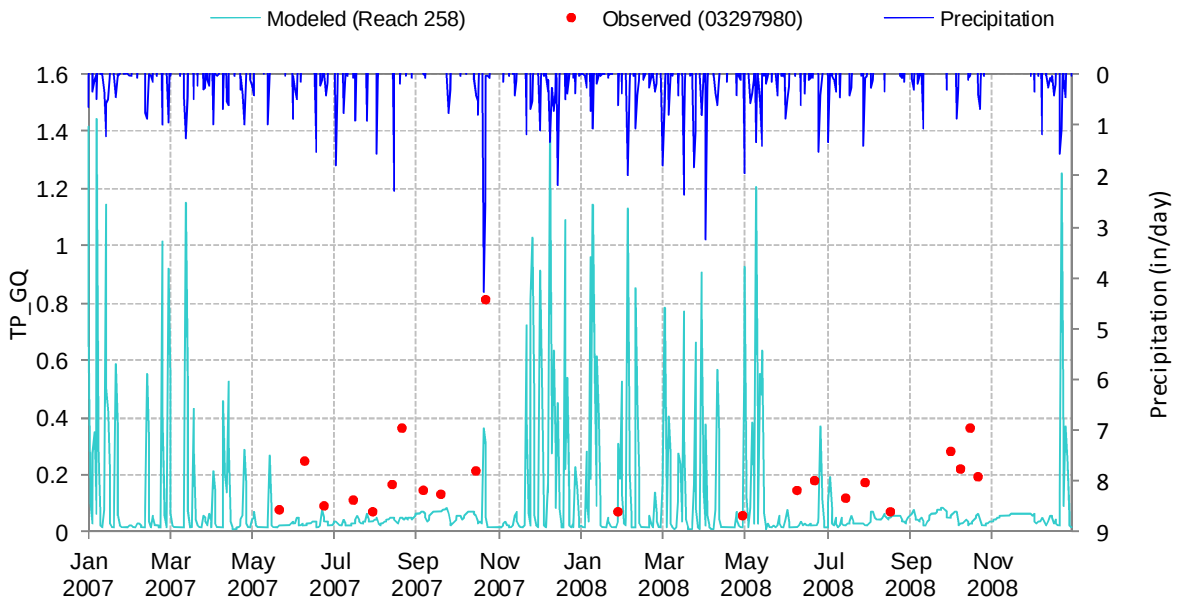

Figure B-116 Modeled vs. Observed TP_GQ at 03297980

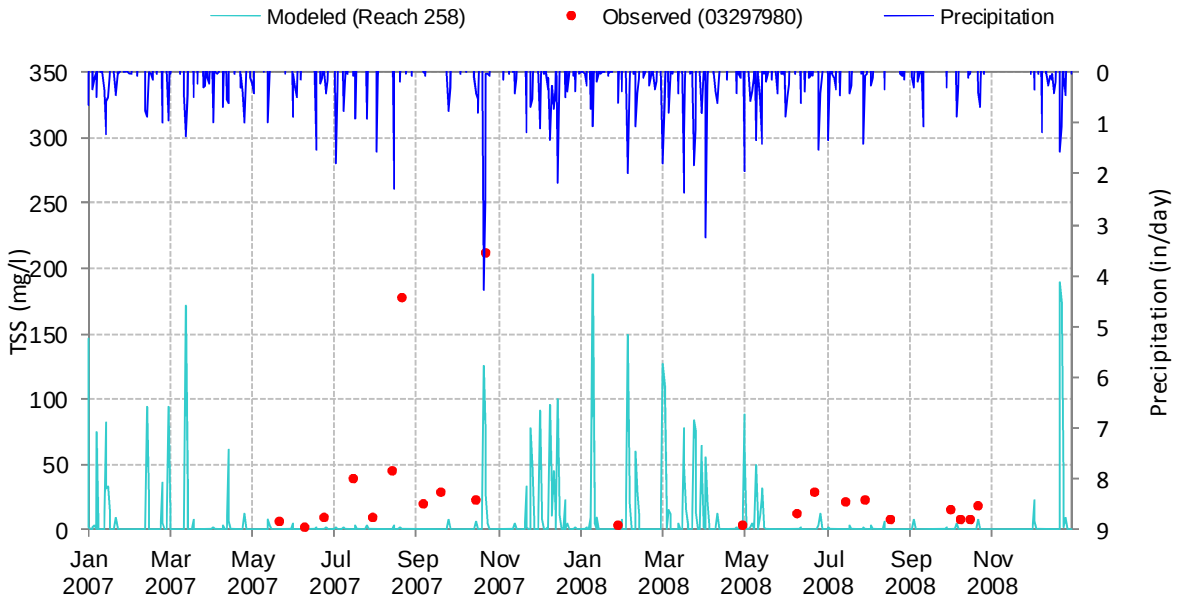

Figure B-117 Modeled vs. Observed TSS (mg/l) at 03297980

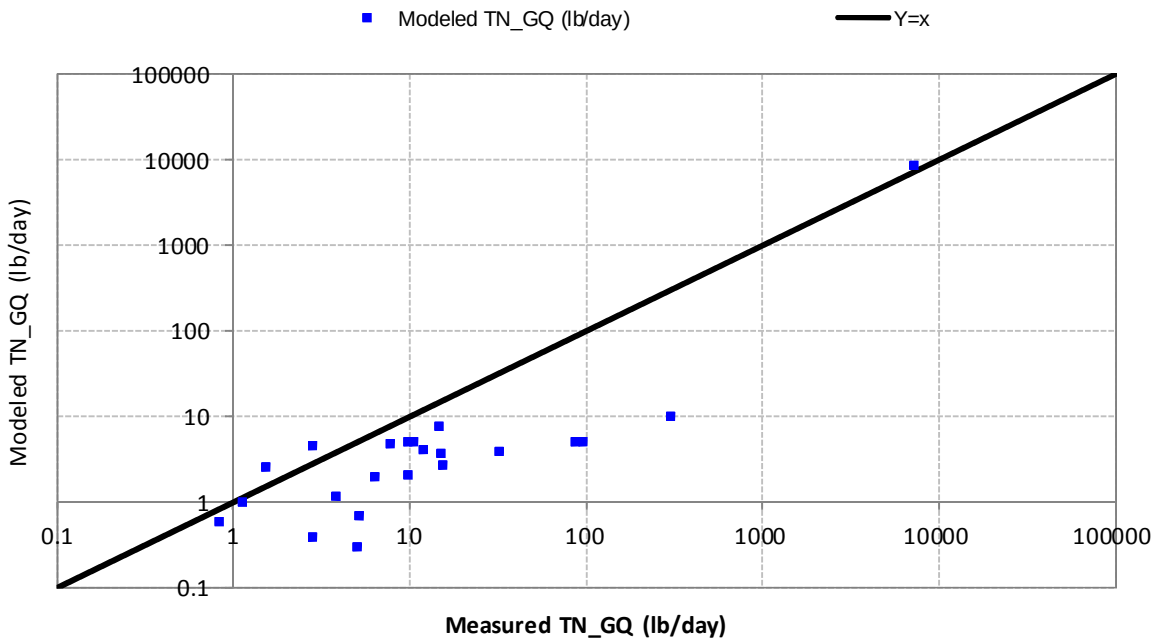

Figure B-118 Modeled vs. Observed Load TN_GQ at 03297980

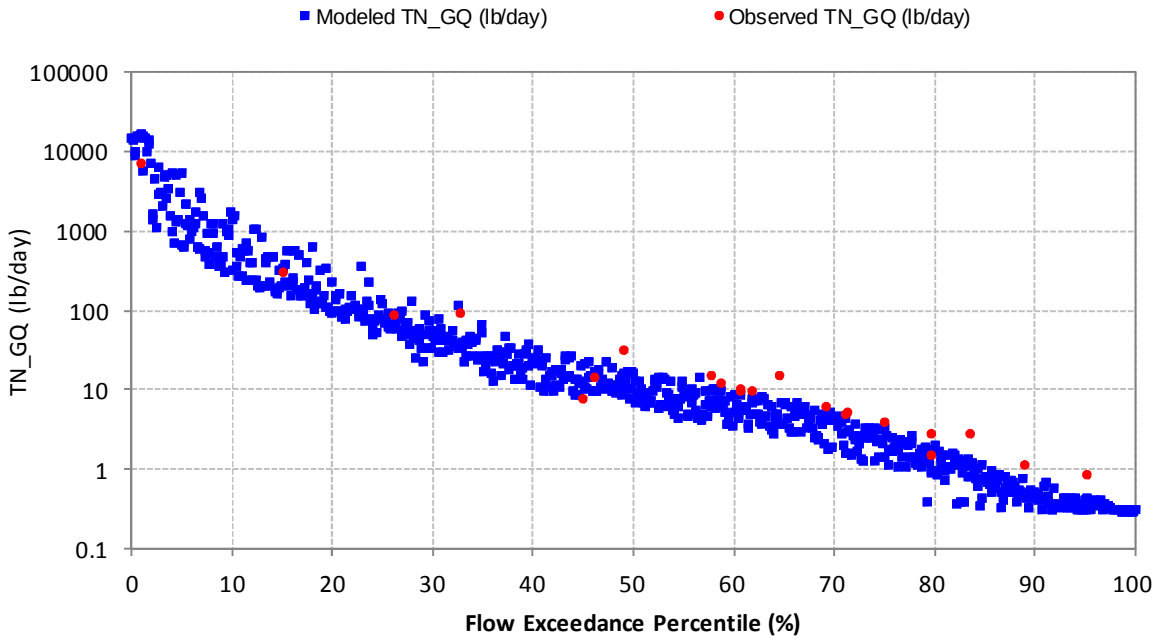

Figure B-119 Modeled vs. Observed Load TN_GQ at 03297980

Table B-24 Modeled vs. Observed Load TN_GQ at 03297980

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	135,789	100,921	34.55	85,712	58.43
2008	193,044	70,865	172.41	48,564	297.5

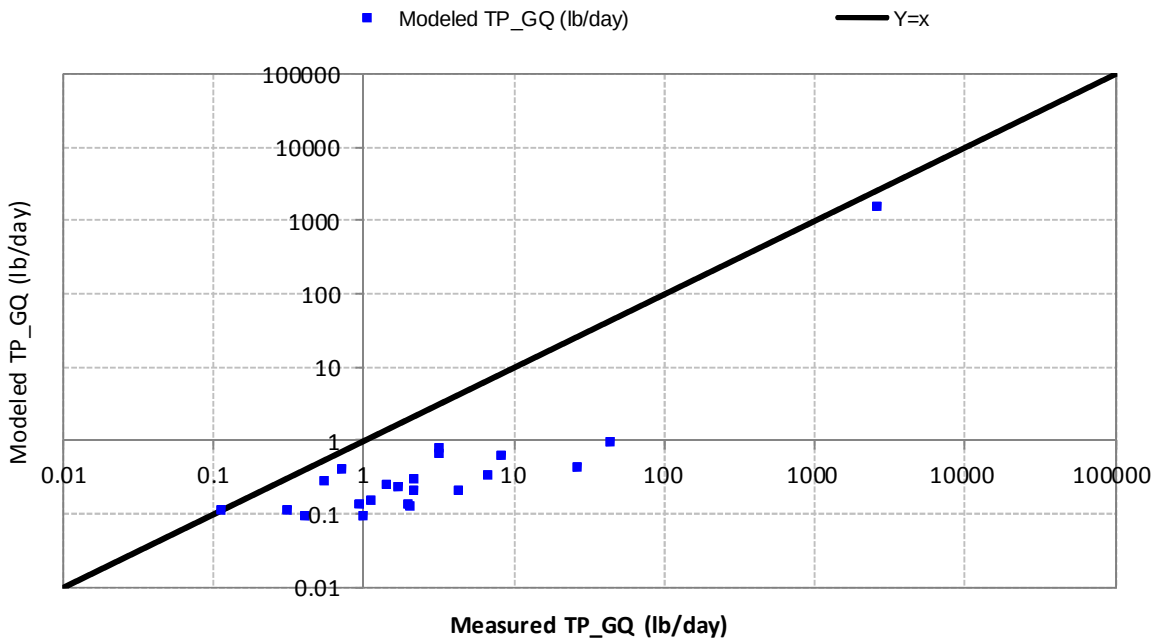

Figure B-120 Modeled vs. Observed Load TP_GQ at 03297980

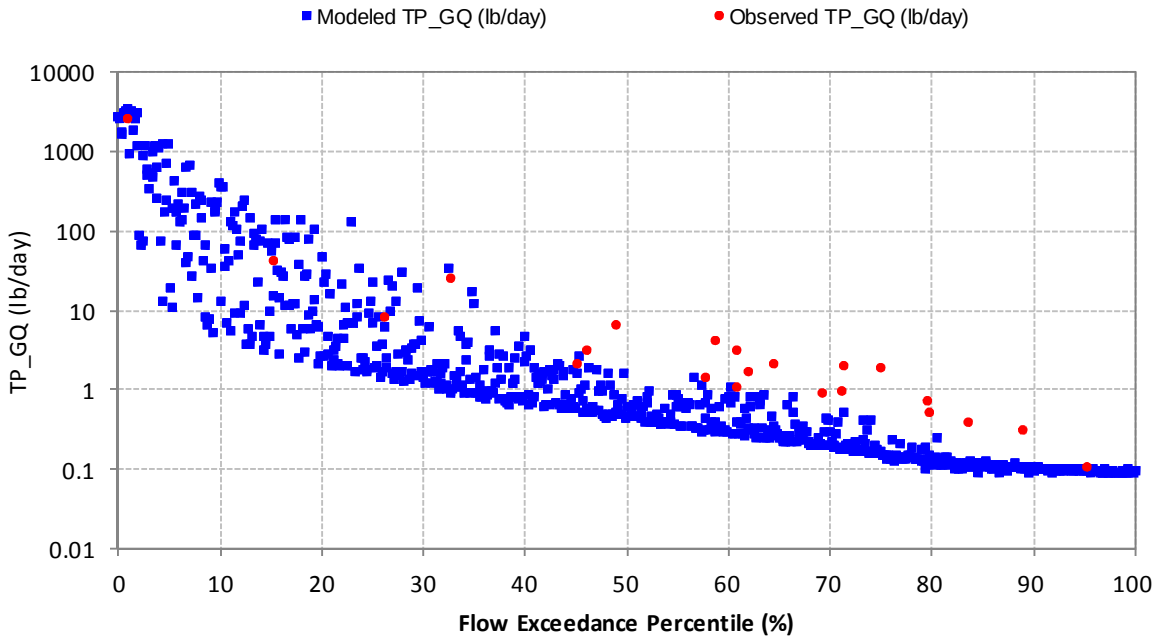

Figure B-121 Modeled vs. Observed Load TP_GQ at 03297980

Table B-25 Modeled vs. Observed Load TP_GQ at 03297980

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	25,612	26,736	-4.21	19,036	34.55
2008	35,600	11,930	198.4	8,066	341.36

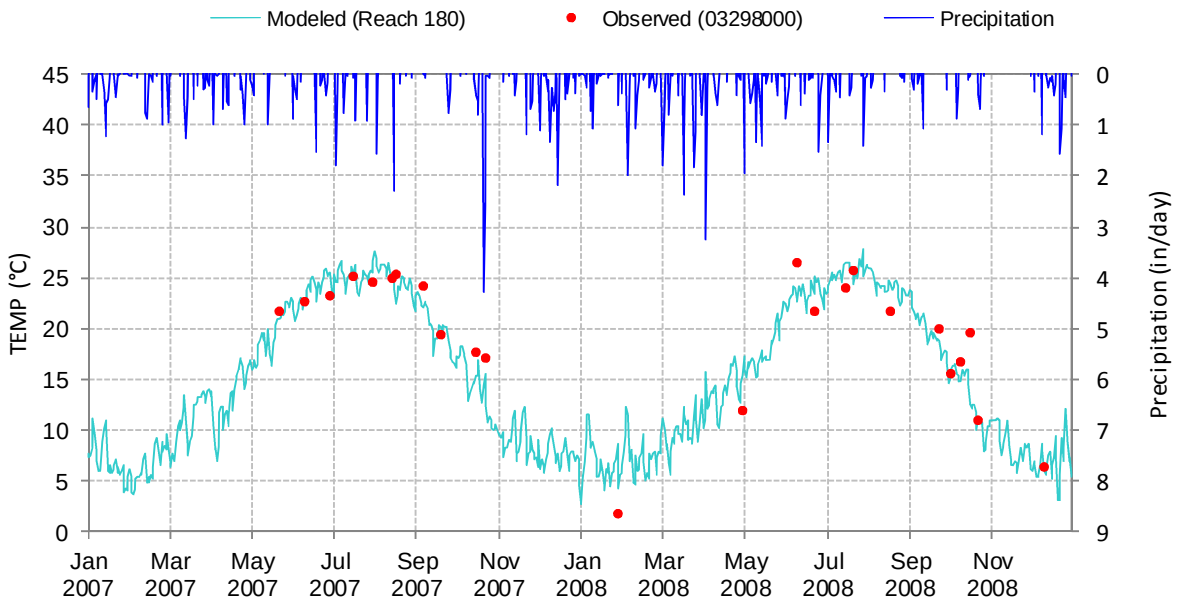

Figure B-122 Modeled vs. Observed TEMP (°C) at 03298000

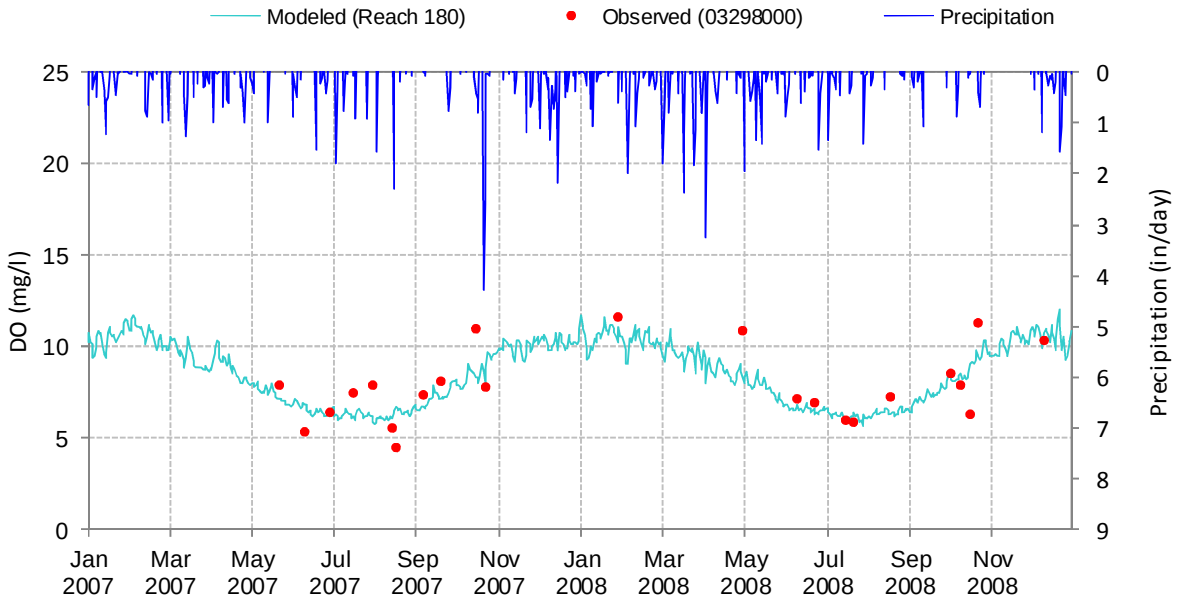

Figure B-123 Modeled vs. Observed DO (mg/l) at 03298000

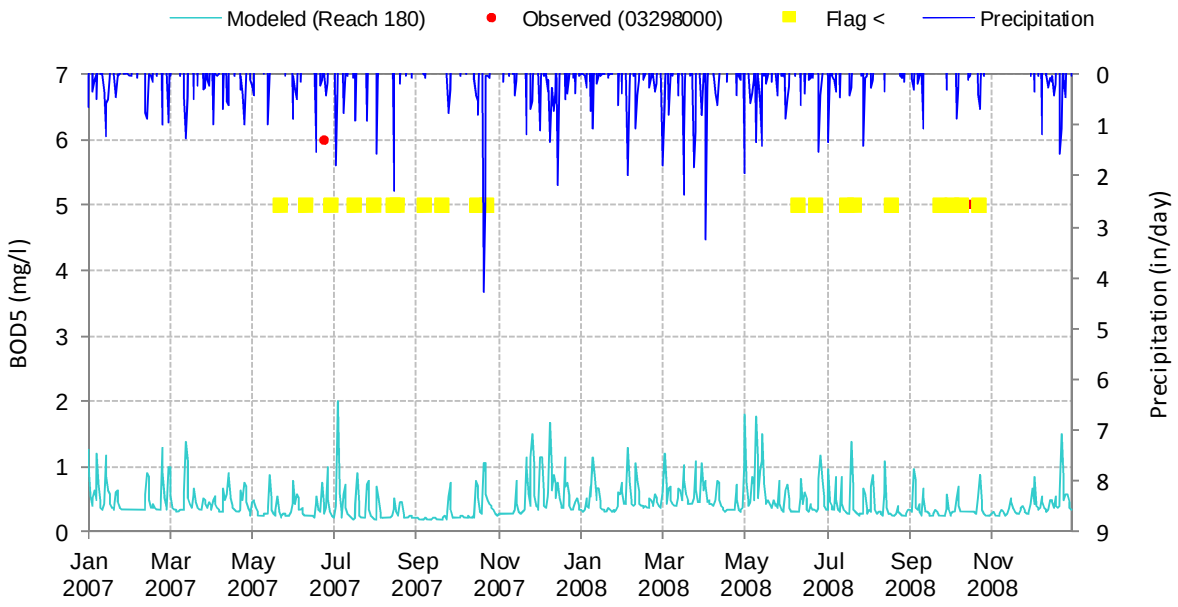

Figure B-124 Modeled vs. Observed BOD5 (mg/l) at 03298000

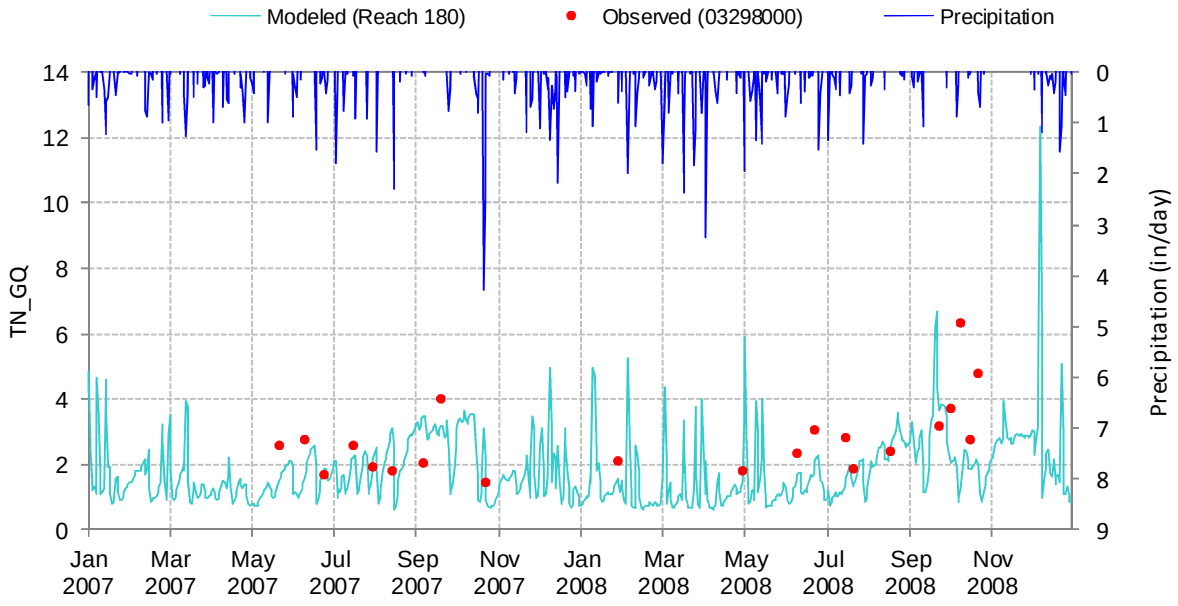

Figure B-125 Modeled vs. Observed TN_GQ at 03298000

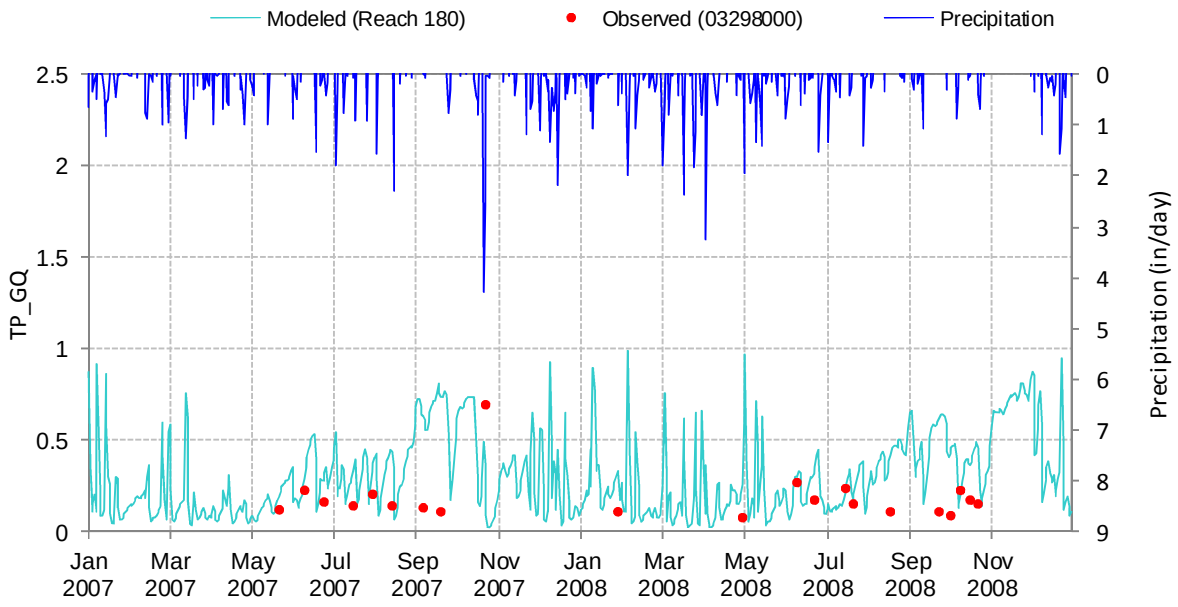

Figure B-126 Modeled vs. Observed TP_GQ at 03298000

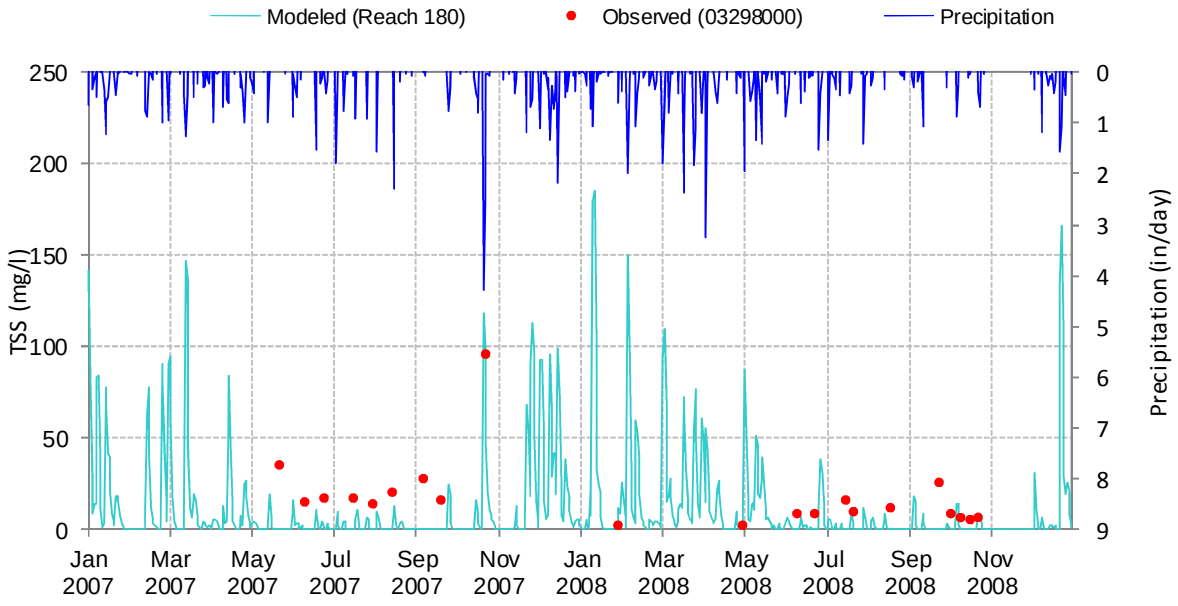

Figure B-127 Modeled vs. Observed TSS (mg/l) at 03298000

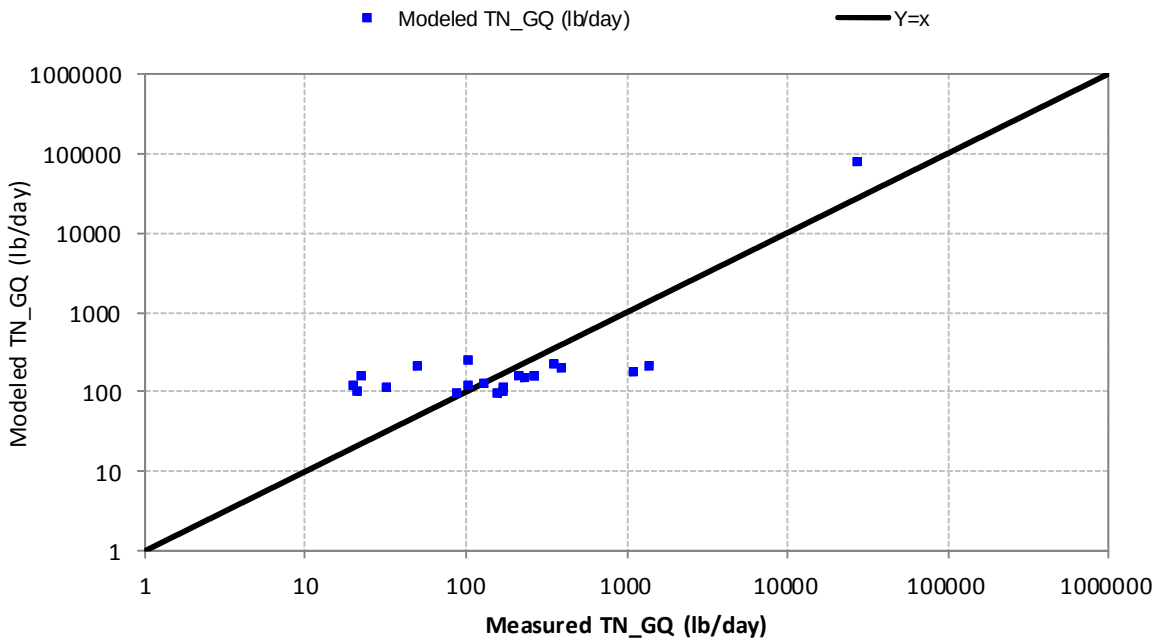

Figure B-128 Modeled vs. Observed Load TN_GQ at 03298000

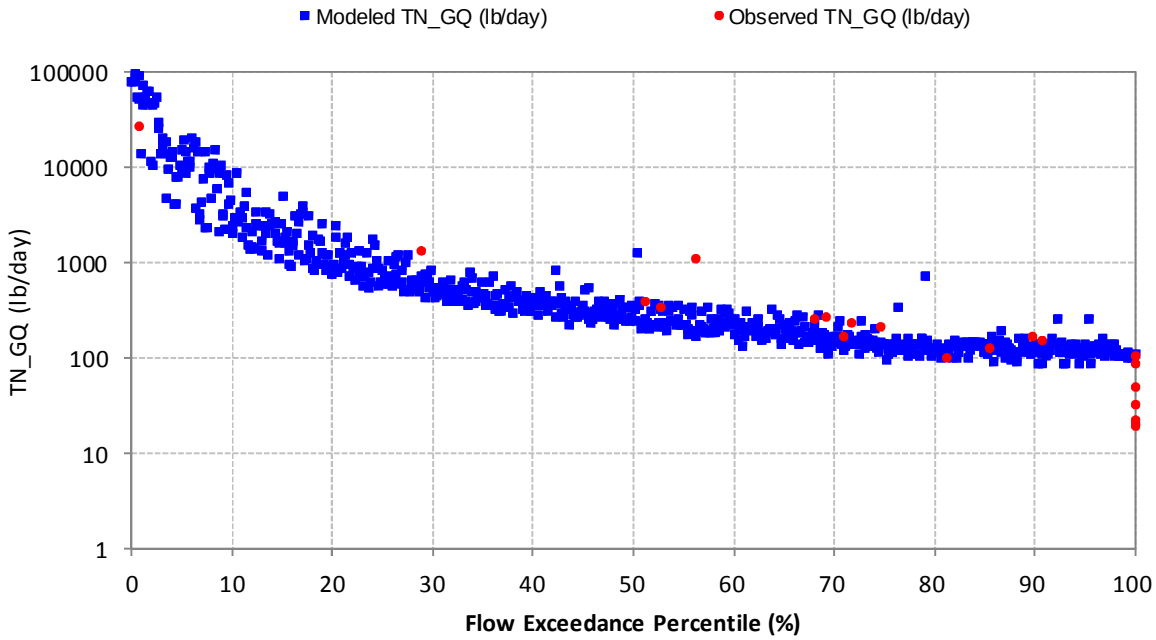

Figure B-129 Modeled vs. Observed Load TN_GQ at 03298000

Table B-26 Modeled vs. Observed Load TN_GQ at 03298000

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	822,240	917,430	-10.38	952,955	-13.72
2008	1,146,557	1,117,775	2.57	1,107,218	3.55

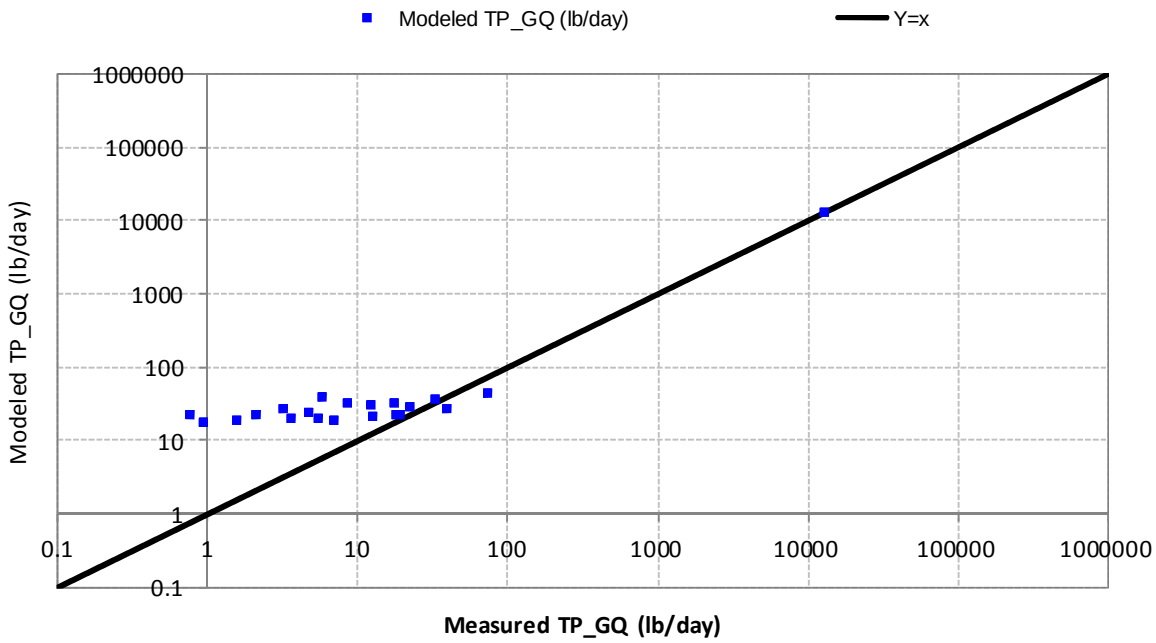

Figure B-130 Modeled vs. Observed Load TP_GQ at 03298000

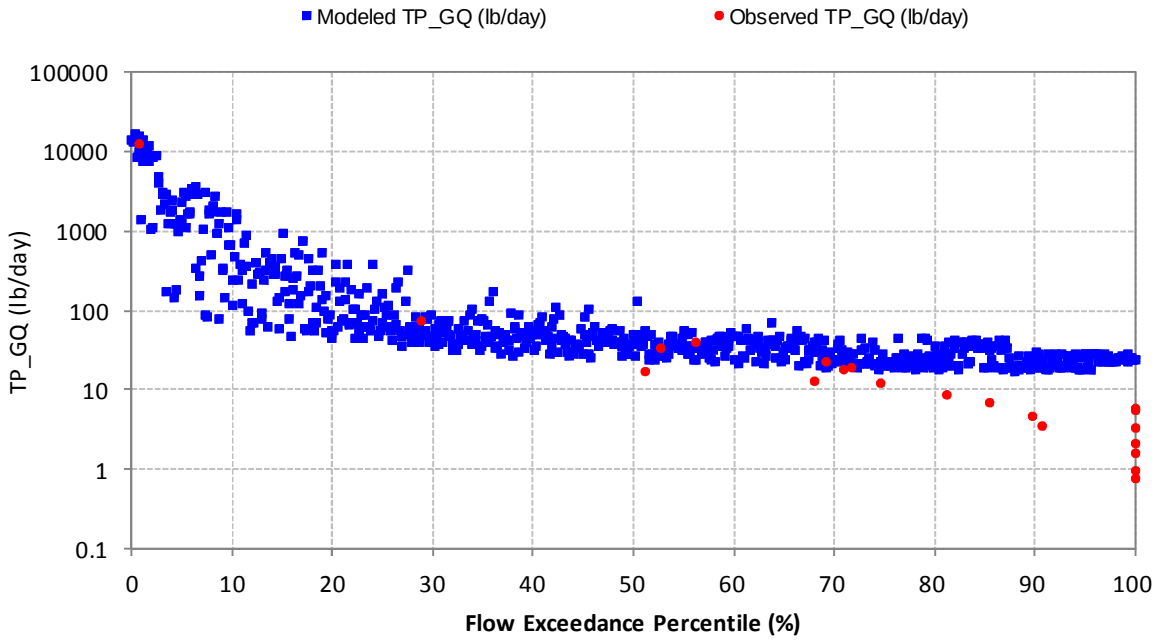

Figure B-131 Modeled vs. Observed Load TP_GQ at 03298000

Table B-27 Modeled vs. Observed Load TP_GQ at 03298000

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	128,478	146,358	-12.22	112,250	14.46
2008	186,445	79,183	135.46	63,578	193.25

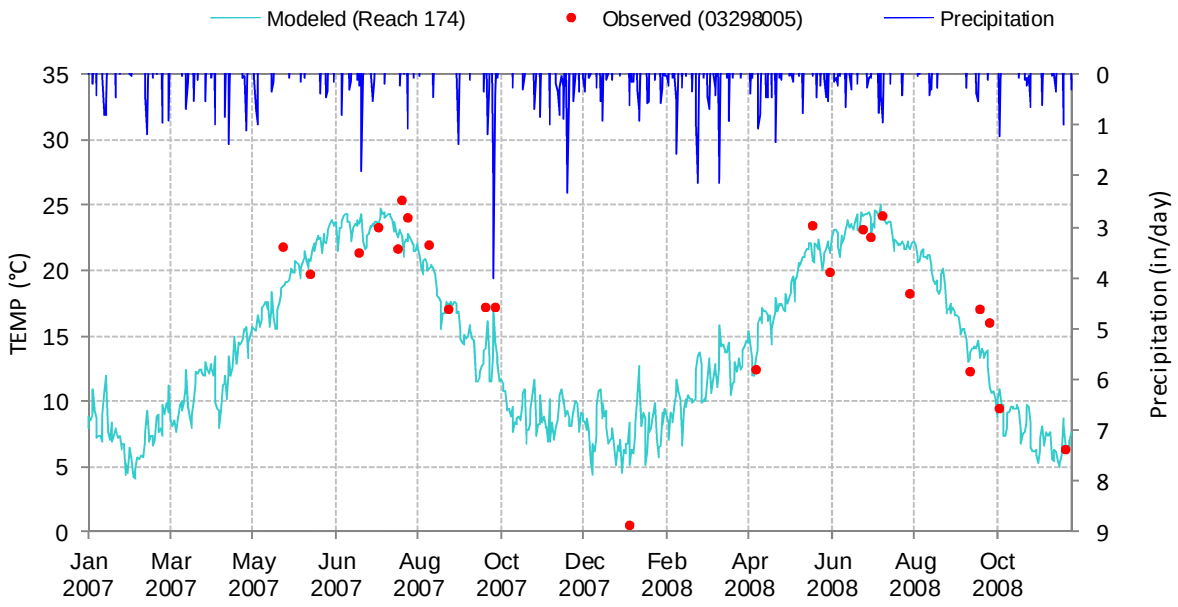

Figure B-132 Modeled vs. Observed TEMP (°C) at 03298005

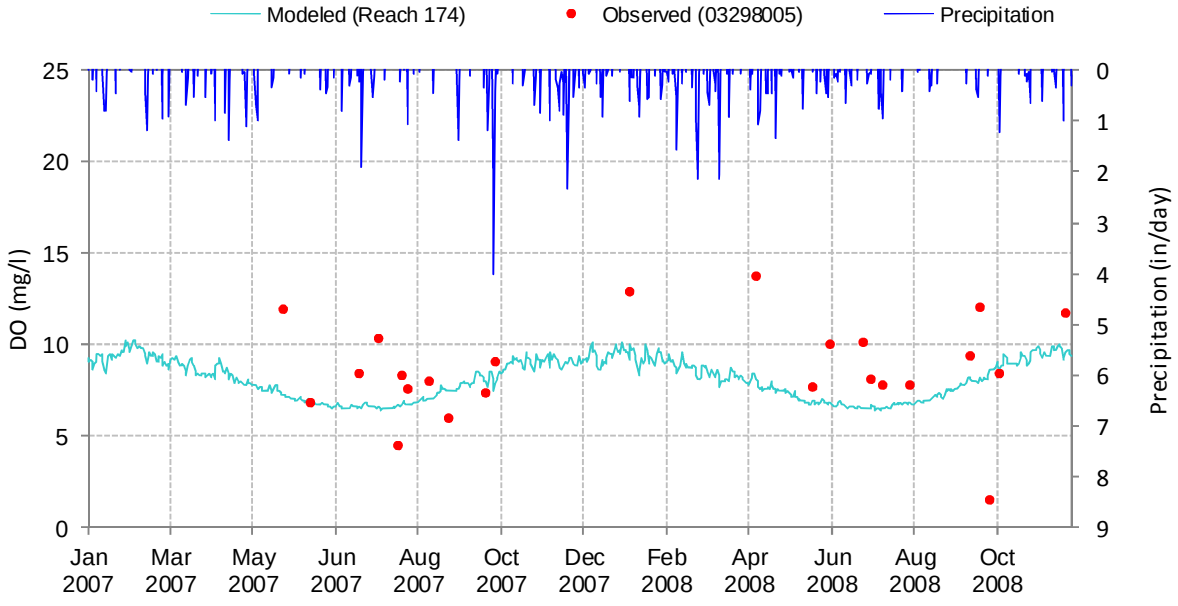

Figure B-133 Modeled vs. Observed DO (mg/l) at 03298005

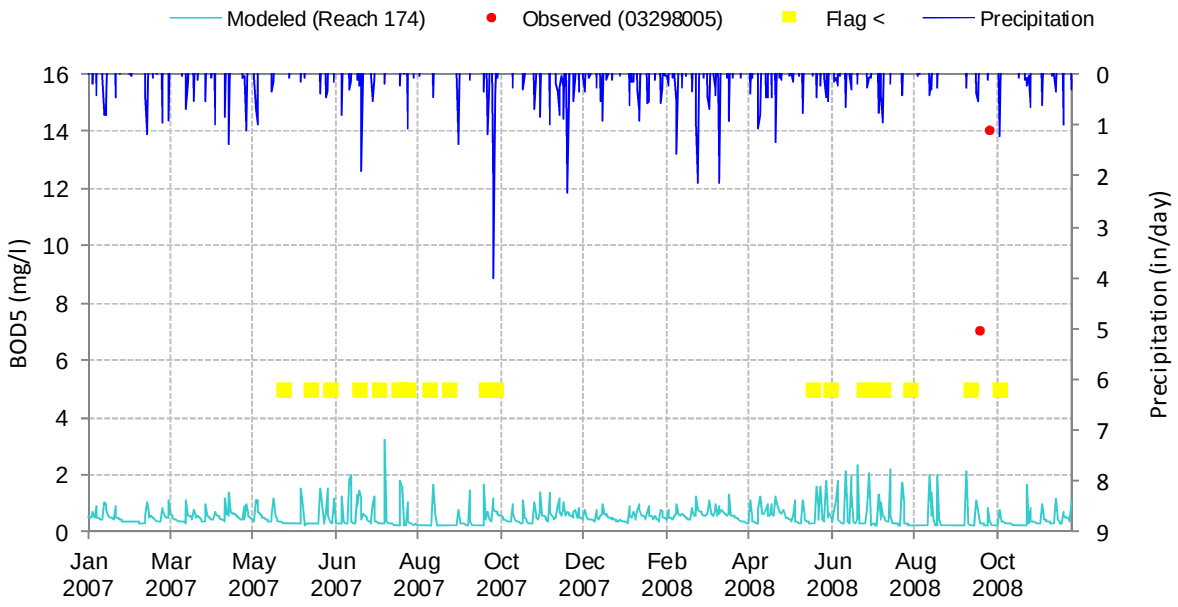

Figure B-134 Modeled vs. Observed BOD5 (mg/l) at 03298005

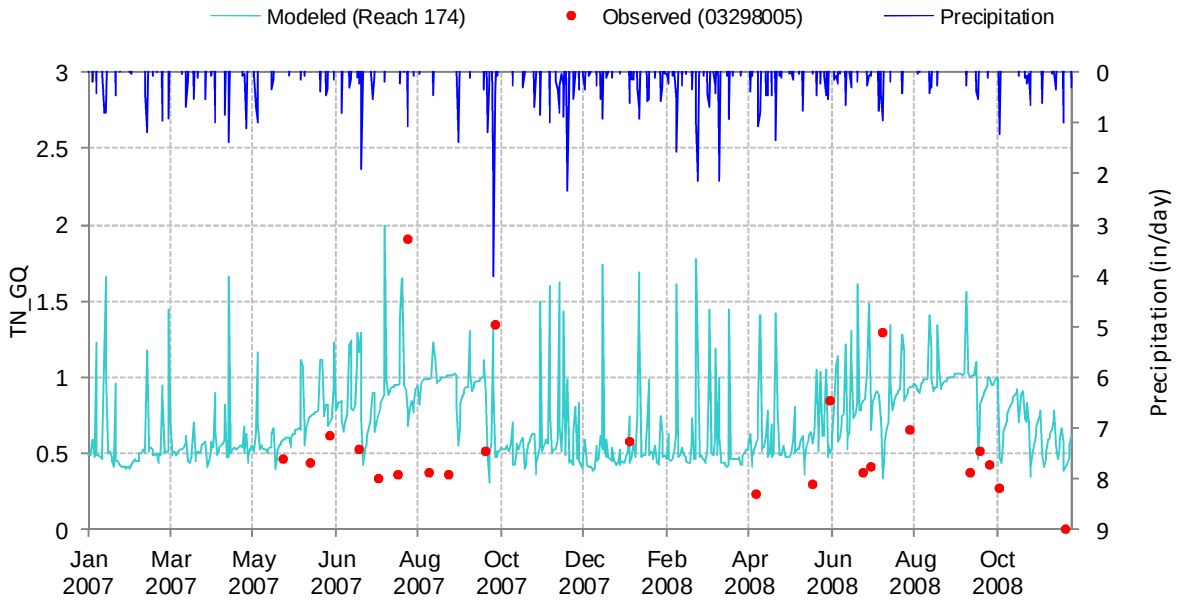

Figure B-135 Modeled vs. Observed TN_GQ at 03298005

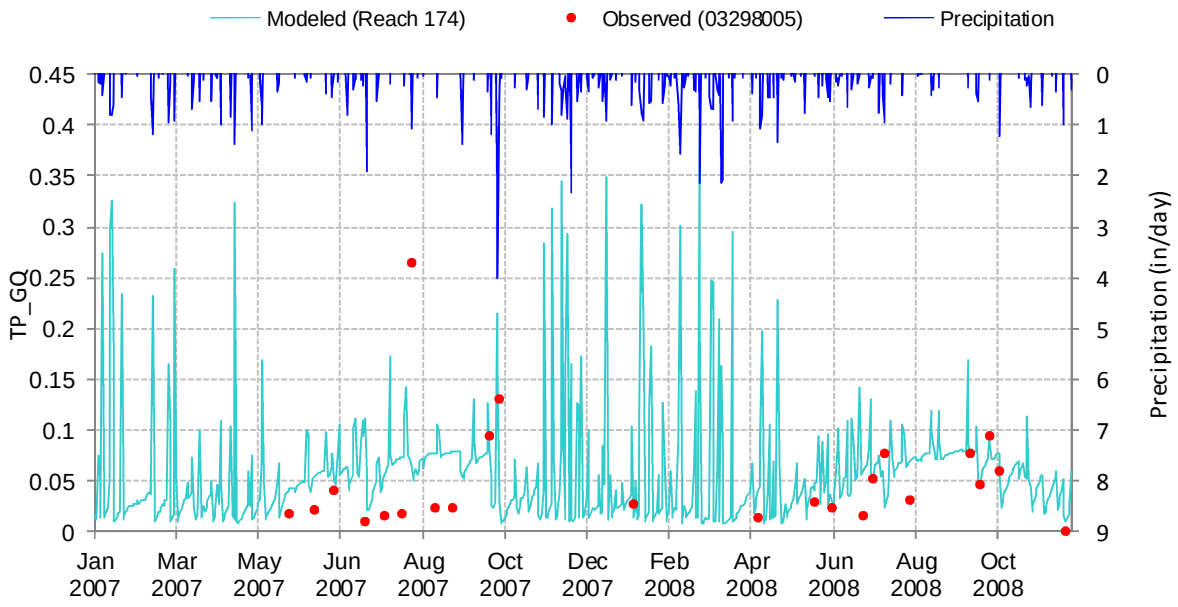

Figure B-136 Modeled vs. Observed TP_GQ at 03298005

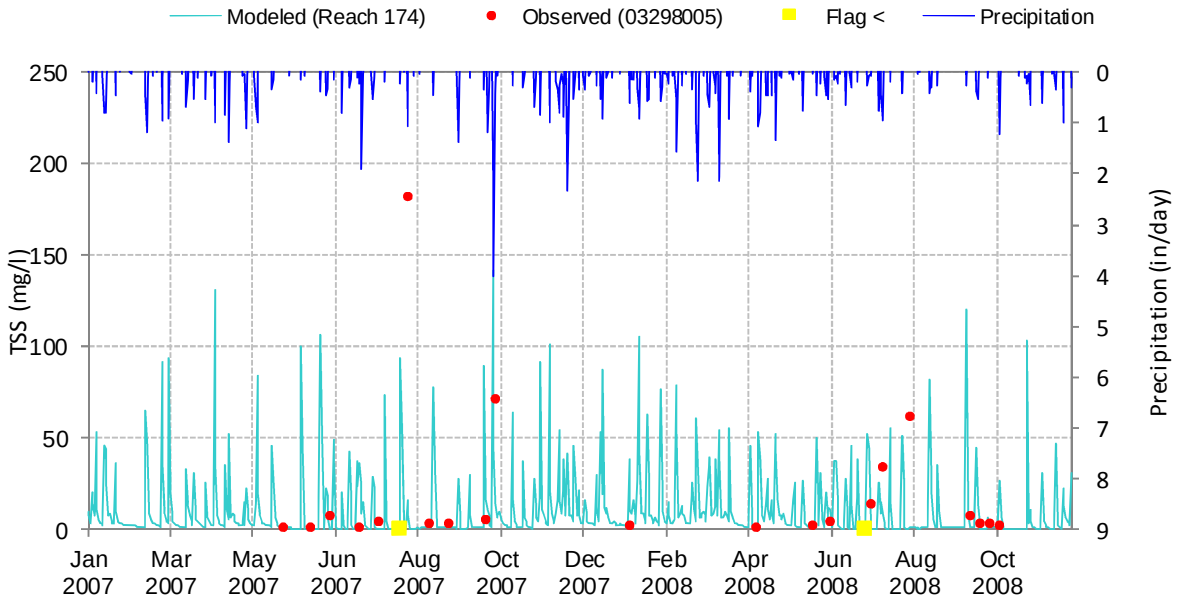

Figure B-137 Modeled vs. Observed TSS (mg/l) at 03298005

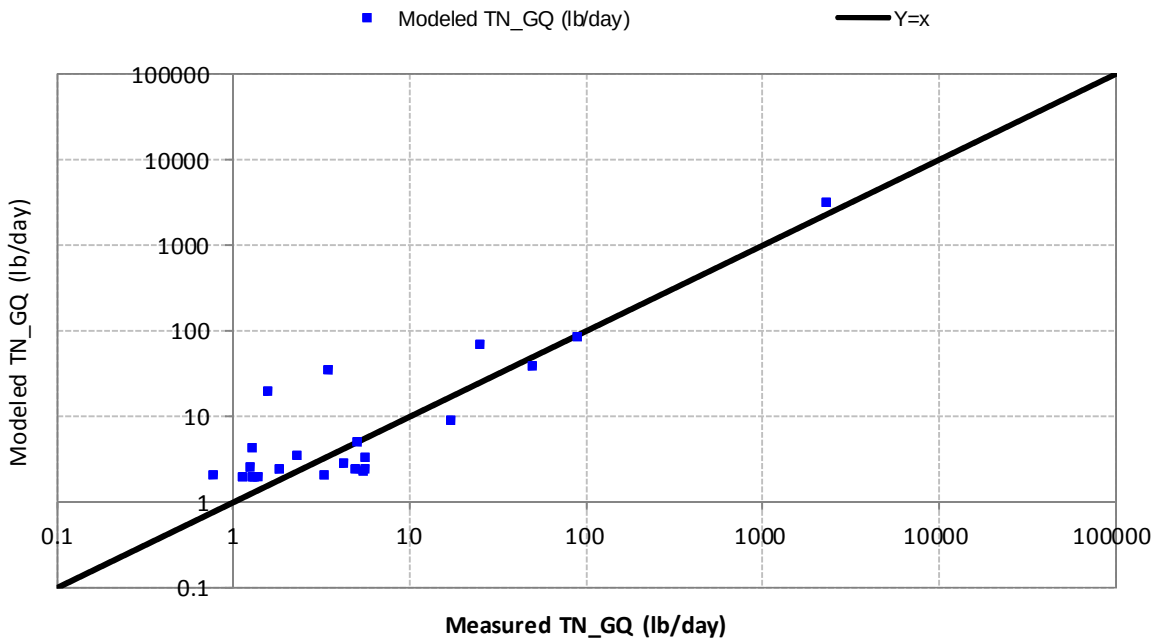

Figure B-138 Modeled vs. Observed Load TN_GQ at 03298005

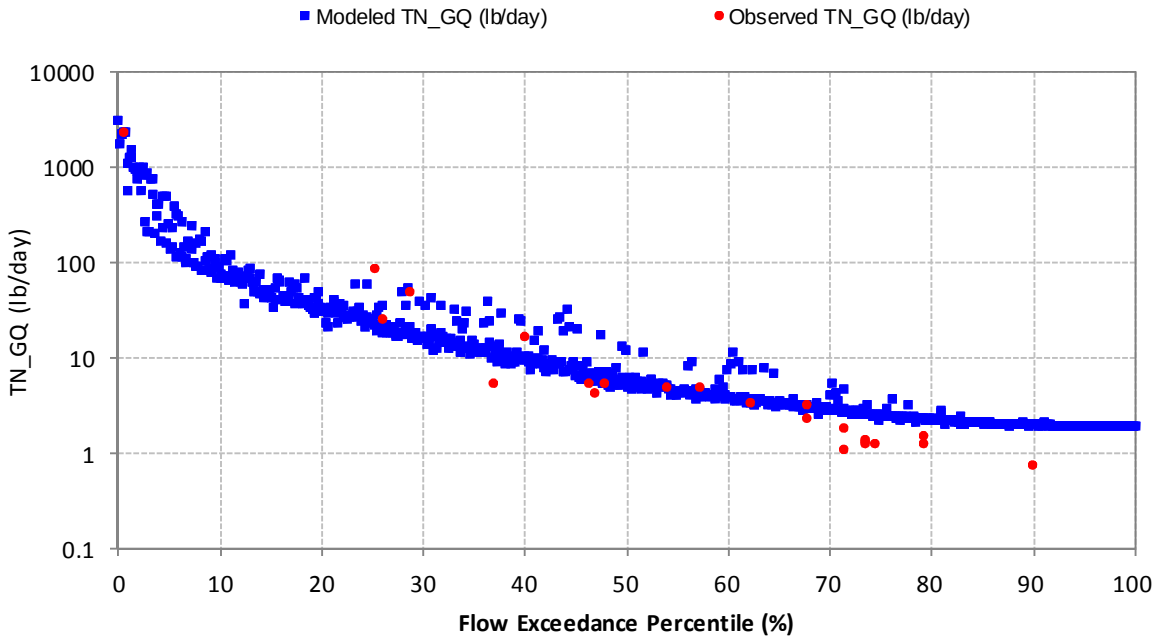

Figure B-139 Modeled vs. Observed Load TN_GQ at 03298005

Table B-28 Modeled vs. Observed Load TN_GQ at 03298005

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	22,653	23,068	-1.8	20,158	12.38
2008	25,736	20,038	28.43	13,817	86.26

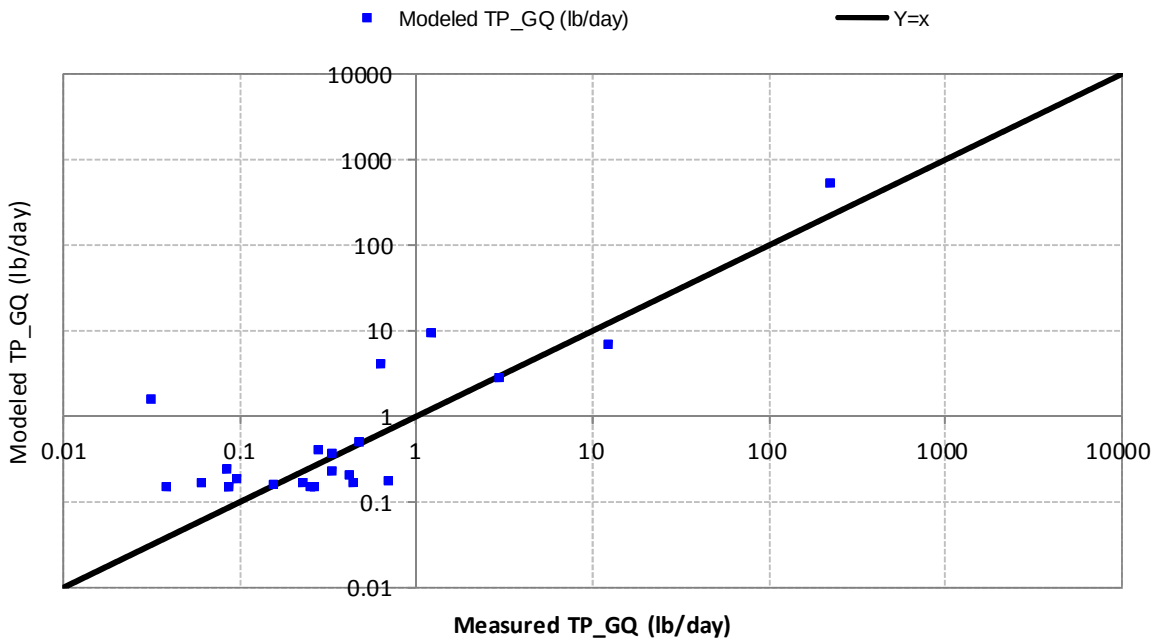

Figure B-140 Modeled vs. Observed Load TP_GQ at 03298005

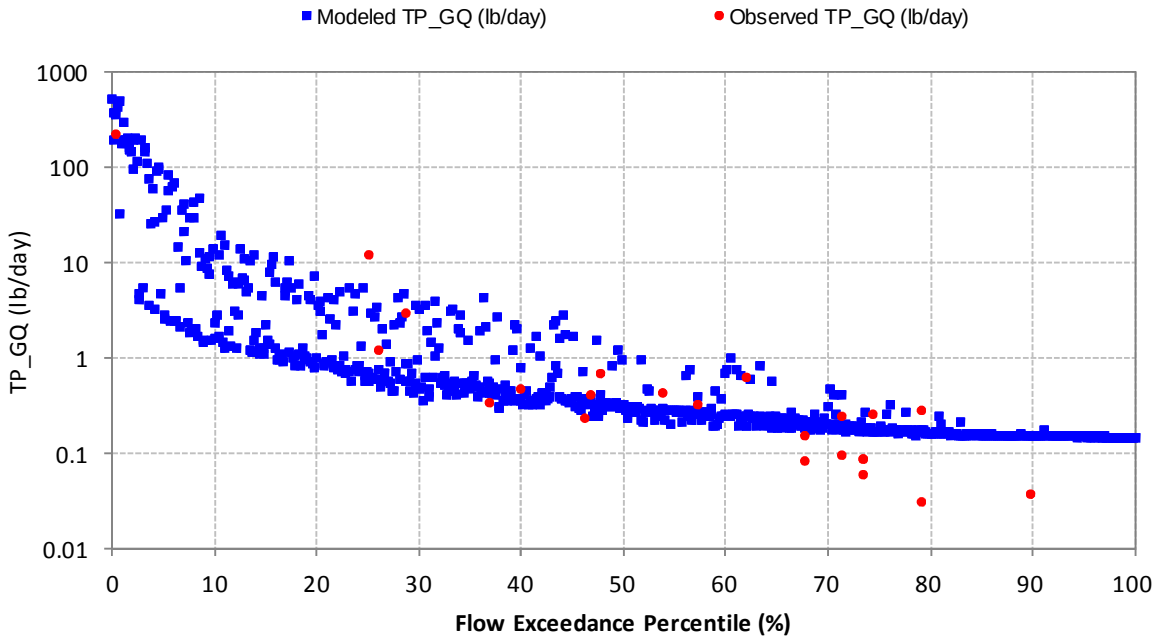

Figure B-141 Modeled vs. Observed Load TP_GQ at 03298005

Table B-29 Modeled vs. Observed Load TP_GQ at 03298005

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	3,291	1,804	82.36	1,414	132.71
2008	3,705	1,242	198.32	761	386.68

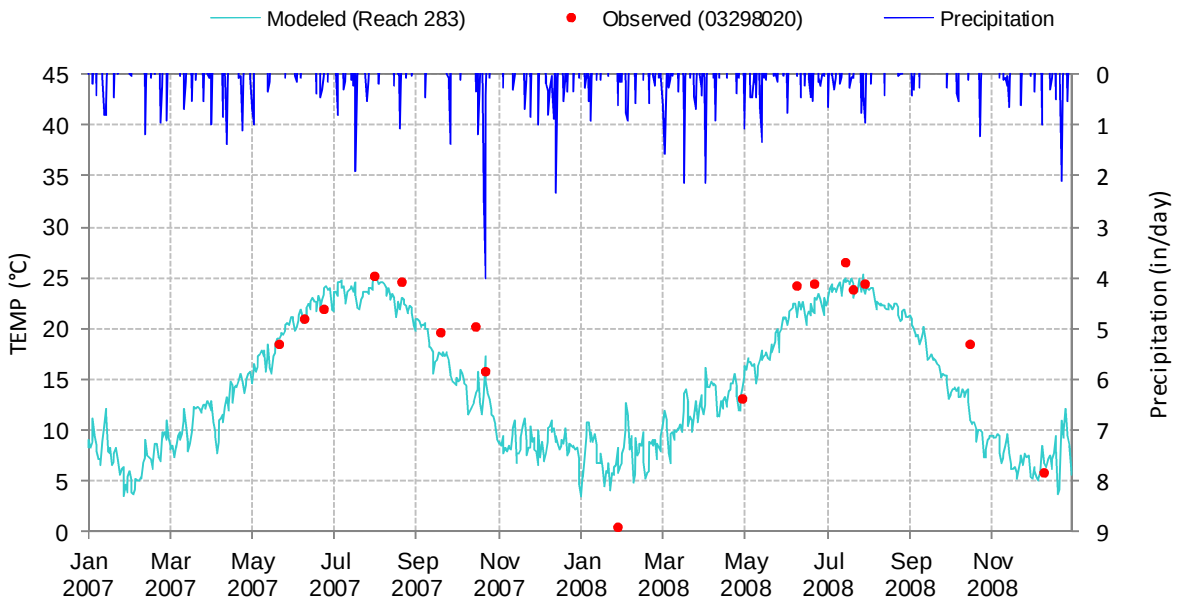

Figure B-142 Modeled vs. Observed TEMP (°C) at 03298020

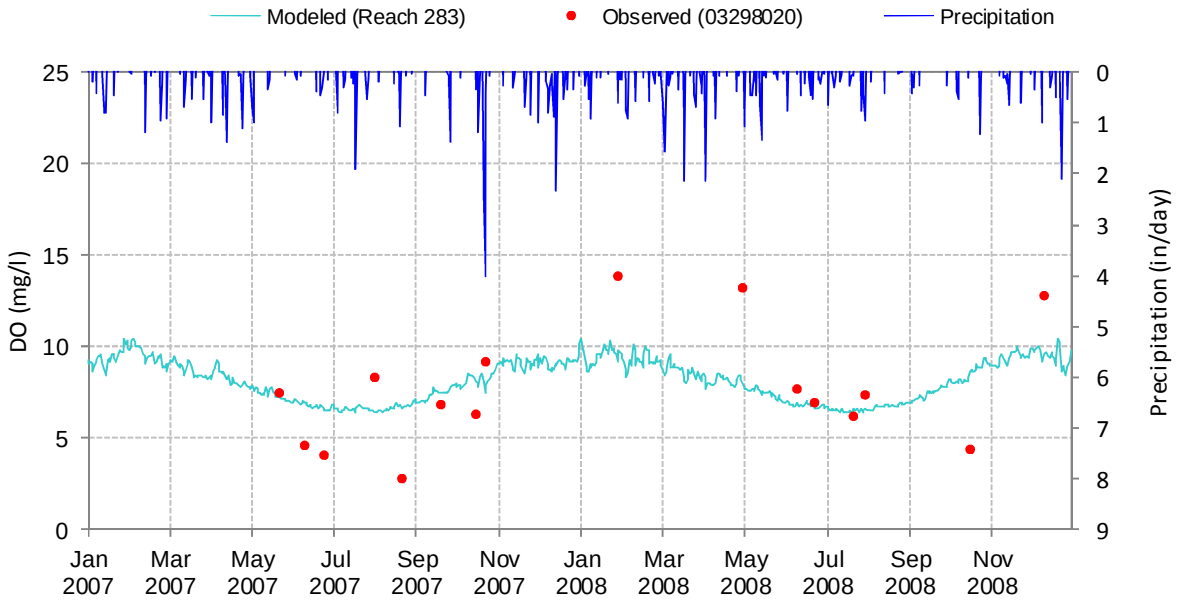

Figure B-143 Modeled vs. Observed DO (mg/l) at 03298020

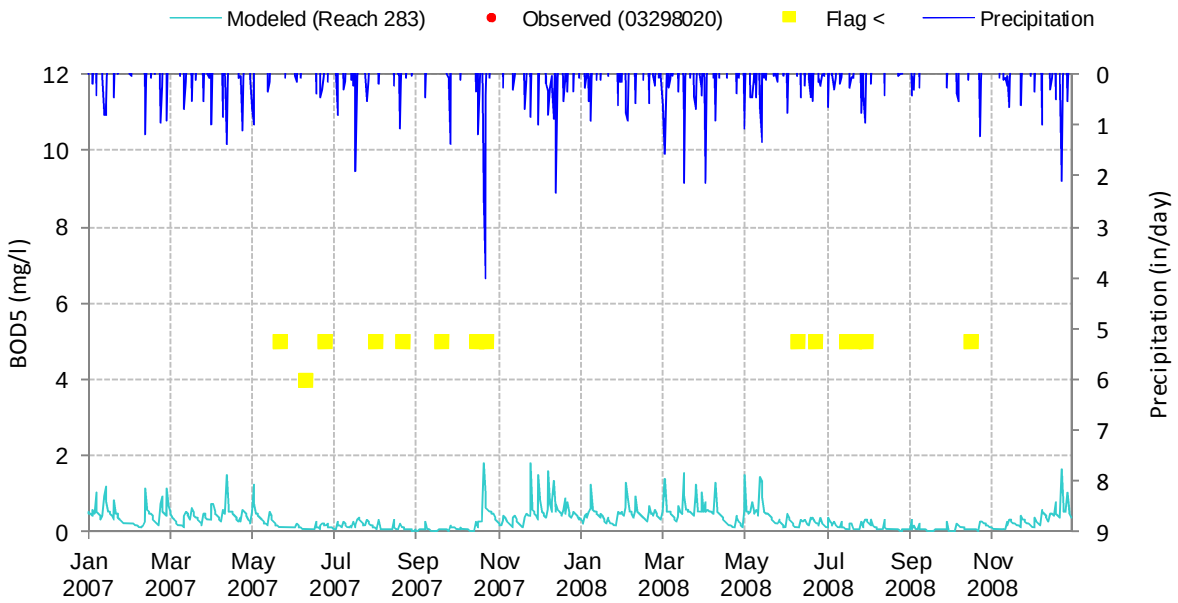

Figure B-144 Modeled vs. Observed BOD5 (mg/l) at 03298020

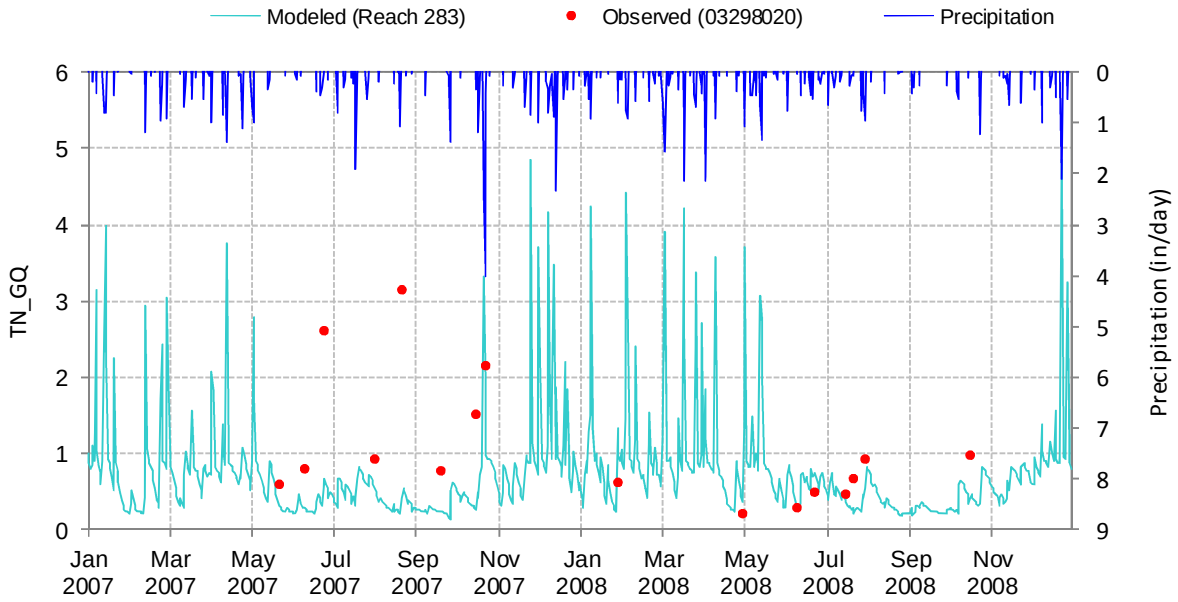

Figure B-145 Modeled vs. Observed TN_GQ at 03298020

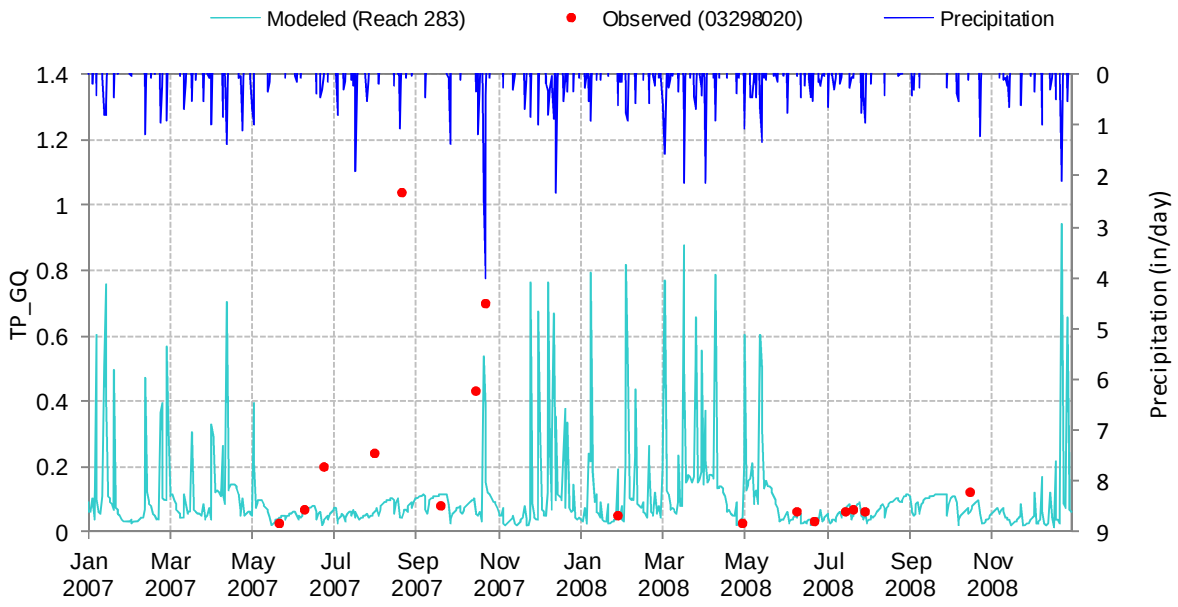

Figure B-146 Modeled vs. Observed TP_GQ at 03298020

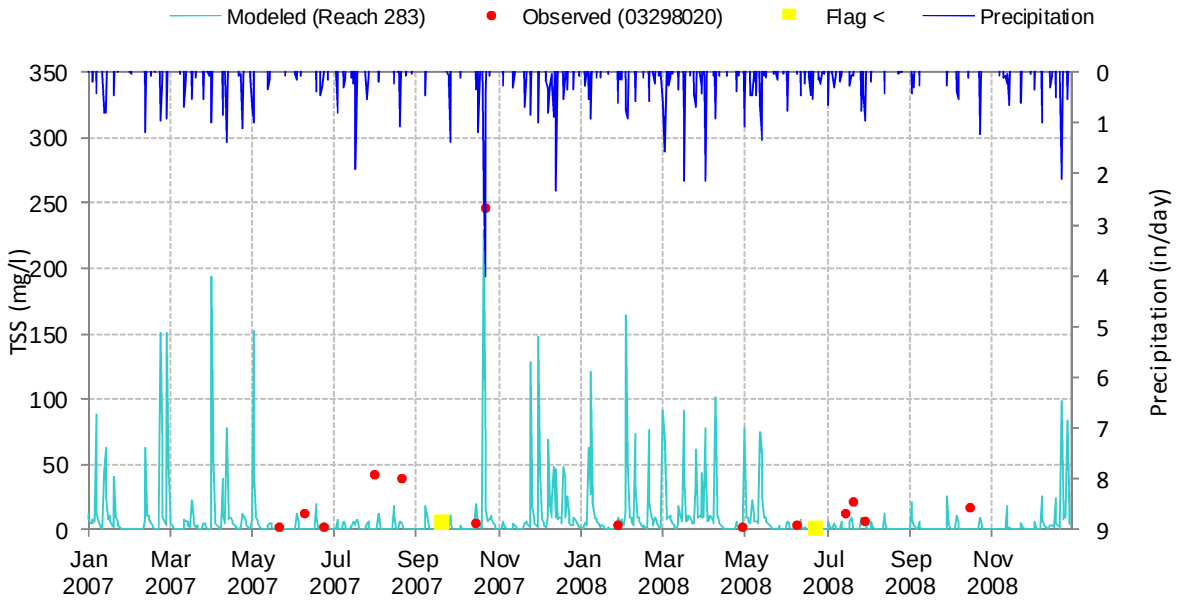

Figure B-147 Modeled vs. Observed TSS (mg/l) at 03298020

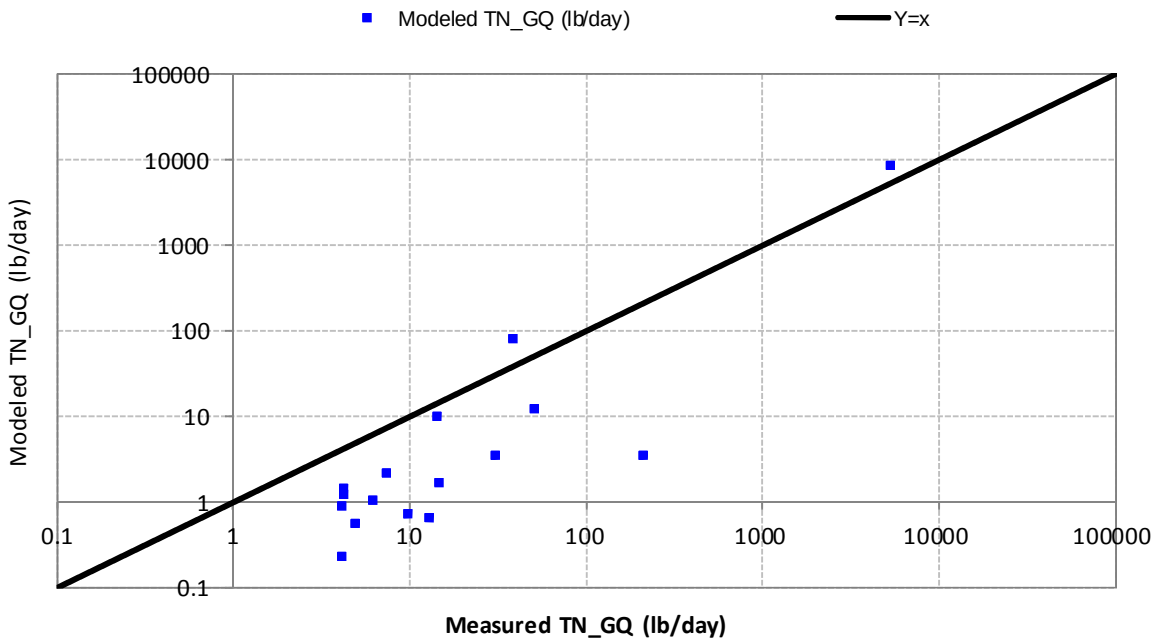

Figure B-148 Modeled vs. Observed Load TN_GQ at 03298020

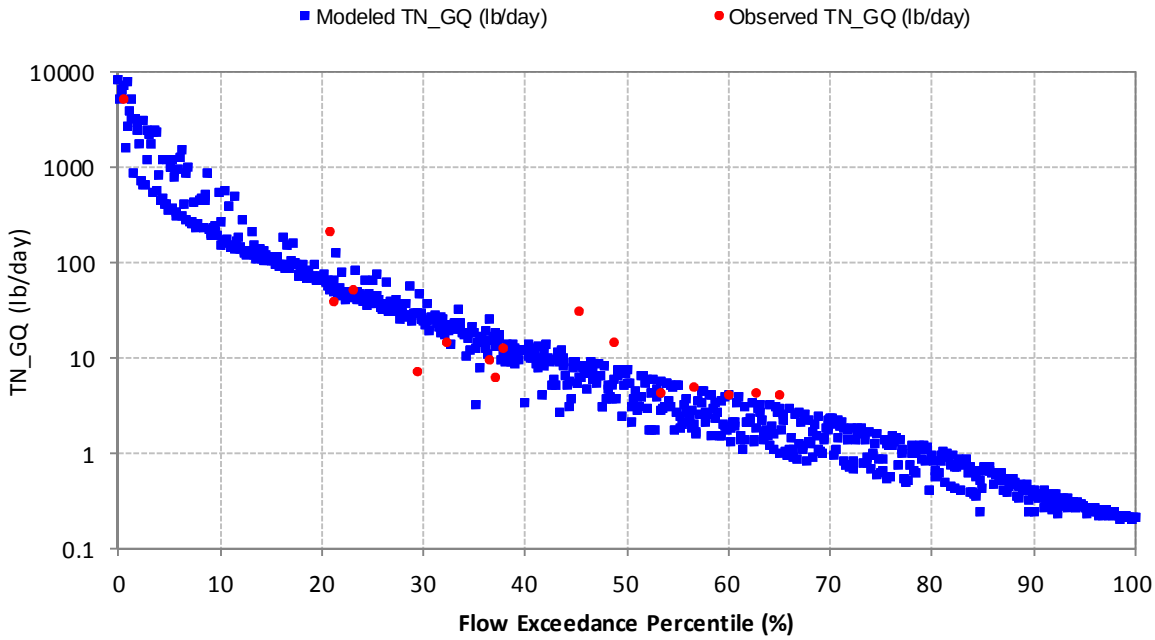

Figure B-149 Modeled vs. Observed Load TN_GQ at 03298020

Table B-30 Modeled vs. Observed Load TN_GQ at 03298020

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	59,276	51,636	14.8	43,014	37.81
2008	70,779	34,818	103.28	24,499	188.91

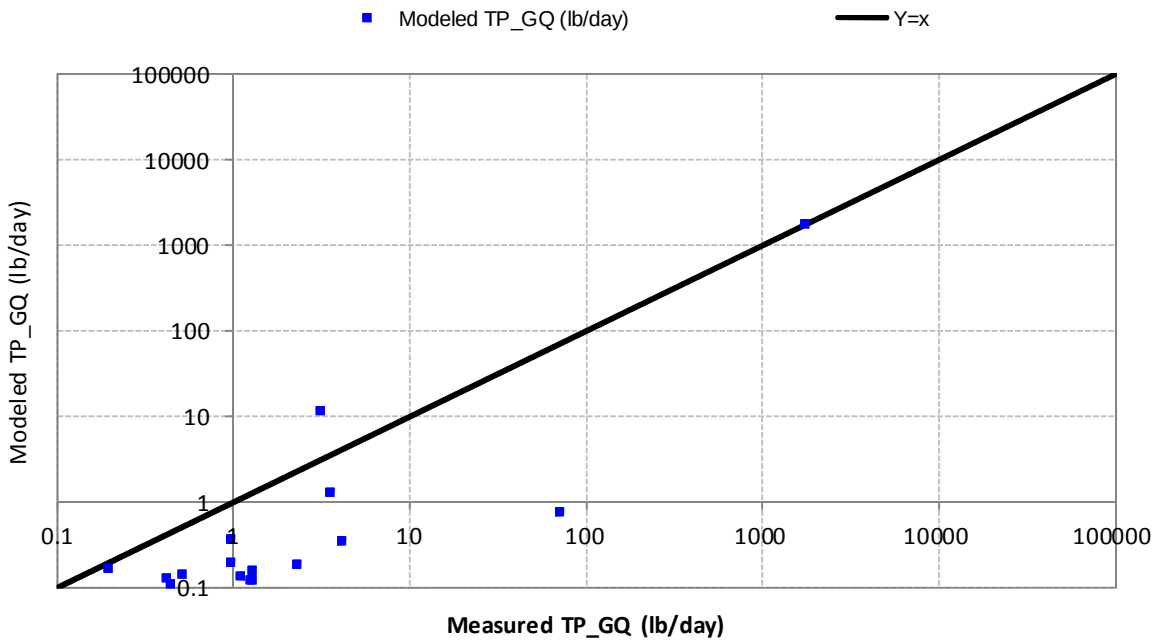

Figure B-150 Modeled vs. Observed Load TP_GQ at 03298020

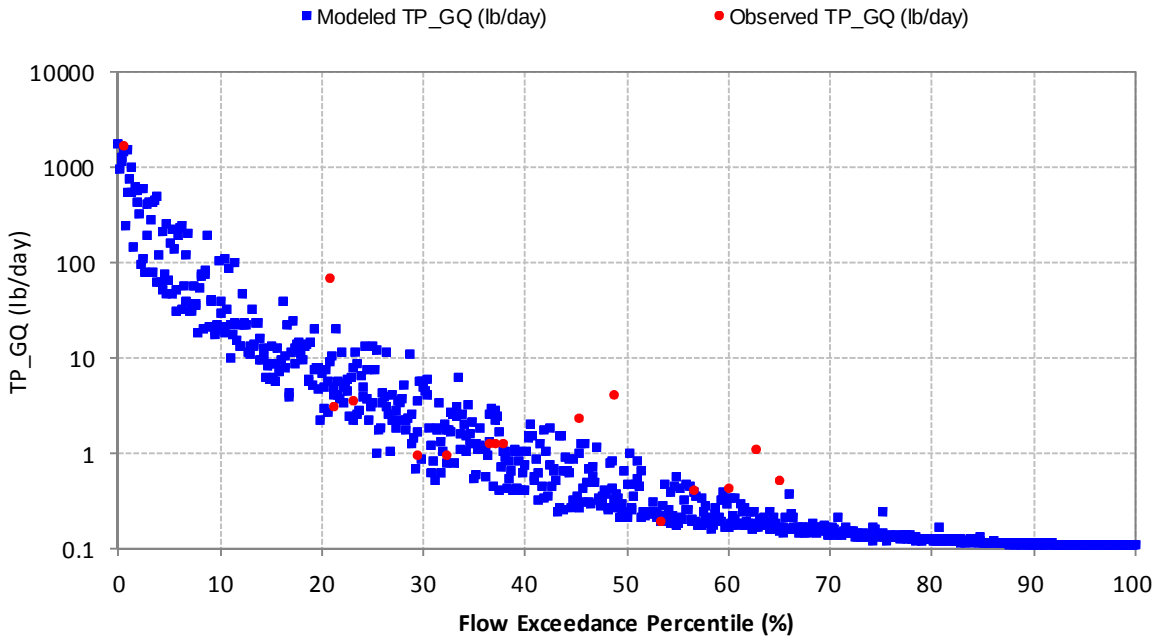

Figure B-151 Modeled vs. Observed Load TP_GQ at 03298020

Table B-31 Modeled vs. Observed Load TP_GQ at 03298020

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	9,978	12,545	-20.46	9,018	10.64
2008	12,697	4,938	157.12	2,984	325.53

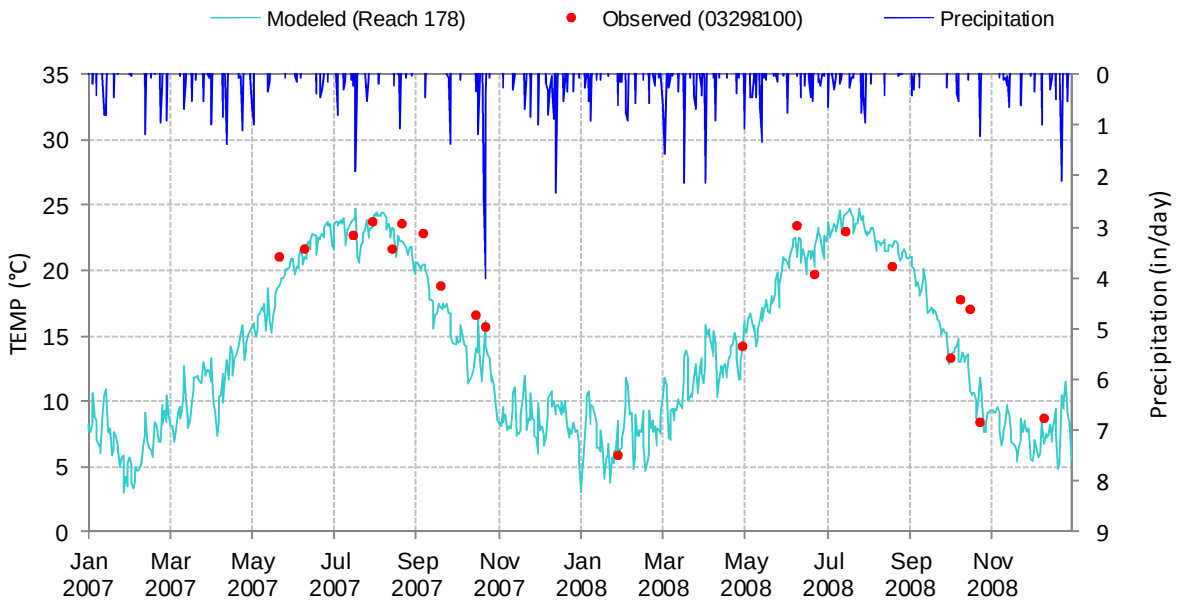

Figure B-152 Modeled vs. Observed TEMP (°C) at 03298100

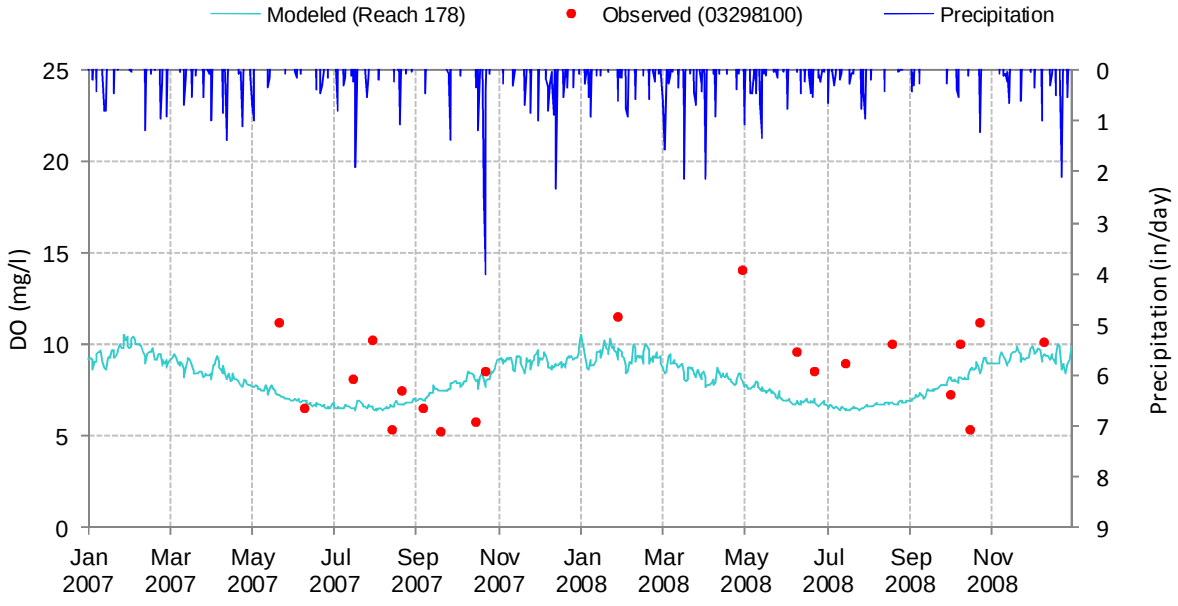

Figure B-153 Modeled vs. Observed DO (mg/l) at 03298100

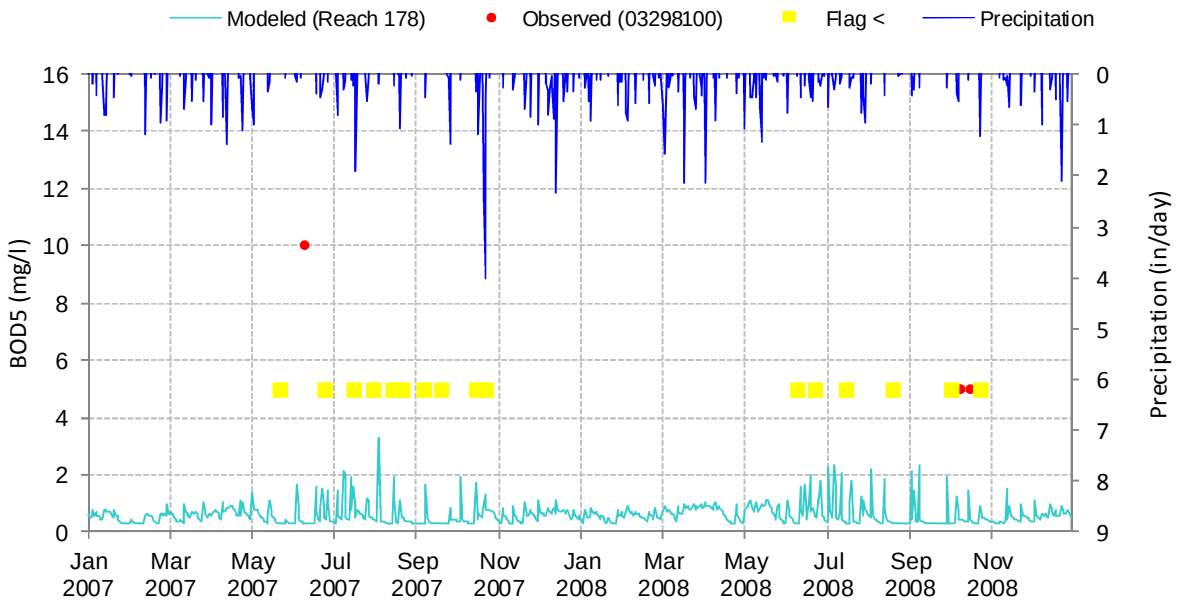

Figure B-154 Modeled vs. Observed BOD5 (mg/l) at 03298100

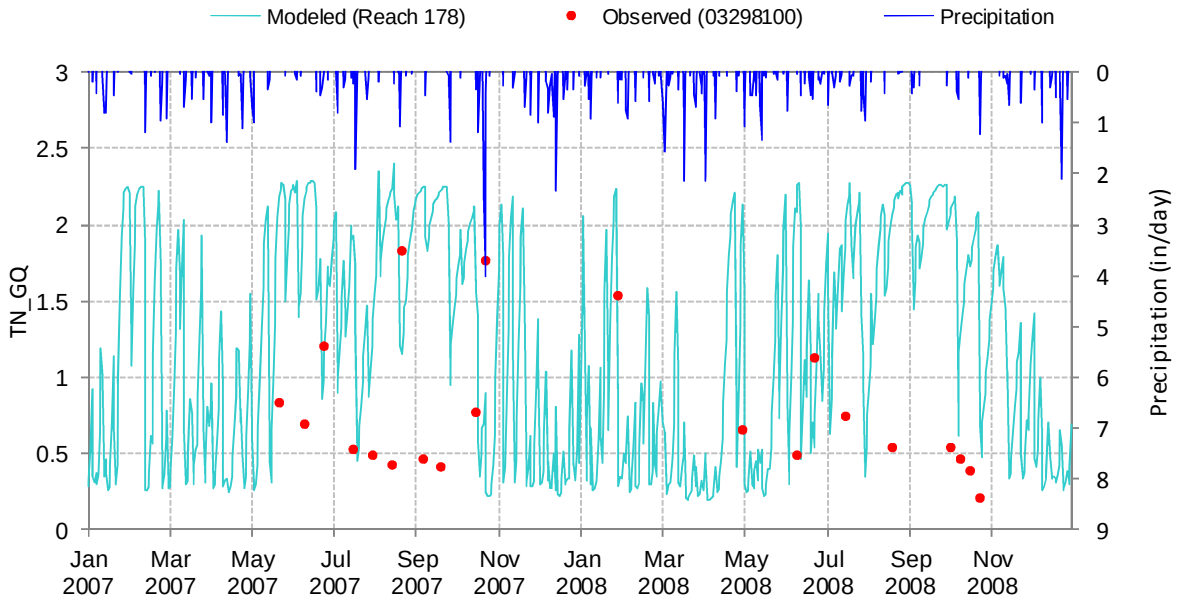

Figure B-155 Modeled vs. Observed TN_GQ at 03298100

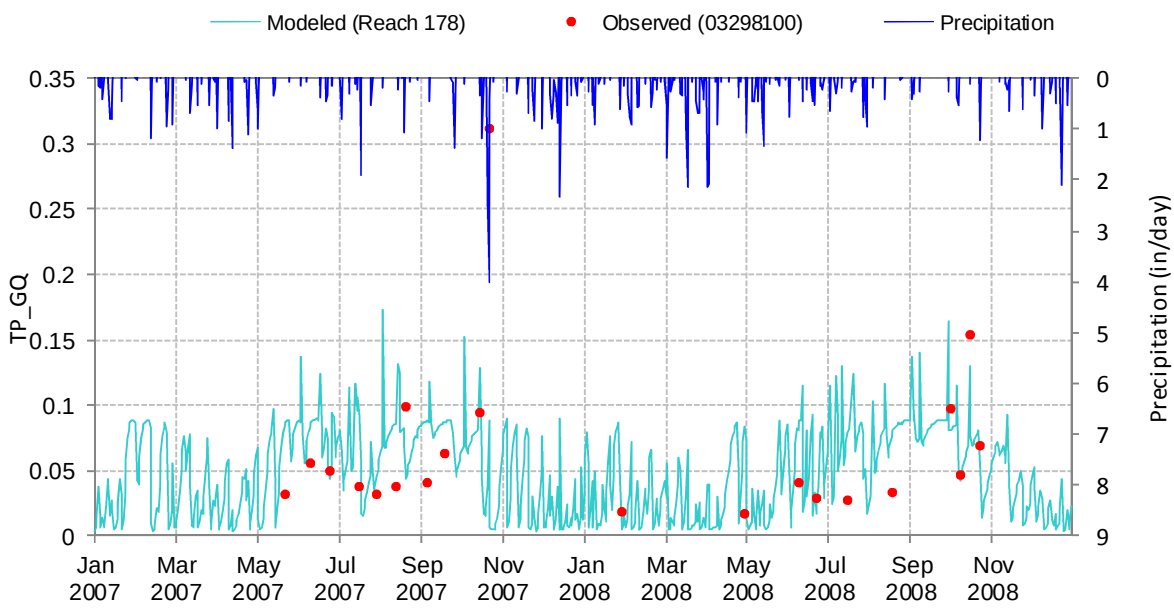

Figure B-156 Modeled vs. Observed TP_GQ at 03298100

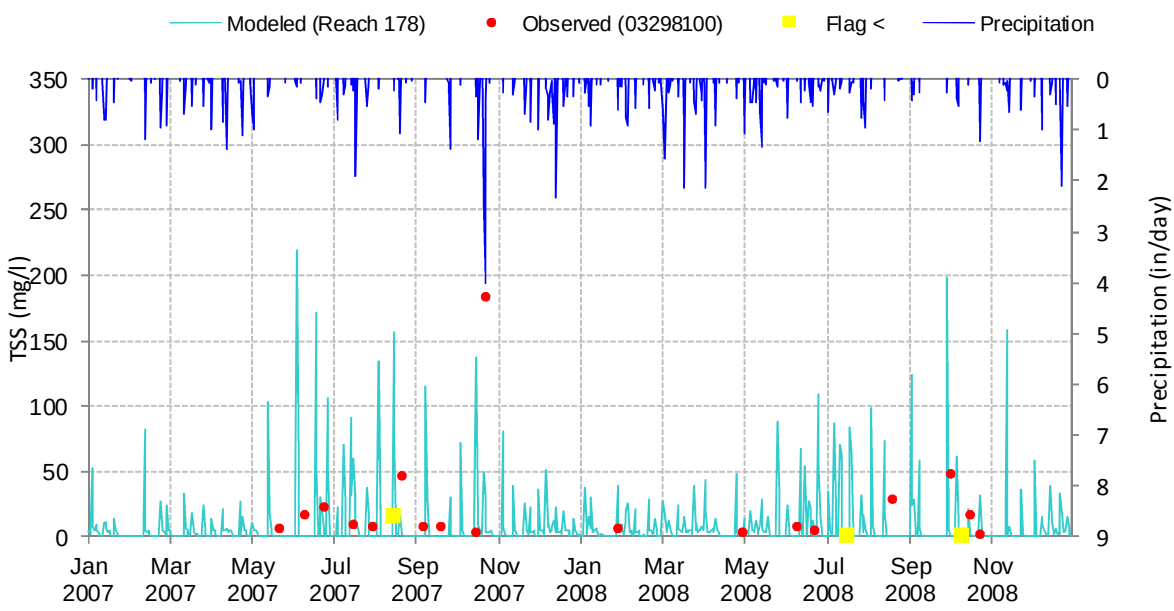

Figure B-157 Modeled vs. Observed TSS (mg/l) at 03298100

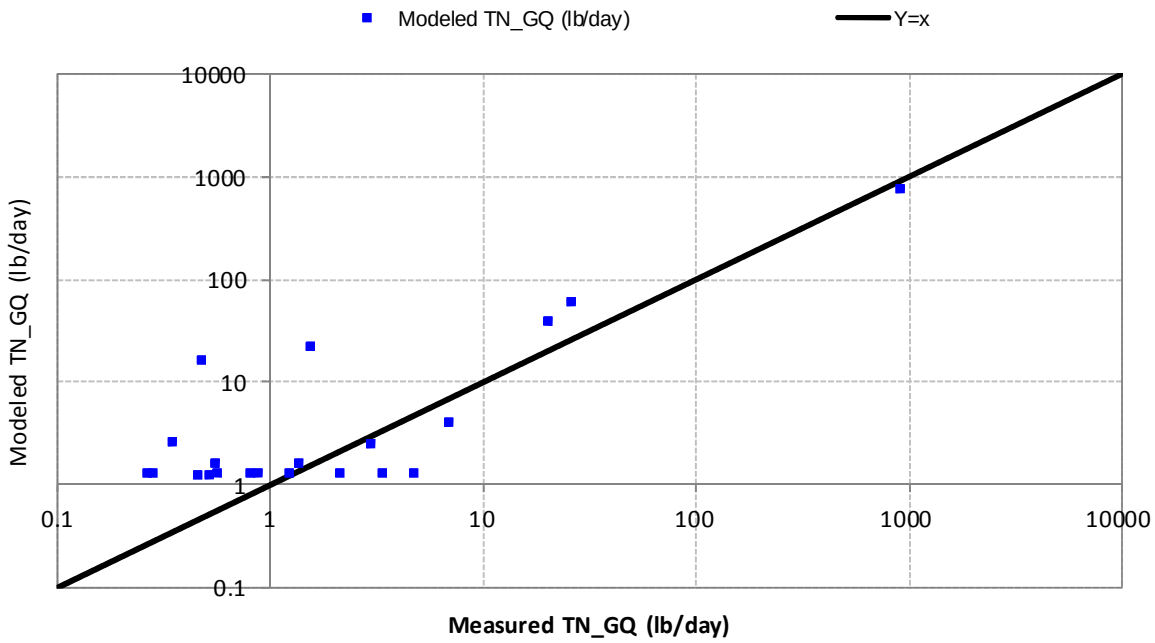

Figure B-158 Modeled vs. Observed Load TN_GQ at 03298100

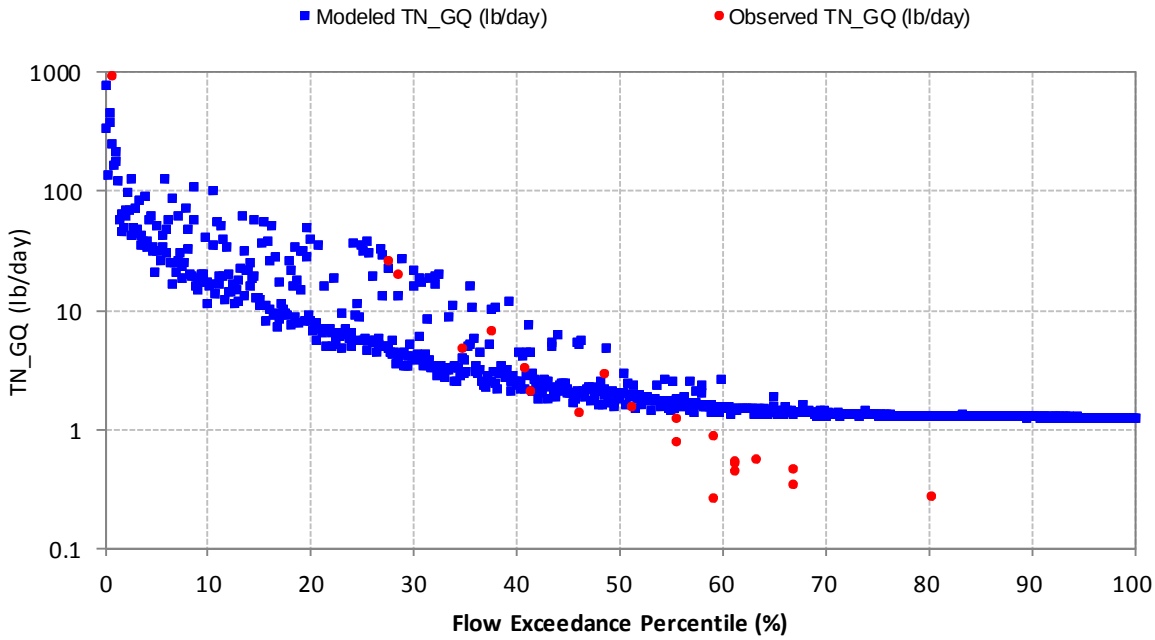

Figure B-159 Modeled vs. Observed Load TN_GQ at 03298100

Table B-32 Modeled vs. Observed Load TN_GQ at 03298100

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	4,824	10,227	-52.83	9,949	-51.51
2008	4,576	13,956	-67.21	10,738	-57.39

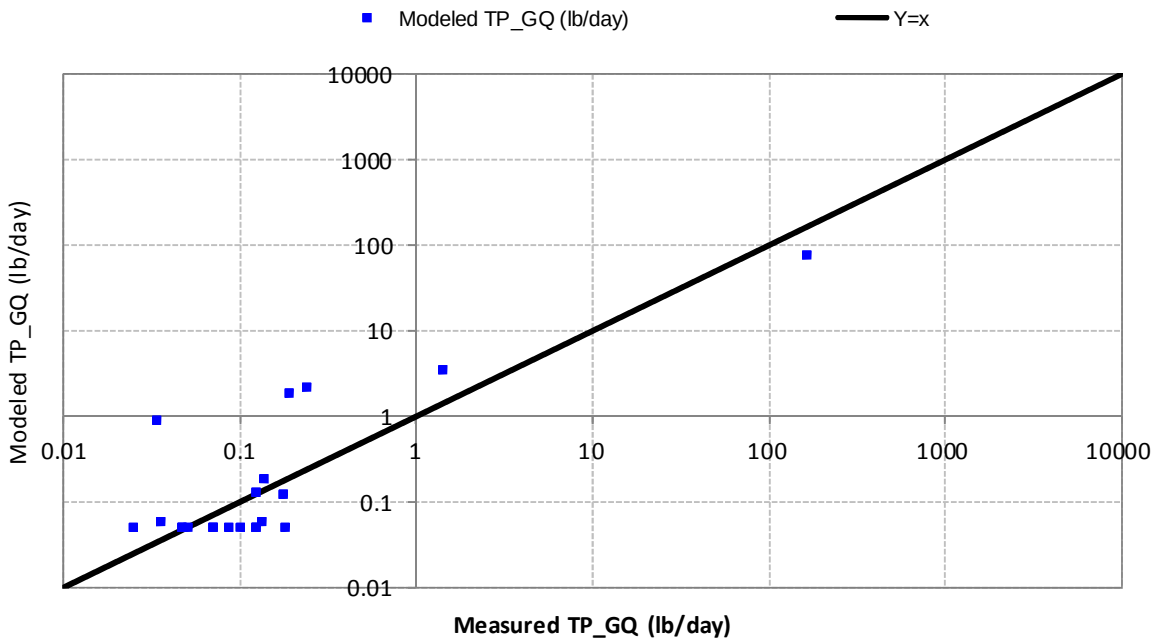

Figure B-160 Modeled vs. Observed Load TP_GQ at 03298100

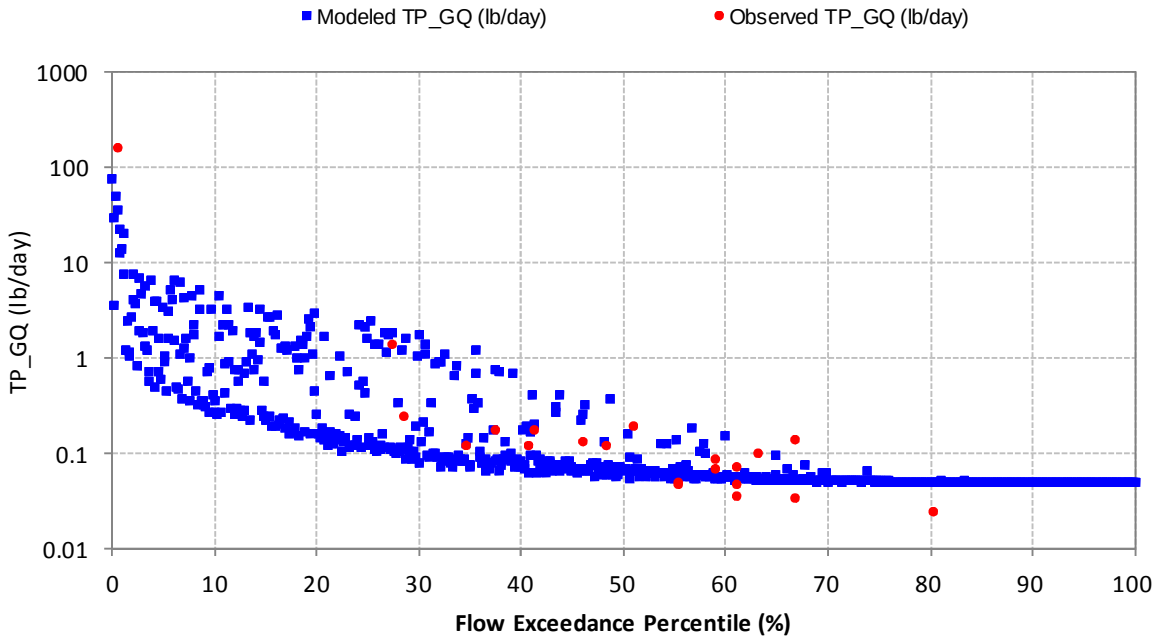

Figure B-161 Modeled vs. Observed Load TP_GQ at 03298100

Table B-33 Modeled vs. Observed Load TP_GQ at 03298100

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	296	1,242	-76.16	903	-67.22
2008	279	462	-39.53	292	-4.3

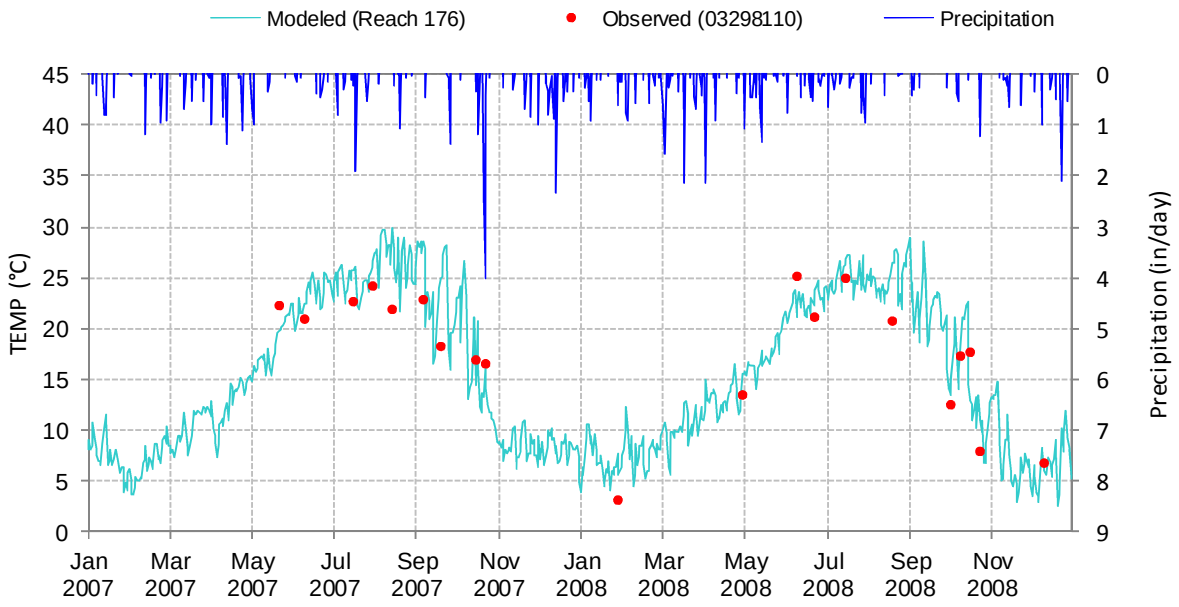

Figure B-162 Modeled vs. Observed TEMP (°C) at 03298110

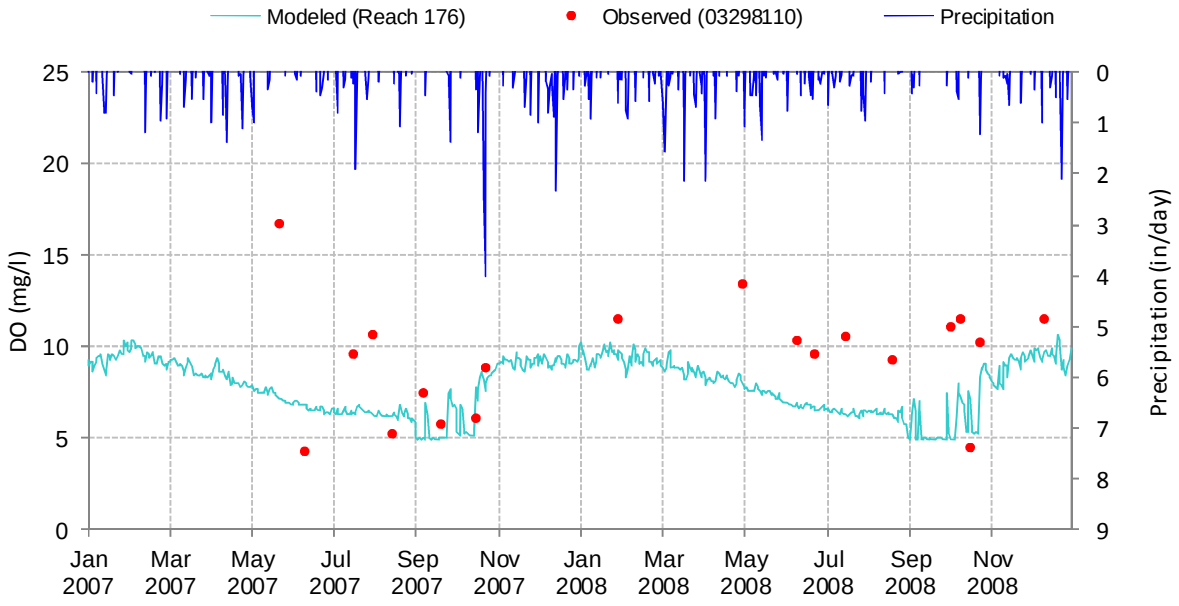

Figure B-163 Modeled vs. Observed DO (mg/l) at 03298110

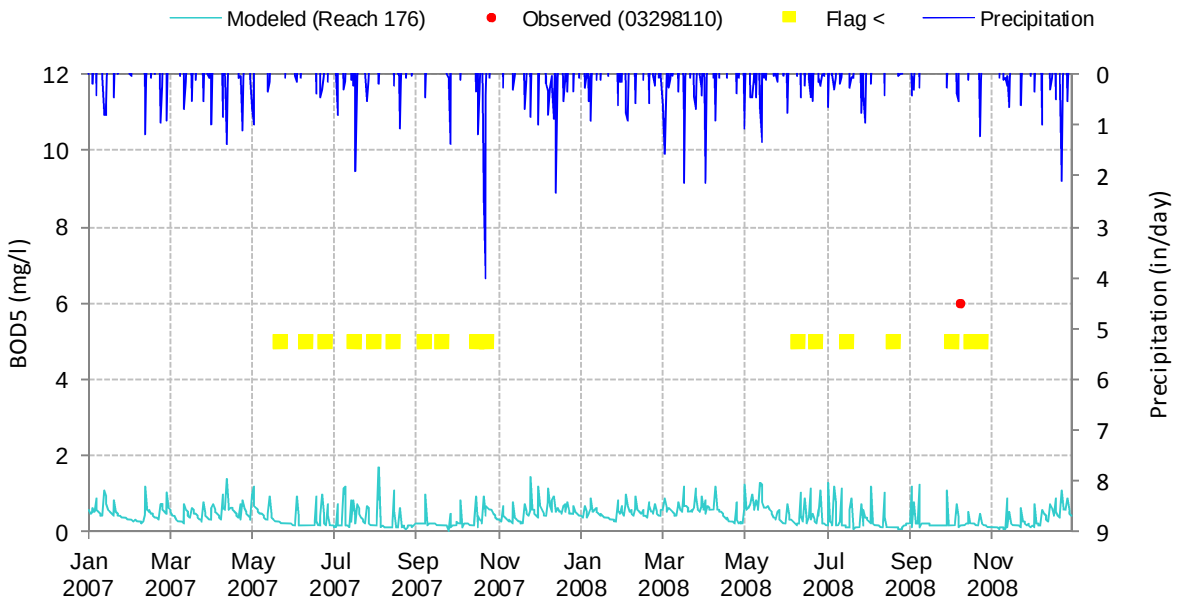

Figure B-164 Modeled vs. Observed BOD5 (mg/l) at 03298110

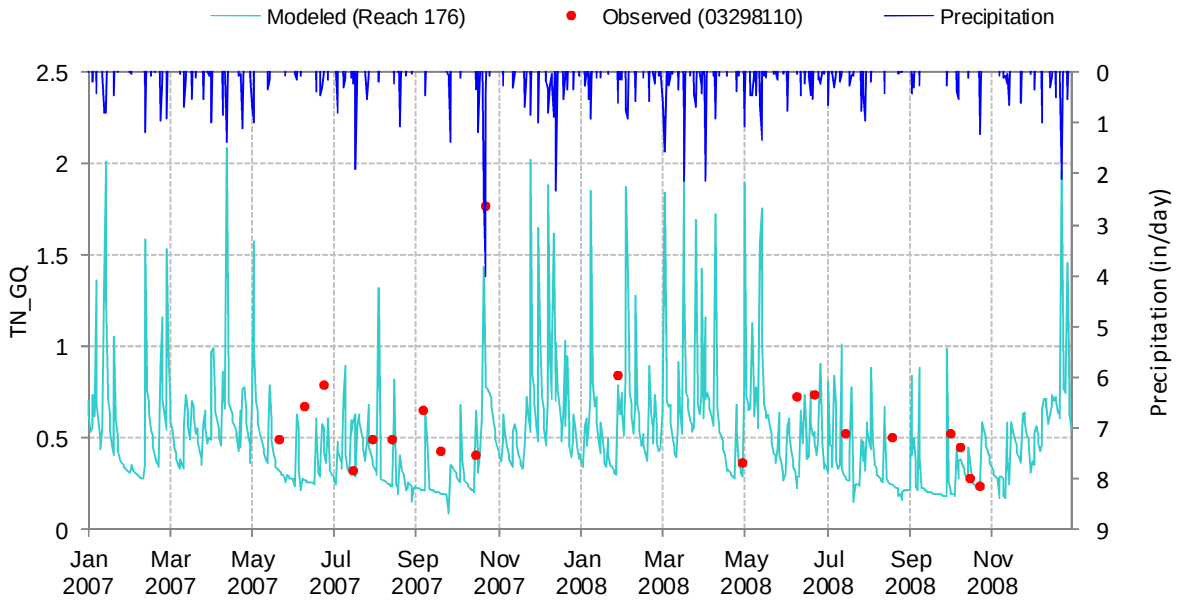

Figure B-165 Modeled vs. Observed TN_GQ at 03298110

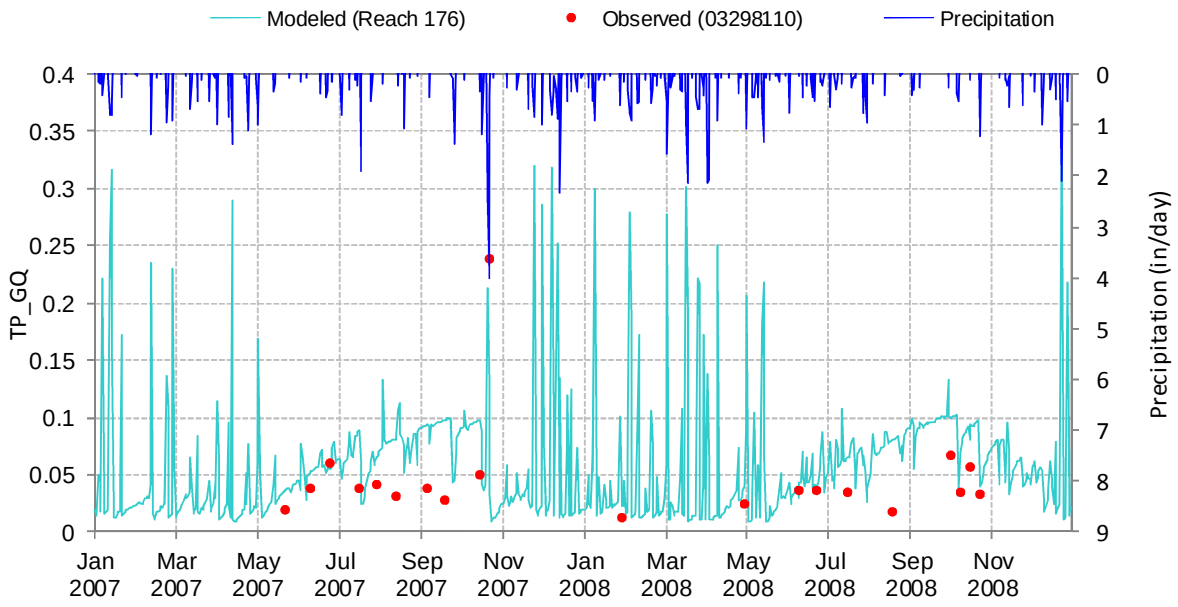

Figure B-166 Modeled vs. Observed TP_GQ at 03298110

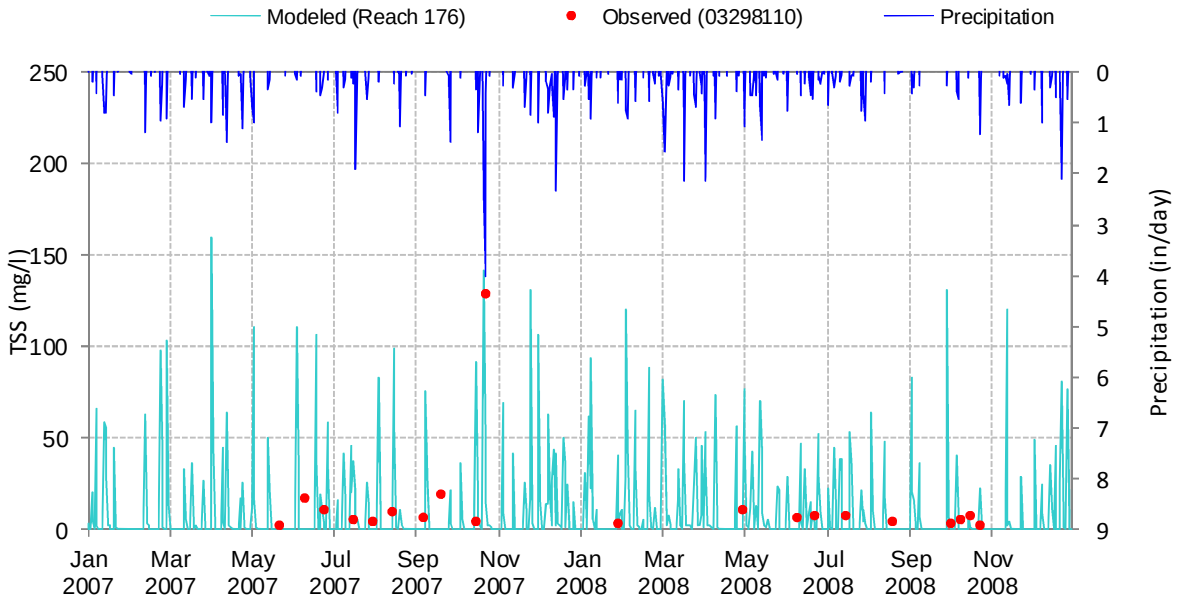

Figure B-167 Modeled vs. Observed TSS (mg/l) at 03298110

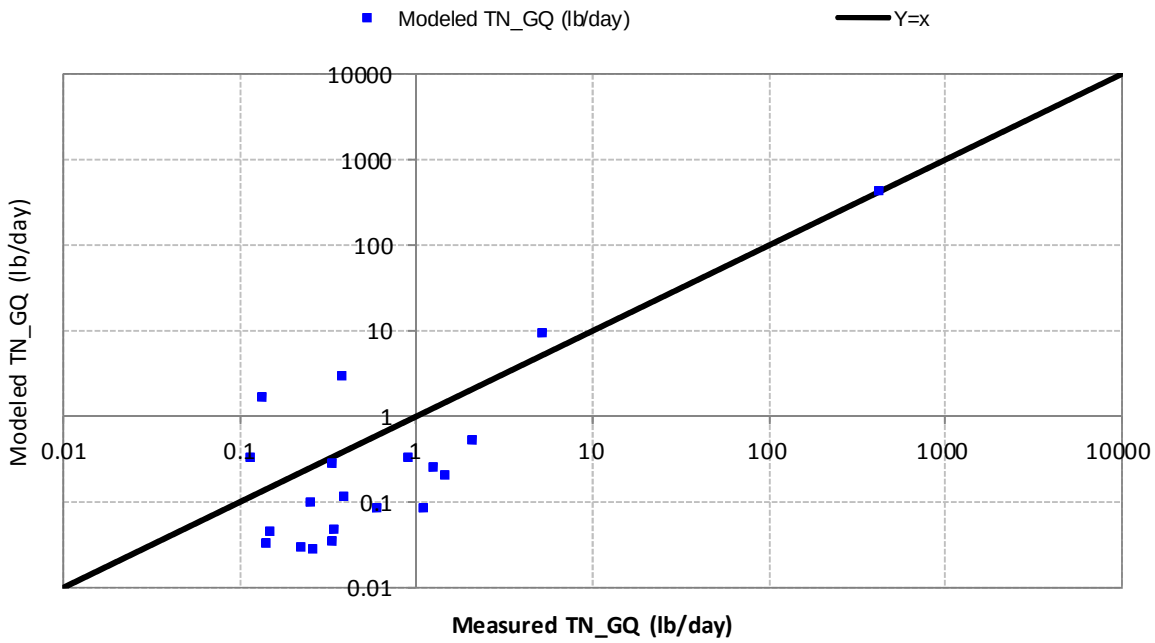

Figure B-168 Modeled vs. Observed Load TN_GQ at 03298110

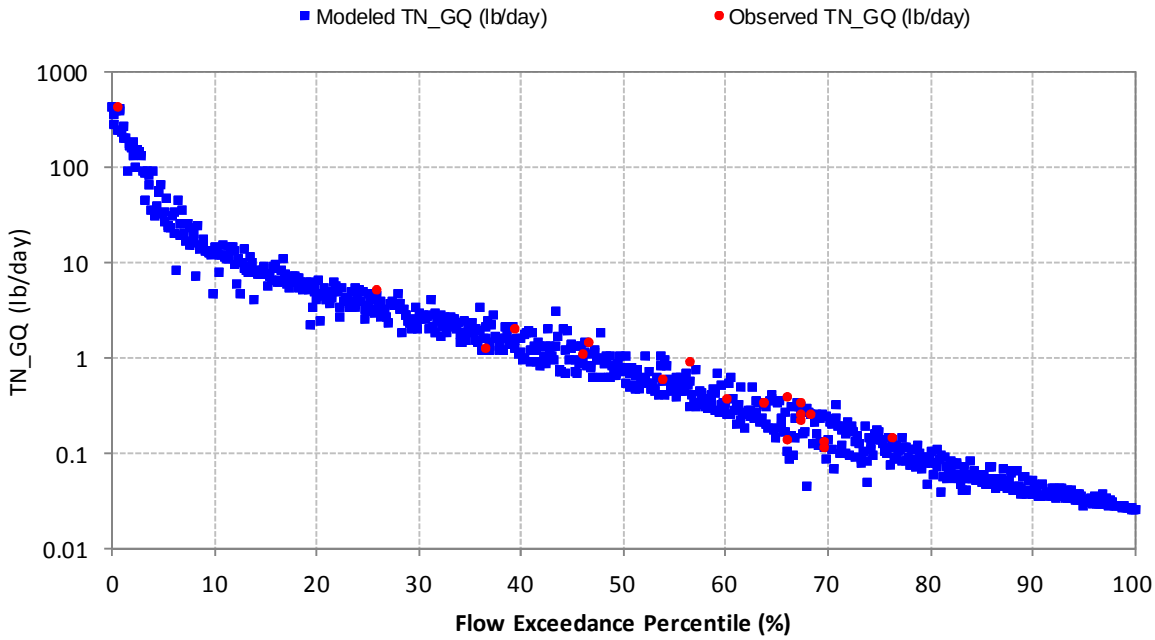

Figure B-169 Modeled vs. Observed Load TN_GQ at 03298110

Table B-34 Modeled vs. Observed Load TN_GQ at 03298110

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	3,572	3,933	-9.18	3,440	3.85
2008	4,292	3,881	10.59	2,976	44.19

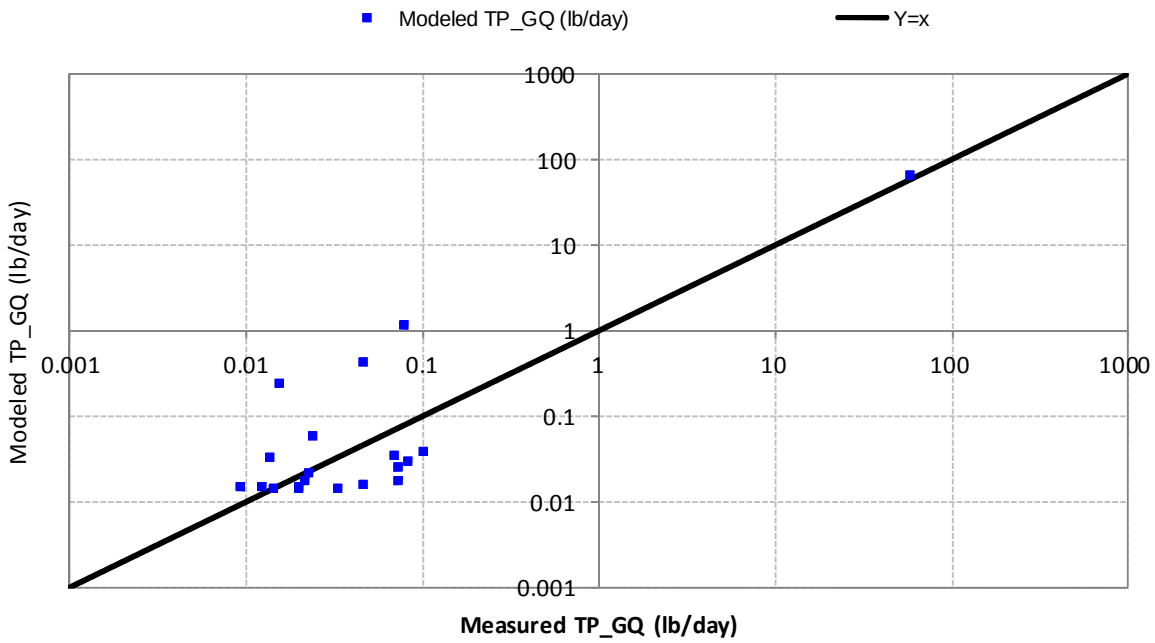

Figure B-170 Modeled vs. Observed Load TP_GQ at 03298110

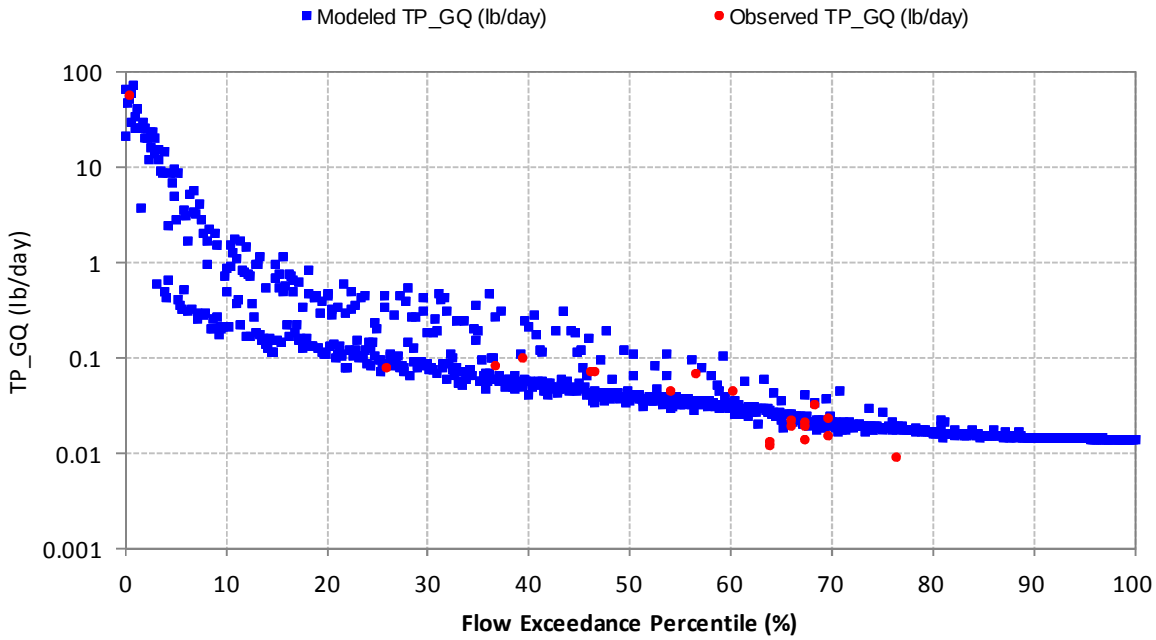

Figure B-171 Modeled vs. Observed Load TP_GQ at 03298110

Table B-35 Modeled vs. Observed Load TP_GQ at 03298110

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	438	428	2.22	309	41.84
2008	498	162	206.39	123	303.94

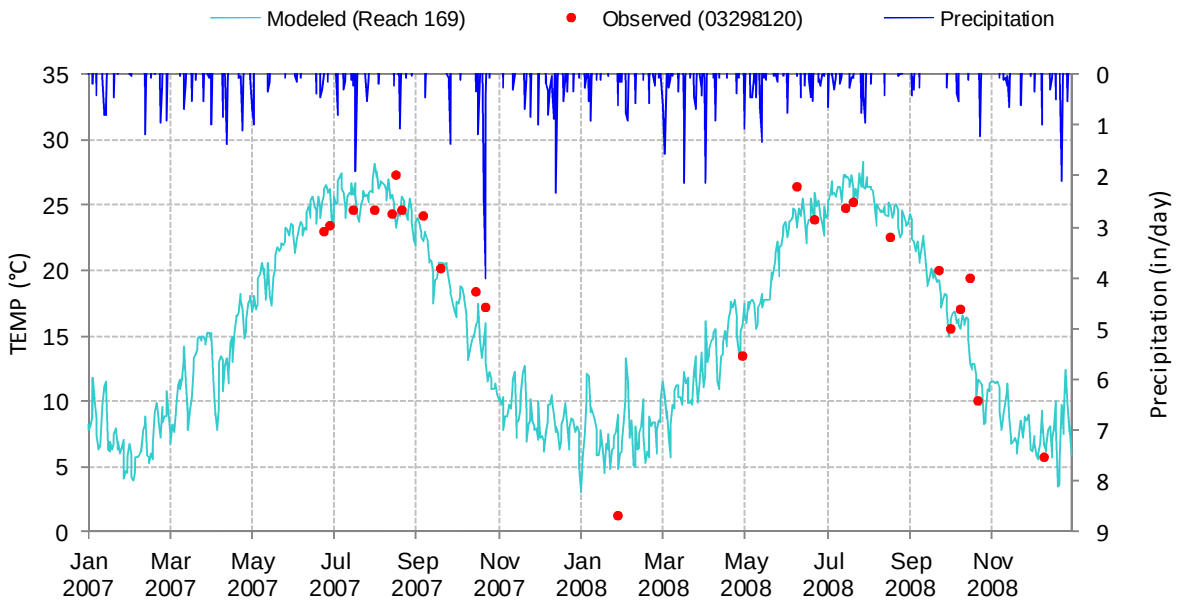

Figure B-172 Modeled vs. Observed TEMP (°C) at 03298120

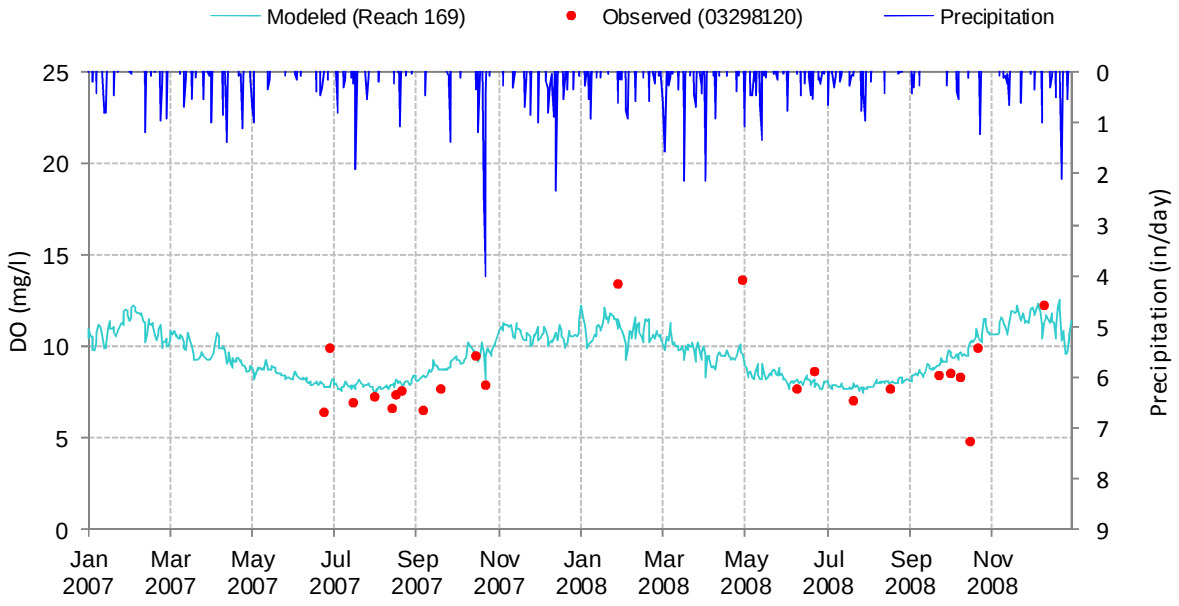

Figure B-173 Modeled vs. Observed DO (mg/l) at 03298120

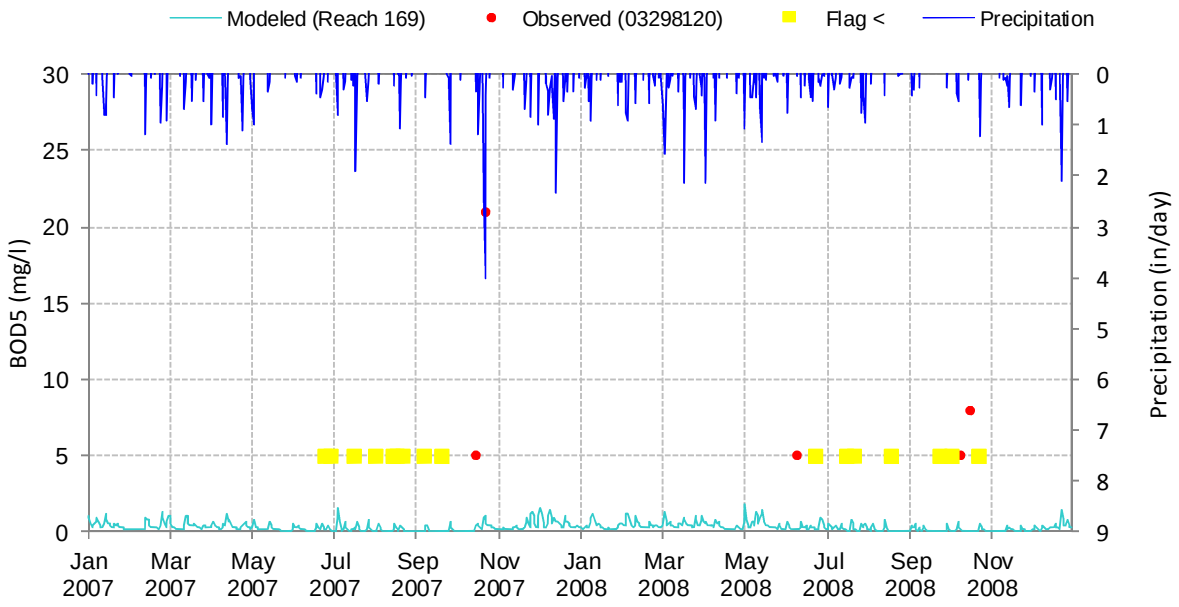

Figure B-174 Modeled vs. Observed BOD5 (mg/l) at 03298120

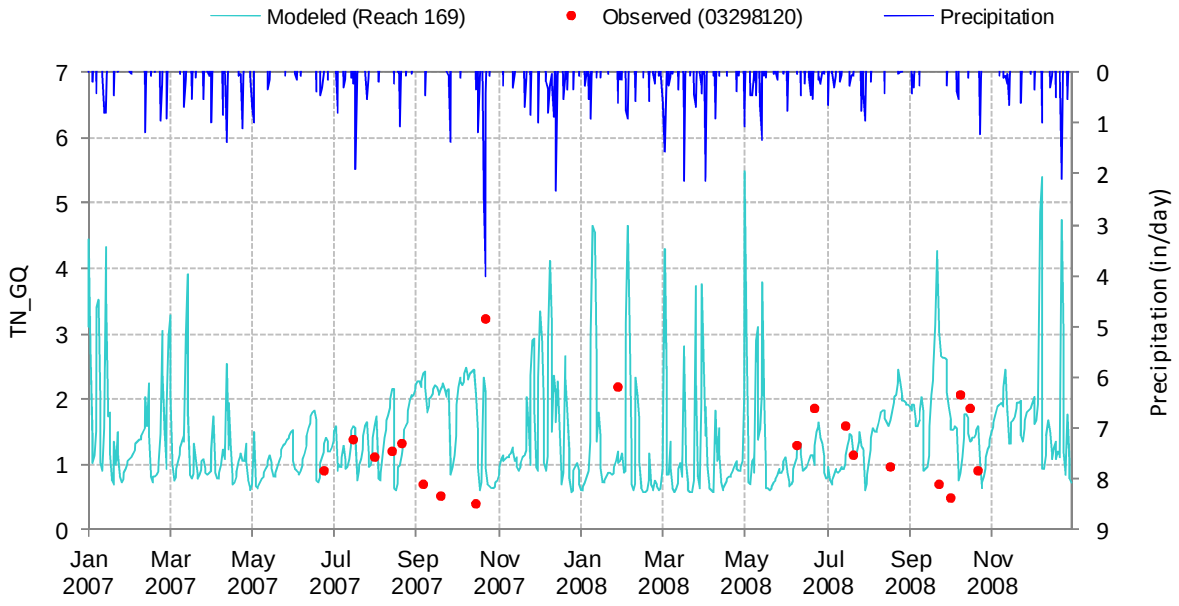

Figure B-175 Modeled vs. Observed TN_GQ at 03298120

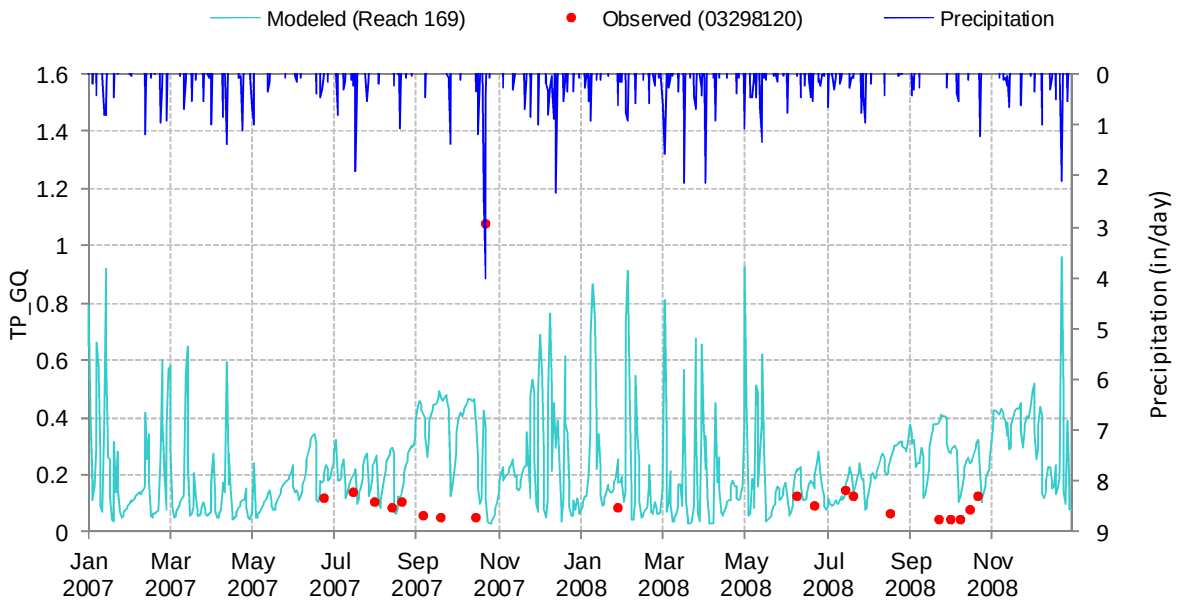

Figure B-176 Modeled vs. Observed TP_GQ at 03298120

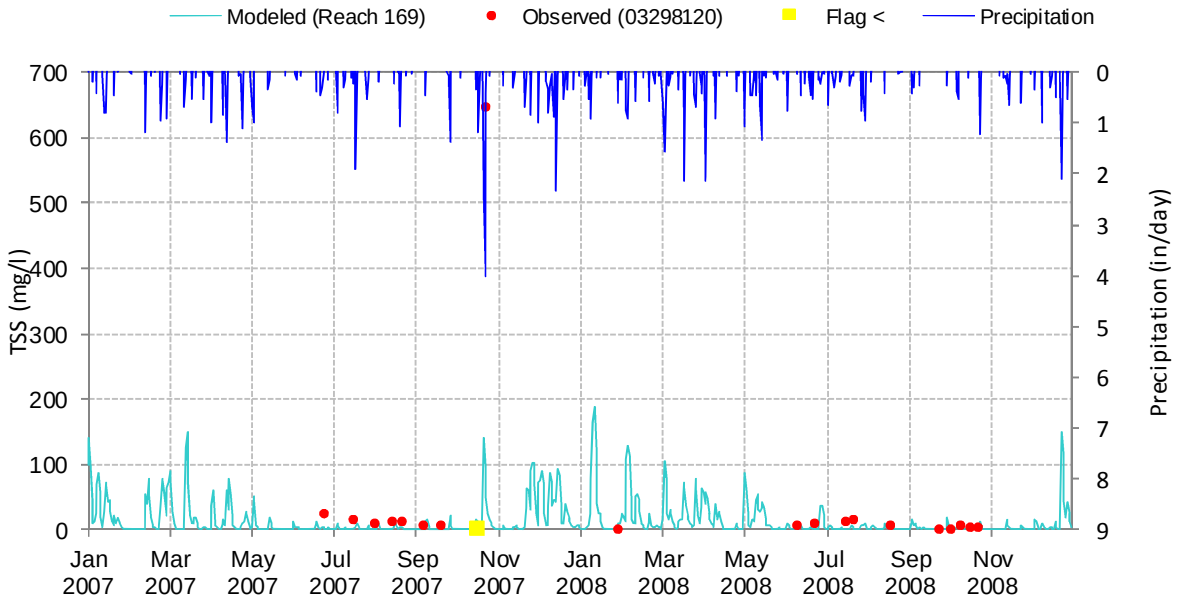

Figure B-177 Modeled vs. Observed TSS (mg/l) at 03298120

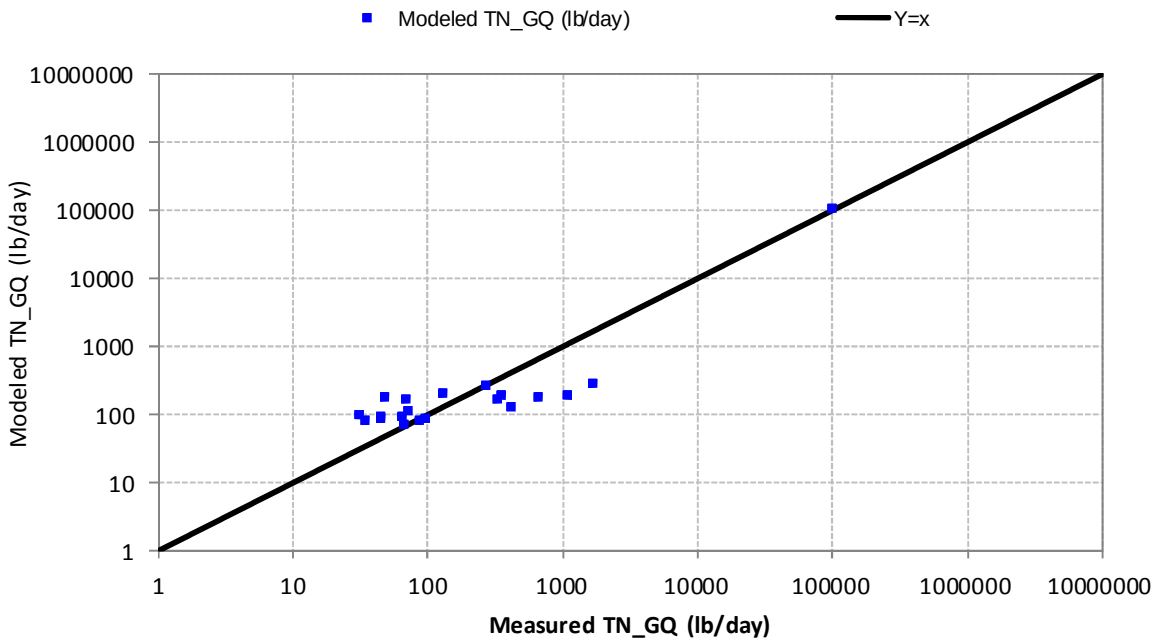

Figure B-178 Modeled vs. Observed Load TN_GQ at 03298120

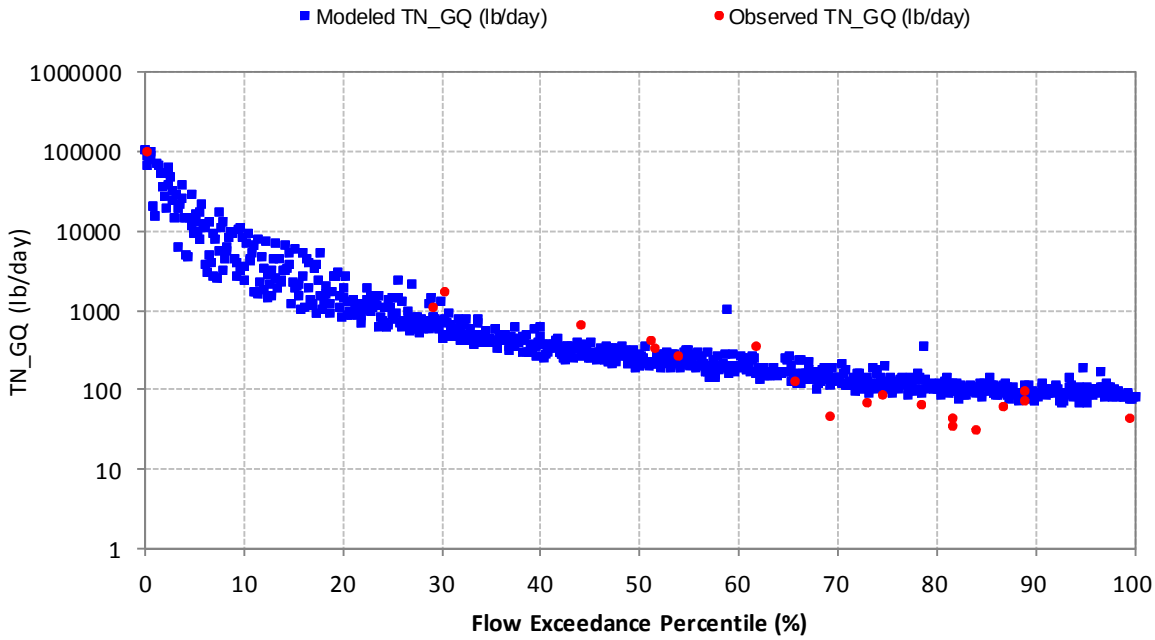

Figure B-179 Modeled vs. Observed Load TN_GQ at 03298120

Table B-36 Modeled vs. Observed Load TN_GQ at 03298120

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	887,509	908,350	-2.29	841,146	5.51
2008	1,255,422	1,327,766	-5.45	1,115,718	12.52

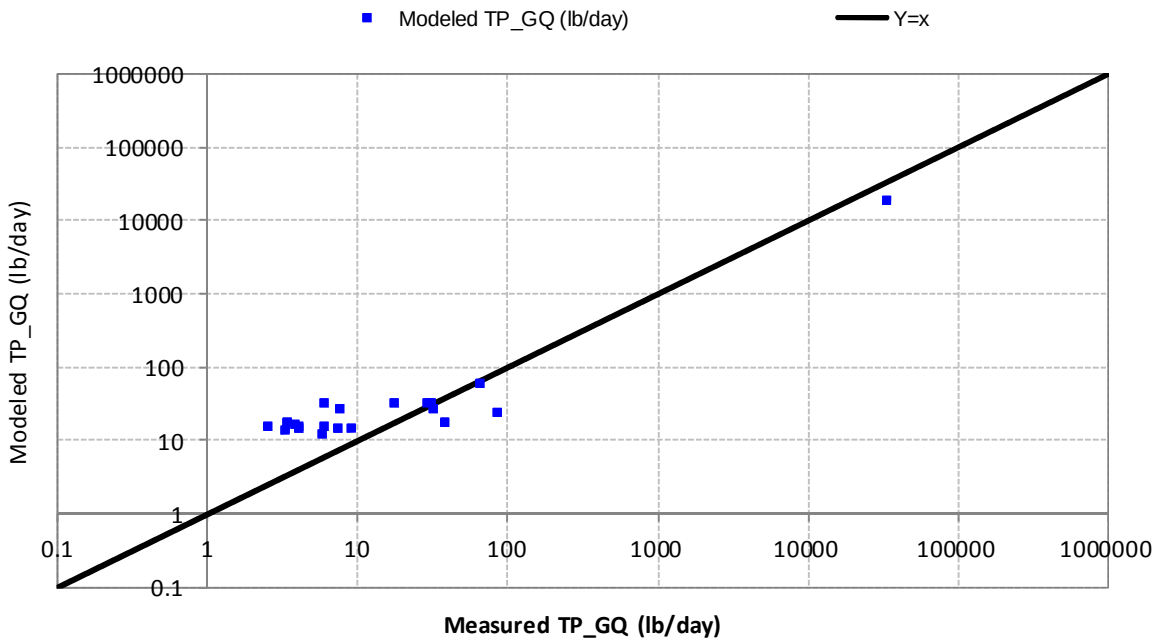

Figure B-180 Modeled vs. Observed Load TP_GQ at 03298120

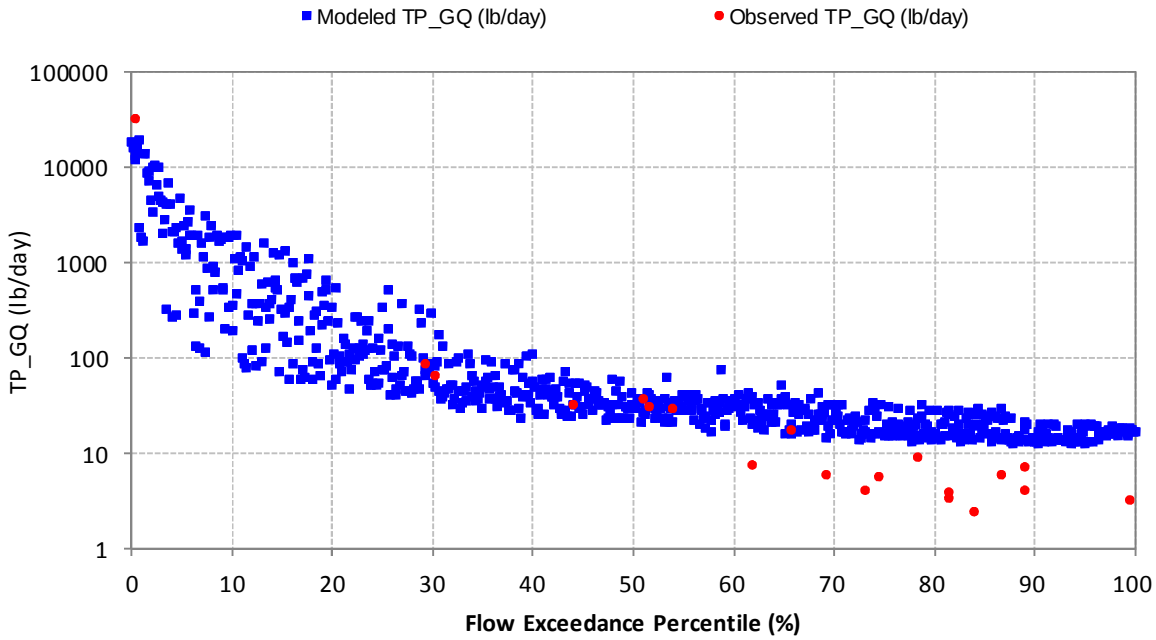

Figure B-181 Modeled vs. Observed Load TP_GQ at 03298120

Table B-37 Modeled vs. Observed Load TP_GQ at 03298120

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	144,255	251,813	-42.71	185,163	-22.09
2008	211,296	99,747	111.83	74,312	184.34

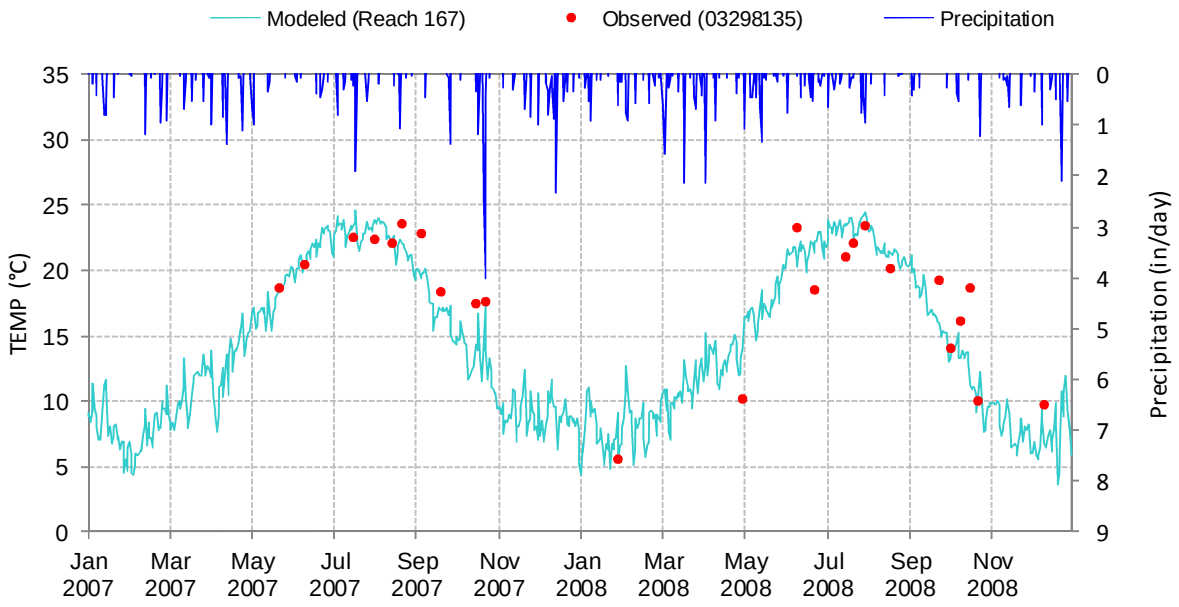

Figure B-182 Modeled vs. Observed TEMP (°C) at 03298135

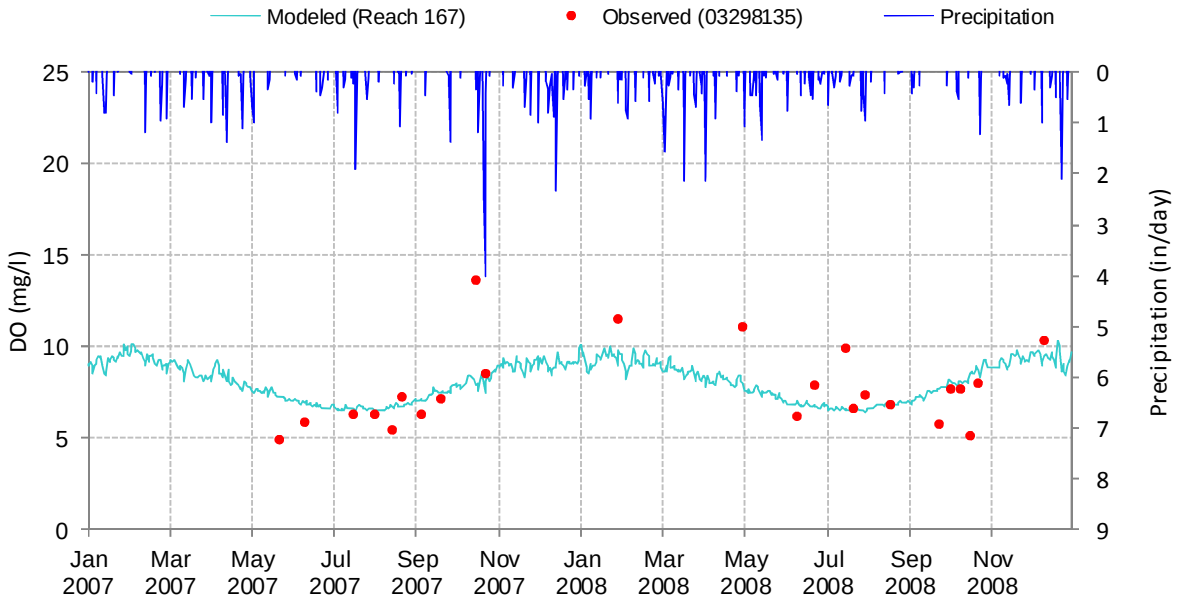

Figure B-183 Modeled vs. Observed DO (mg/l) at 03298135

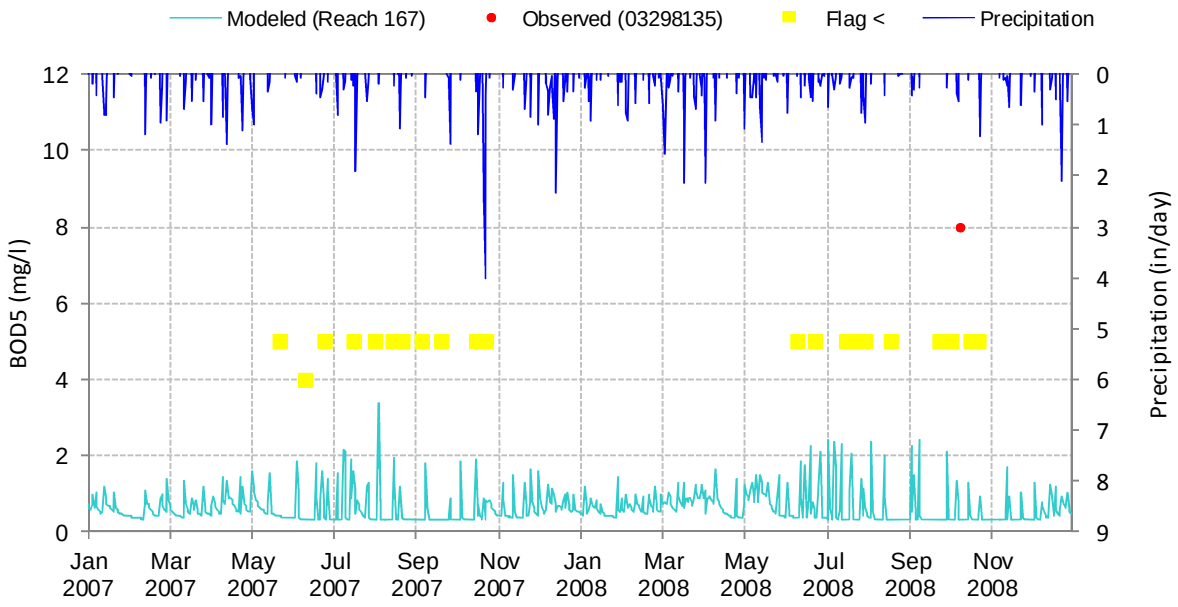

Figure B-184 Modeled vs. Observed BOD5 (mg/l) at 03298135

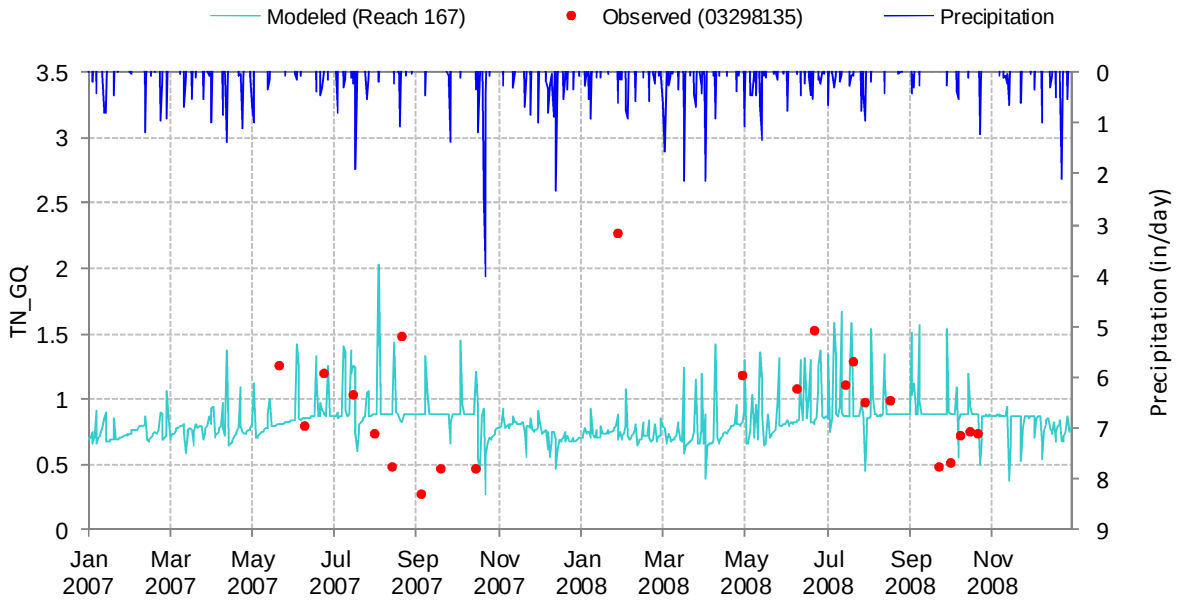

Figure B-185 Modeled vs. Observed TN_GQ at 03298135

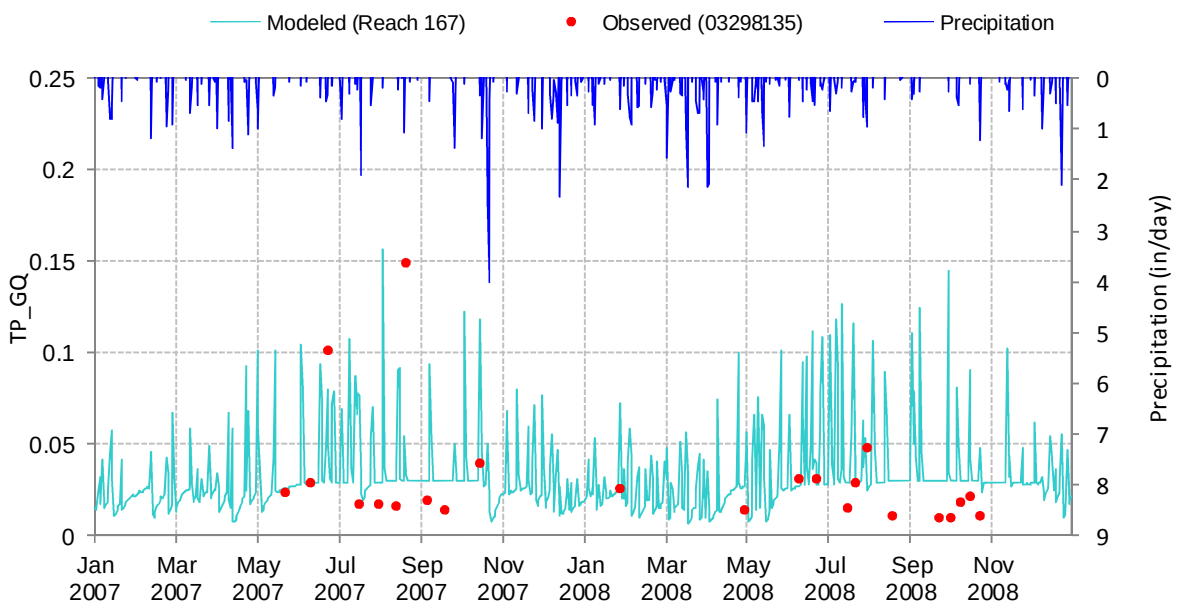

Figure B-186 Modeled vs. Observed TP_GQ at 03298135

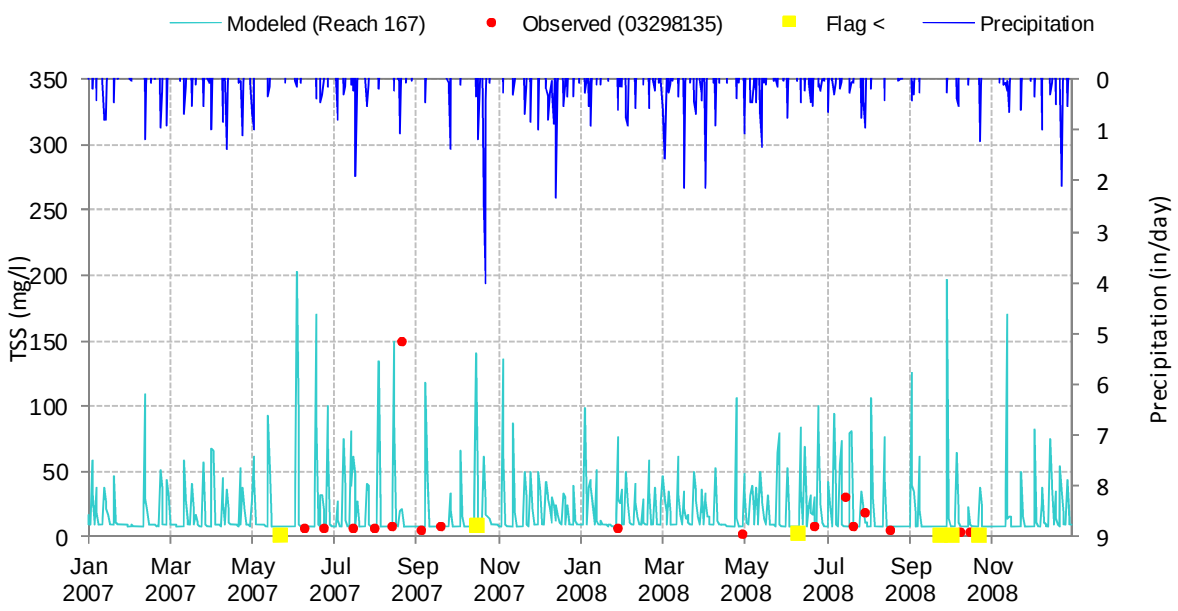

Figure B-187 Modeled vs. Observed TSS (mg/l) at 03298135

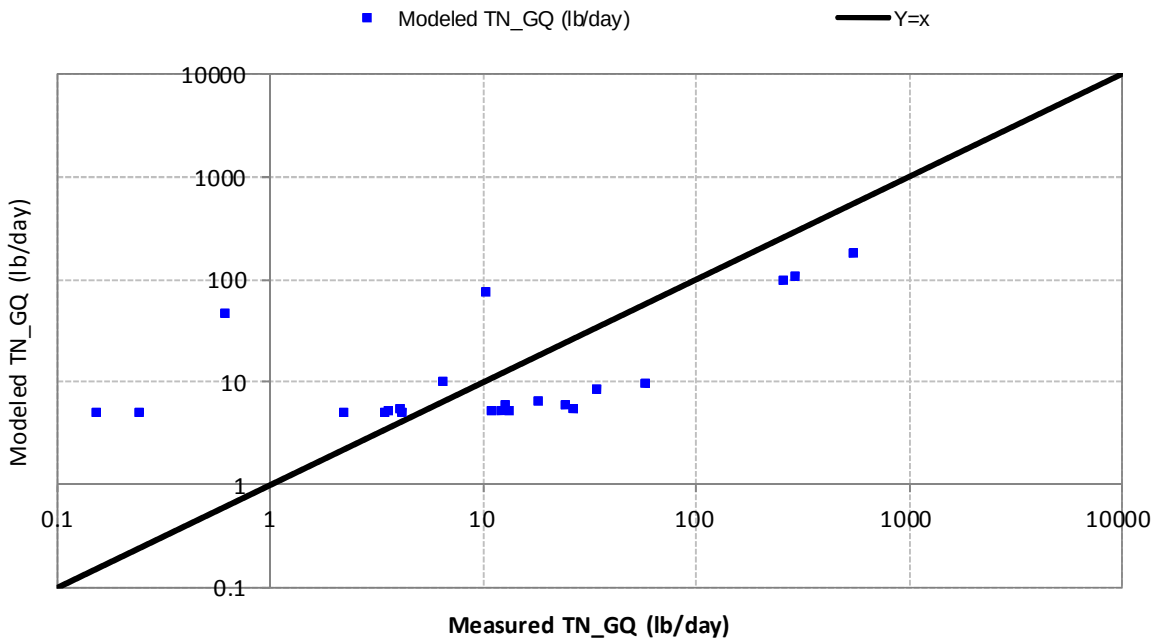

Figure B-188 Modeled vs. Observed Load TN_GQ at 03298135

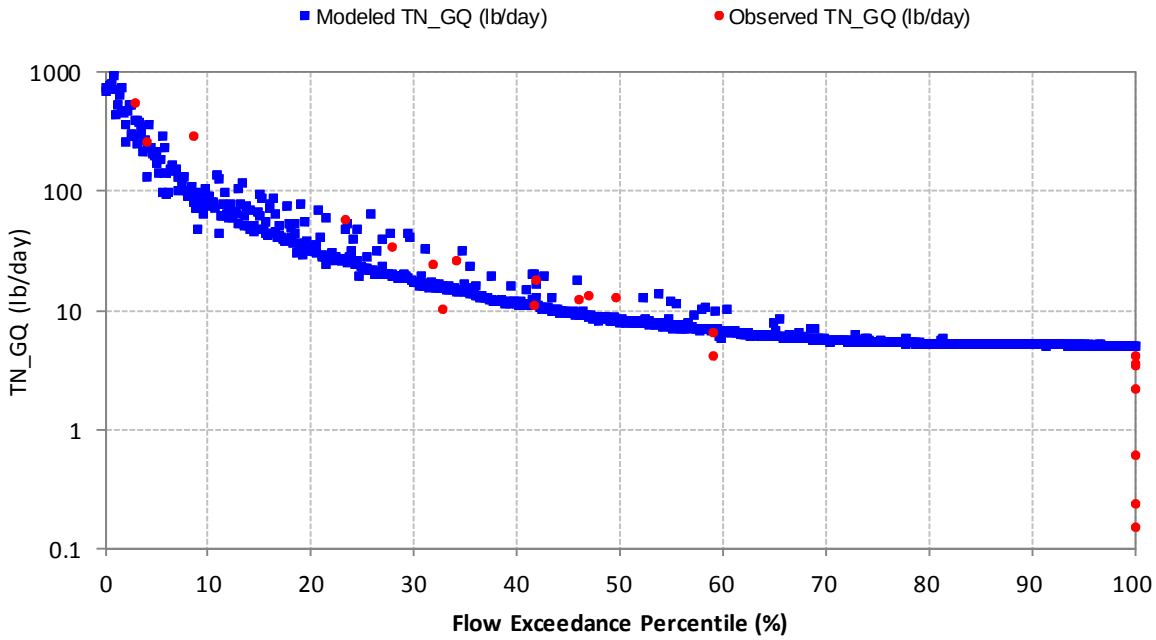

Figure B-189 Modeled vs. Observed Load TN_GQ at 03298135

Table B-38 Modeled vs. Observed Load TN_GQ at 03298135

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	14,758	18,885	-21.85	23,263	-36.56
2008	16,686	40,821	-59.12	36,041	-53.7

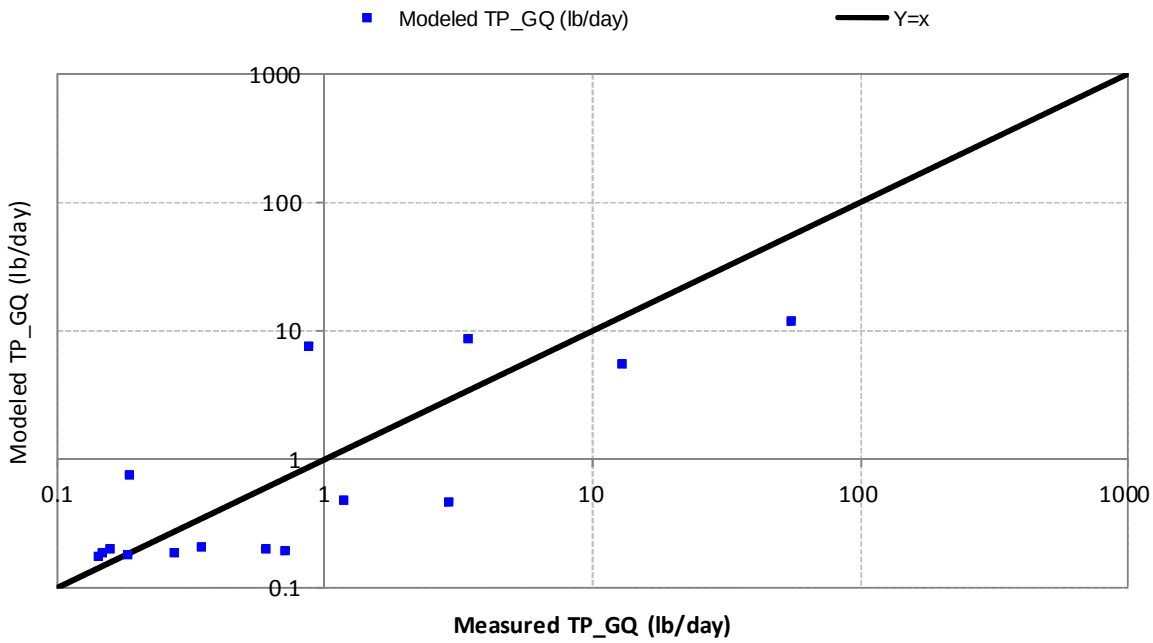

Figure B-190 Modeled vs. Observed Load TP_GQ at 03298135

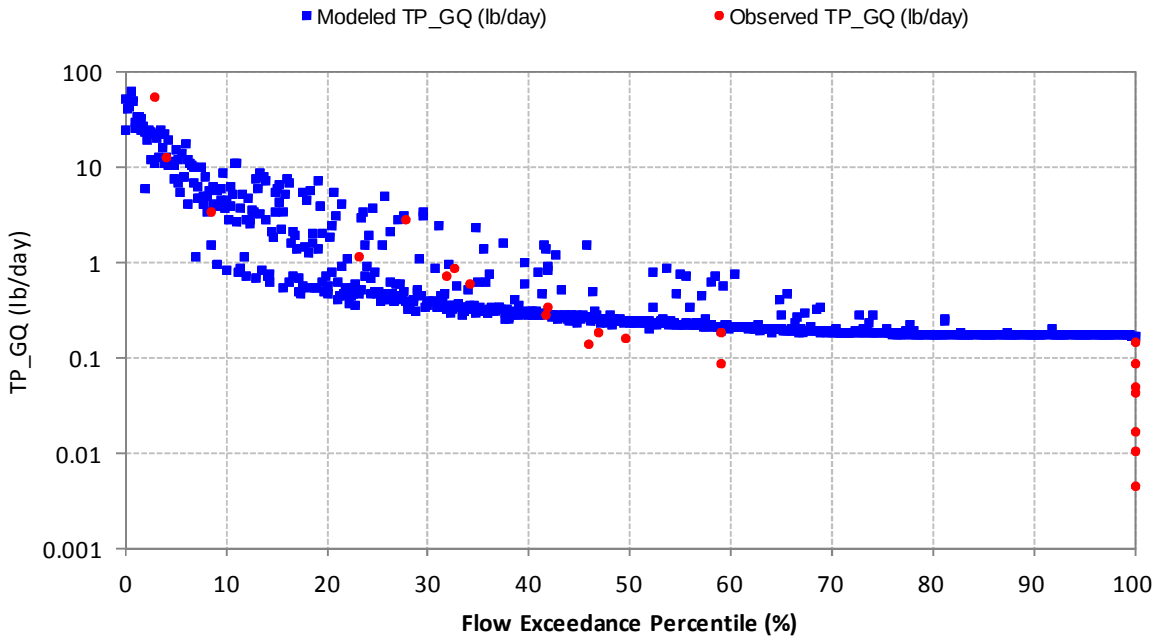

Figure B-191 Modeled vs. Observed Load TP_GQ at 03298135

Table B-39 Modeled vs. Observed Load TP_GQ at 03298135

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	779	738	5.61	709	9.91
2008	831	598	38.9	552	50.58

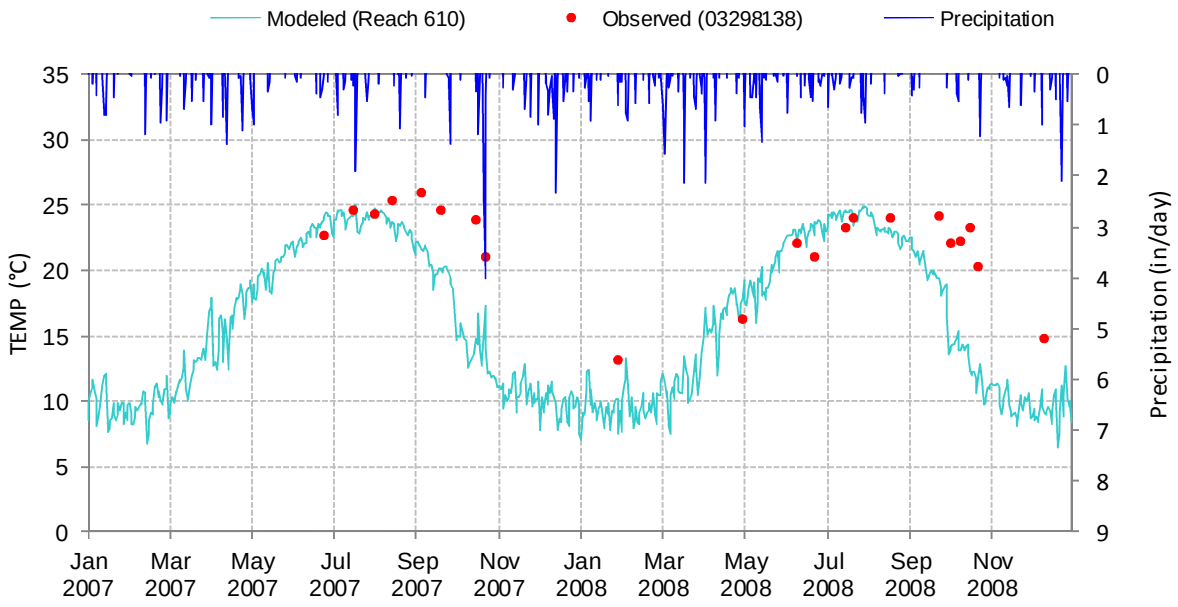

Figure B-192 Modeled vs. Observed TEMP (°C) at 03298138

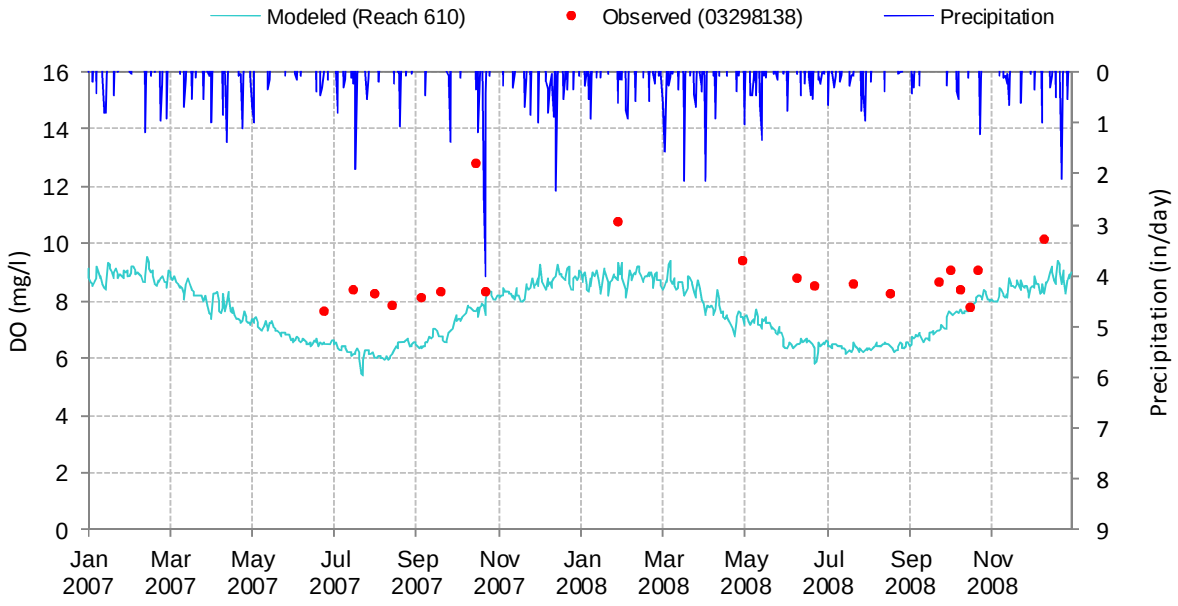

Figure B-193 Modeled vs. Observed DO (mg/l) at 03298138

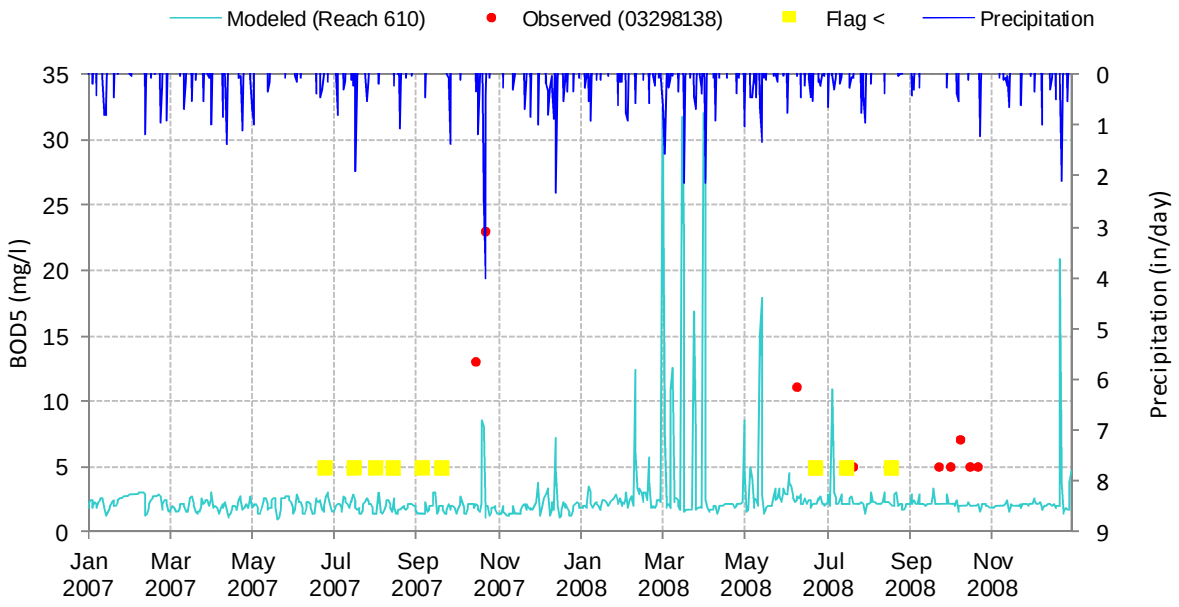

Figure B-194 Modeled vs. Observed BOD5 (mg/l) at 03298138

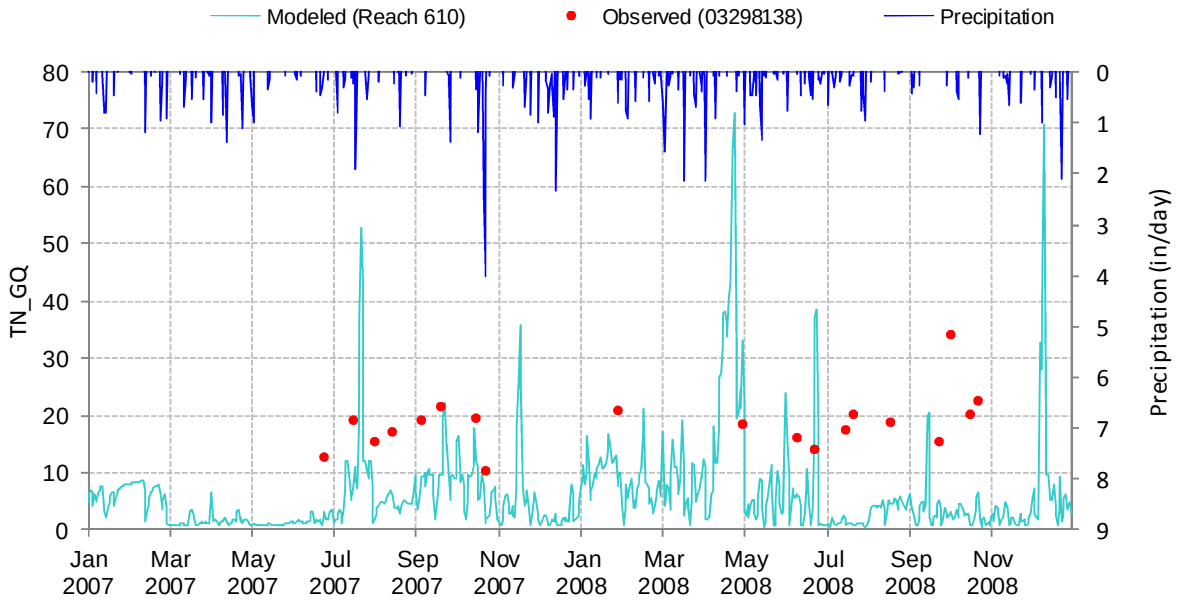

Figure B-195 Modeled vs. Observed TN_GQ at 03298138

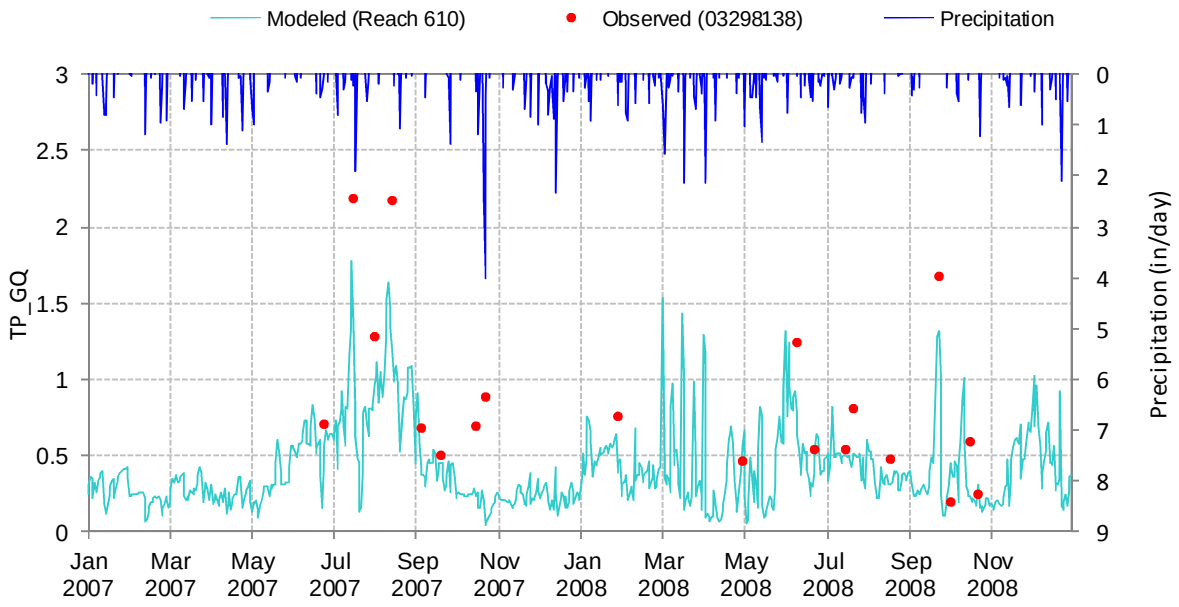

Figure B-196 Modeled vs. Observed TP_GQ at 03298138

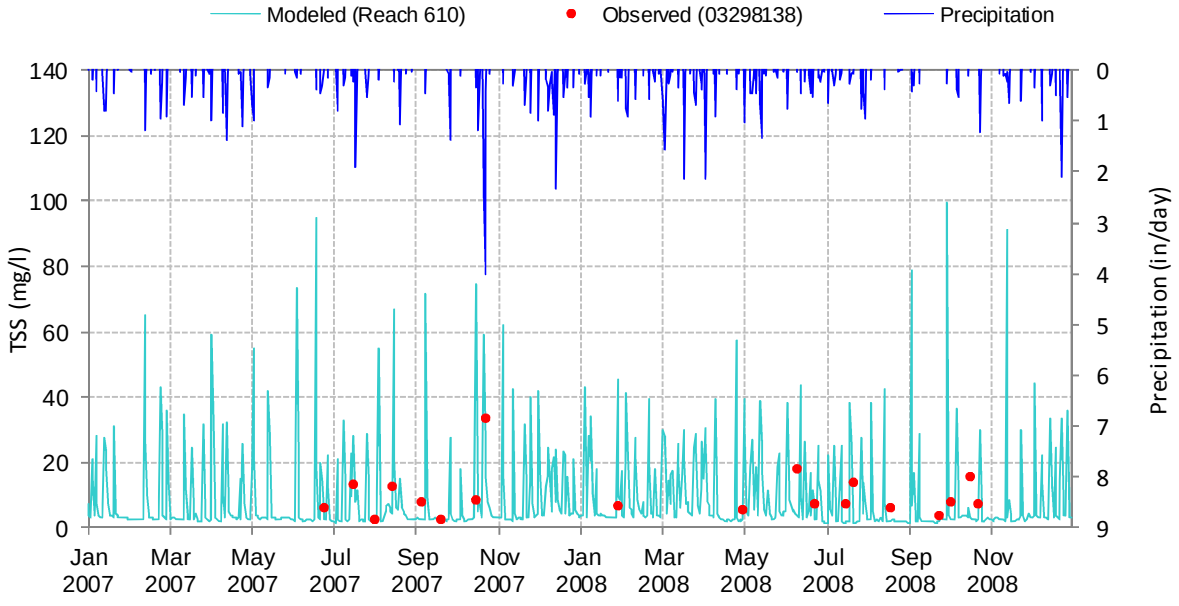

Figure B-197 Modeled vs. Observed TSS (mg/l) at 03298138

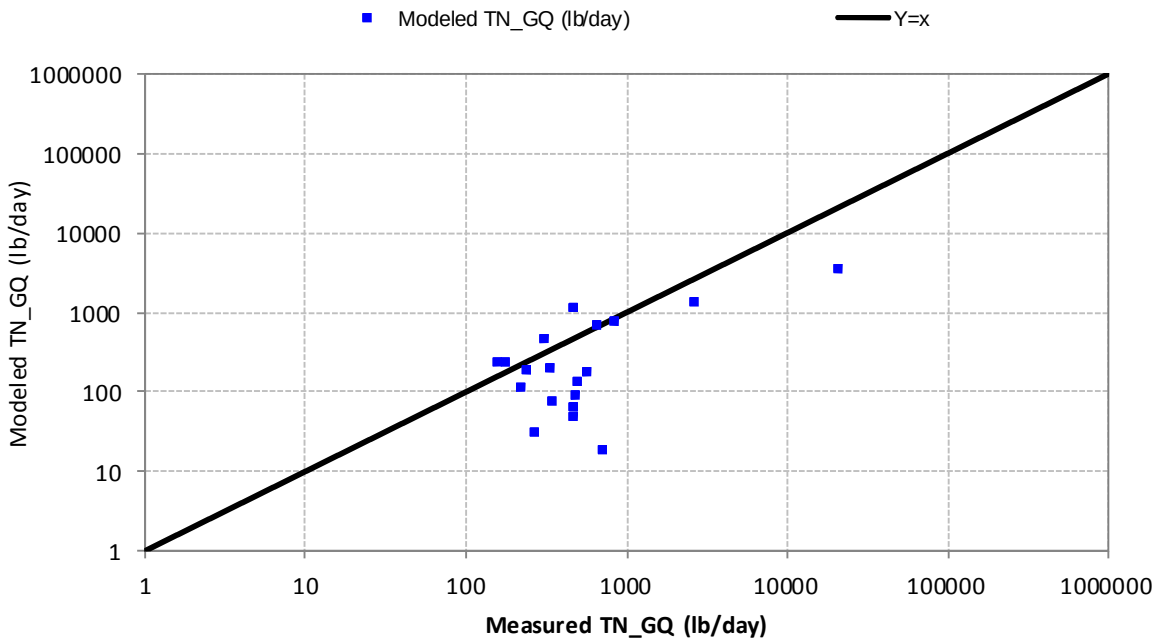

Figure B-198 Modeled vs. Observed Load TN_GQ at 03298138

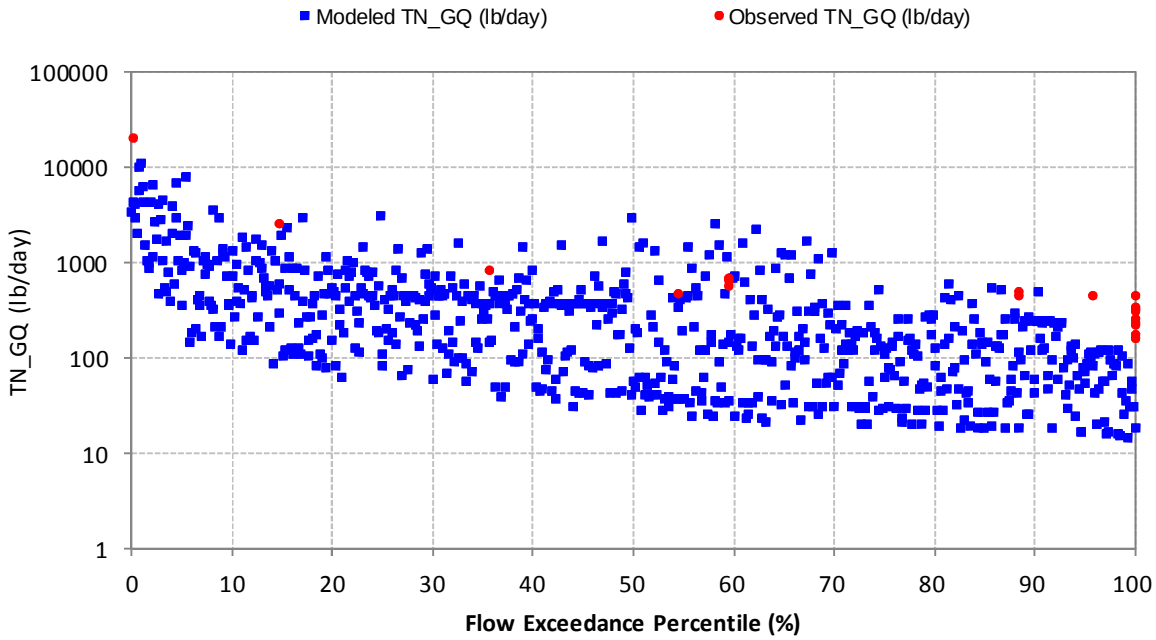

Figure B-199 Modeled vs. Observed Load TN_GQ at 03298138

Table B-40 Modeled vs. Observed Load TN_GQ at 03298138

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	122,074	384,834	-68.28	418,960	-70.86
2008	236,243	718,912	-67.14	713,548	-66.89

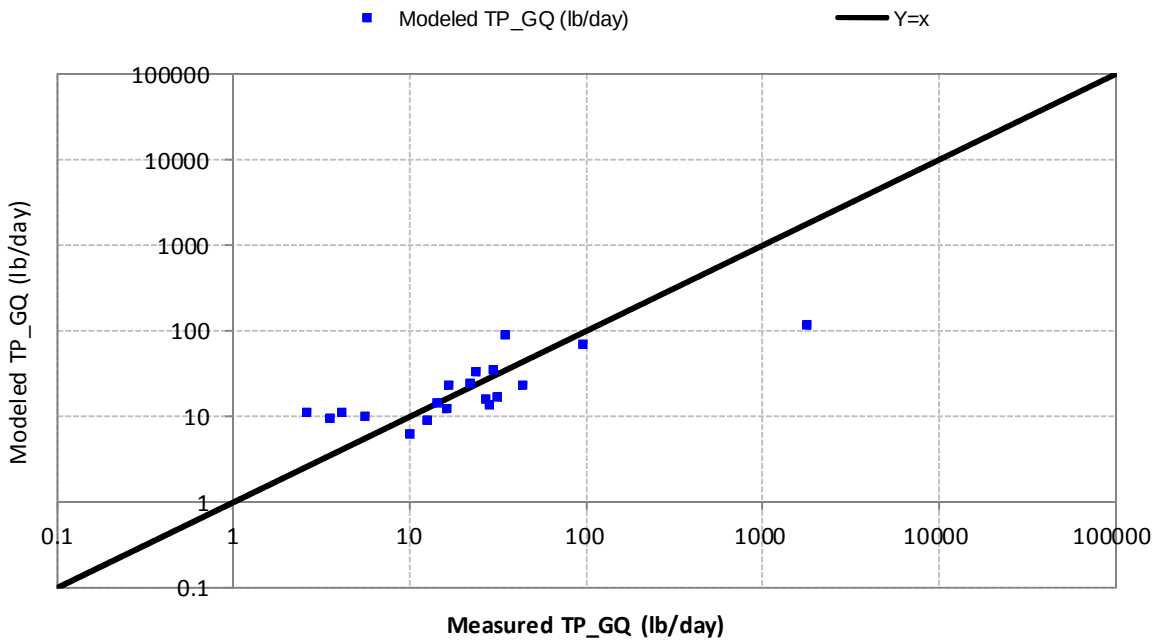

Figure B-200 Modeled vs. Observed Load TP_GQ at 03298138

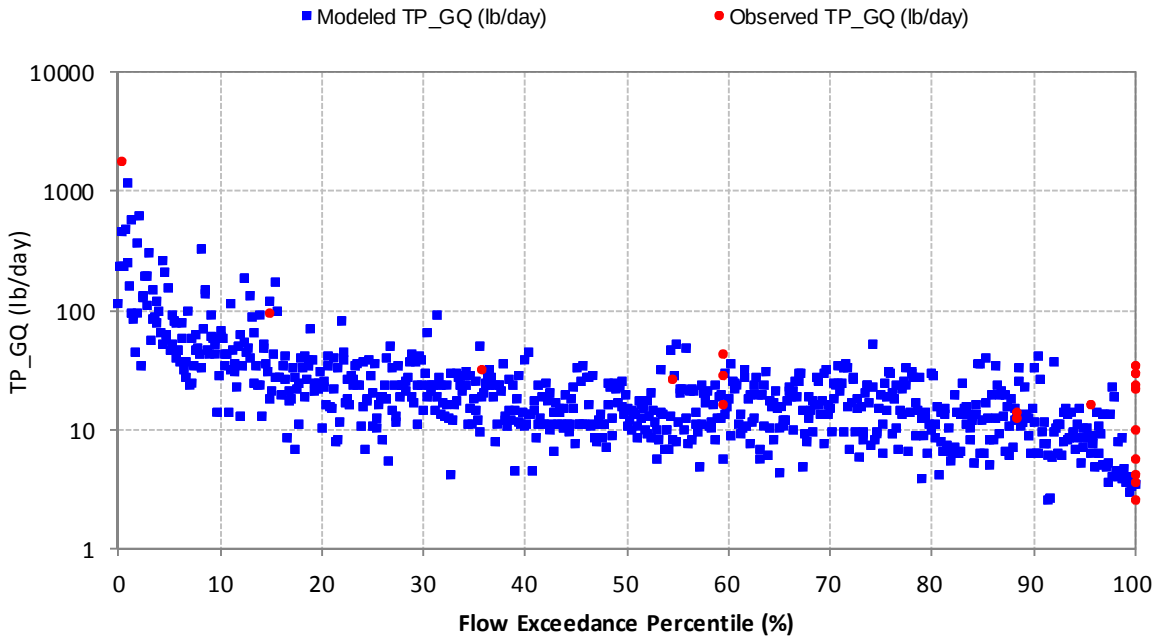

Figure B-201 Modeled vs. Observed Load TP_GQ at 03298138

Table B-41 Modeled vs. Observed Load TP_GQ at 03298138

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	9,175	25,637	-64.21	25,384	-63.86
2008	14,169	24,456	-42.06	23,304	-39.2

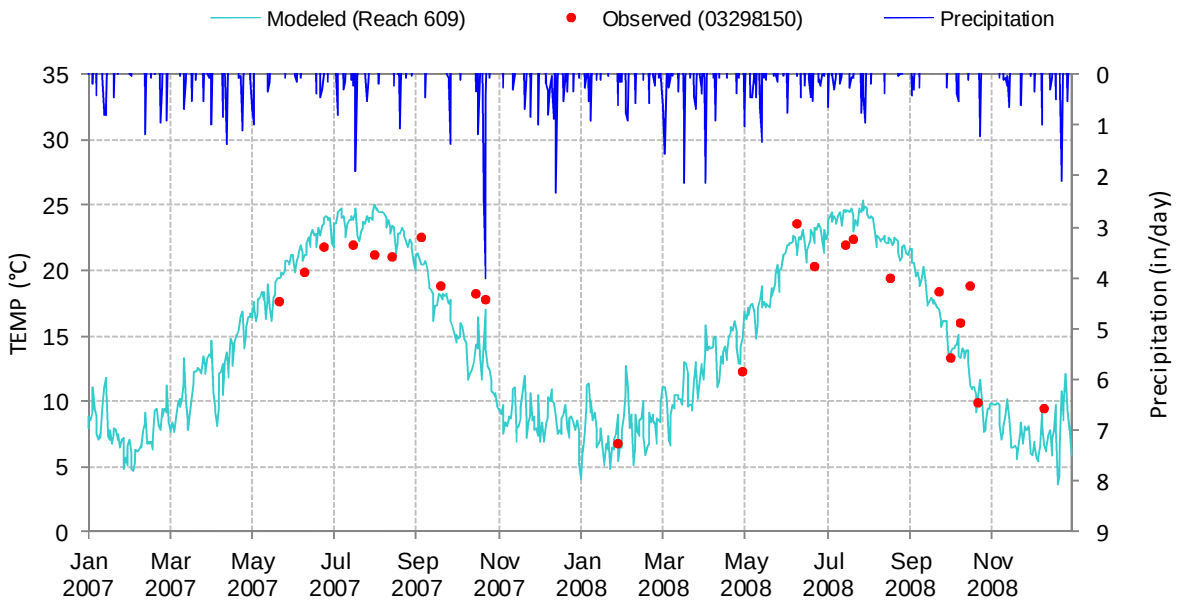

Figure B-202 Modeled vs. Observed TEMP (°C) at 03298150

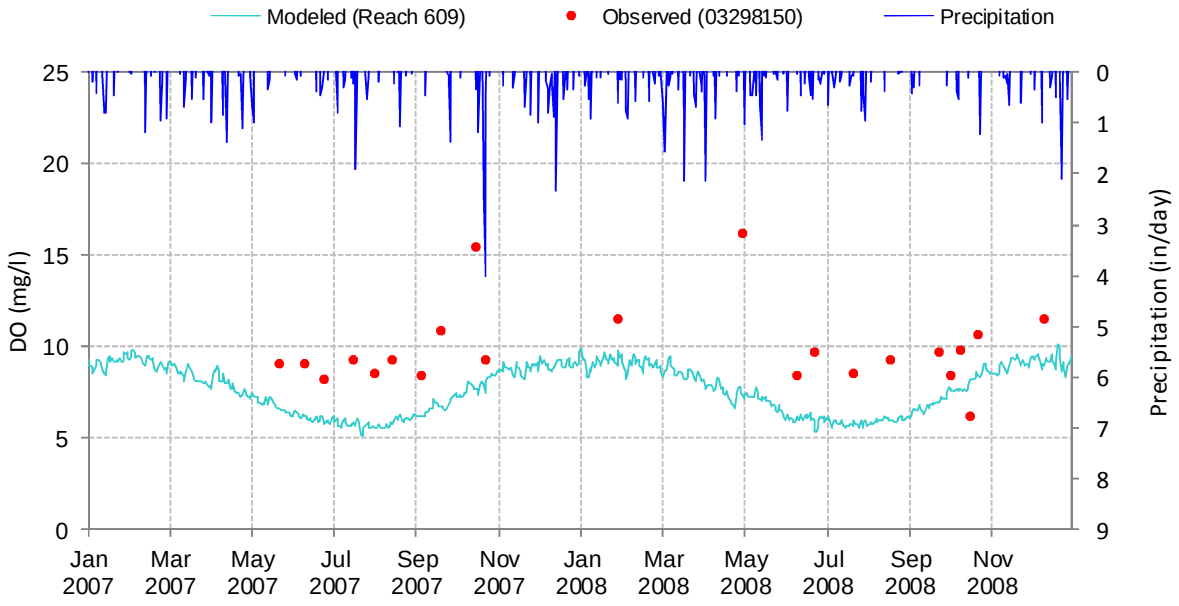

Figure B-203 Modeled vs. Observed DO (mg/l) at 03298150

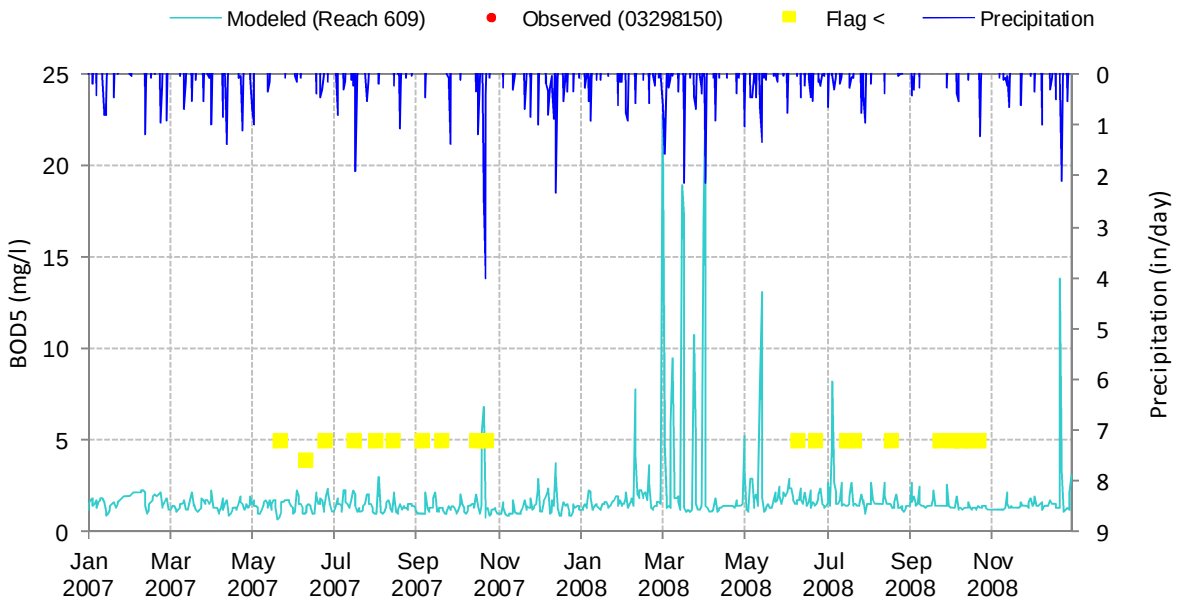

Figure B-204 Modeled vs. Observed BOD5 (mg/l) at 03298150

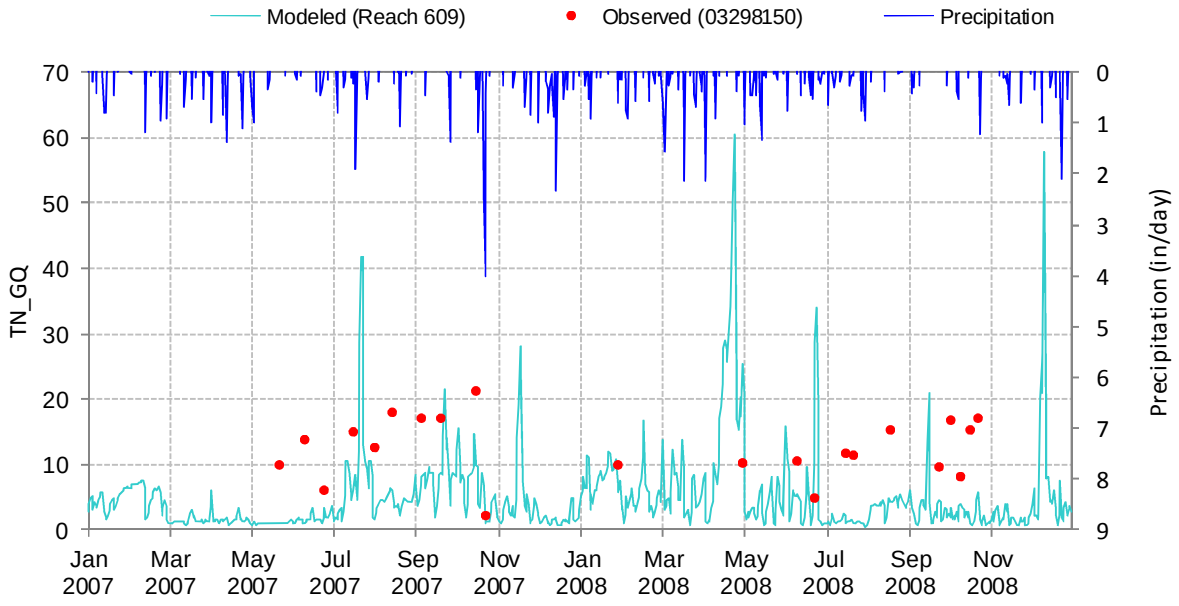

Figure B-205 Modeled vs. Observed TN_GQ at 03298150

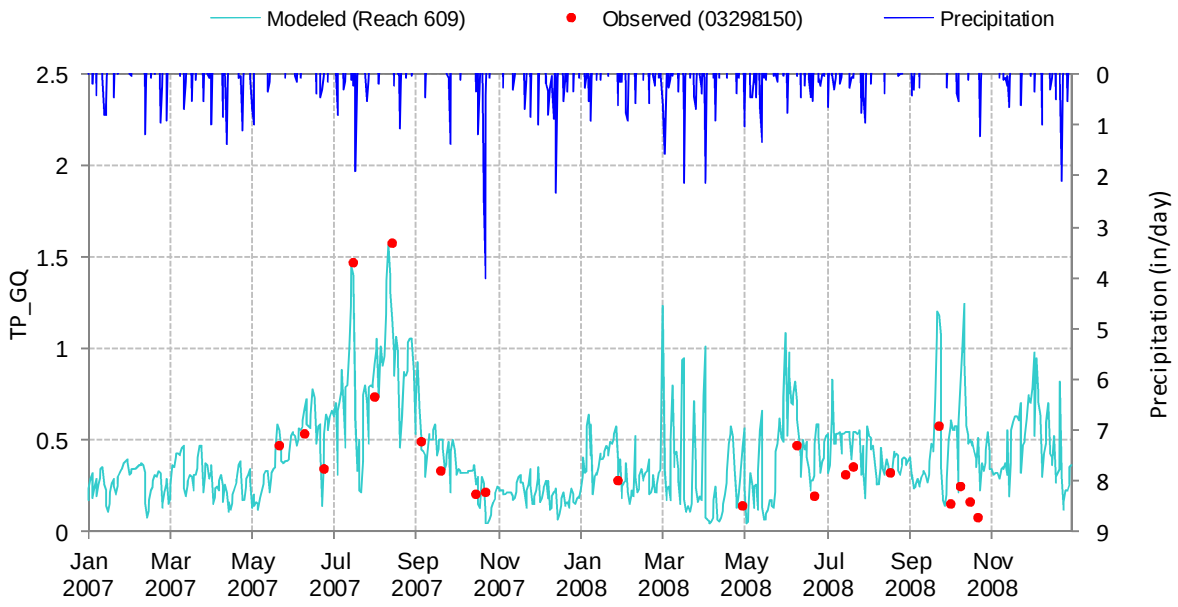

Figure B-206 Modeled vs. Observed TP_GQ at 03298150

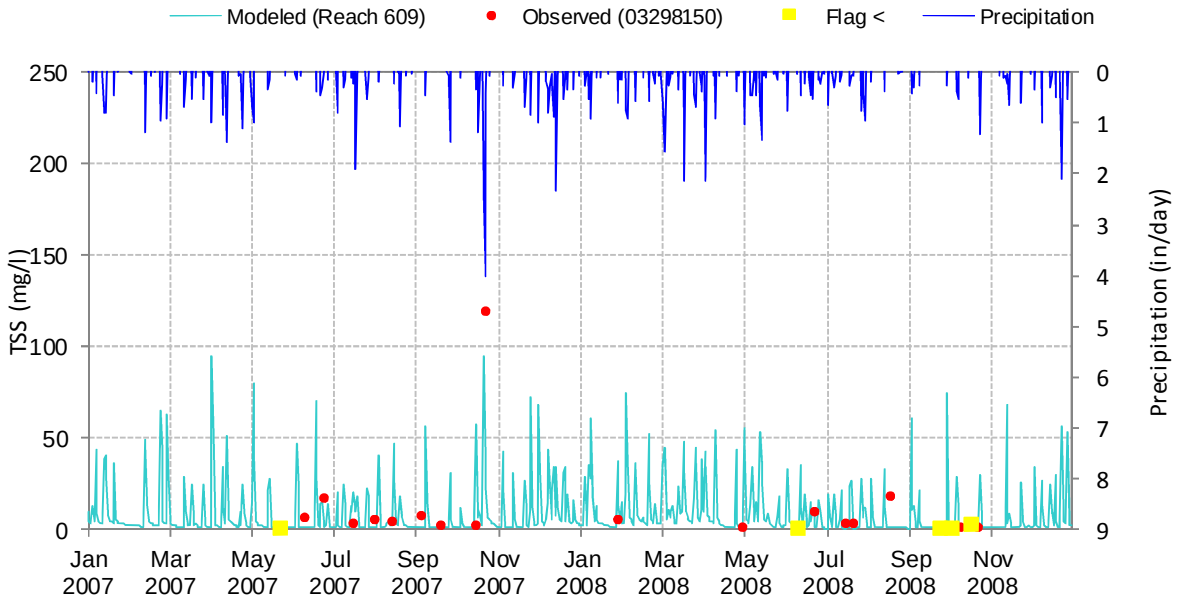

Figure B-207 Modeled vs. Observed TSS (mg/l) at 03298150

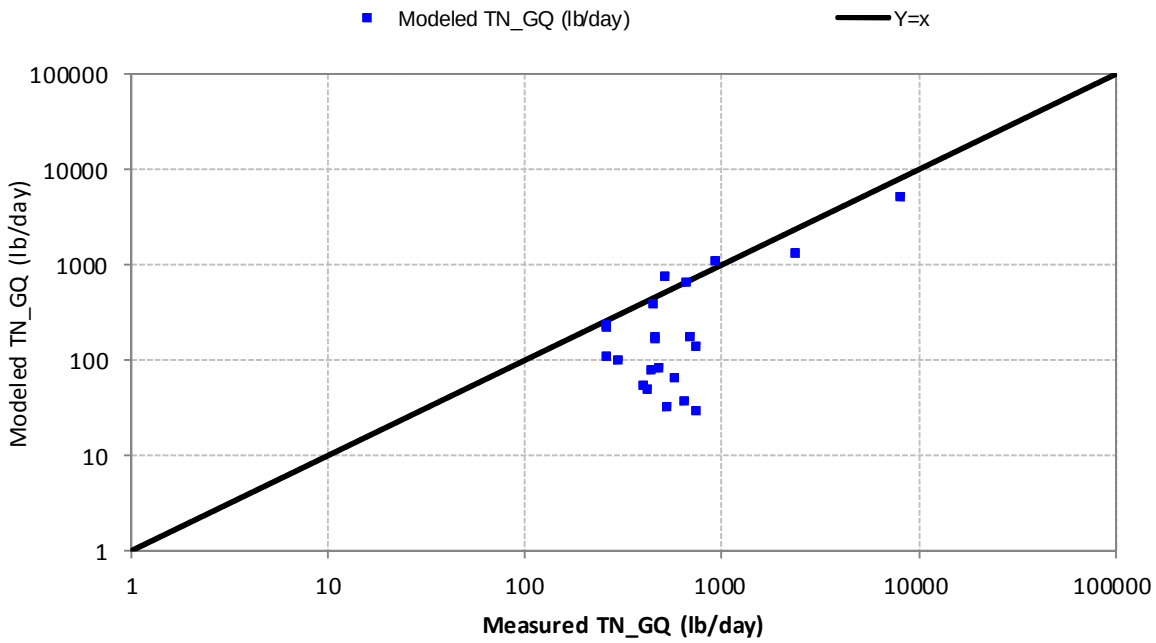

Figure B-208 Modeled vs. Observed Load TN_GQ at 03298150

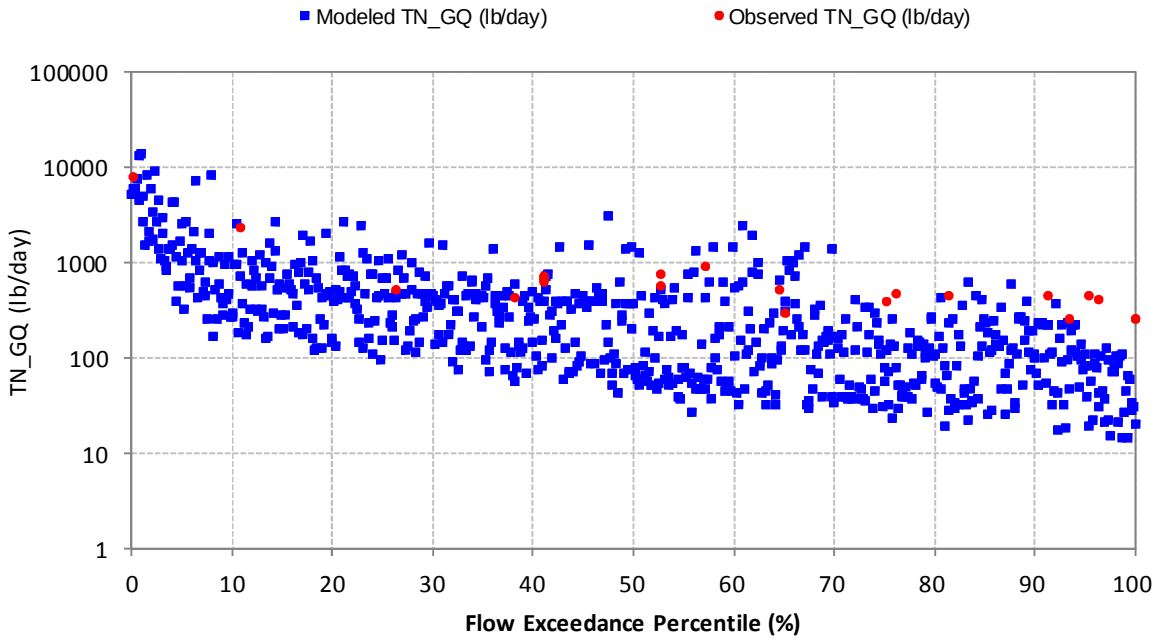

Figure B-209 Modeled vs. Observed Load TN_GQ at 03298150

Table B-42 Modeled vs. Observed Load TN_GQ at 03298150

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	141,307	454,824	-68.93	495,609	-71.49
2008	252,336	695,282	-63.71	734,674	-65.65

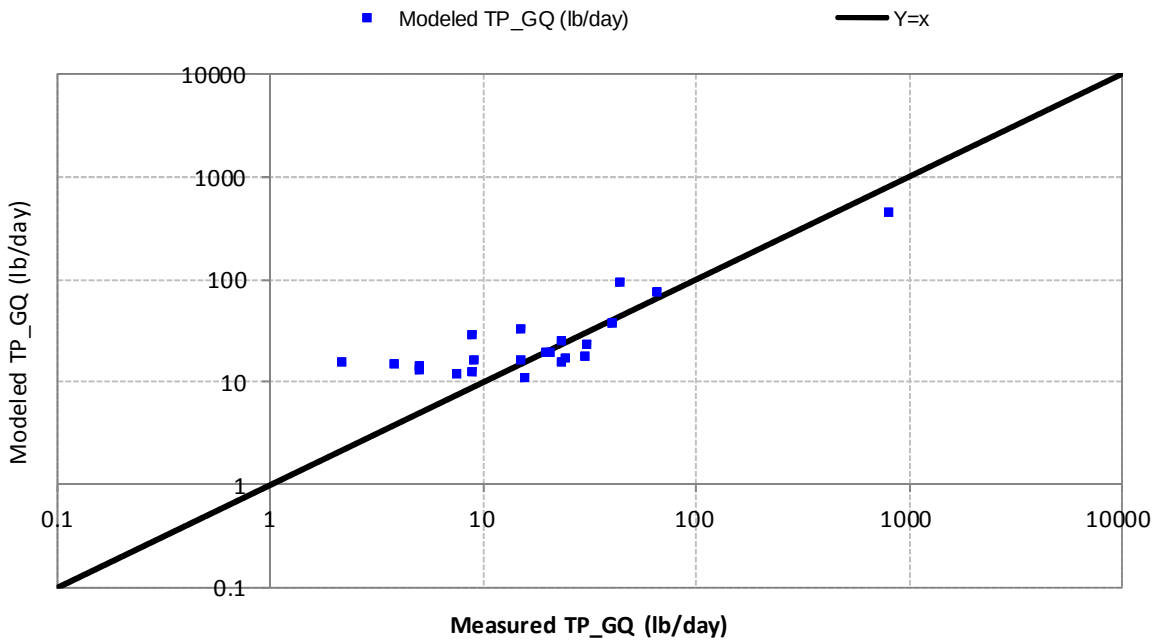

Figure B-210 Modeled vs. Observed Load TP_GQ at 03298150

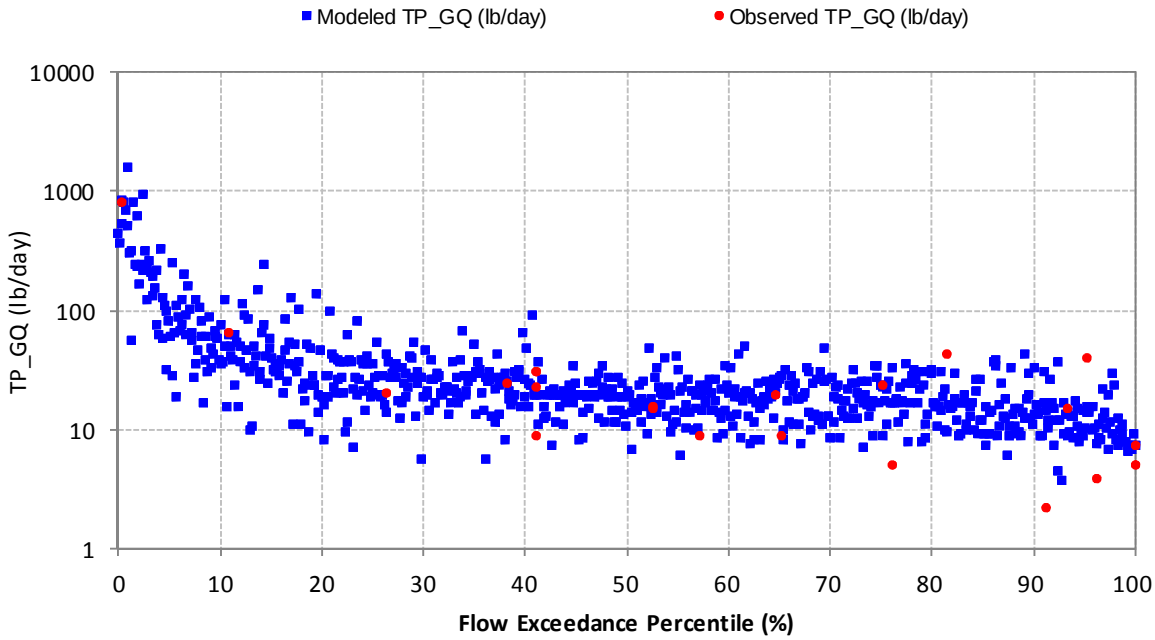

Figure B-211 Modeled vs. Observed Load TP_GQ at 03298150

Table B-43 Modeled vs. Observed Load TP_GQ at 03298150

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	12,918	24,041	-46.27	24,514	-47.3
2008	17,947	16,285	10.21	16,079	11.62

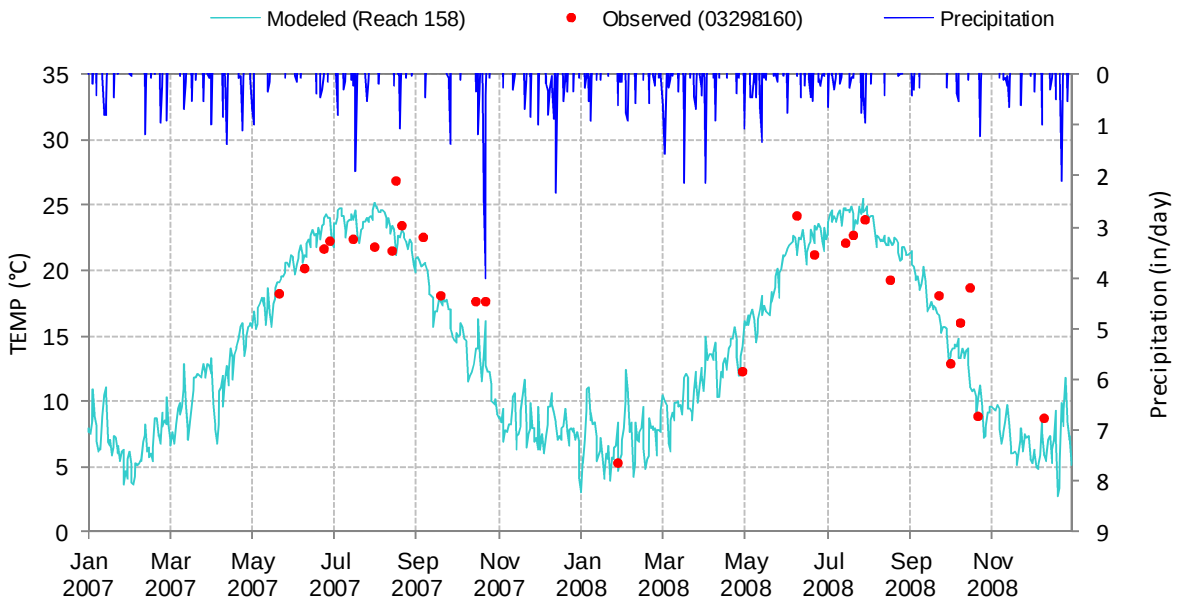

Figure B-212 Modeled vs. Observed TEMP (°C) at 03298160

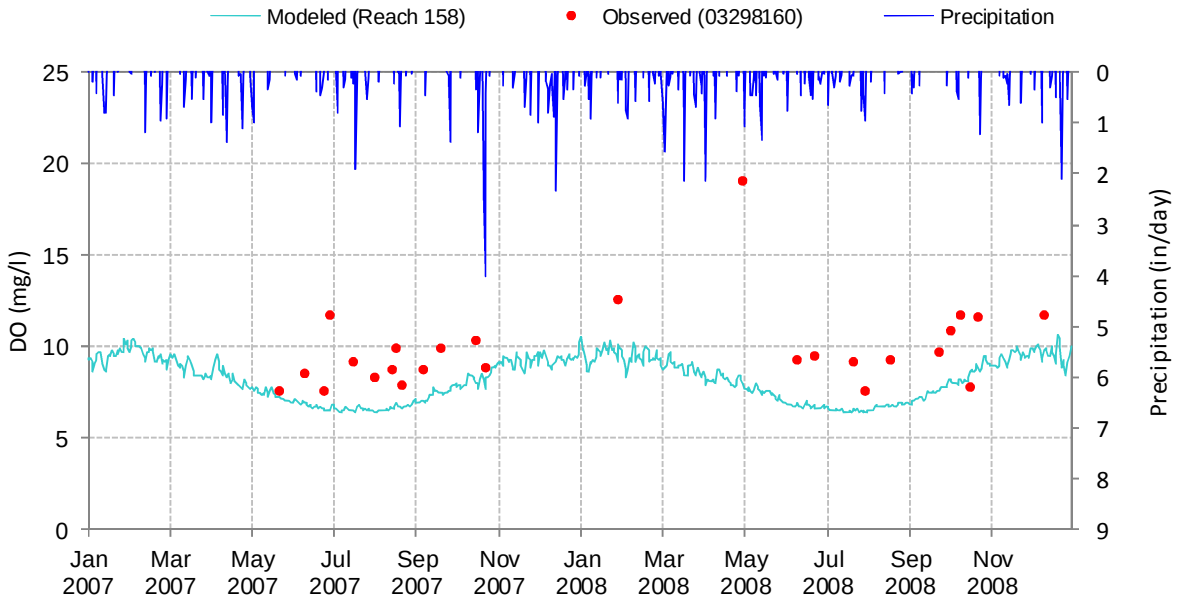

Figure B-213 Modeled vs. Observed DO (mg/l) at 03298160

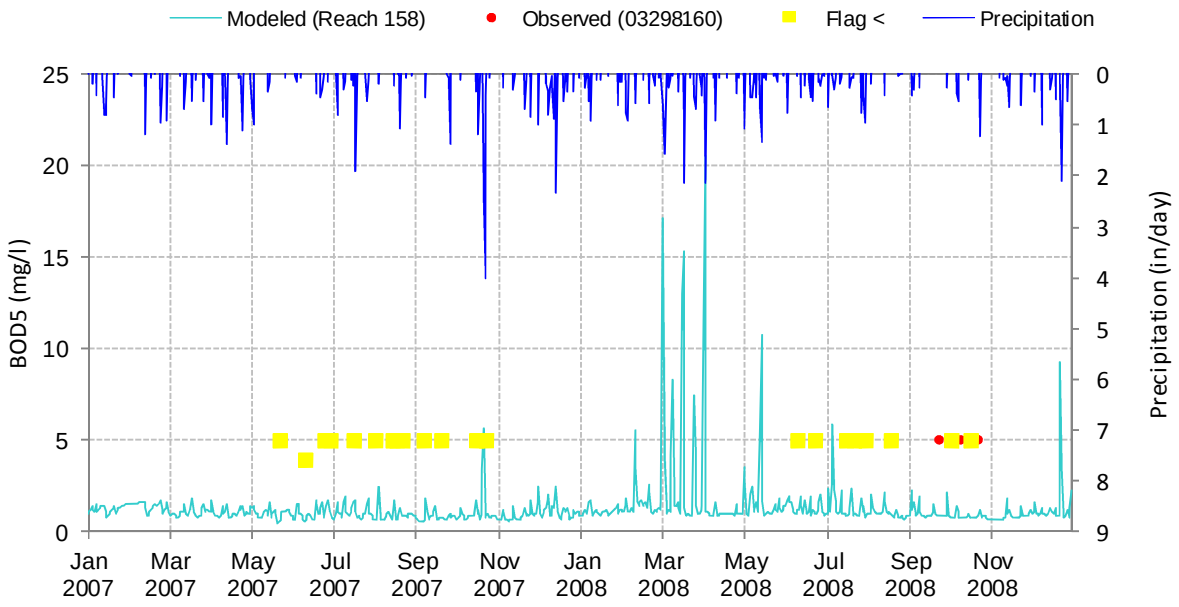

Figure B-214 Modeled vs. Observed BOD5 (mg/l) at 03298160

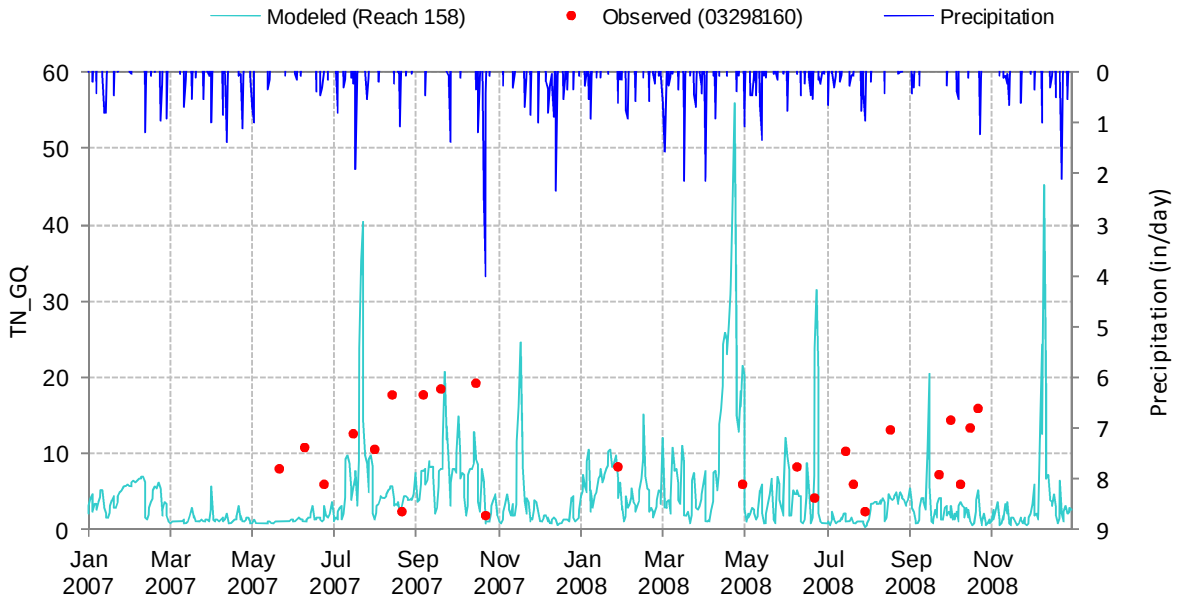

Figure B-215 Modeled vs. Observed TN_GQ at 03298160

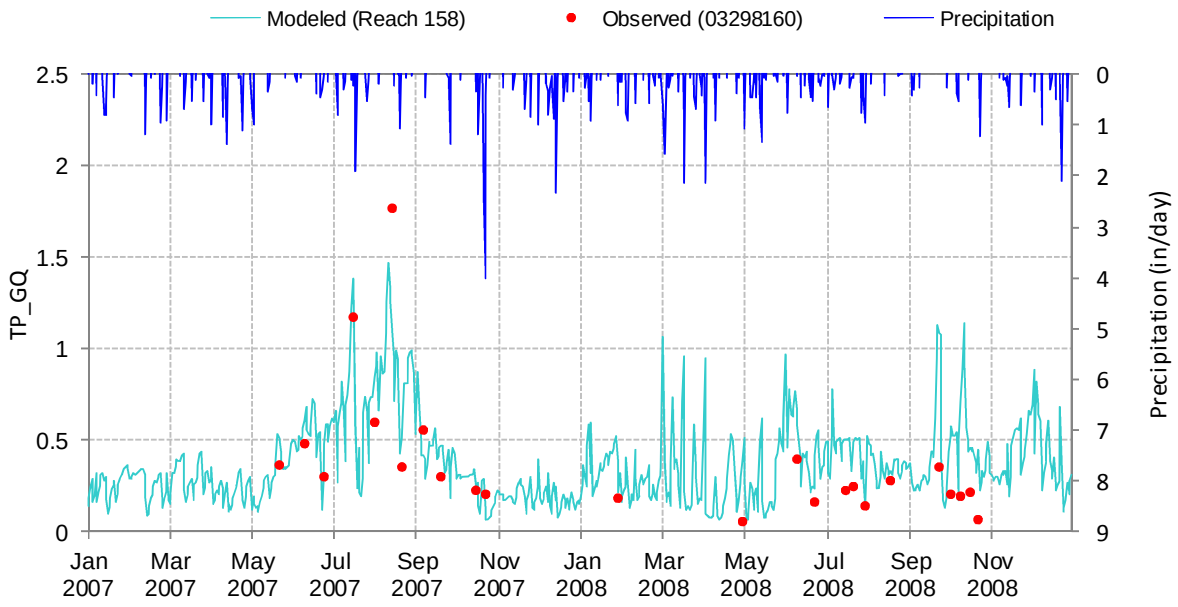

Figure B-216 Modeled vs. Observed TP_GQ at 03298160

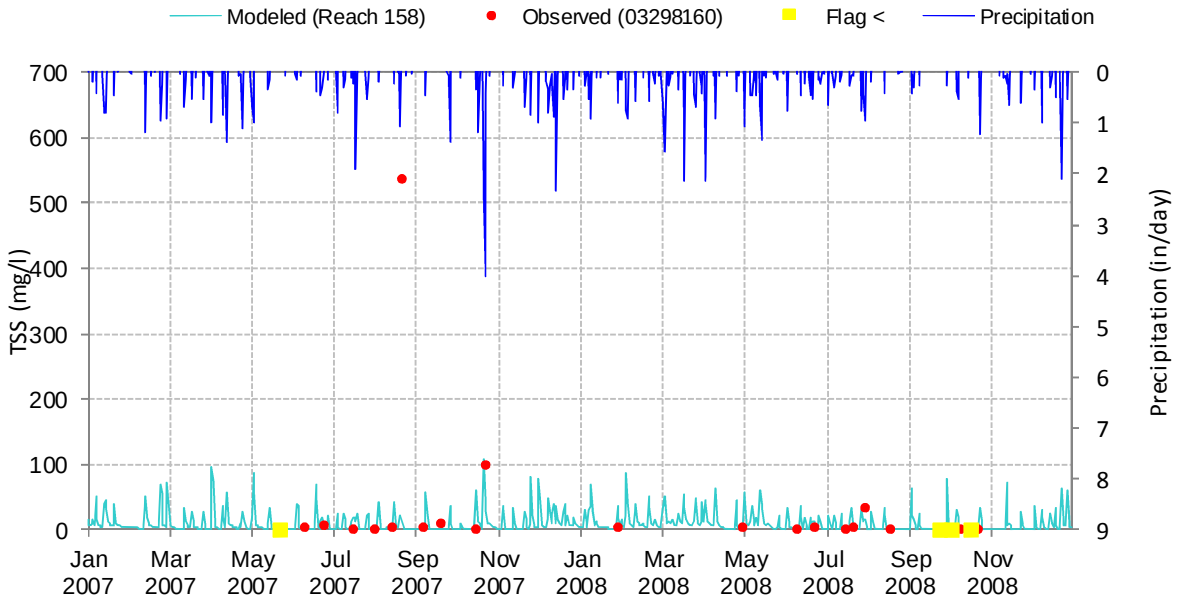

Figure B-217 Modeled vs. Observed TSS (mg/l) at 03298160

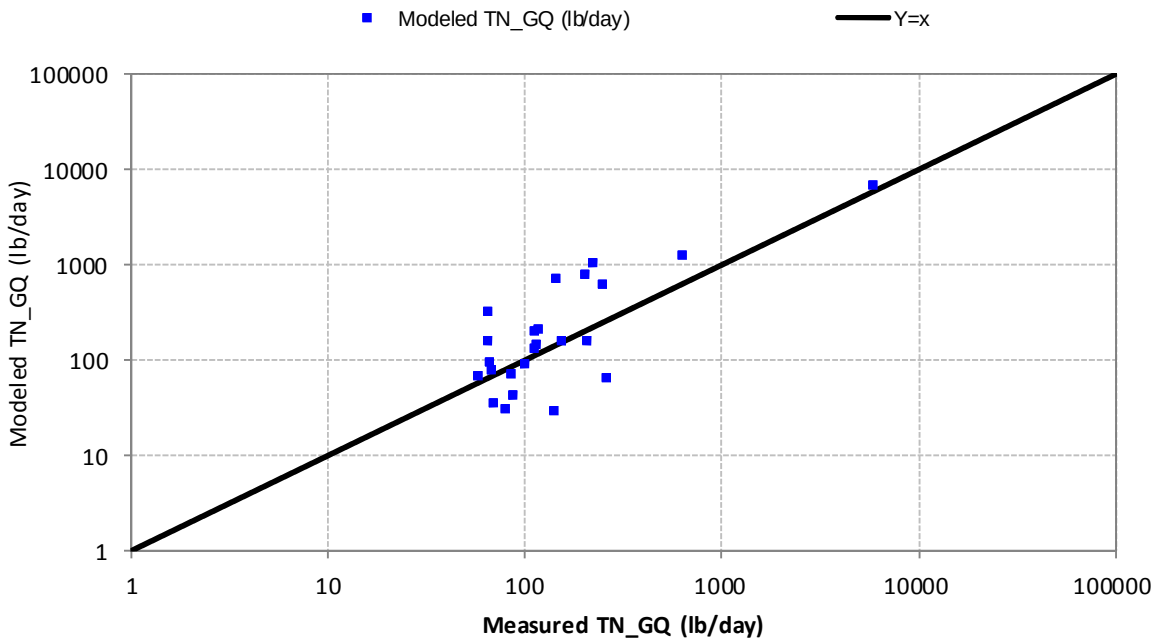

Figure B-218 Modeled vs. Observed Load TN_GQ at 03298160

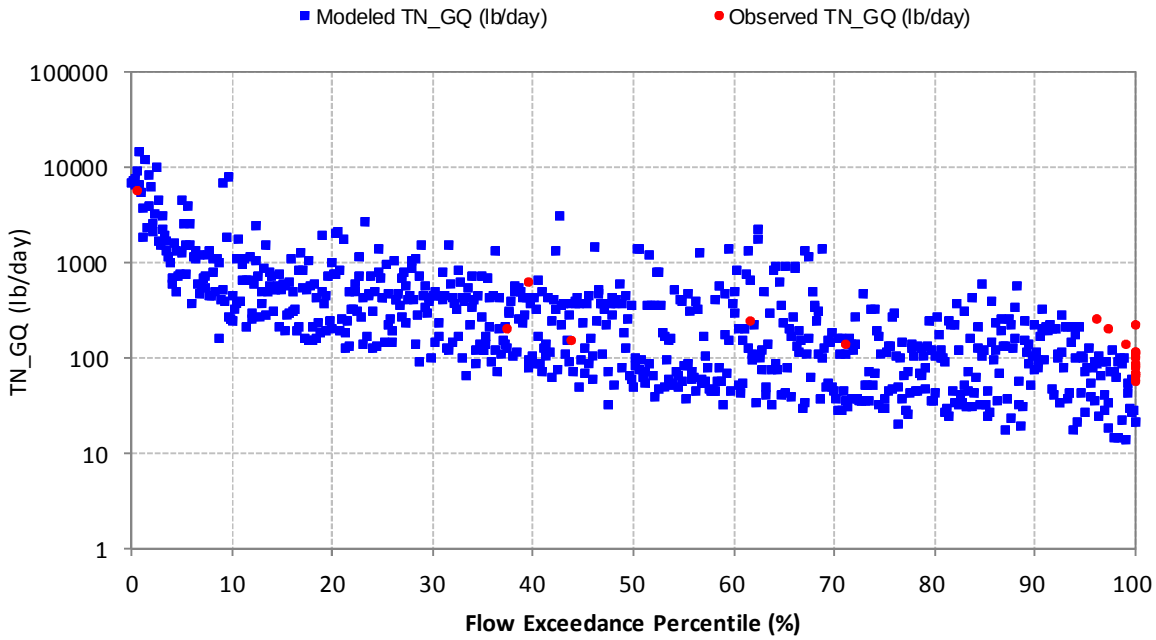

Figure B-219 Modeled vs. Observed Load TN_GQ at 03298160

Table B-44 Modeled vs. Observed Load TN_GQ at 03298160

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	148,371	269,829	-45.01	311,857	-52.42
2008	255,057	471,588	-45.92	462,274	-44.83

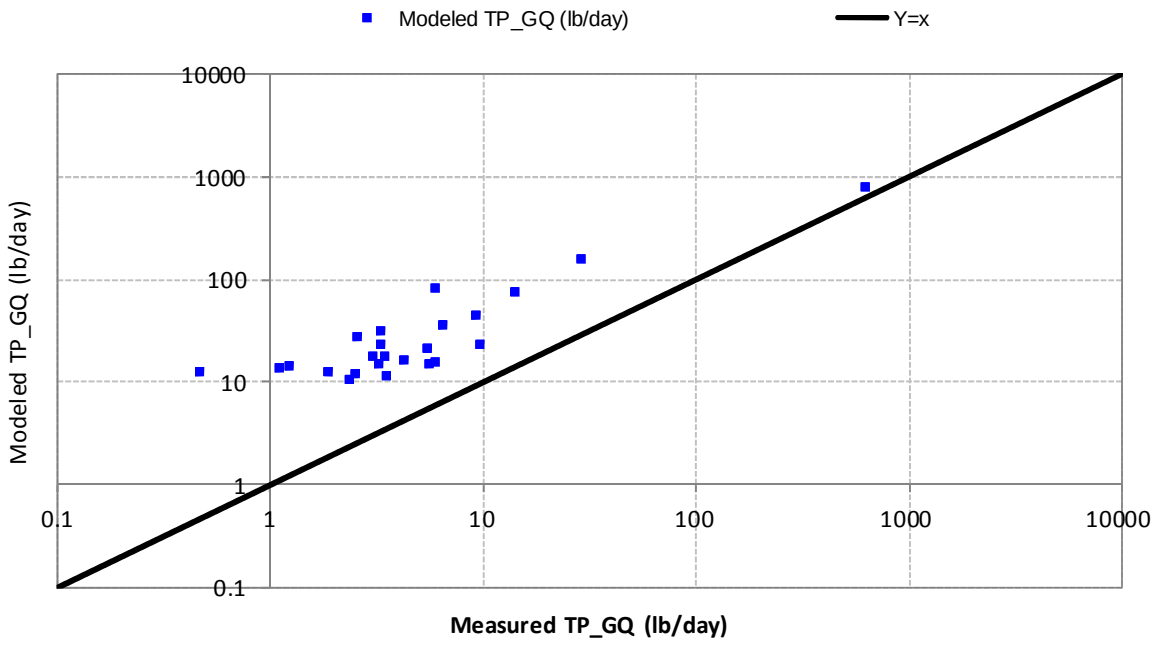

Figure B-220 Modeled vs. Observed Load TP_GQ at 03298160

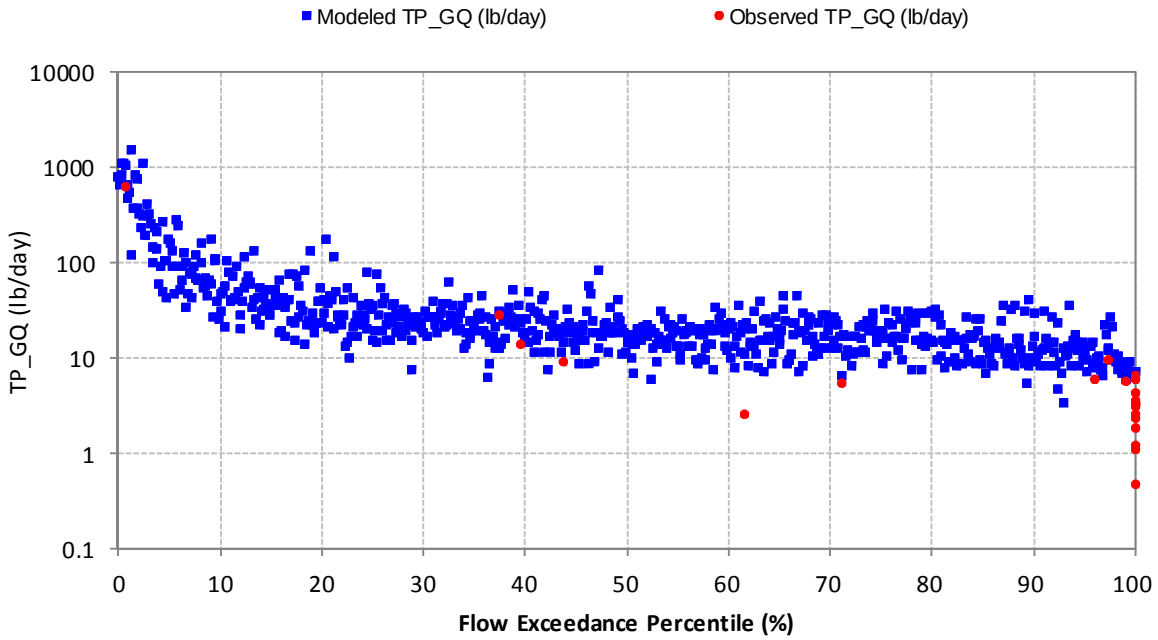

Figure B-221 Modeled vs. Observed Load TP_GQ at 03298160

Table B-45 Modeled vs. Observed Load TP_GQ at 03298160

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	14,662	14,298	2.54	14,374	2
2008	20,075	10,061	99.53	8,938	124.6

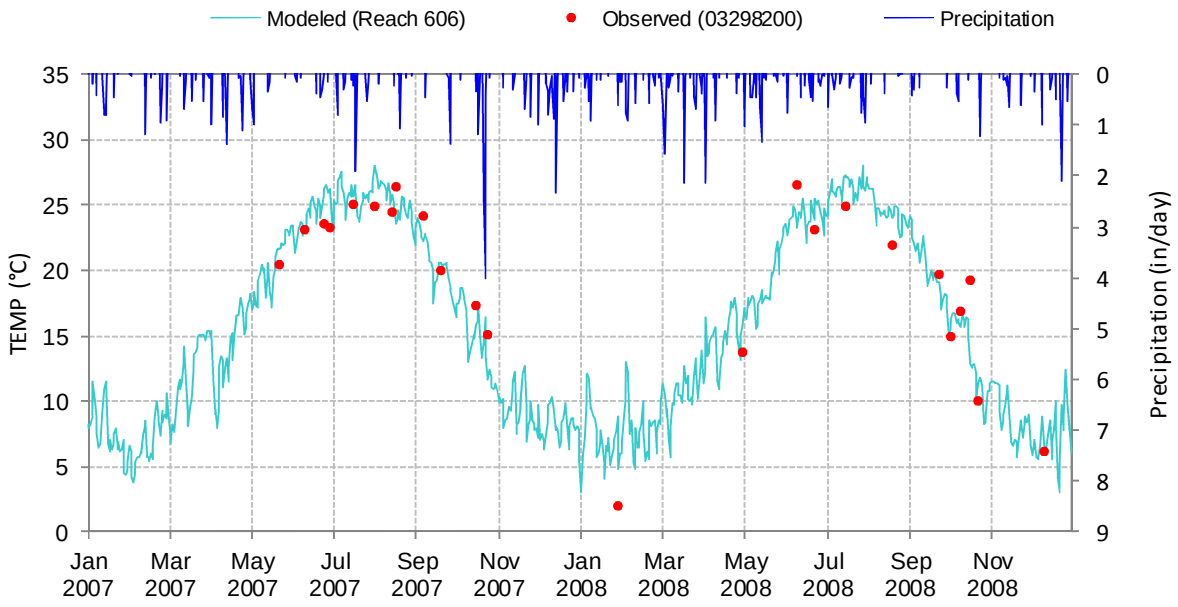

Figure B-222 Modeled vs. Observed TEMP (°C) at 03298200

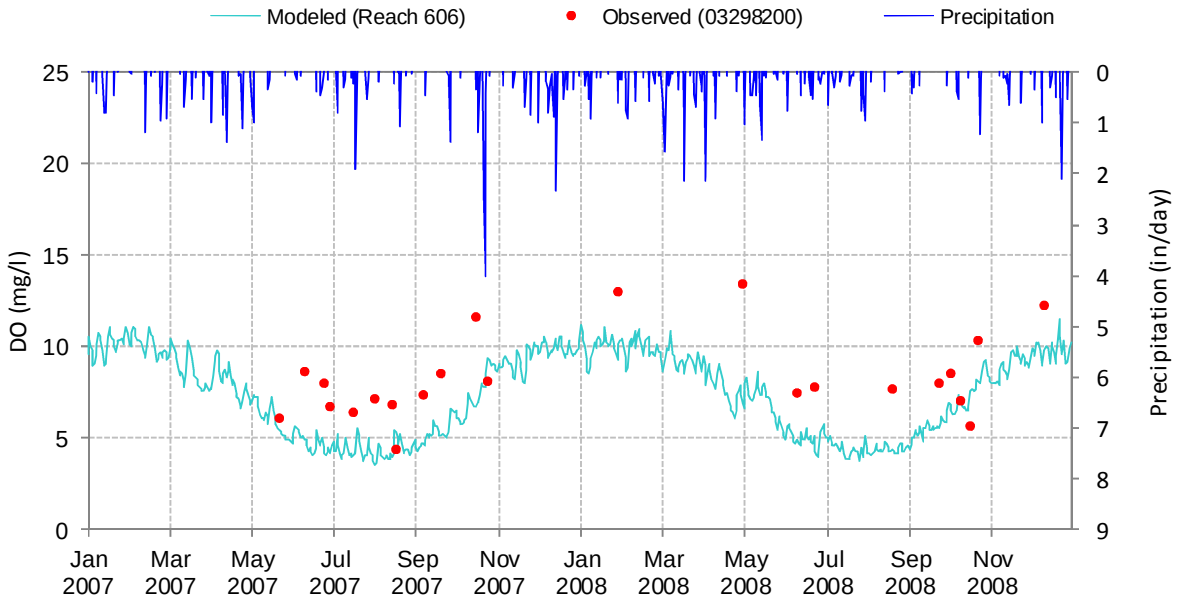

Figure B-223 Modeled vs. Observed DO (mg/l) at 03298200

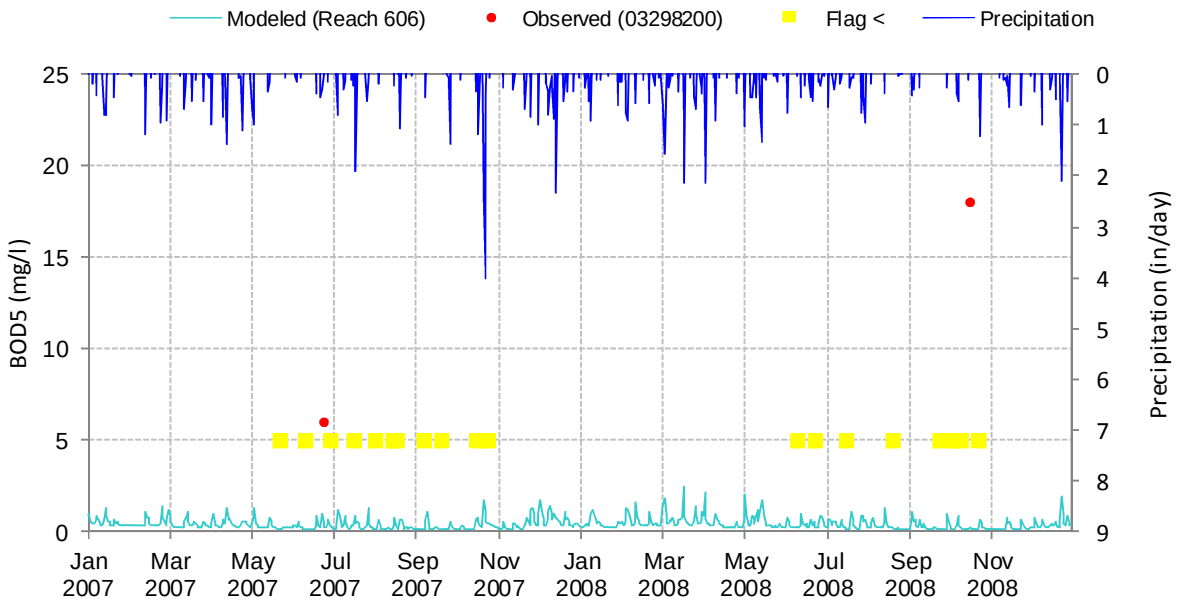

Figure B-224 Modeled vs. Observed BOD5 (mg/l) at 03298200

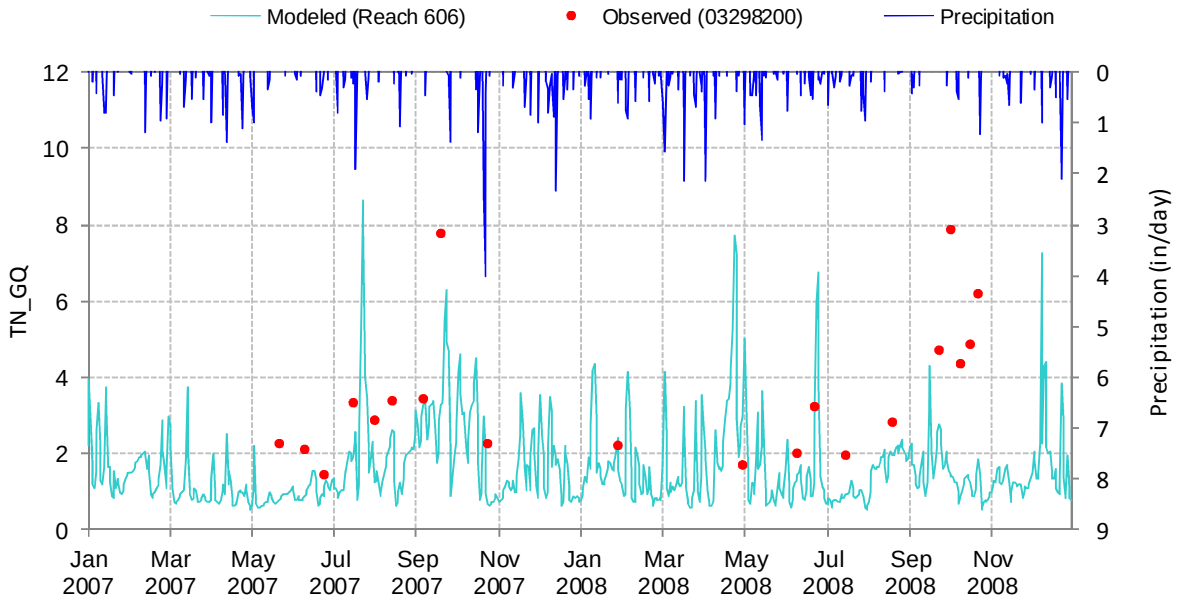

Figure B-225 Modeled vs. Observed TN_GQ at 03298200

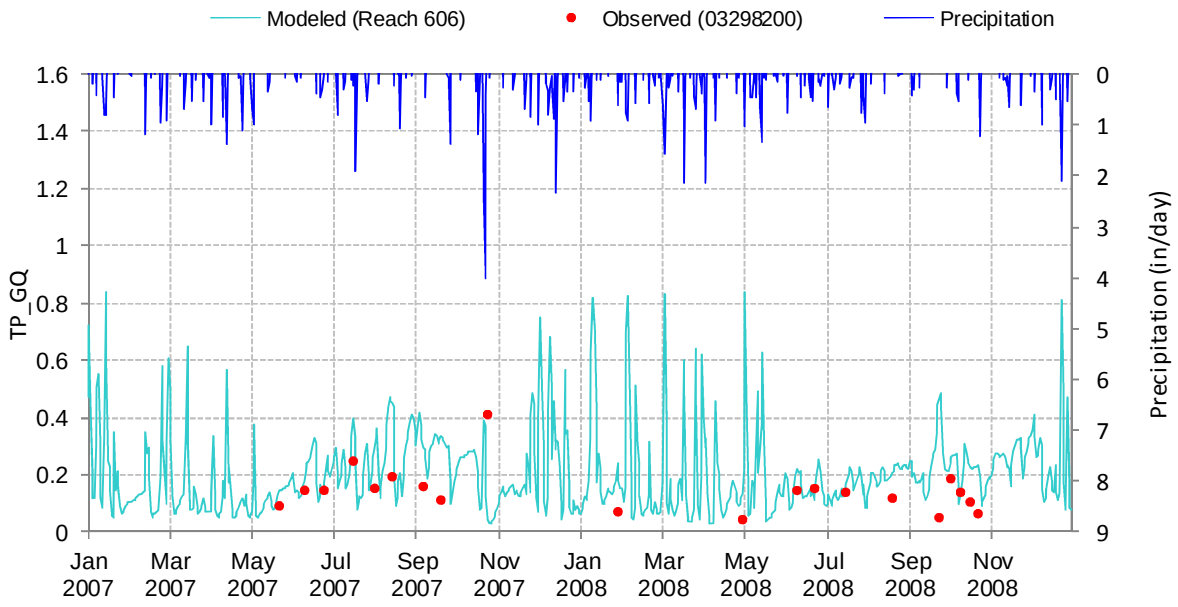

Figure B-226 Modeled vs. Observed TP_GQ at 03298200

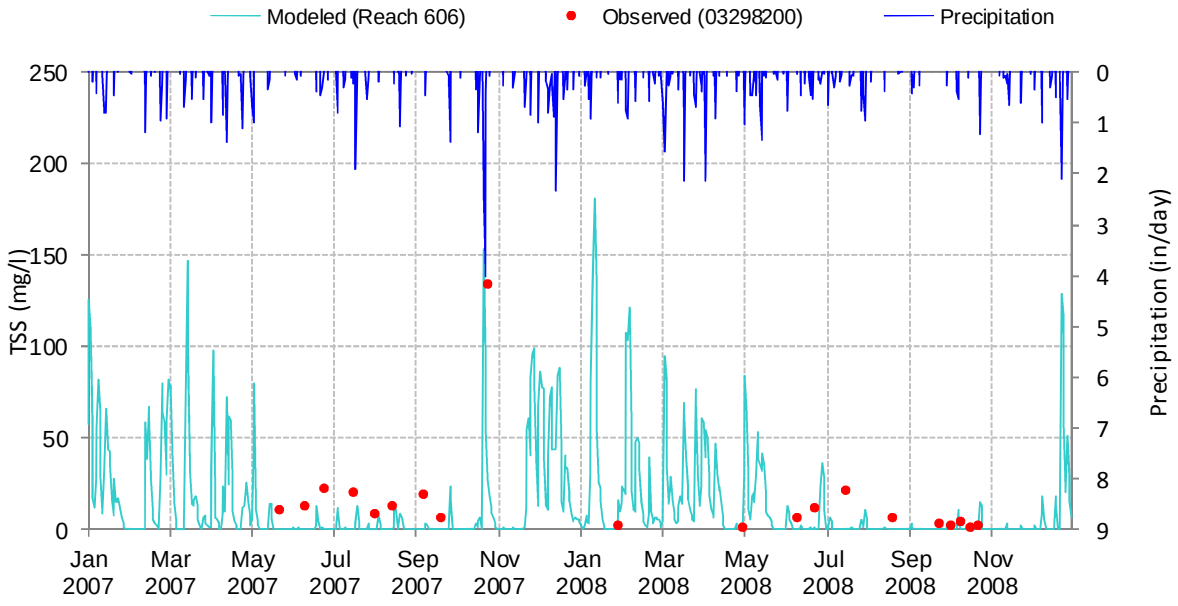

Figure B-227 Modeled vs. Observed TSS (mg/l) at 03298200

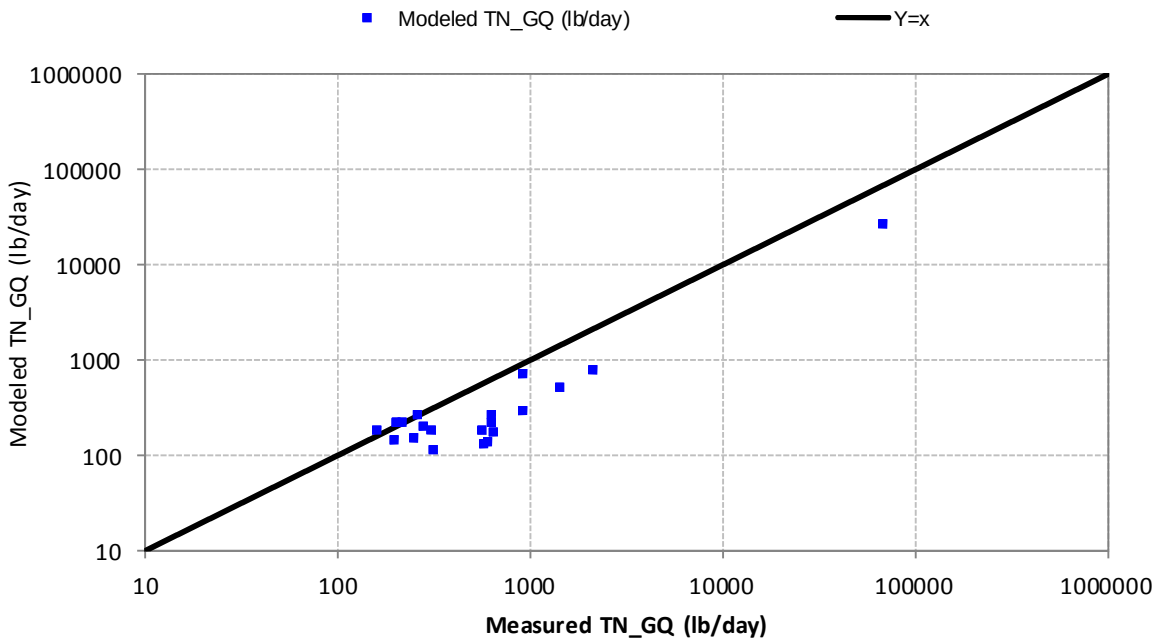

Figure B-228 Modeled vs. Observed Load TN_GQ at 03298200

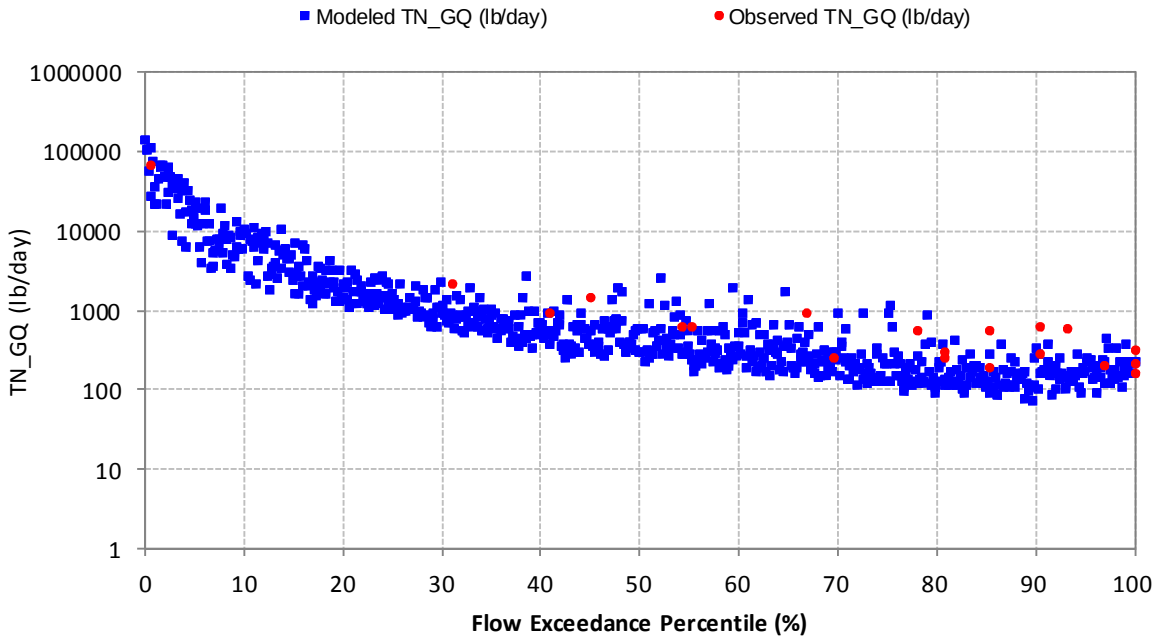

Figure B-229 Modeled vs. Observed Load TN_GQ at 03298200

Table B-46 Modeled vs. Observed Load TN_GQ at 03298200

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	1,055,318	1,610,815	-34.49	1,396,224	-24.42
2008	1,512,796	1,846,219	-18.06	1,746,585	-13.39

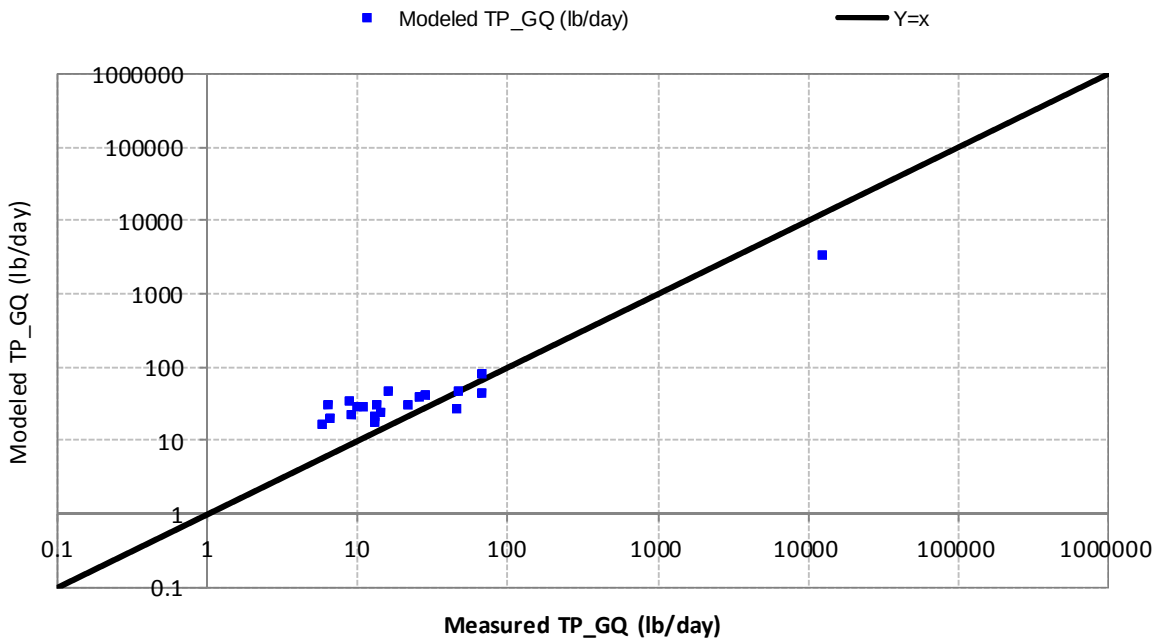

Figure B-230 Modeled vs. Observed Load TP_GQ at 03298200

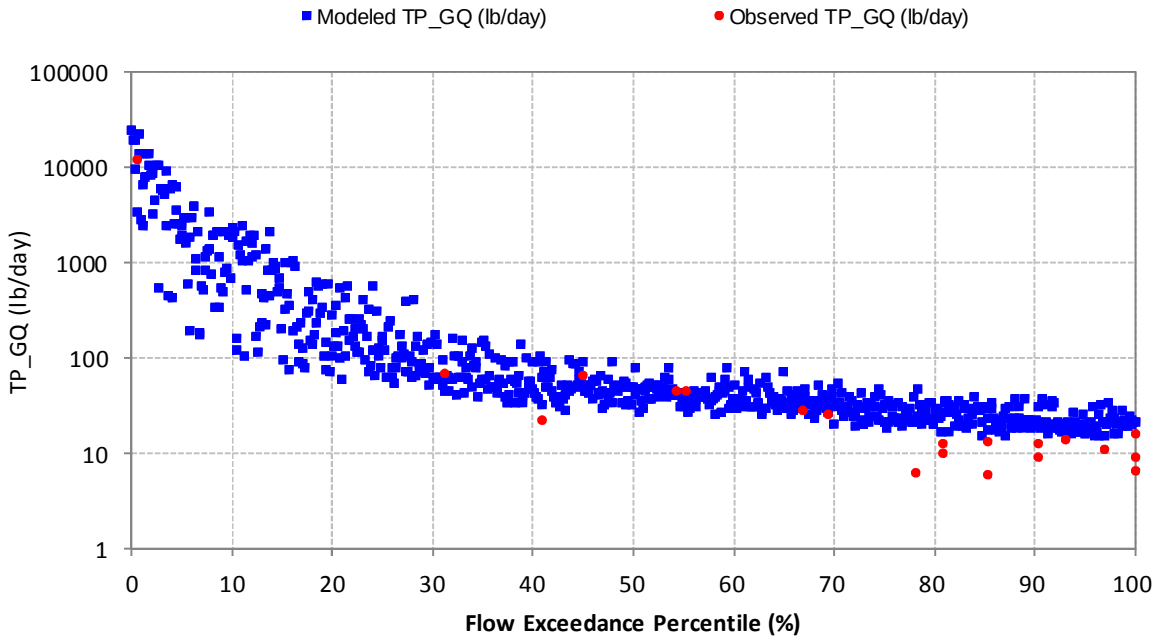

Figure B-231 Modeled vs. Observed Load TP_GQ at 03298200

Table B-47 Modeled vs. Observed Load TP_GQ at 03298200

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	170,519	125,796	35.55	109,496	55.73
2008	245,353	72,462	238.6	57,689	325.3

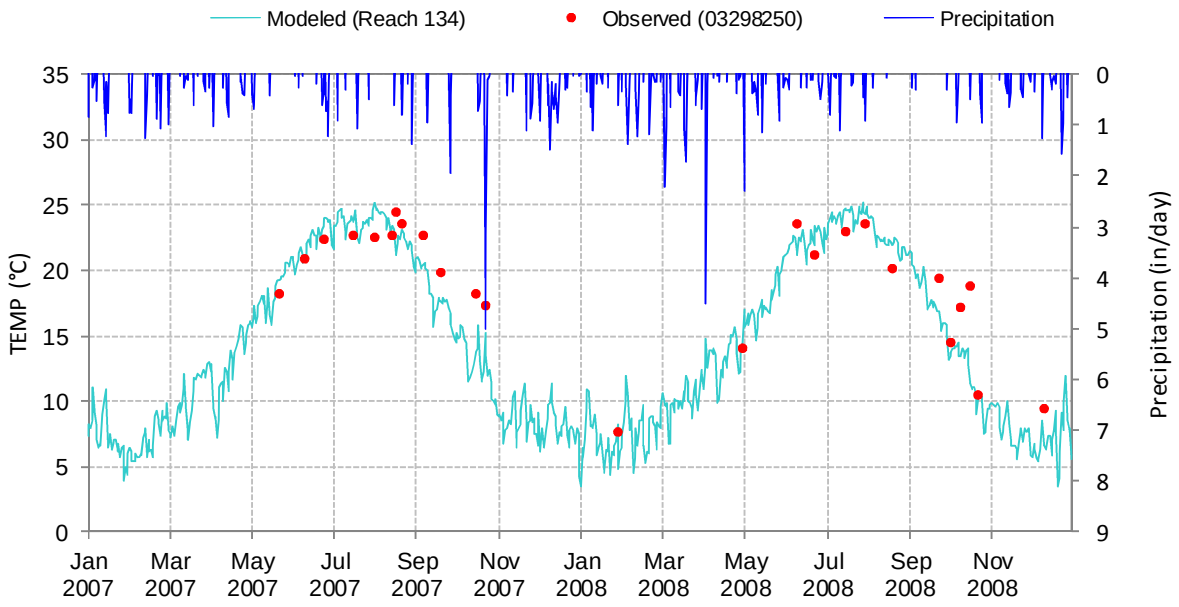

Figure B-232 Modeled vs. Observed TEMP (°C) at 03298250

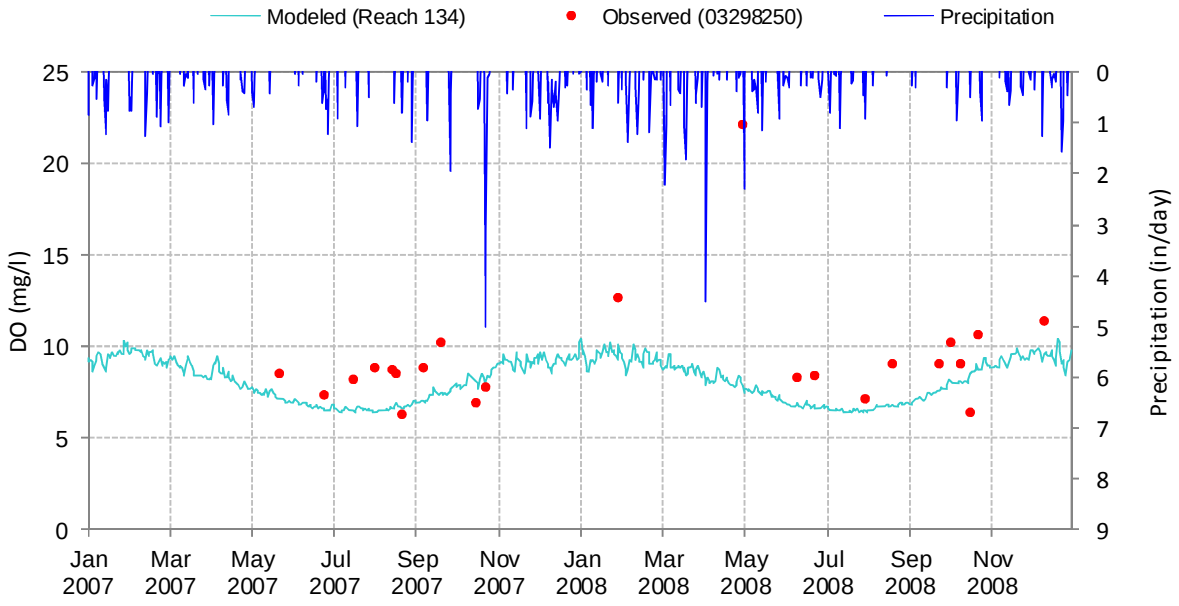

Figure B-233 Modeled vs. Observed DO (mg/l) at 03298250

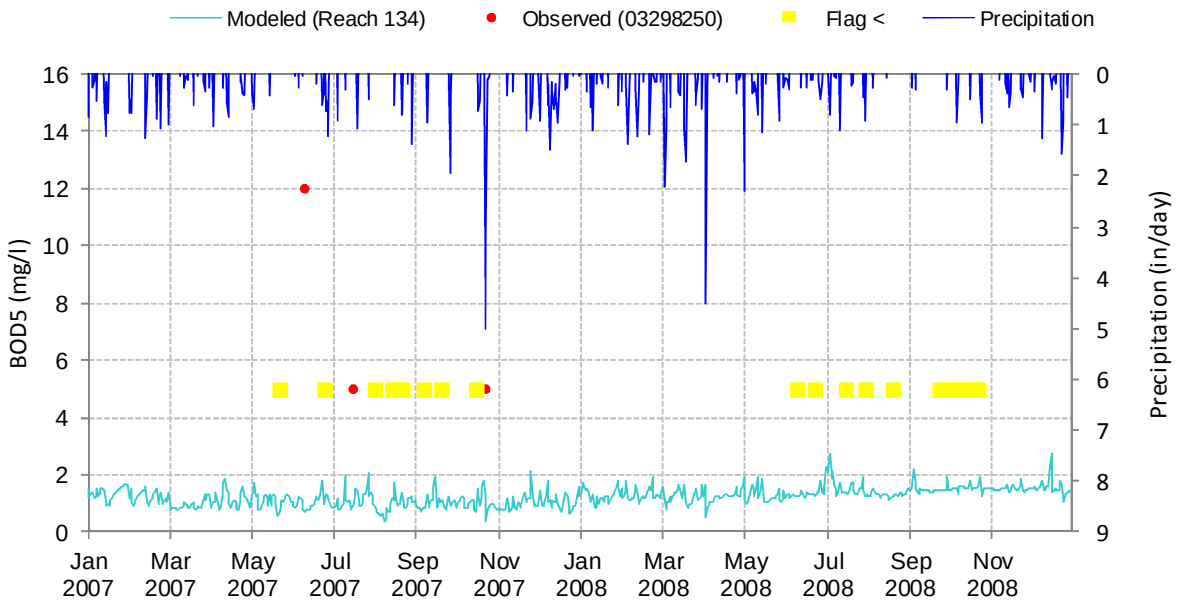

Figure B-234 Modeled vs. Observed BOD5 (mg/l) at 03298250

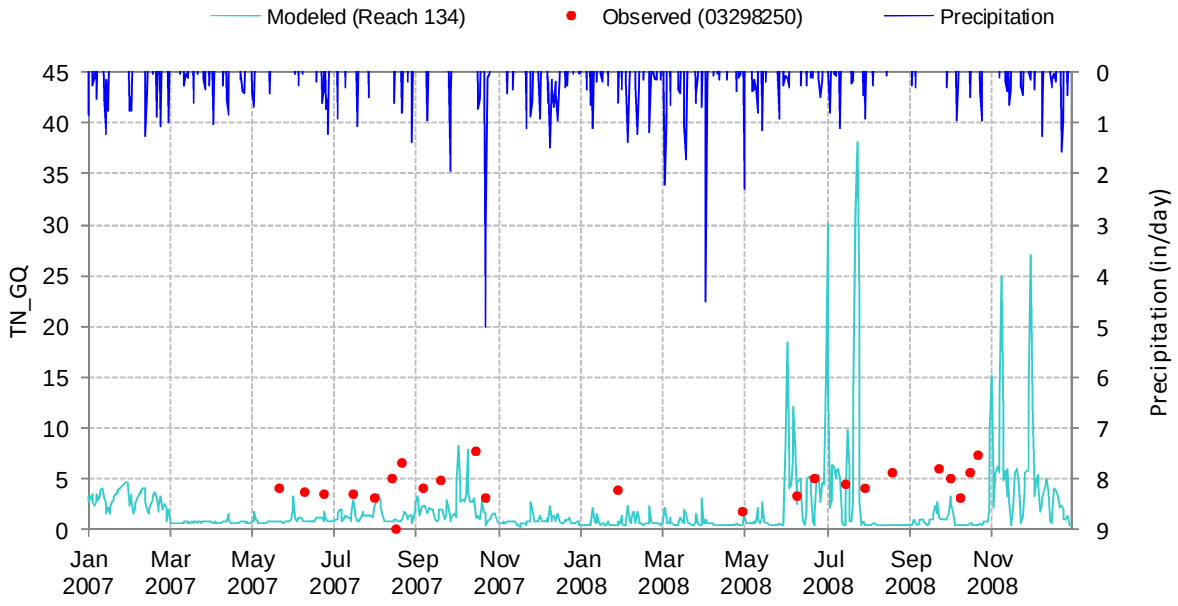

Figure B-235 Modeled vs. Observed TN_GQ at 03298250

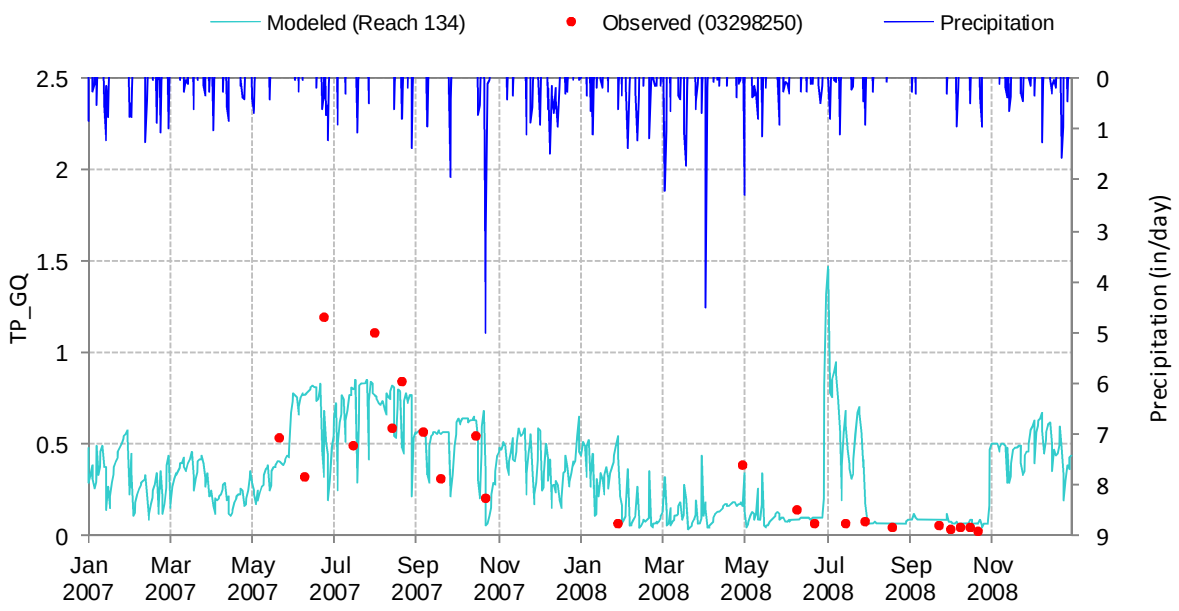

Figure B-236 Modeled vs. Observed TP_GQ at 03298250

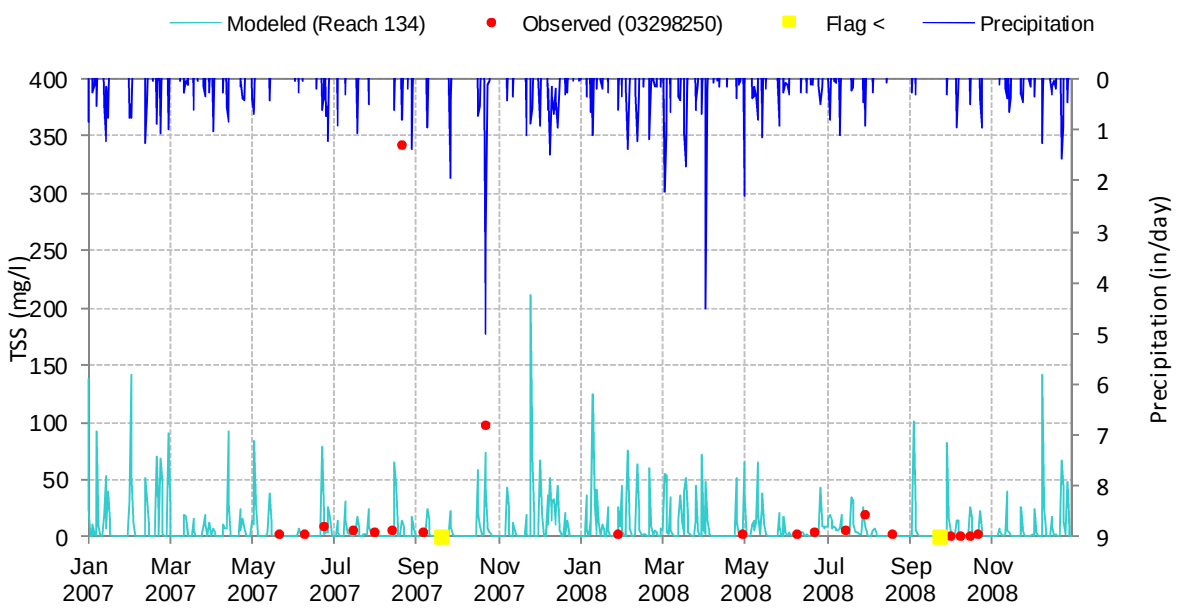

Figure B-237 Modeled vs. Observed TSS (mg/l) at 03298250

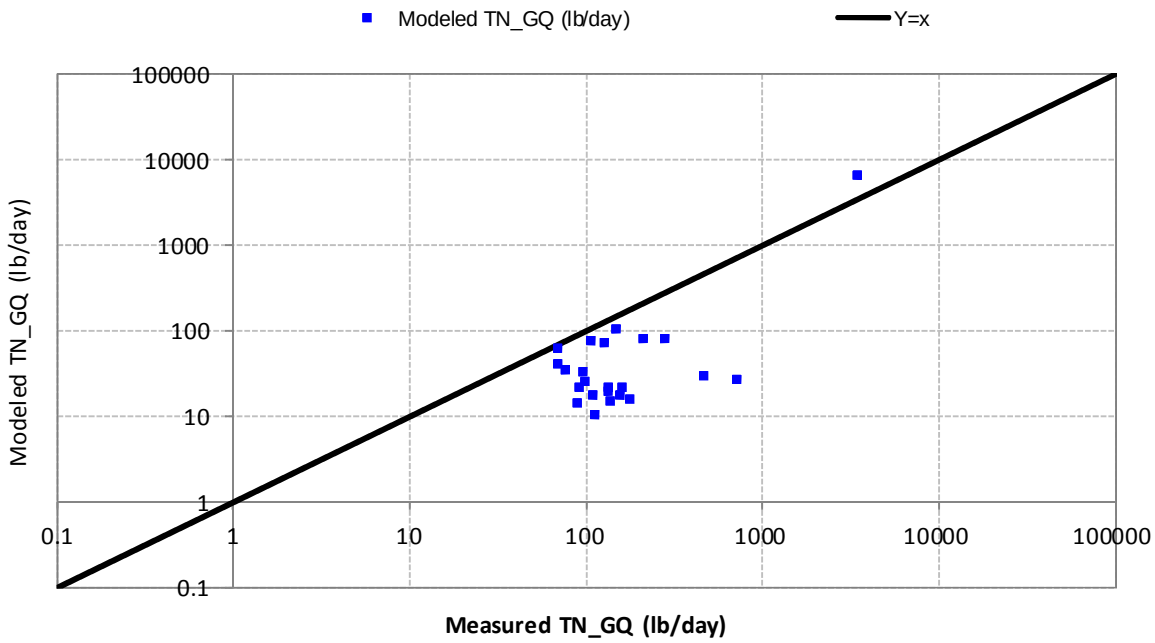

Figure B-238 Modeled vs. Observed Load TN_GQ at 03298250

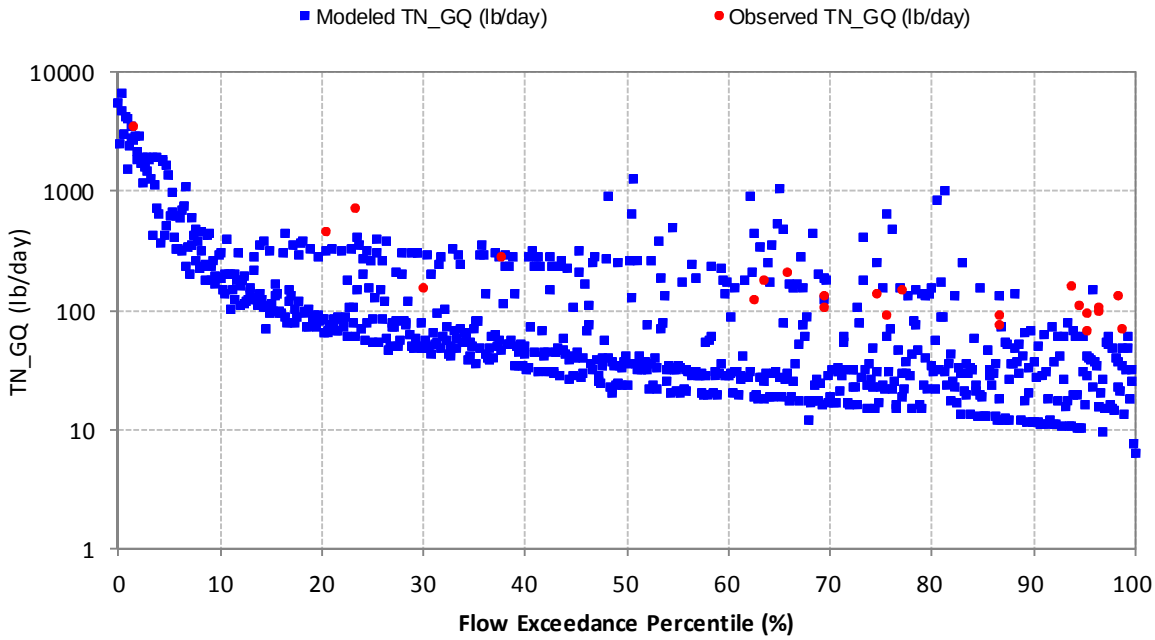

Figure B-239 Modeled vs. Observed Load TN_GQ at 03298250

Table B-48 Modeled vs. Observed Load TN_GQ at 03298250

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	75,568	133,412	-43.36	135,242	-44.12
2008	86,456	198,861	-56.52	173,340	-50.12

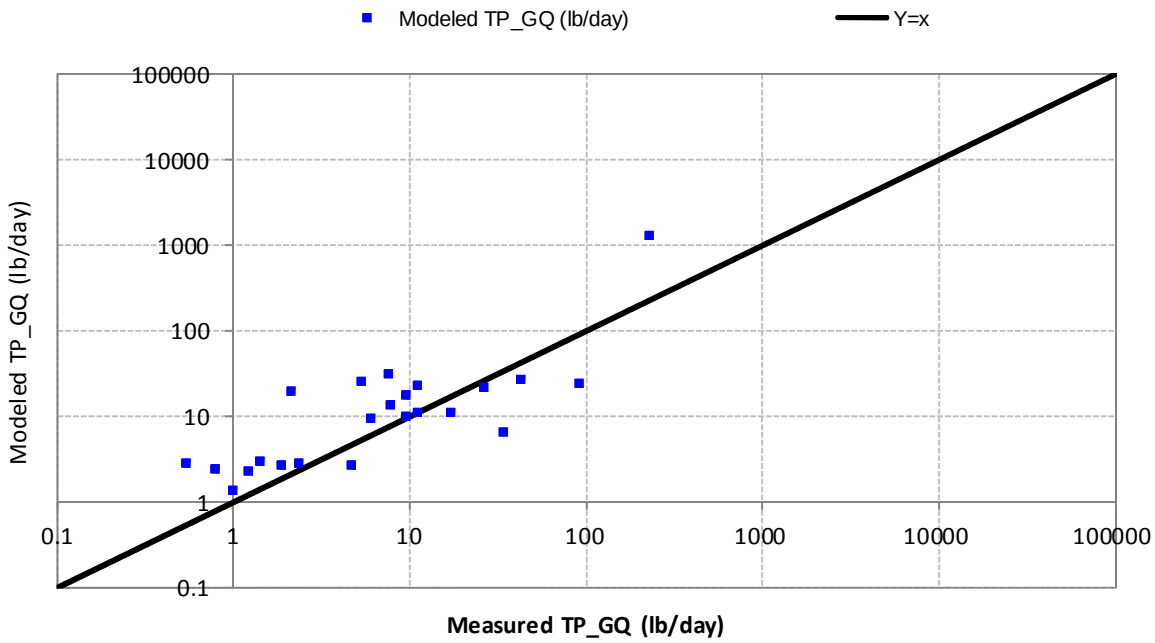

Figure B-240 Modeled vs. Observed Load TP_GQ at 03298250

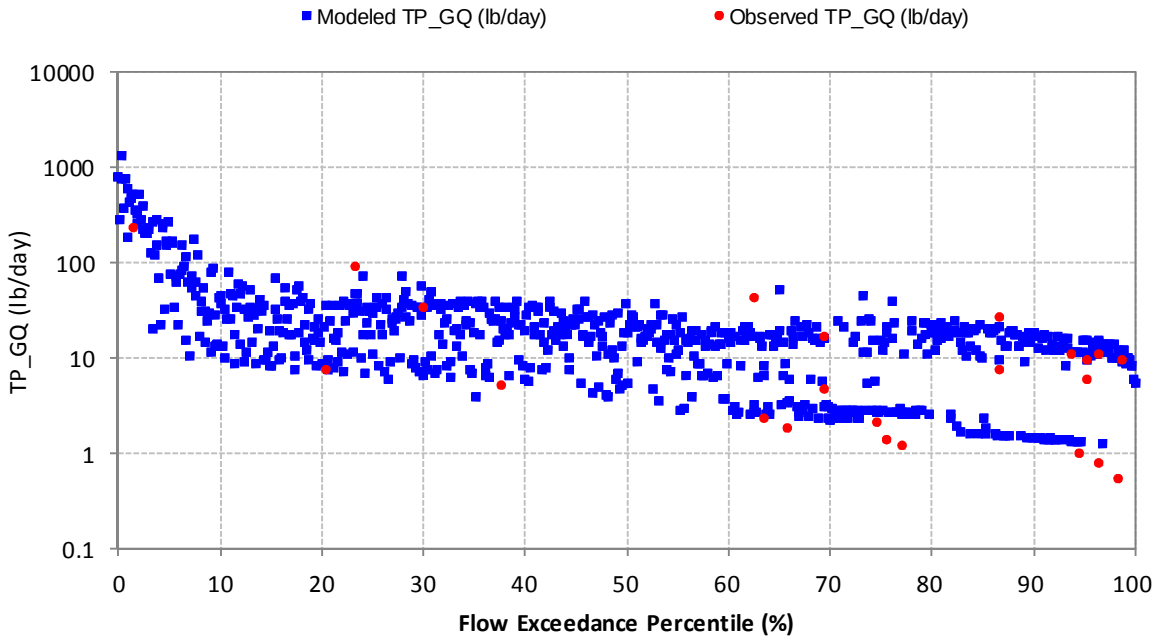

Figure B-241 Modeled vs. Observed Load TP_GQ at 03298250

Table B-49 Modeled vs. Observed Load TP_GQ at 03298250

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	14,400	15,206	-5.3	14,483	-0.57
2008	11,560	6,108	89.26	10,588	9.18

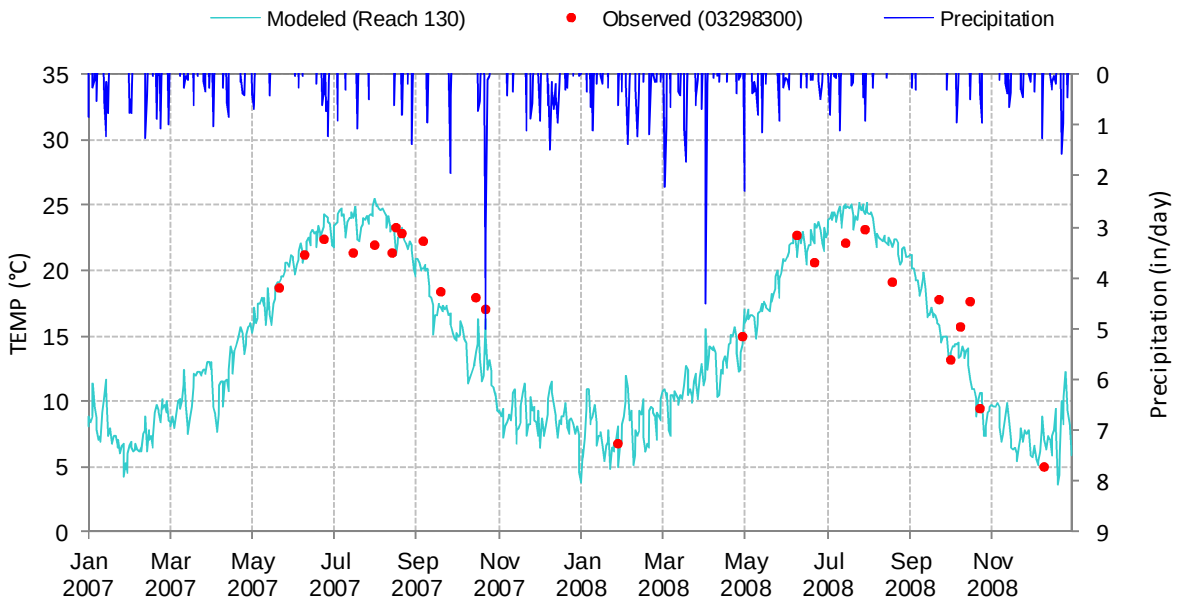

Figure B-242 Modeled vs. Observed TEMP (°C) at 03298300

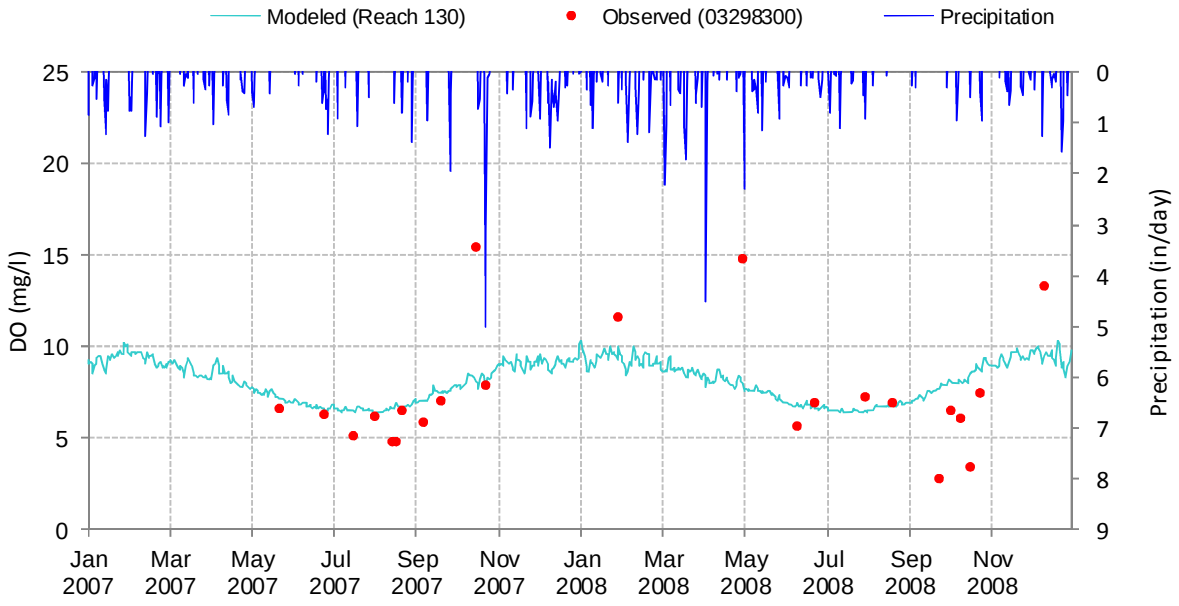

Figure B-243 Modeled vs. Observed DO (mg/l) at 03298300

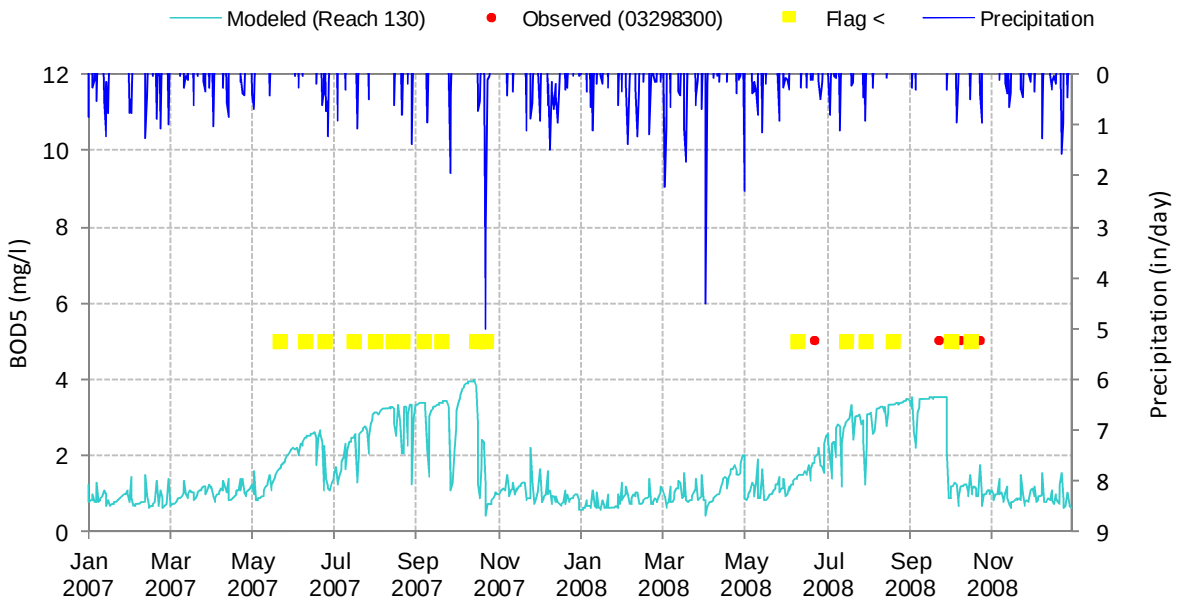

Figure B-244 Modeled vs. Observed BOD5 (mg/l) at 03298300

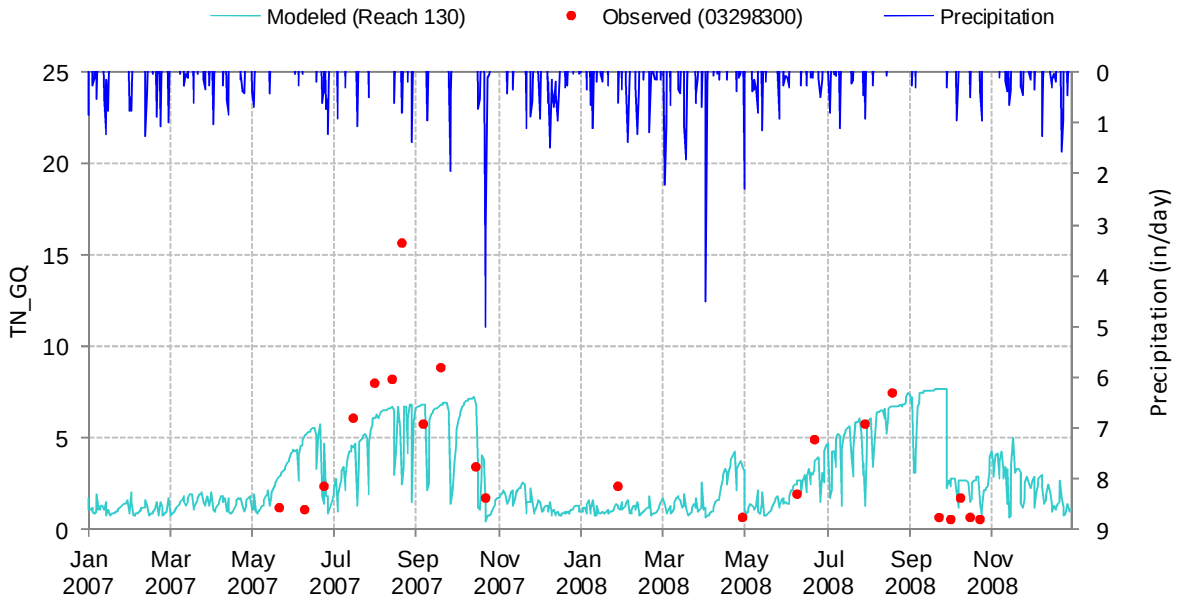

Figure B-245 Modeled vs. Observed TN_GQ at 03298300

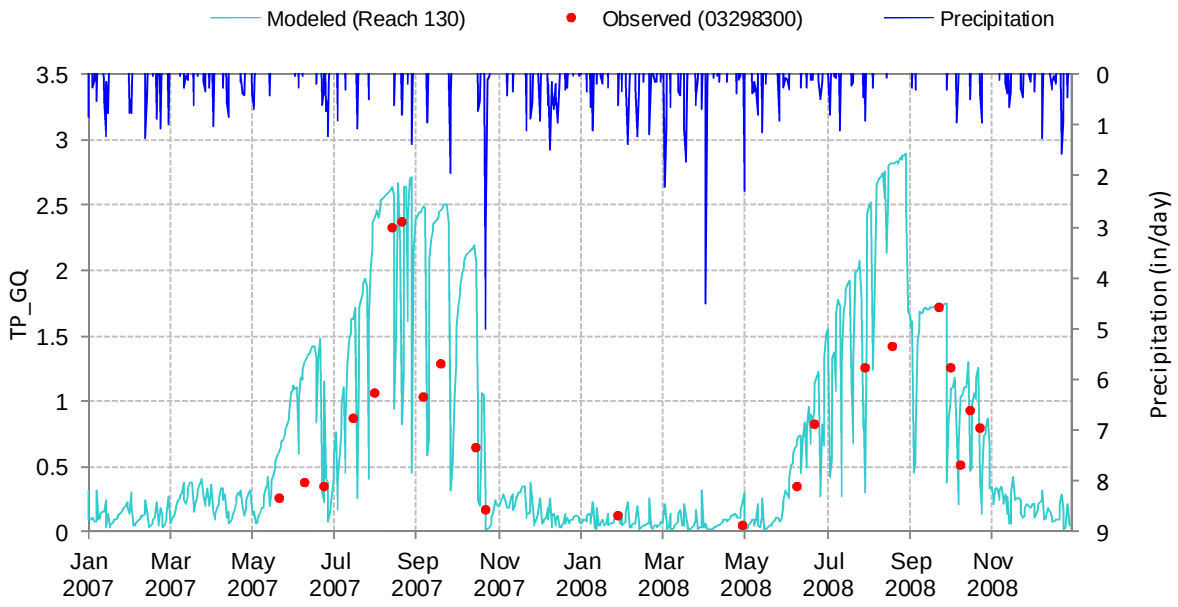

Figure B-246 Modeled vs. Observed TP_GQ at 03298300

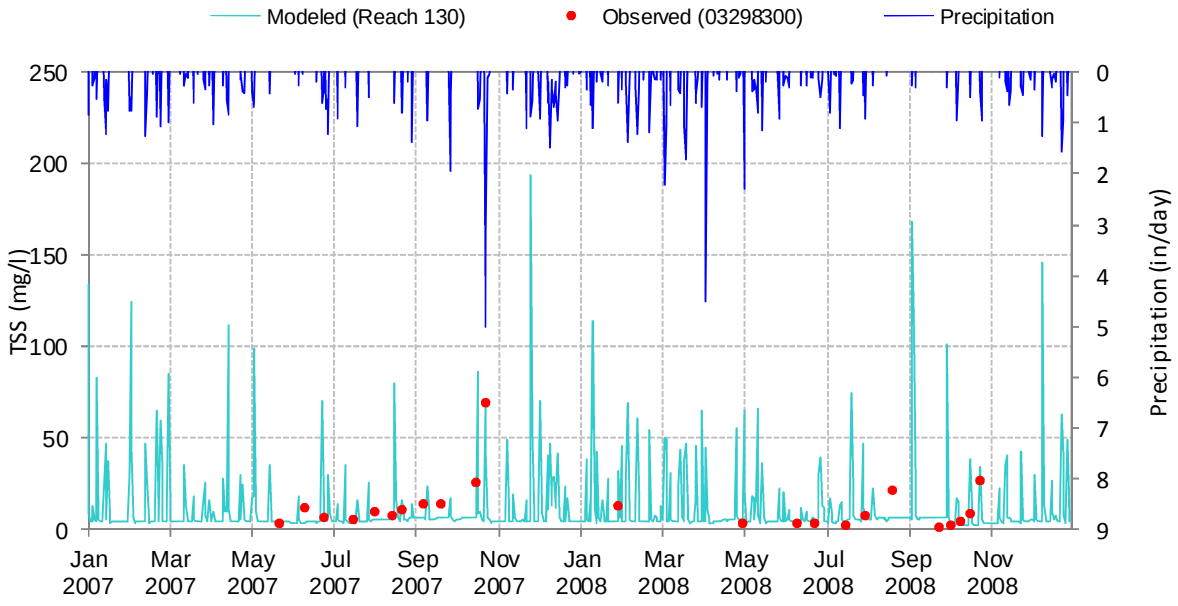

Figure B-247 Modeled vs. Observed TSS (mg/l) at 03298300

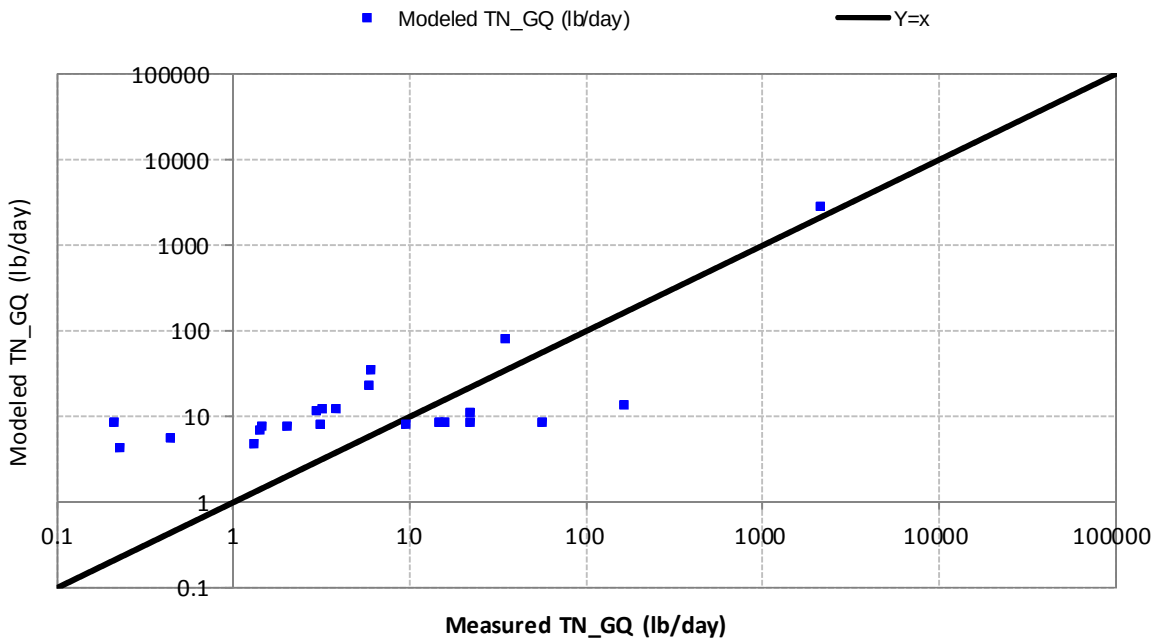

Figure B-248 Modeled vs. Observed Load TN_GQ at 03298300

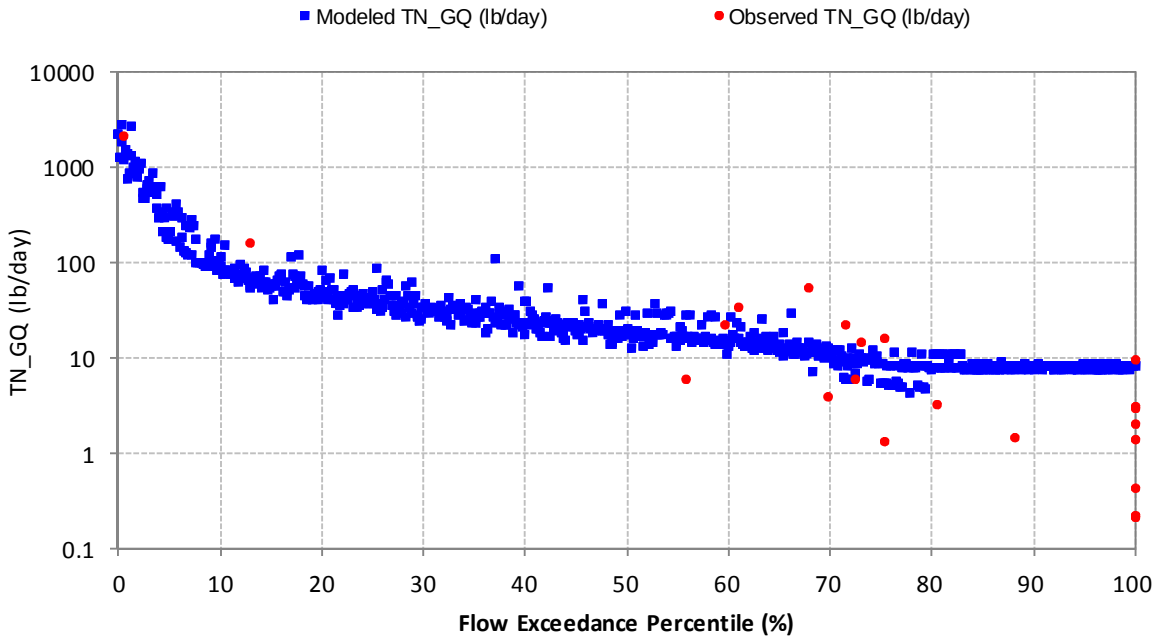

Figure B-249 Modeled vs. Observed Load TN_GQ at 03298300

Table B-50 Modeled vs. Observed Load TN_GQ at 03298300

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	25,647	28,722	-10.71	30,365	-15.54
2008	30,091	52,922	-43.14	42,079	-28.49

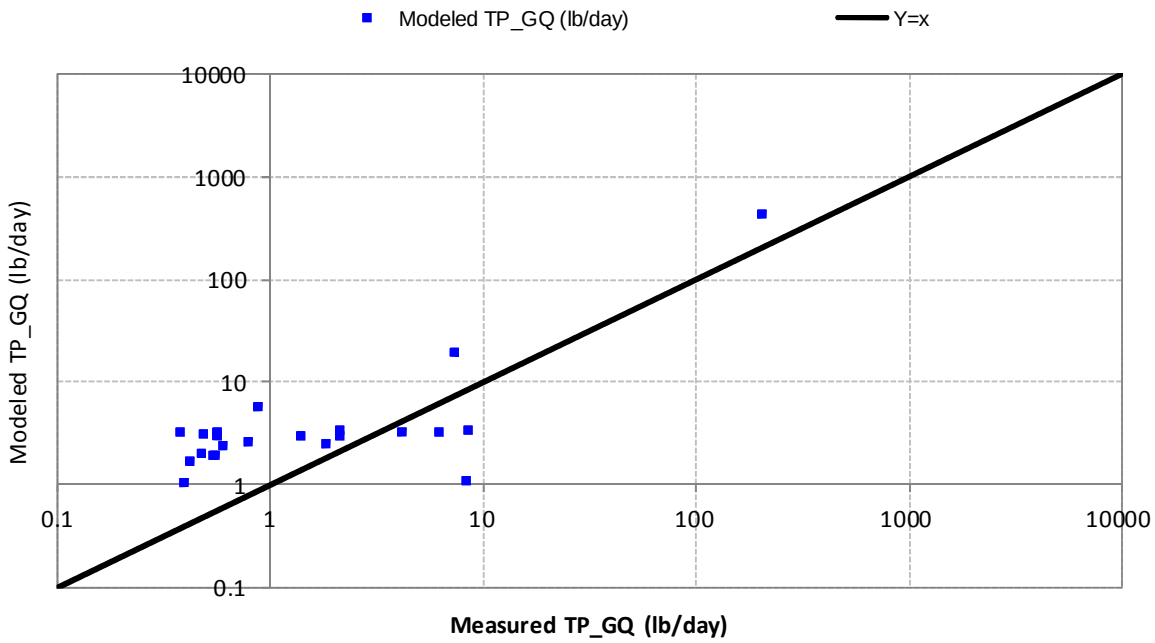

Figure B-250 Modeled vs. Observed Load TP_GQ at 03298300

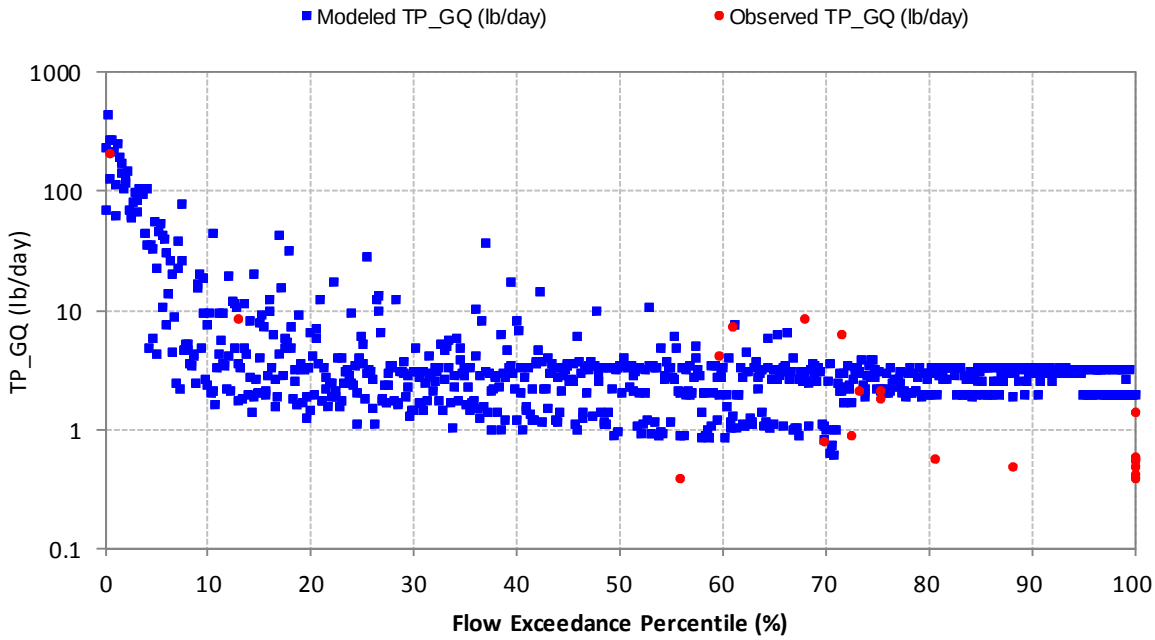

Figure B-251 Modeled vs. Observed Load TP_GQ at 03298300

Table B-51 Modeled vs. Observed Load TP_GQ at 03298300

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	3,694	4,209	-12.24	4,042	-8.6
2008	3,430	3,883	-11.67	3,735	-8.16

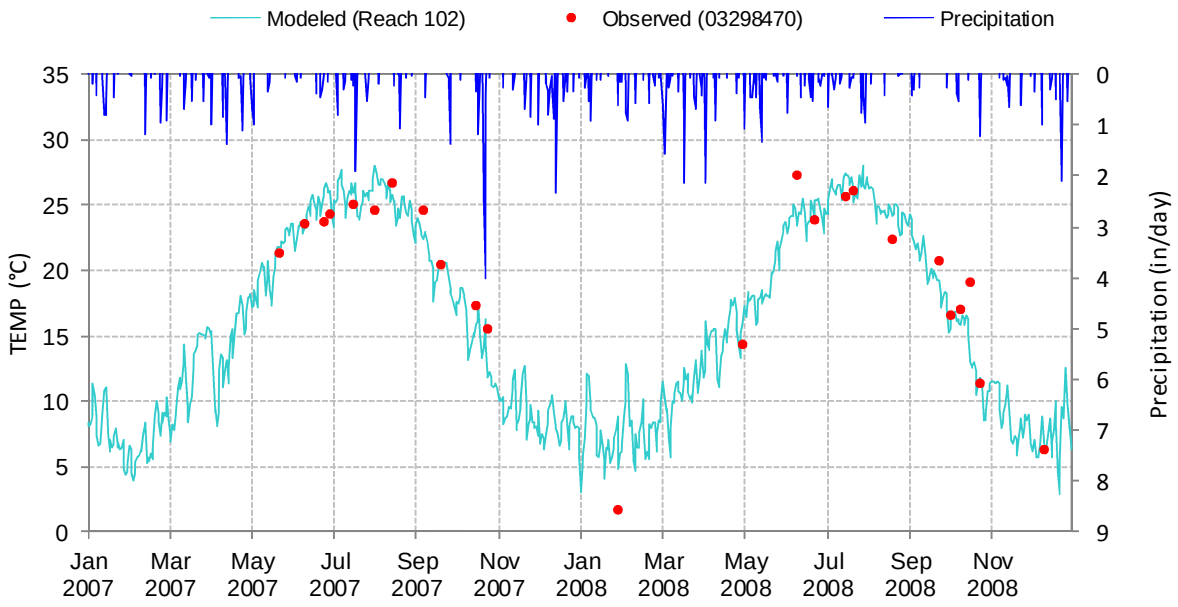

Figure B-252 Modeled vs. Observed TEMP (°C) at 03298470

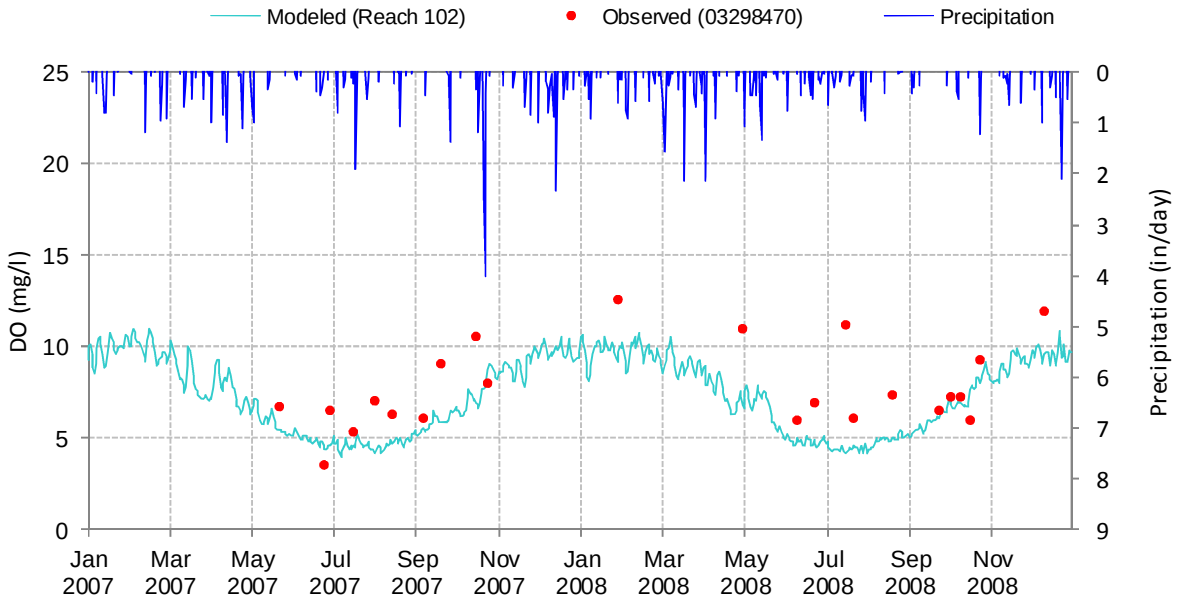

Figure B-253 Modeled vs. Observed DO (mg/l) at 03298470

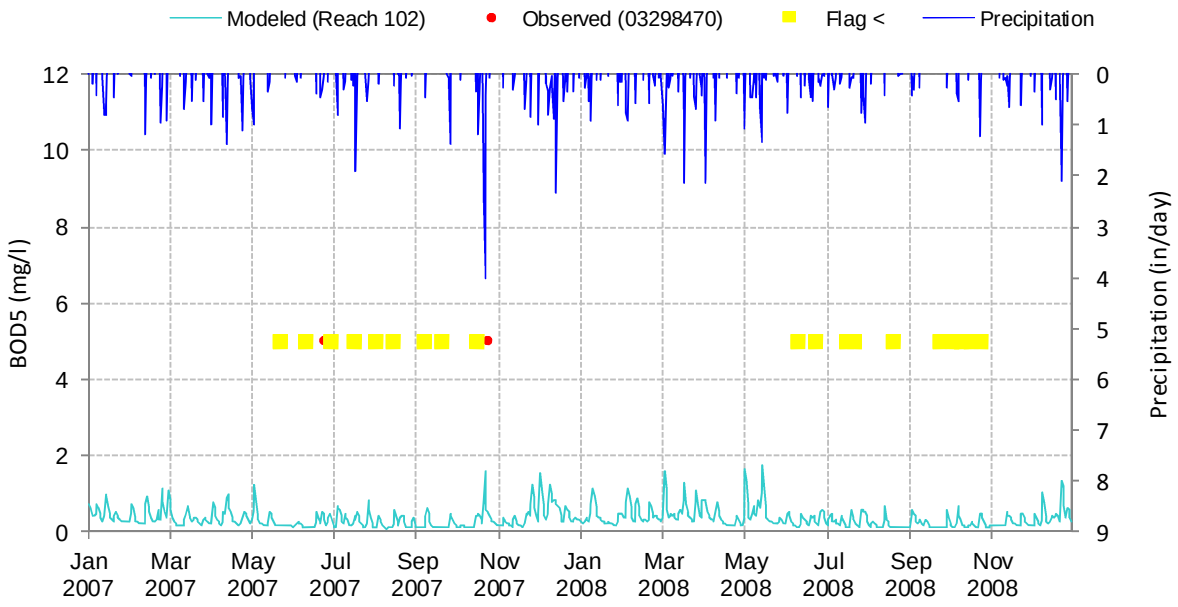

Figure B-254 Modeled vs. Observed BOD5 (mg/l) at 03298470

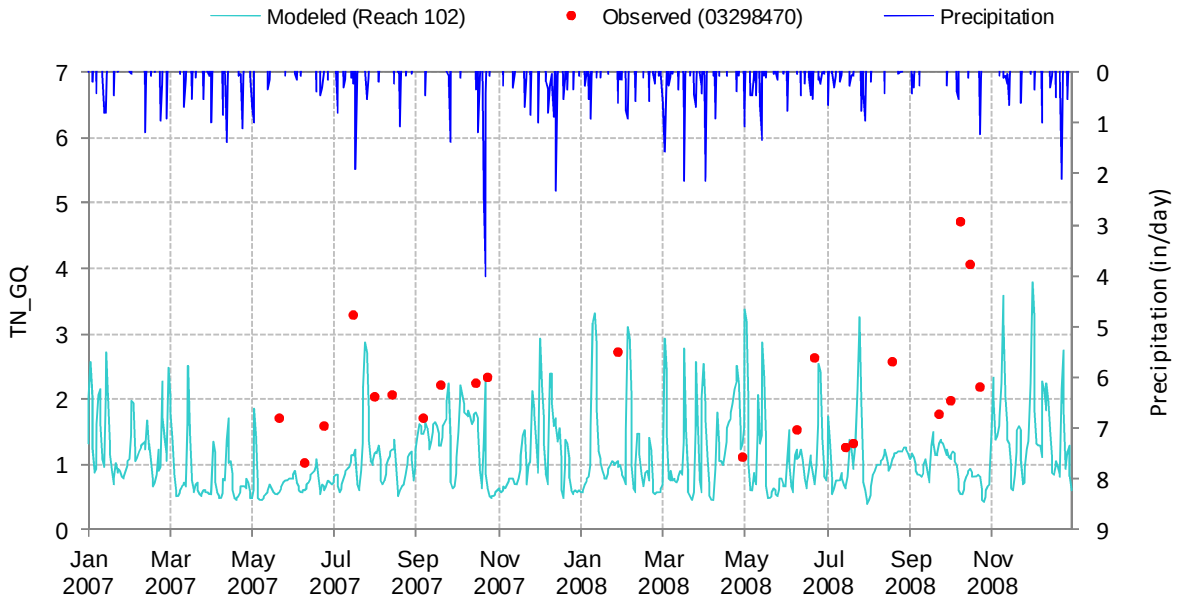

Figure B-255 Modeled vs. Observed TN_GQ at 03298470

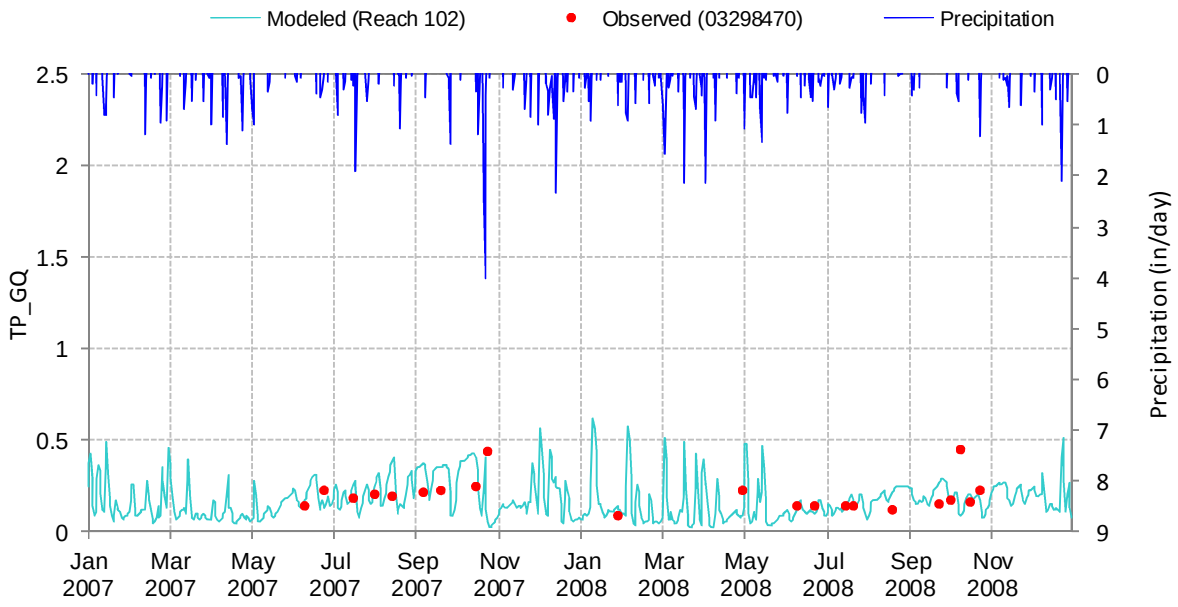

Figure B-256 Modeled vs. Observed TP_GQ at 03298470

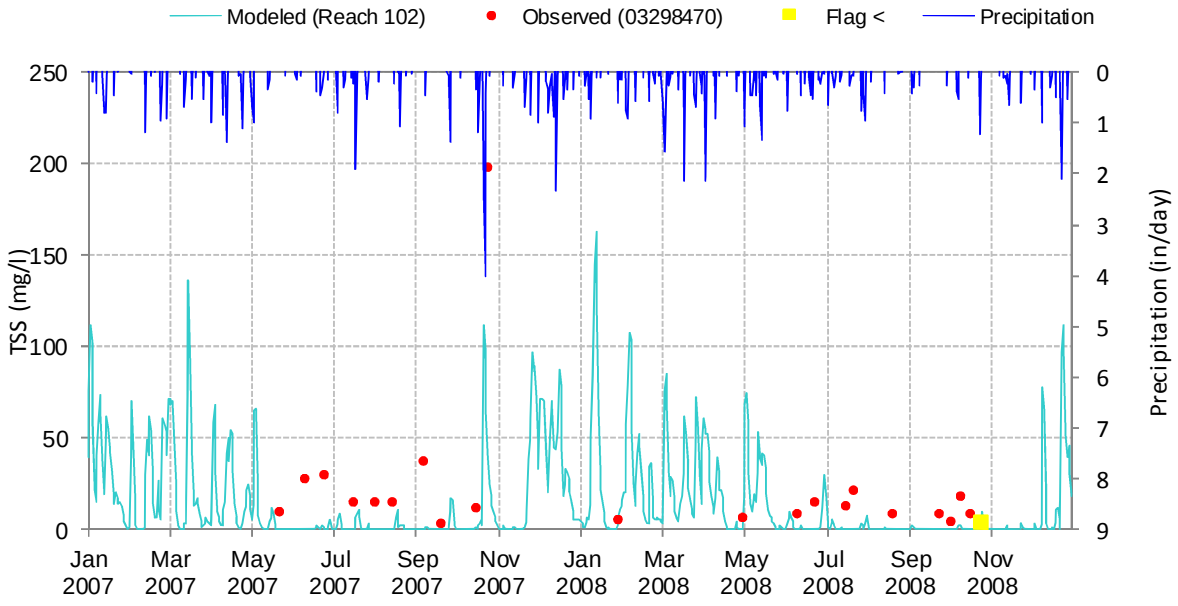

Figure B-257 Modeled vs. Observed TSS (mg/l) at 03298470

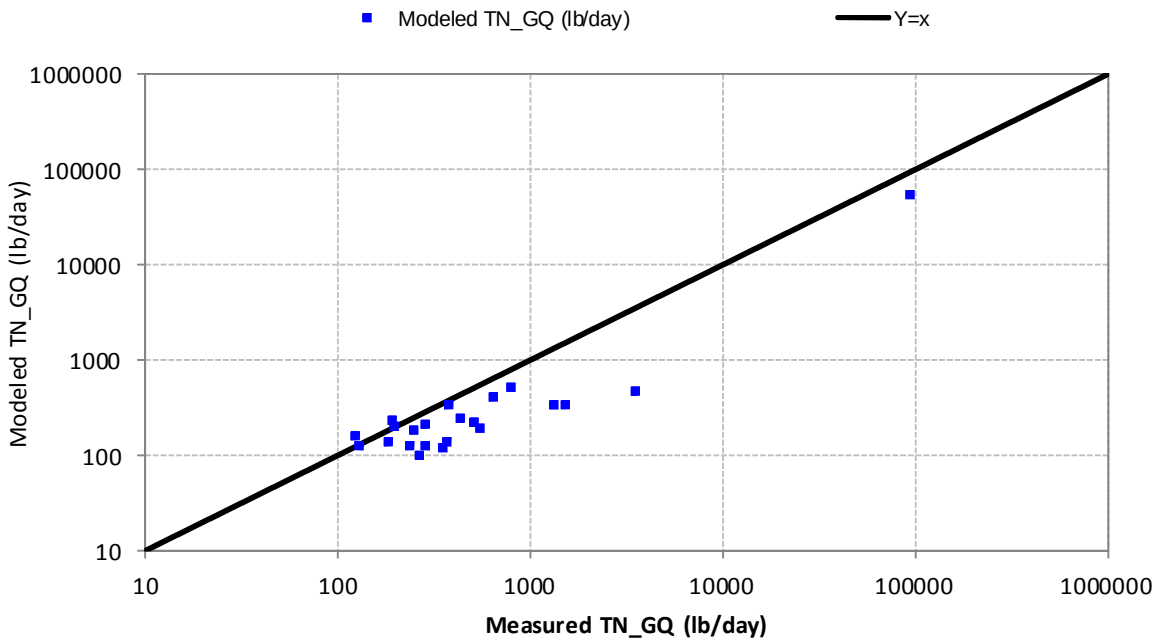

Figure B-258 Modeled vs. Observed Load TN_GQ at 03298470

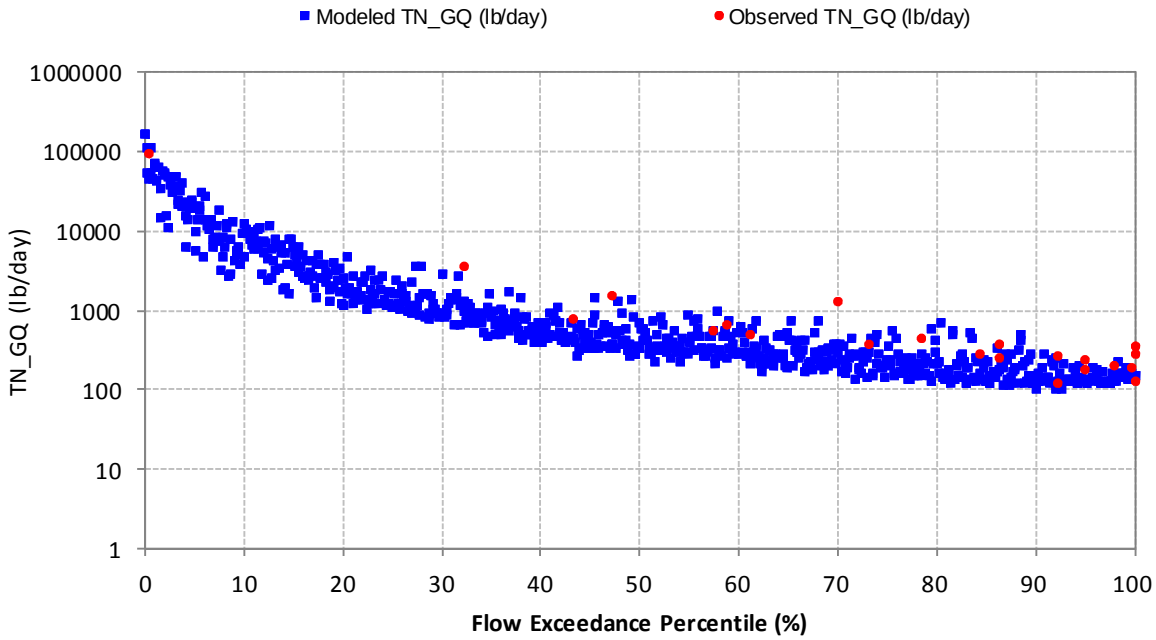

Figure B-259 Modeled vs. Observed Load TN_GQ at 03298470

Table B-52 Modeled vs. Observed Load TN_GQ at 03298470

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	1,104,835	1,583,668	-30.24	1,639,406	-32.61
2008	1,516,606	2,462,522	-38.41	1,985,291	-23.61

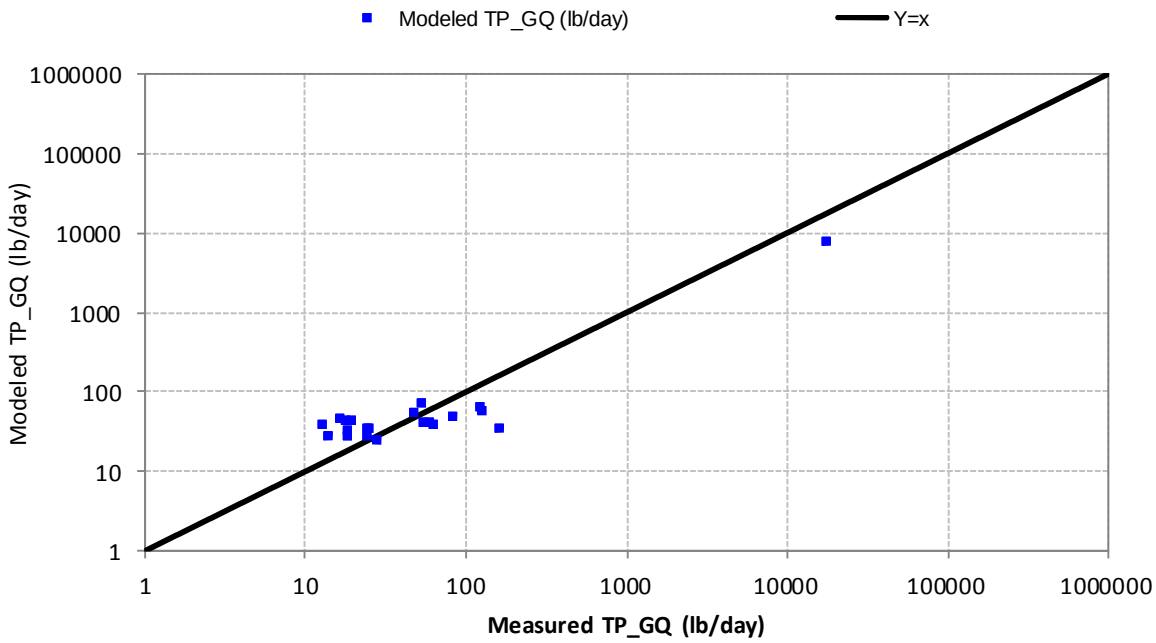

Figure B-260 Modeled vs. Observed Load TP_GQ at 03298470

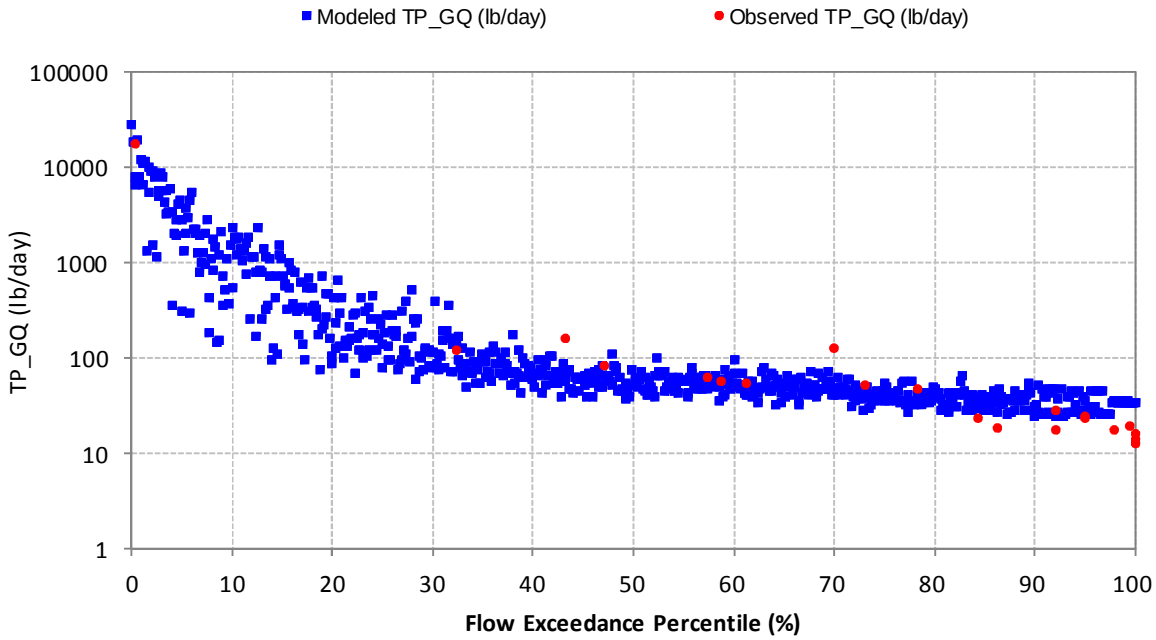

Figure B-261 Modeled vs. Observed Load TP_GQ at 03298470

Table B-53 Modeled vs. Observed Load TP_GQ at 03298470

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2007	177,210	207,454	-14.58	177,255	-0.03
2008	233,097	153,489	51.87	180,161	29.38

Table B-54 Summary Qualitative and Quantitative scores for the USGS Water Quality Calibration stations

Water Quality Station location: Main Stem- Floyds Fork					
USGS Station ID	Station name	Qualitative Score		Quantitative Score	
		TN	TP	TN	TP
03297830	Floyds Fork at Highway 53	G	P	51	145
03297845	Floyds Fork near Crestwood	G	VG	42	5
03297900	Floyds Fork near Peewee Valley	VG	VG	10	22
03297930	Floyds Fork at Echo trail bridge	G	G	47	49
03298000	Floyds Fork at Fisherville	VG	G	3	40
03298120	Floyds Fork at Seatonville Road	VG	VG	3	1
03298200	Floyds Fork near Mt. Washington	VG	F	26	110
03298470	Floyds Fork near Shepherdsville	G	VG	35	14
Water Quality Station location: Tributaries					
03297850	South Fork Curry's Fork at Moody Lane	G	G	59	52
03297855	South Fork Curry's Fork at Highway 393	G	P	66	154
03297860	North Fork Curry's Fork at Stone Ridge road	G	G	42	62
03297875	Ashers Run at Abbott lane near Crestwood	VG	VG	9	30
03297880	Currys Fork near Crestwood	VG	VG	9	13
03297950	Long Run at Old stage coach road	F	P	114	146
03297975	South Long Run at Hobbs Lane	F	G	97	33
03297980	Long Run near Fisherville	F	G	91	58
03298005	Pope lick at South poope lick road near Fisherville	VG	P	12	130
03298020	Chenoweth Run at Gelhaus Lane	G	VG	50	13
03298100	Pope lick at pope lick road near Middletown	G	G	61	66
03298110	Pope lick at Rehl road near Fisherville	VG	G	1	59
03298135	Chenoweth Run at Ruckriegal Parkway	G	VG	47	21
03298138	Chenoweth Run at Jeffersontown STP at Jeffersontown	G	G	68	53
03298150	Chenoweth Run at Gelhaus Lane near Fern creek	G	VG	66	24
03298160	Chenoweth Run at Seatonville road near Jeffersontown	G	G	46	35
03298250	Cedar Creek at Thixton Road	G	VG	51	22
03298300	Pennsylvania Run at Mt. Washington	G	VG	32	12

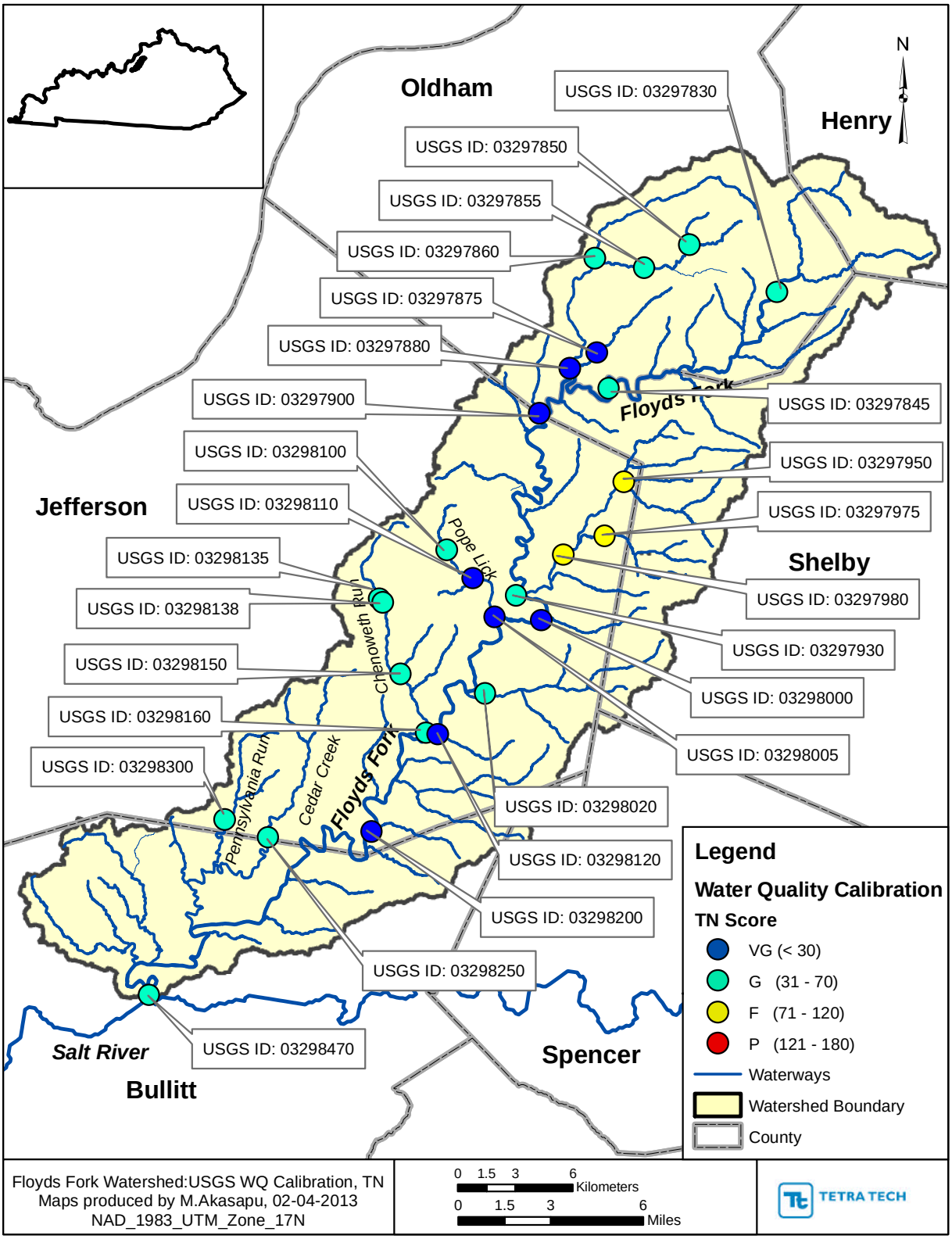

Figure B-262 USGS Water Quality for TN in the Floyds Fork Watershed

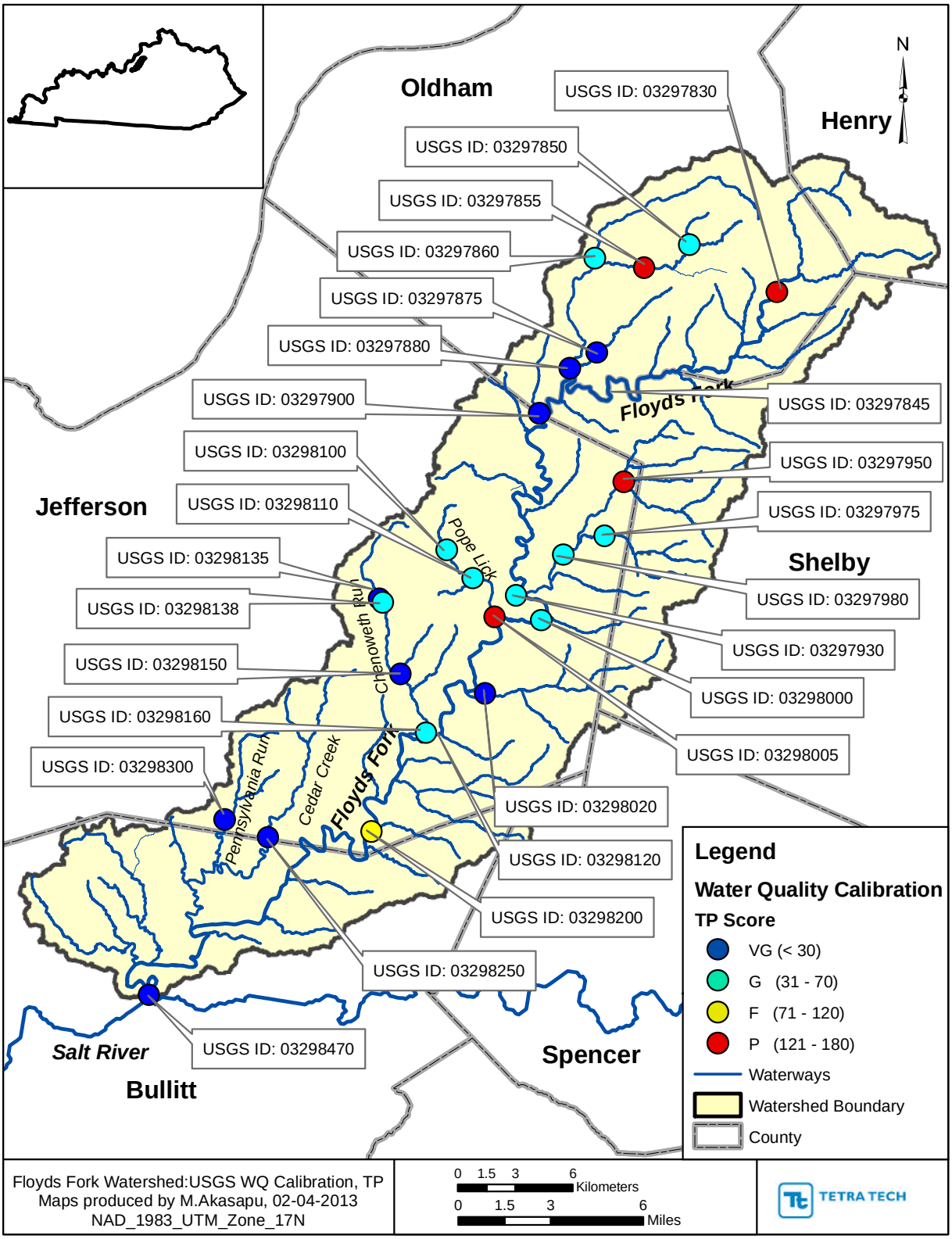

Figure B-263 USGS Water Quality for TP in the Floyds Fork Watershed

Table B-55 LSPC Watershed Water Quality Validation Stations

Station	Agency	Site Name	USGS Drainage Area (mi2)	USGS Drainage Area (acres)	LSPC Watershed	LSPC Drainage Area (acres)	Type
EFFFF001	MSD	Floyds Fork at Ash Avenue	80	51136	615	53084	TEMP., DO, BOD5, TN, TP, TSS
EFFFF002	MSD	Floyds Fork at Bardstown Road	213	136320	606	137052	TEMP., DO, BOD5, TN, TP, TSS
EFFFF003	MSD	Floyds Fork at Old Taylorsville Road	138	88320	180	88803	TEMP., DO, BOD5, TN, TP, TSS
EFFCR001	MSD	Chenoweth Run # 1 at Gelhaus Lane	12	7424	609	8176	TEMP., DO, BOD5, TN, TP, TSS
EFFCR002	MSD	Chenoweth Run # 1 at Ruckriegal Parkway	5	3501	167	3449	TEMP., DO, BOD5, TN, TP, TSS

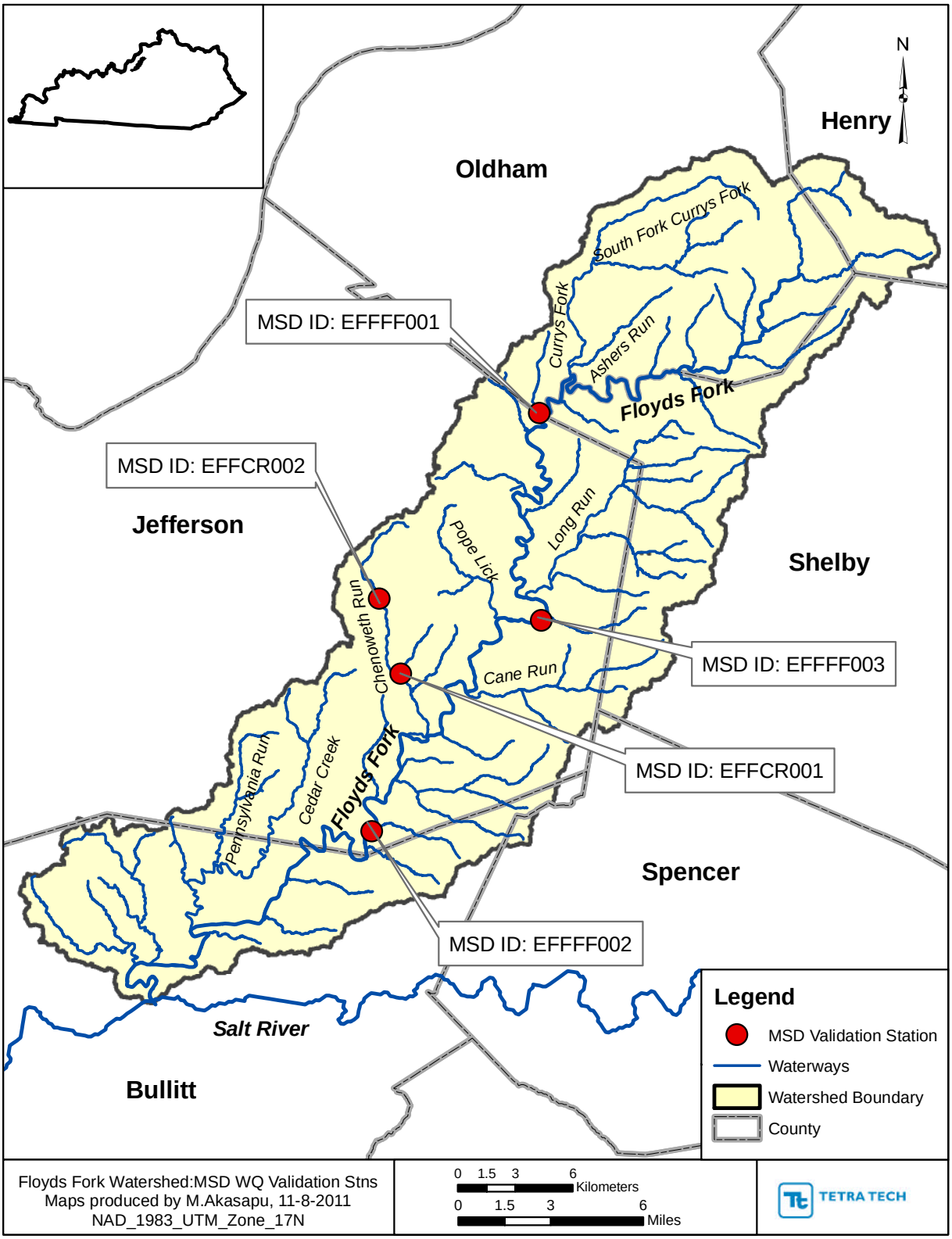

Figure B-264 MSD Water Quality Calibration Stations Utilized in the Floyds Fork Watershed Model

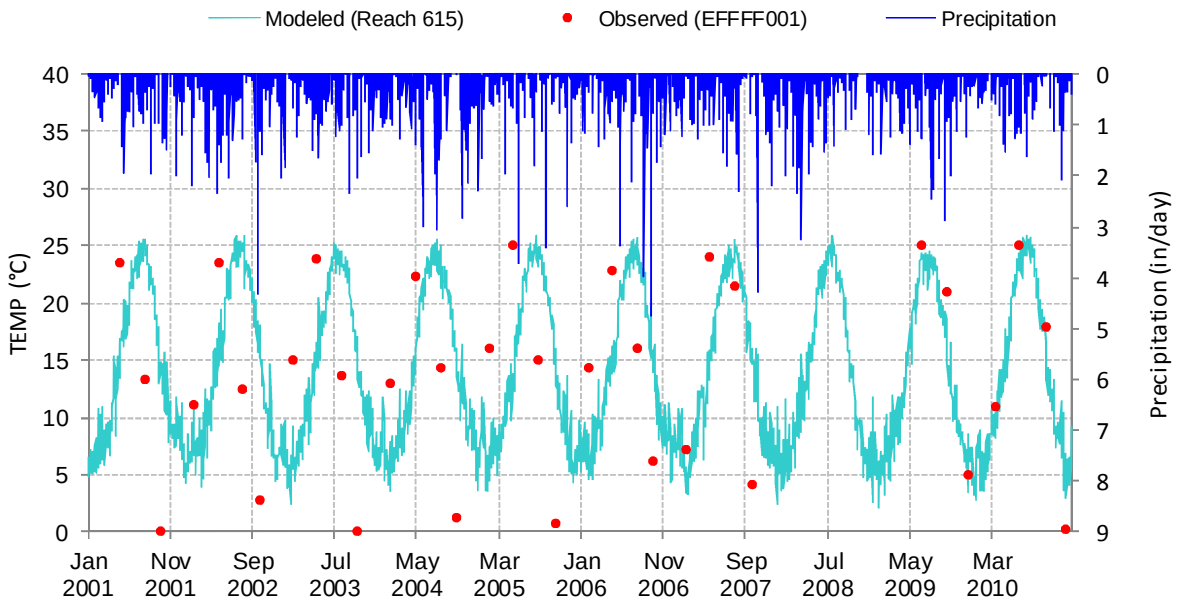

Figure B-265 Modeled vs. Observed TEMP (°C) at EFFFF001

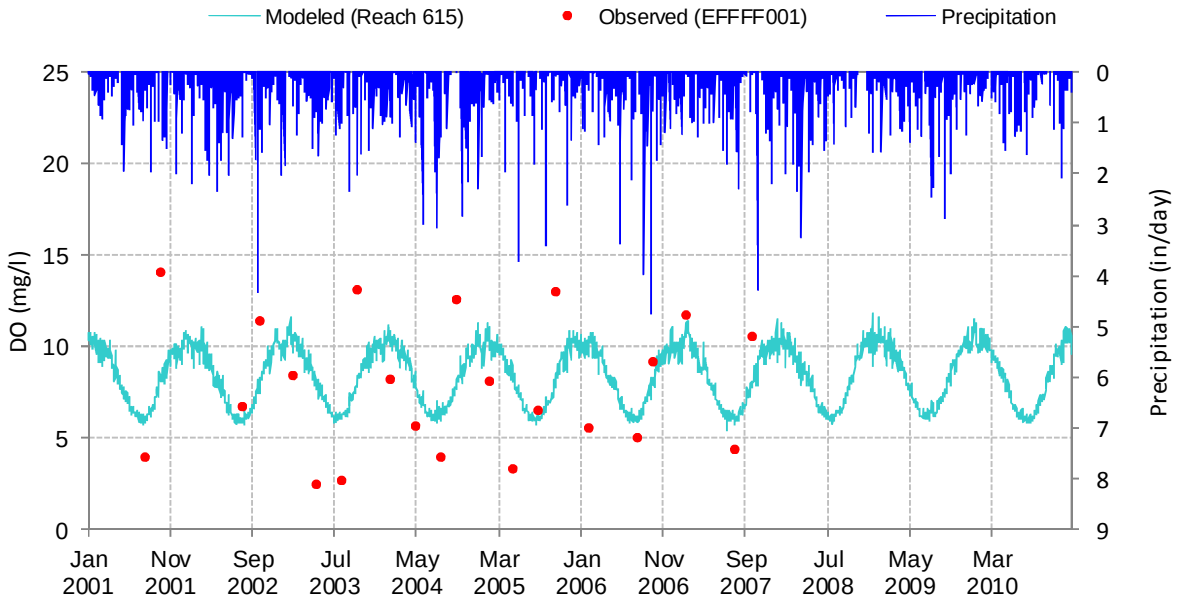

Figure B-266 Modeled vs. Observed DO (mg/l) at EFFFF001

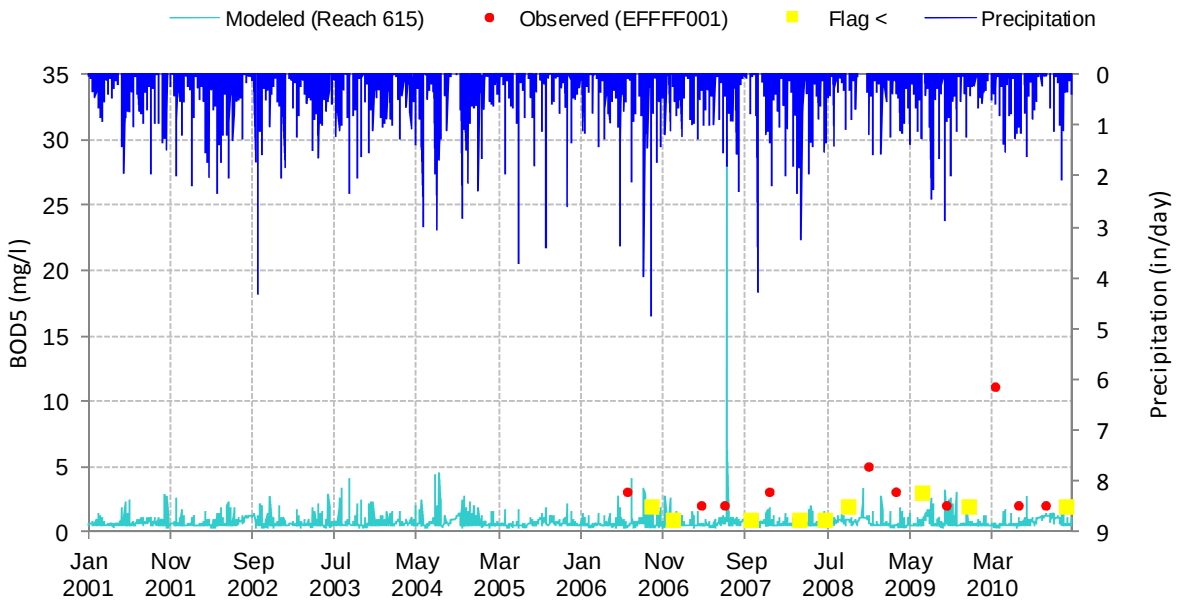

Figure B-267 Modeled vs. Observed BOD5 (mg/l) at EFFFF001

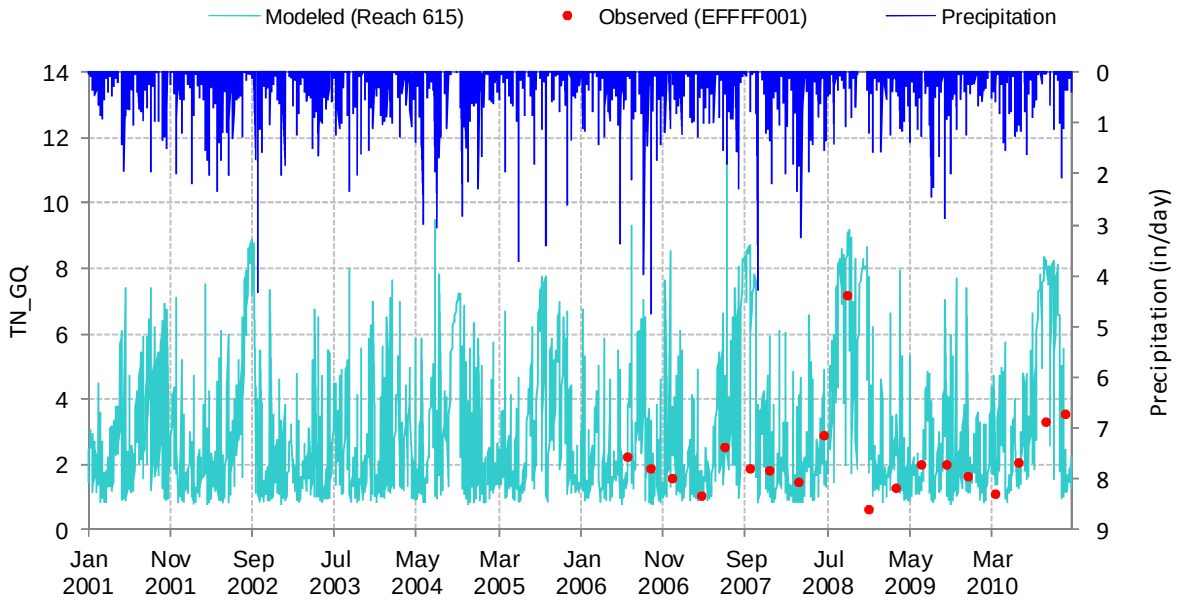

Figure B-268 Modeled vs. Observed TN_GQ at EFFFF001

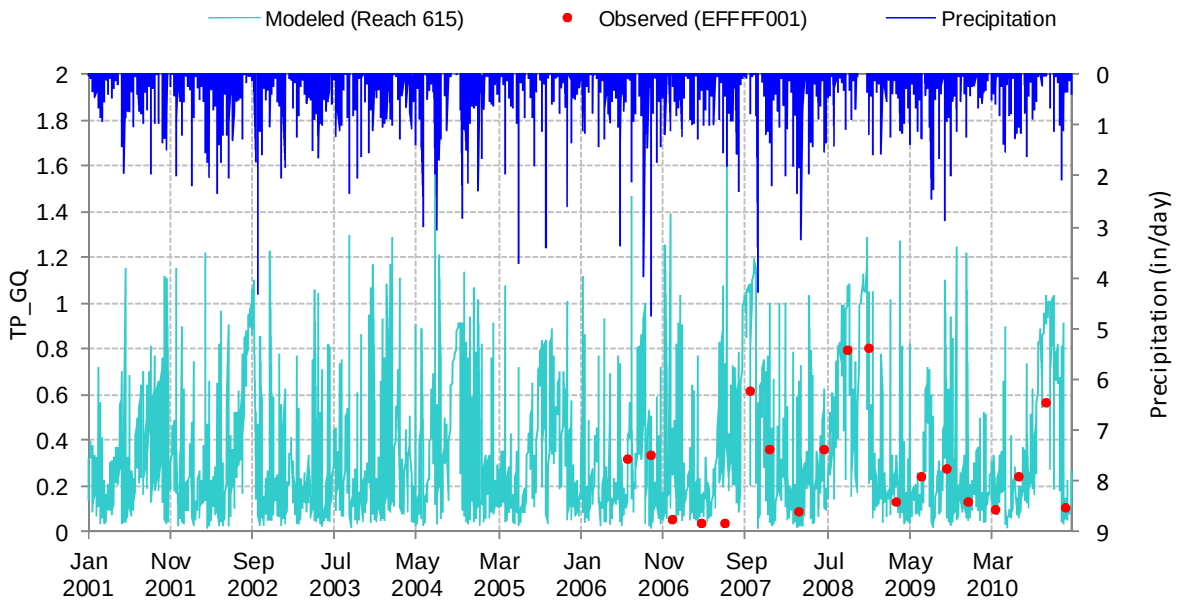

Figure B-269 Modeled vs. Observed TP_GQ at EFFFF001

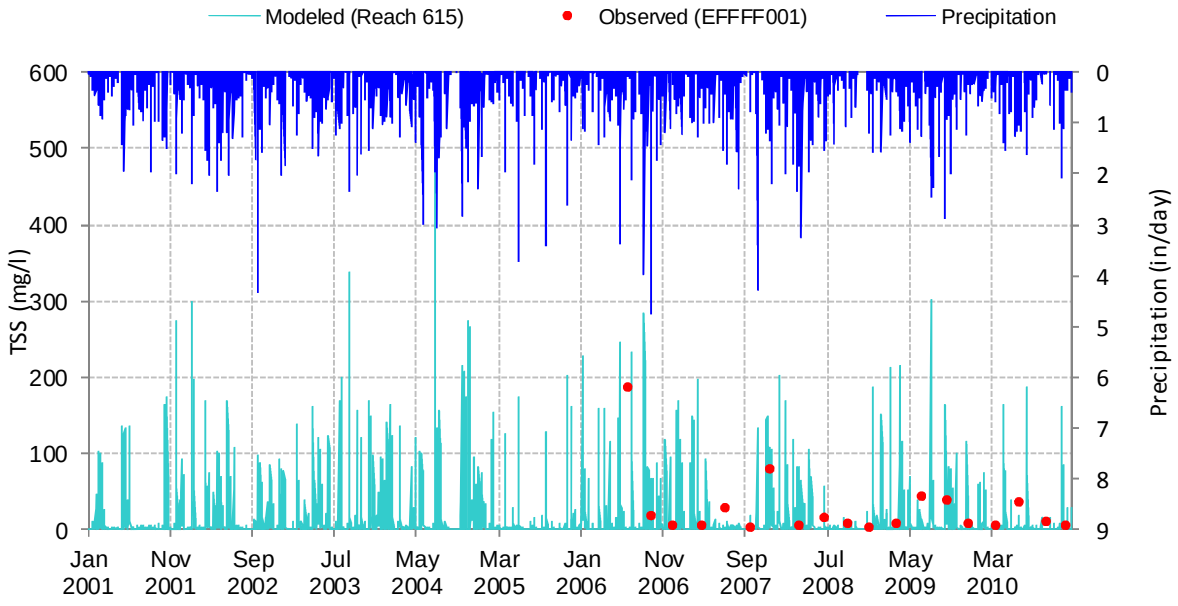

Figure B-270 Modeled vs. Observed TSS (mg/l) at EFFFF001

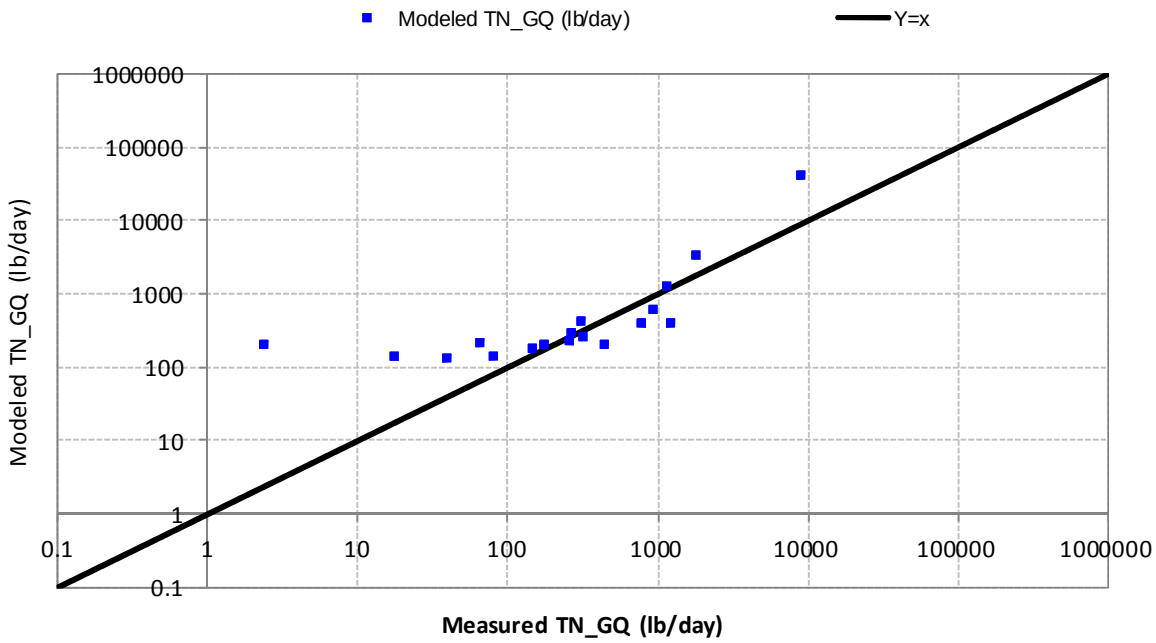

Figure B-271 Modeled vs. Observed Load TN_GQ at EFFFF001

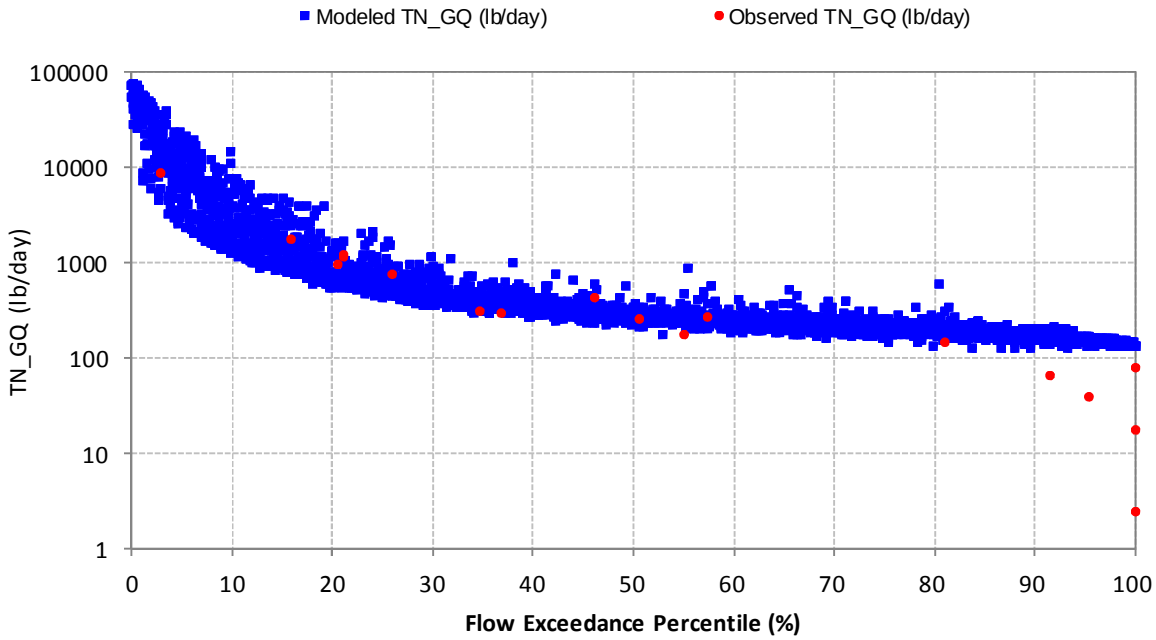

Figure B-272 Modeled vs. Observed Load TN_GQ at EFFFF001

Table B-56 Modeled vs. Observed Load TN_GQ at EFFFF001

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2006	870,863	613,896	41.86	586,876	48.39
2007	578,432	394,580	46.59	370,607	56.08
2008	806,584	496,368	62.5	512,048	57.52
2009	772,545	451,322	71.17	481,530	60.44
2010	349,640	227,129	53.94	247,077	41.51

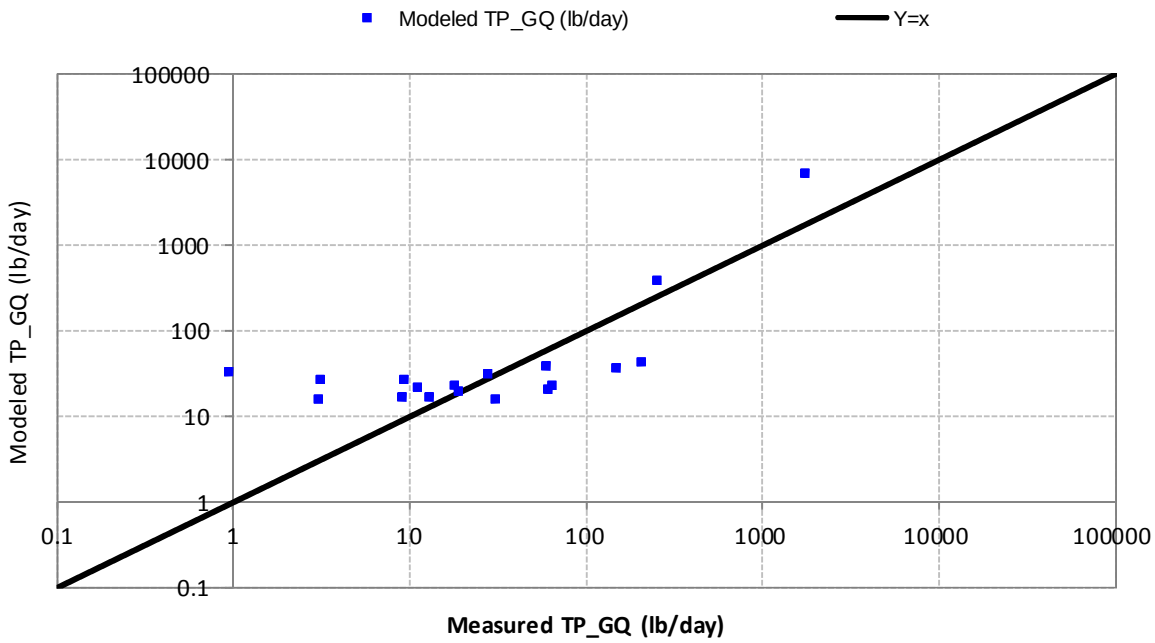

Figure B-273 Modeled vs. Observed Load TP_GQ at EFFFF001

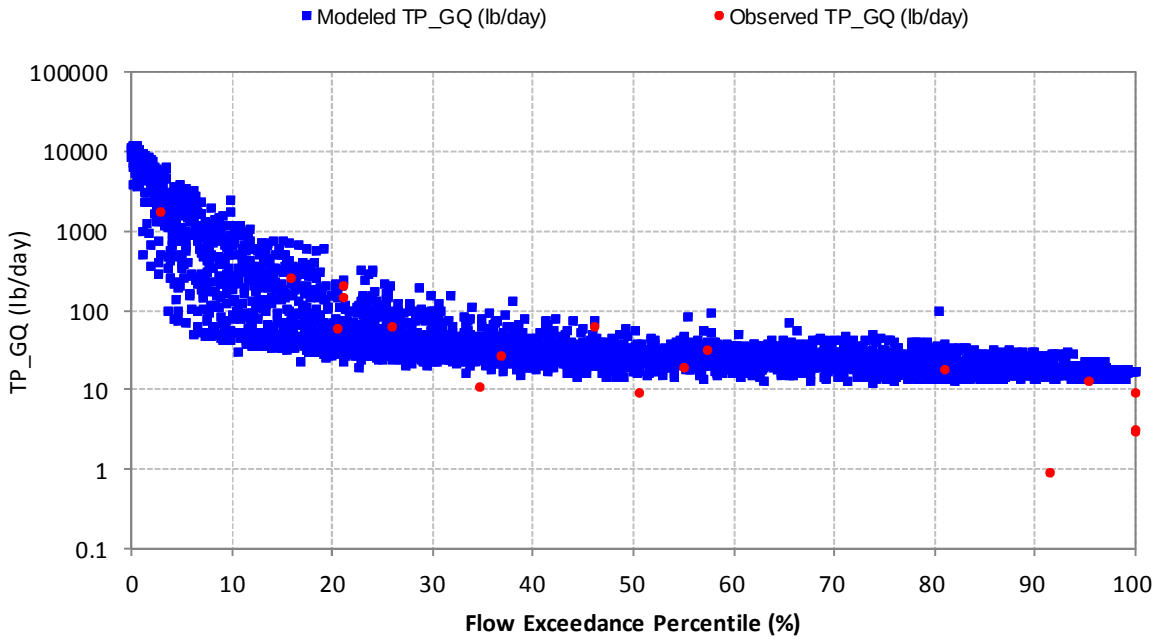

Figure B-274 Modeled vs. Observed Load TP_GQ at EFFFF001

Table B-57 Modeled vs. Observed Load TP_GQ at EFFFF001

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2006	122,525	87,260	40.41	81,794	49.8
2007	81,597	55,338	47.45	46,330	76.12
2008	116,312	82,035	41.78	60,945	90.85
2009	106,647	94,139	13.29	73,318	45.46
2010	44,844	21,968	104.14	21,590	107.71

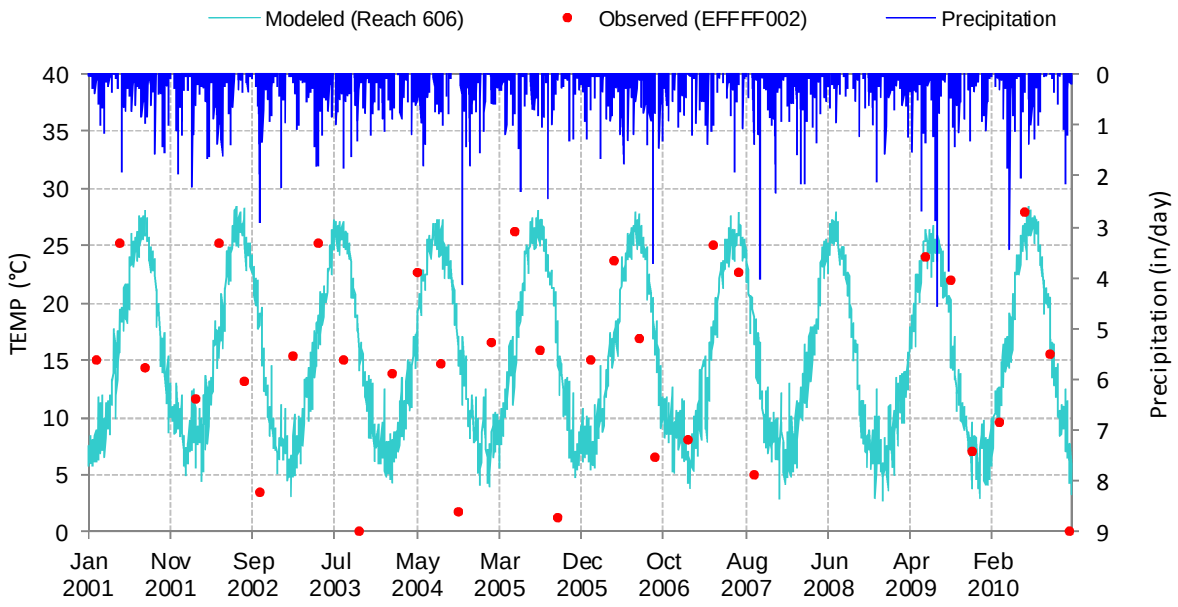

Figure B-275 Modeled vs. Observed TEMP (°C) at EFFFF002

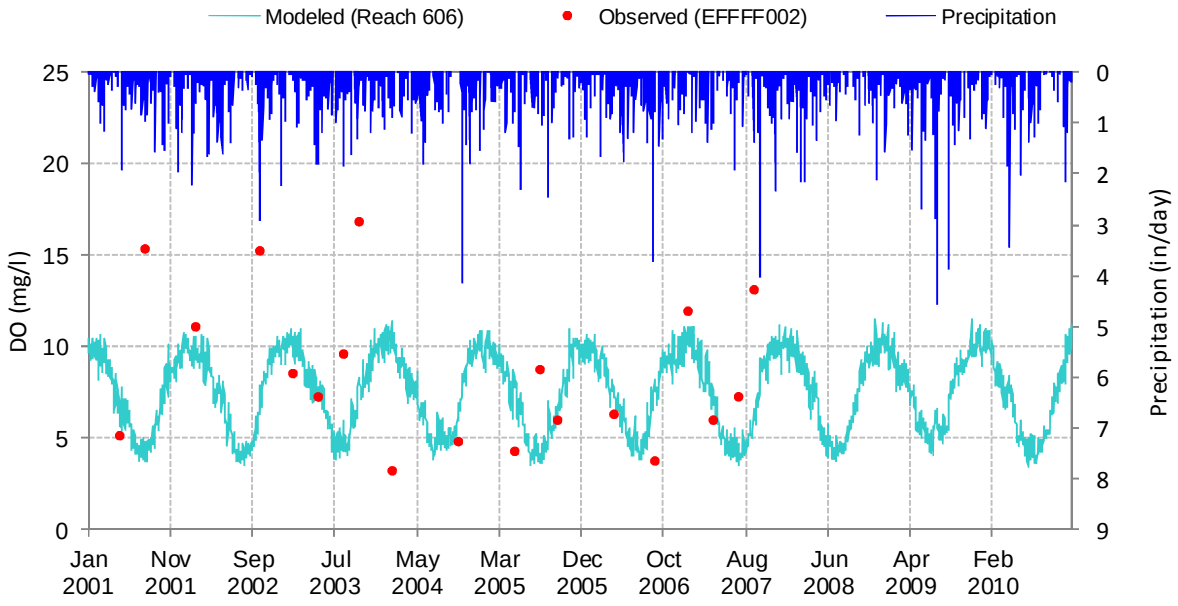

Figure B-276 Modeled vs. Observed DO (mg/l) at EFFFF002

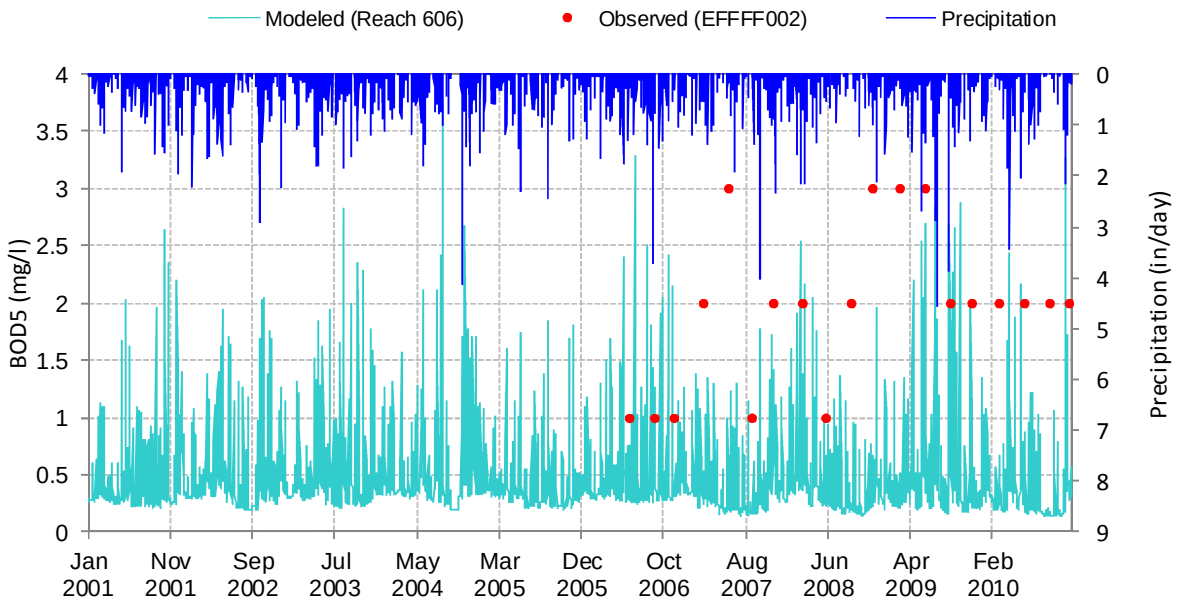

Figure B-277 Modeled vs. Observed BOD5 (mg/l) at EFFFF002

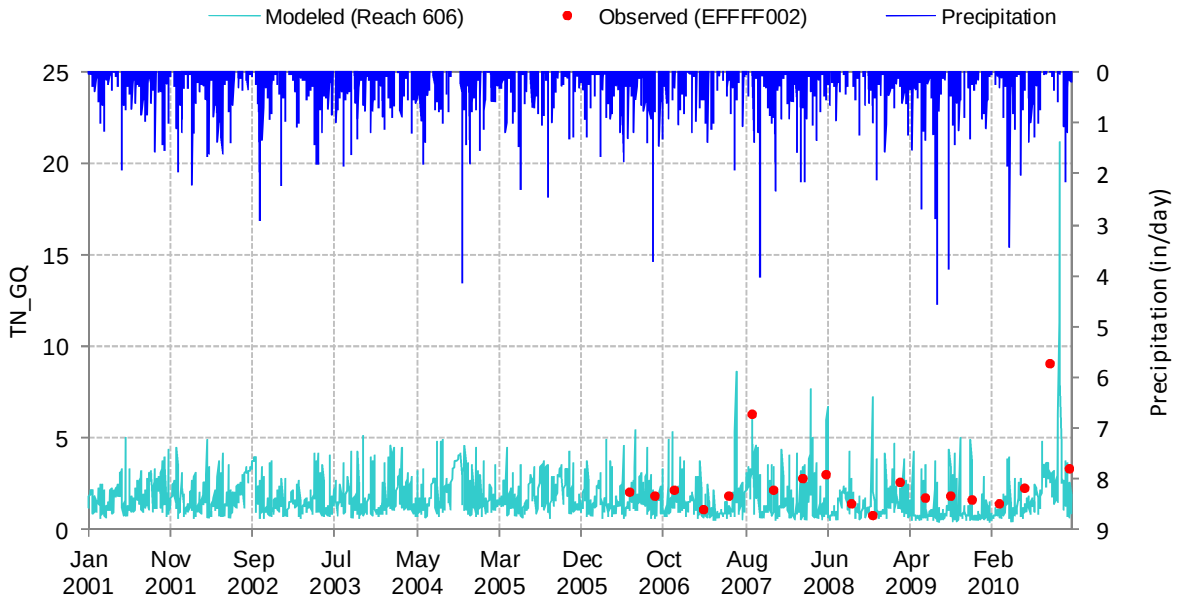

Figure B-278 Modeled vs. Observed TN_GQ at EFFFF002

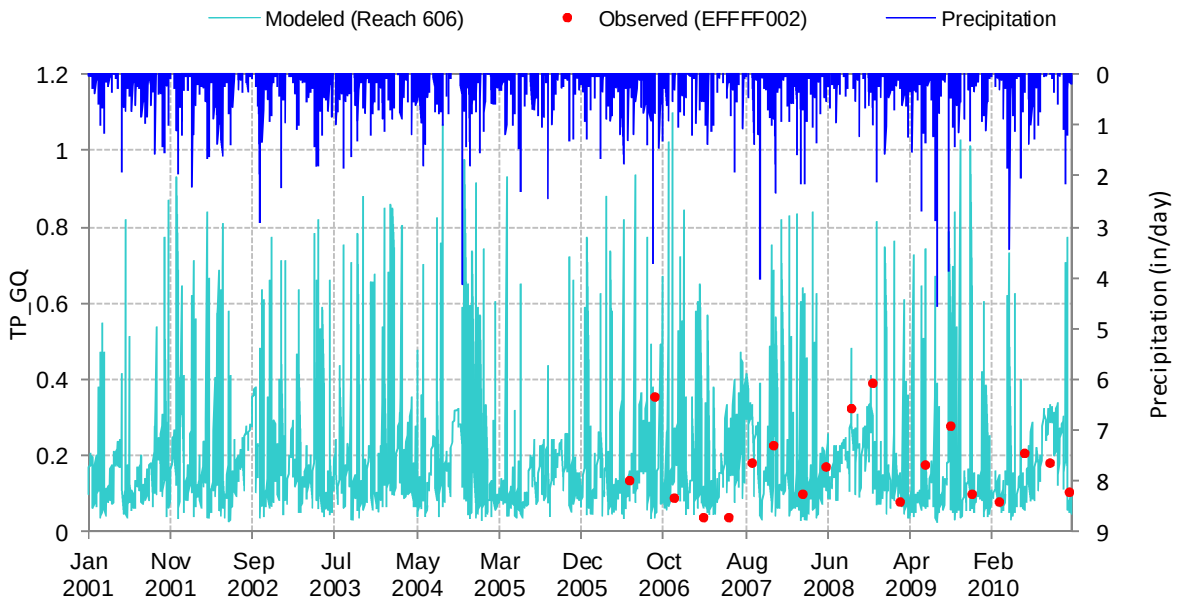

Figure B-279 Modeled vs. Observed TP_GQ at EFFFF002

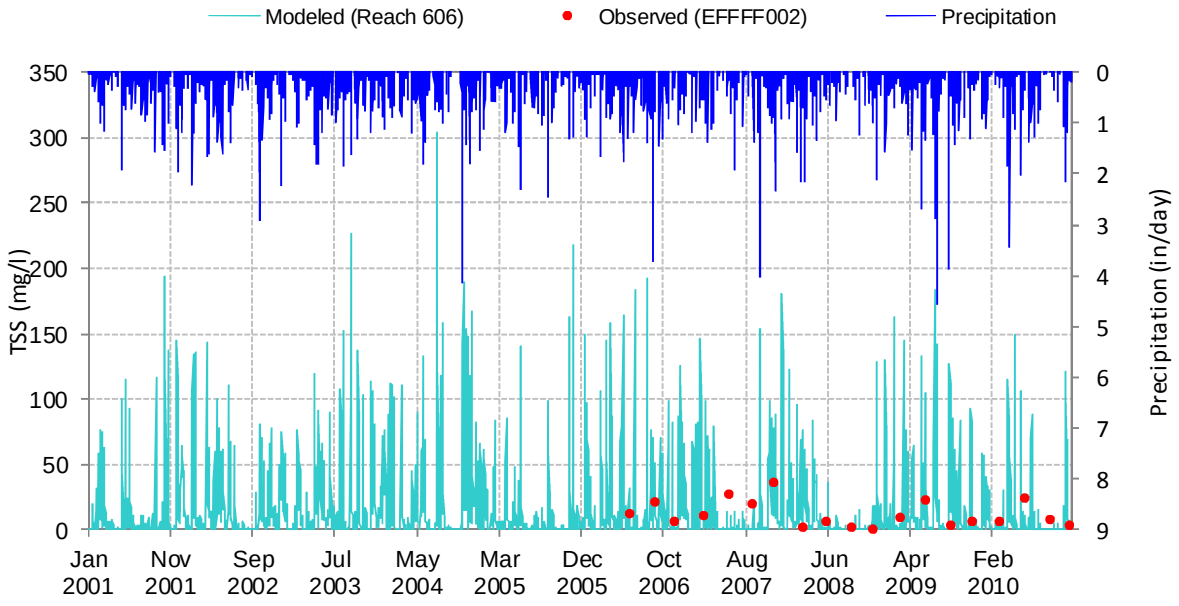

Figure B-280 Modeled vs. Observed TSS (mg/l) at EFFFF002

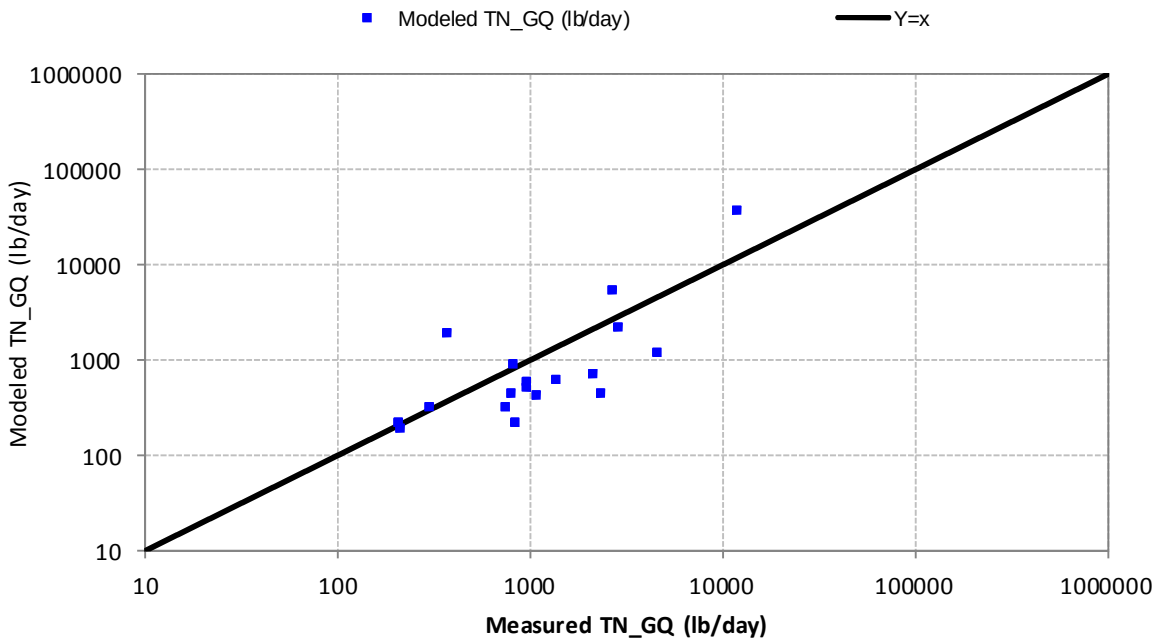

Figure B-281 Modeled vs. Observed Load TN_GQ at EFFFF002

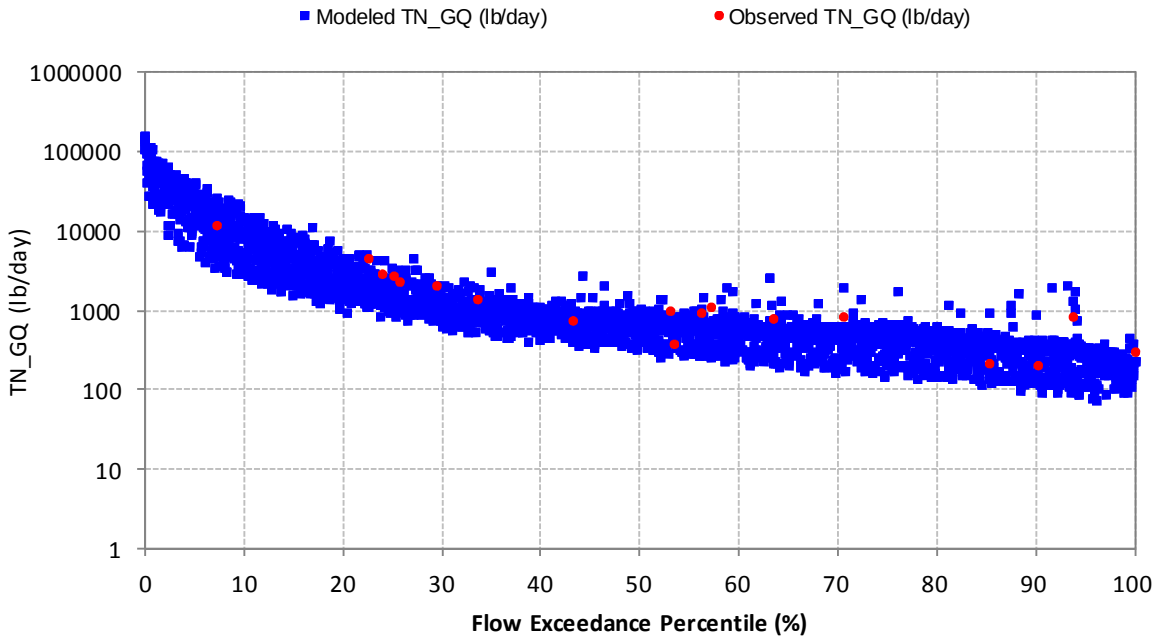

Figure B-282 Modeled vs. Observed Load TN_GQ at EFFFF002

Table B-58 Modeled vs. Observed Load TN_GQ at EFFFF002

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2006	1,606,920	1,560,446	2.98	1,550,500	3.64
2007	1,055,318	1,831,484	-42.38	1,374,520	-23.22
2008	1,512,796	1,802,045	-16.05	1,981,608	-23.66
2009	1,481,424	1,299,835	13.97	1,344,397	10.19

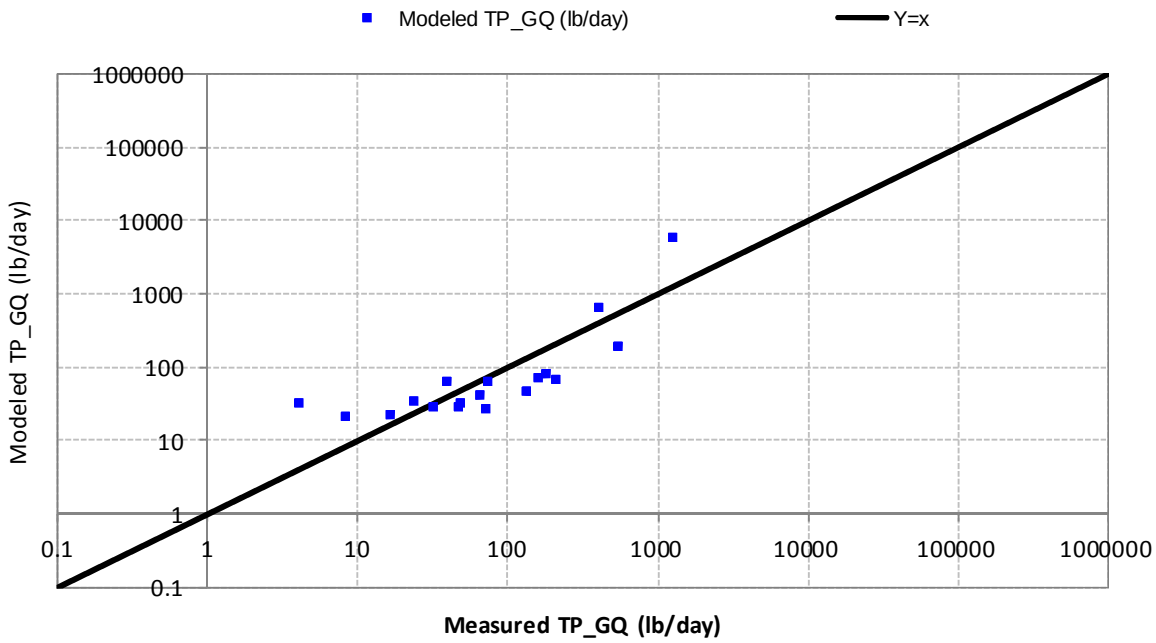

Figure B-283 Modeled vs. Observed Load TP_GQ at EFFFF002

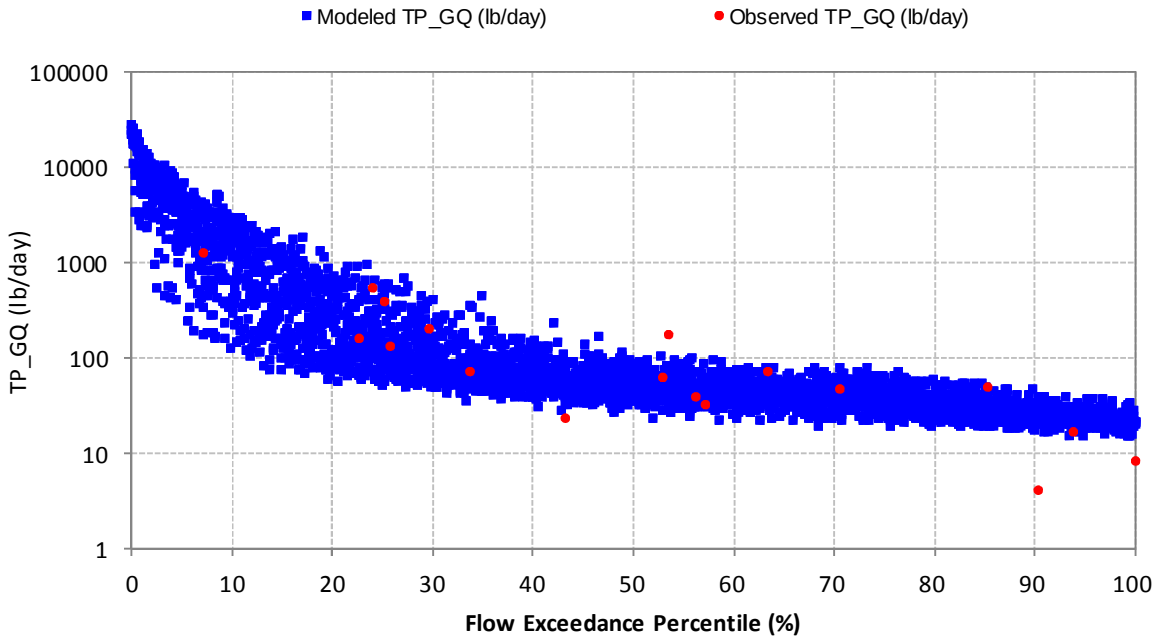

Figure B-284 Modeled vs. Observed Load TP_GQ at EFFFF002

Table B-59 Modeled vs. Observed Load TP_GQ at EFFFF002

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2006	252,227	134,568	87.43	148,006	70.42
2007	170,519	77,033	121.36	74,011	130.4
2008	245,353	139,315	76.11	112,032	119
2009	239,303	147,814	61.89	126,092	89.78

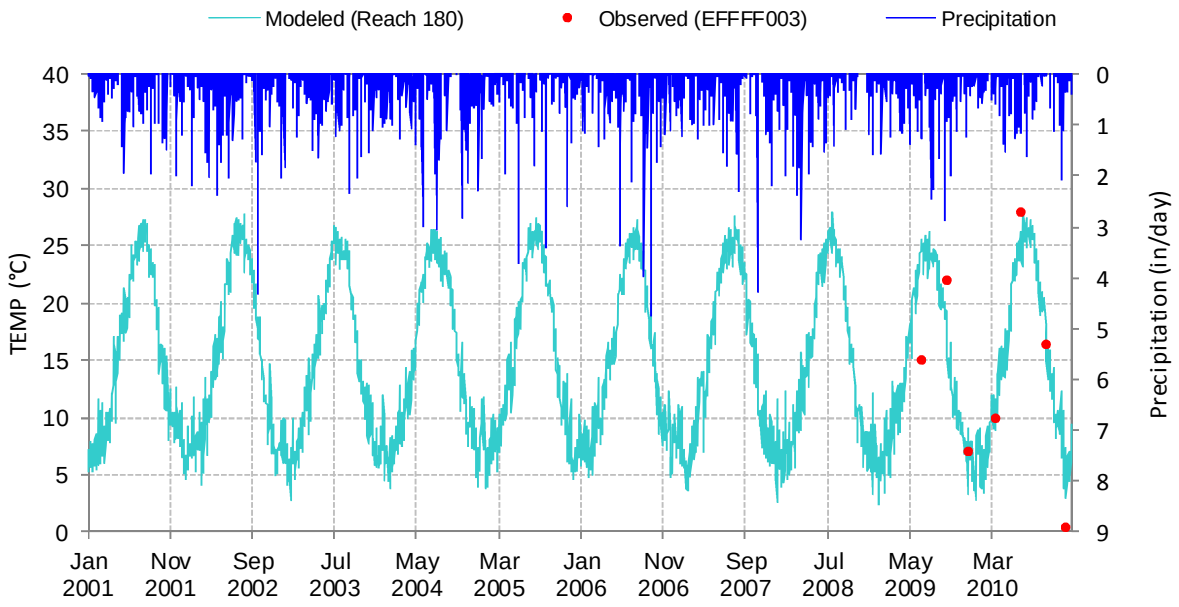

Figure B-285 Modeled vs. Observed TEMP (°C) at EFFFF003

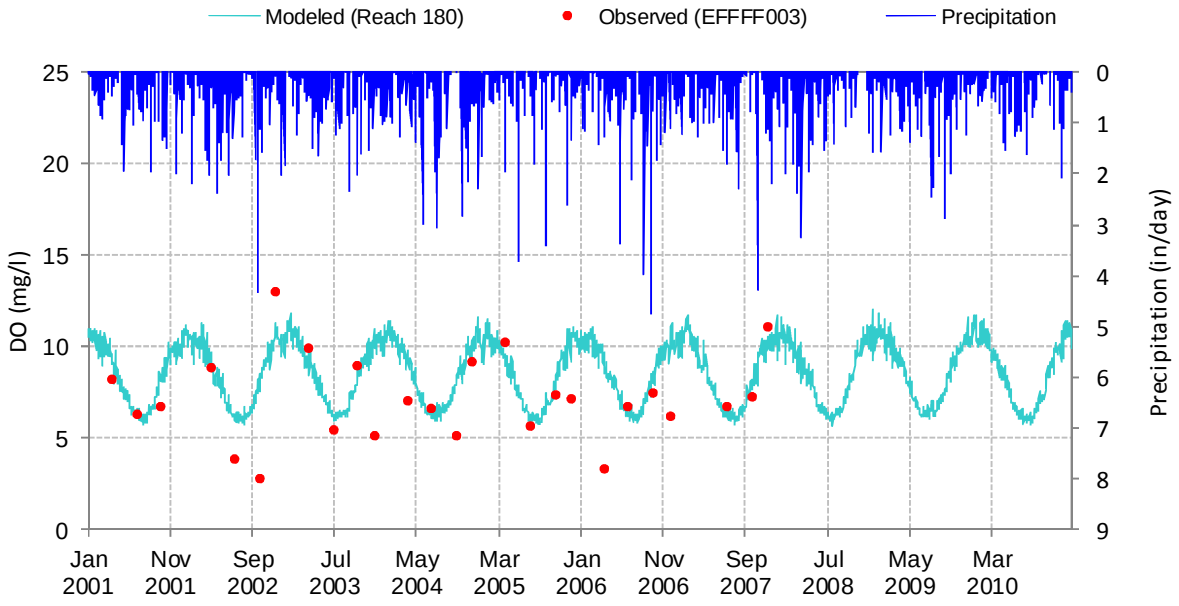

Figure B-286 Modeled vs. Observed DO (mg/l) at EFFFF003

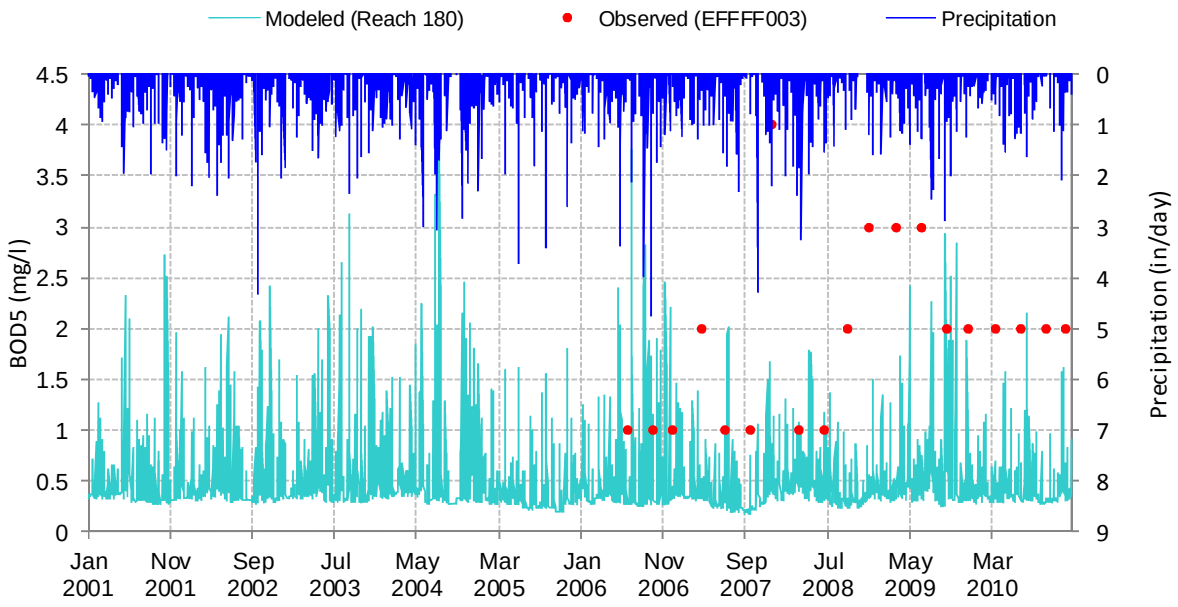

Figure B-287 Modeled vs. Observed BOD5 (mg/l) at EFFFF003

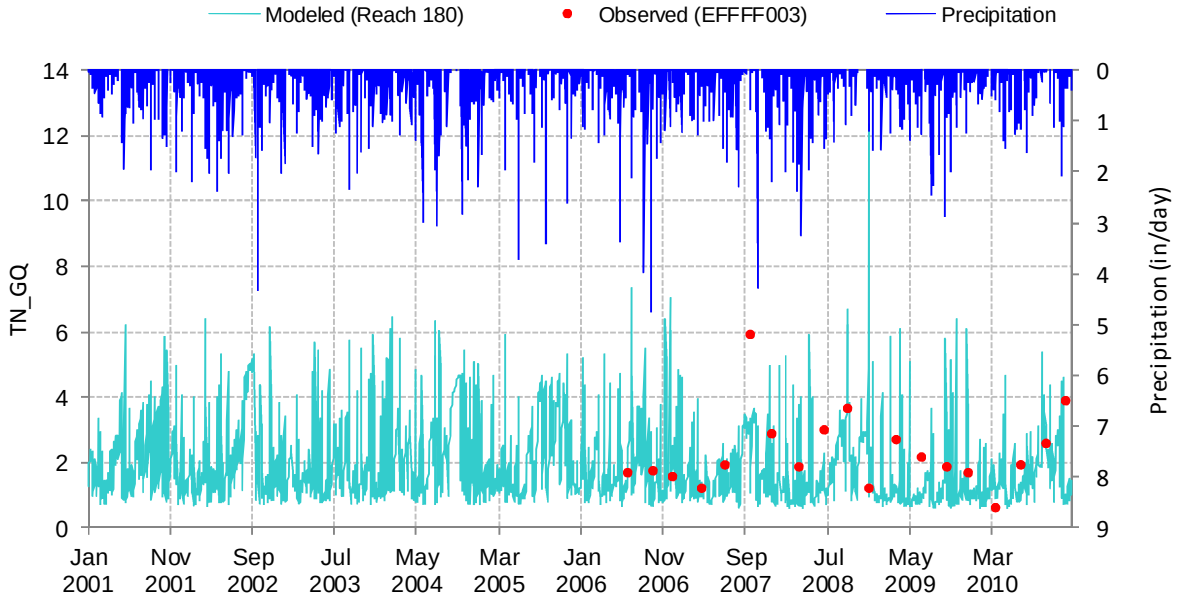

Figure B-288 Modeled vs. Observed TN_GQ at EFFFF003

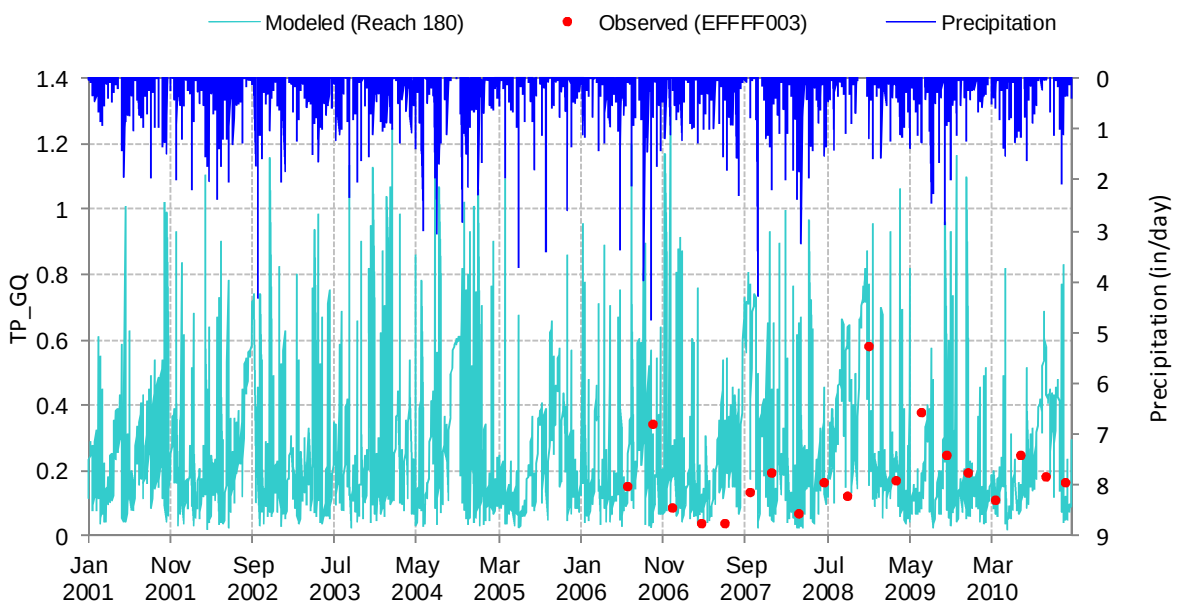

Figure B-289 Modeled vs. Observed TP_GQ at EFFFF003

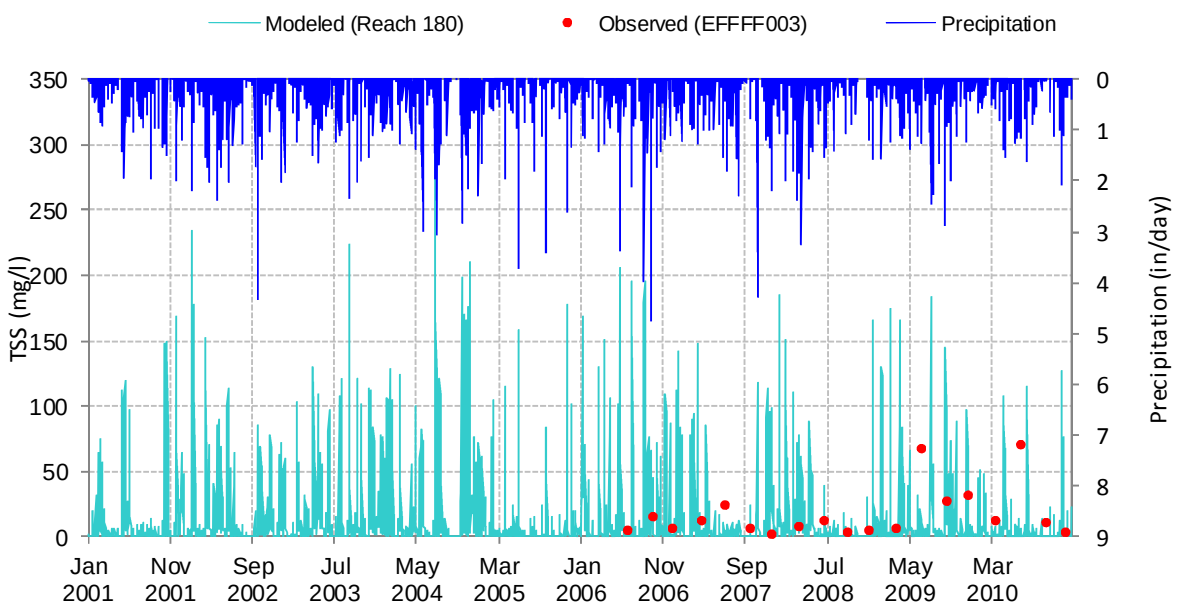

Figure B-290 Modeled vs. Observed TSS (mg/l) at EFFFF003

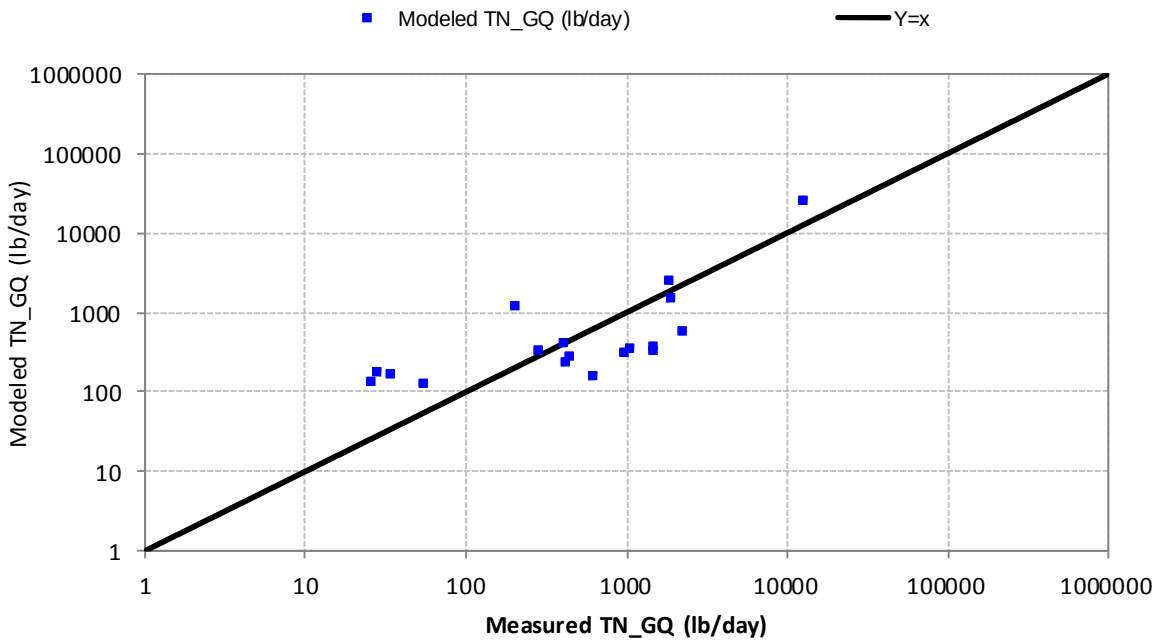

Figure B-291 Modeled vs. Observed Load TN_GQ at EFFFF003

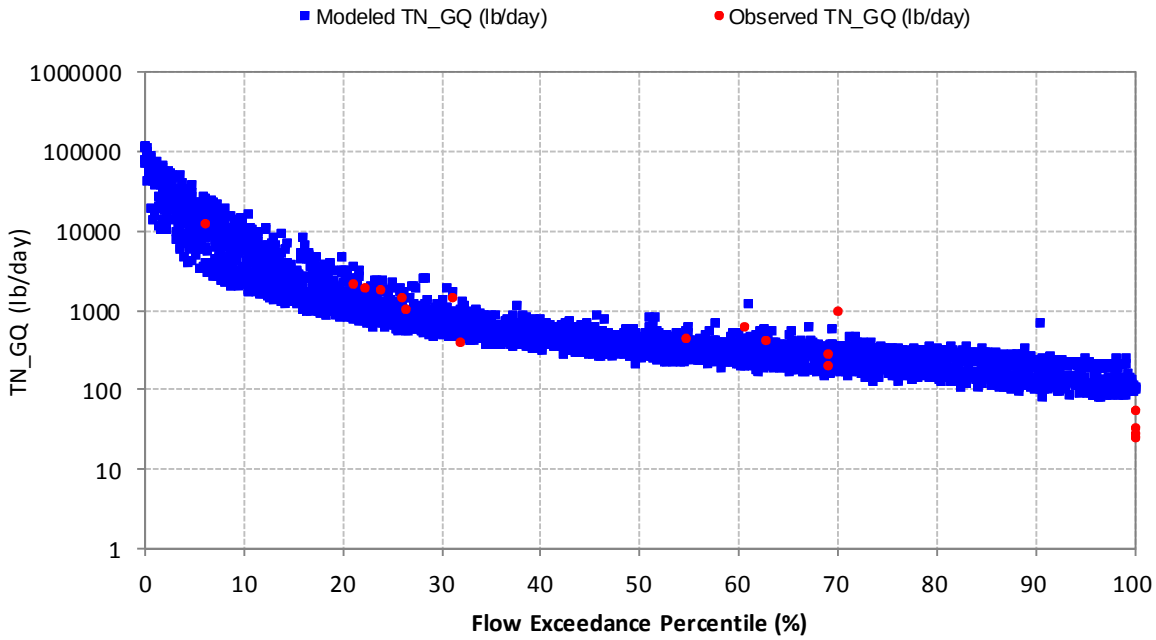

Figure B-292 Modeled vs. Observed Load TN_GQ at EFFFF003

Table B-60 Modeled vs. Observed Load TN_GQ at EFFFF003

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2006	1,289,628	881,507	46.3	876,540	47.13
2007	822,240	1,157,079	-28.94	980,283	-16.12
2008	1,146,557	1,245,491	-7.94	1,118,682	2.49
2009	1,091,603	1,032,744	5.7	1,053,743	3.59
2010	468,691	398,462	17.62	450,669	4

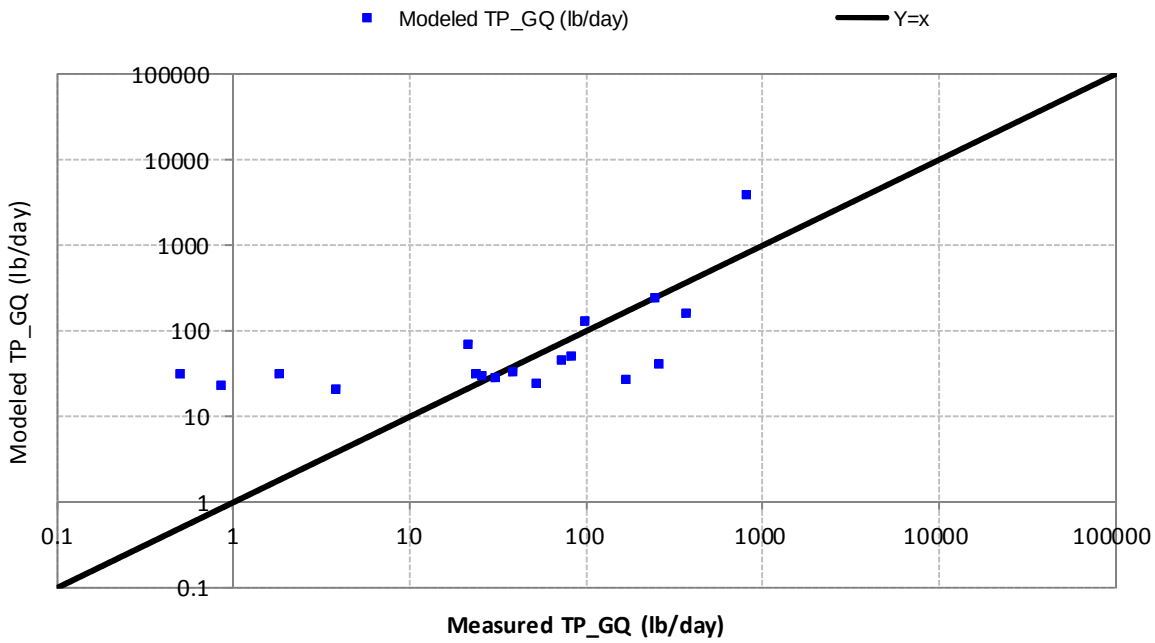

Figure B-293 Modeled vs. Observed Load TP_GQ at EFFFF003

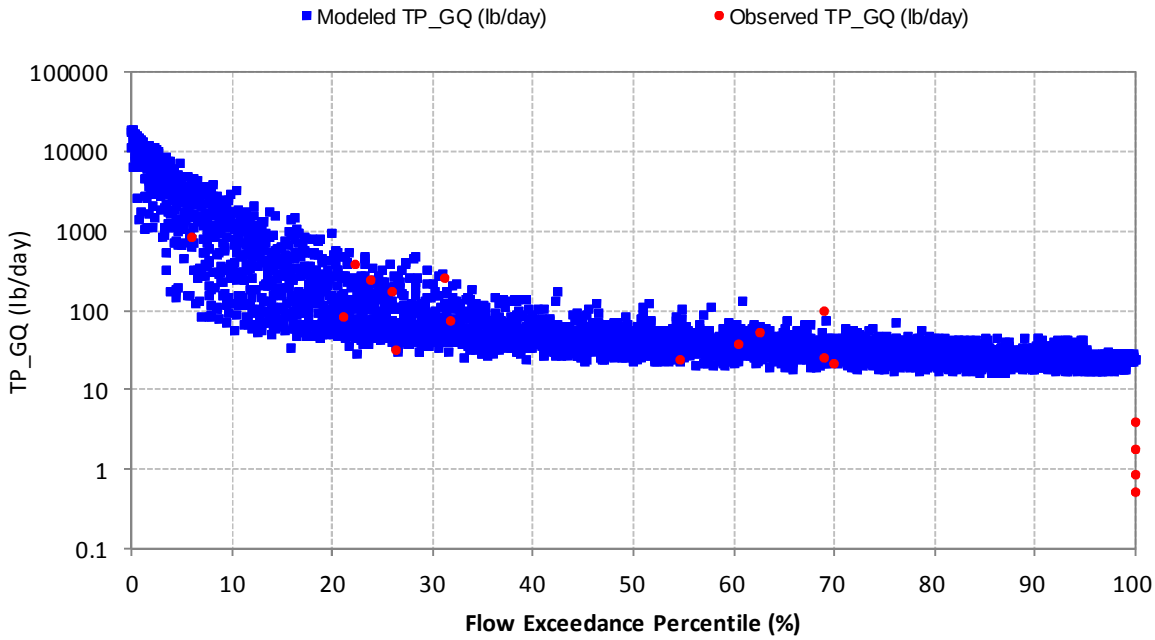

Figure B-294 Modeled vs. Observed Load TP_GQ at EFFFF003

Table B-61 Modeled vs. Observed Load TP_GQ at EFFFF003

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2006	198,559	95,320	108.31	101,892	94.87
2007	128,478	44,089	191.41	42,897	199.51
2008	186,445	81,308	129.31	63,412	194.02
2009	172,910	156,880	10.22	137,908	25.38
2010	71,049	45,418	56.43	48,541	46.37

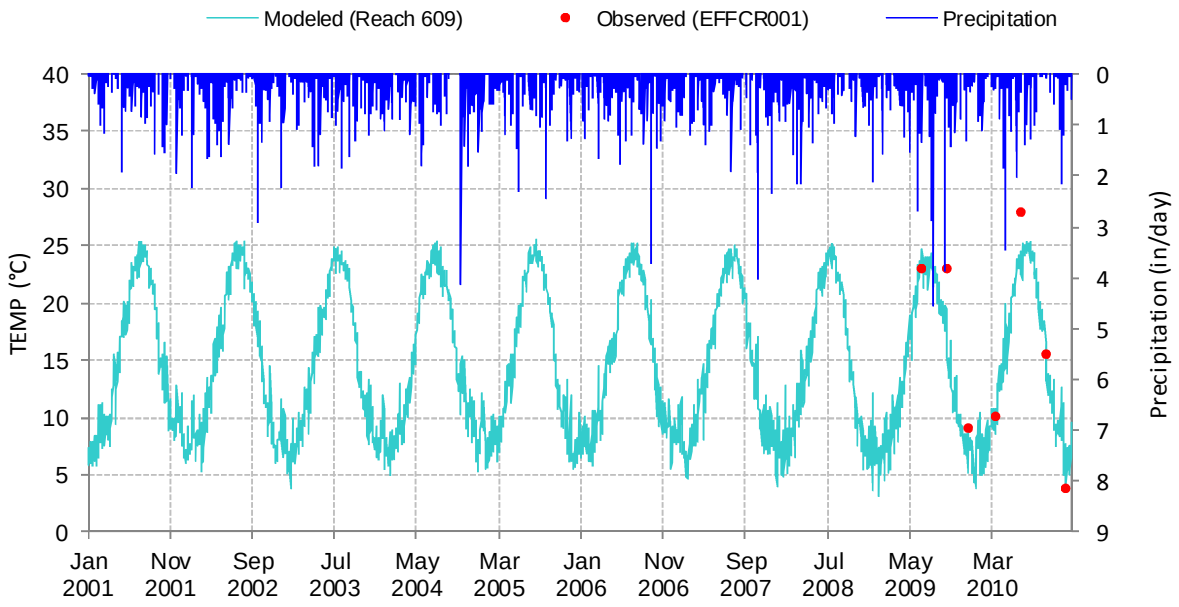

Figure B-295 Modeled vs. Observed TEMP (°C) at EFFCR001

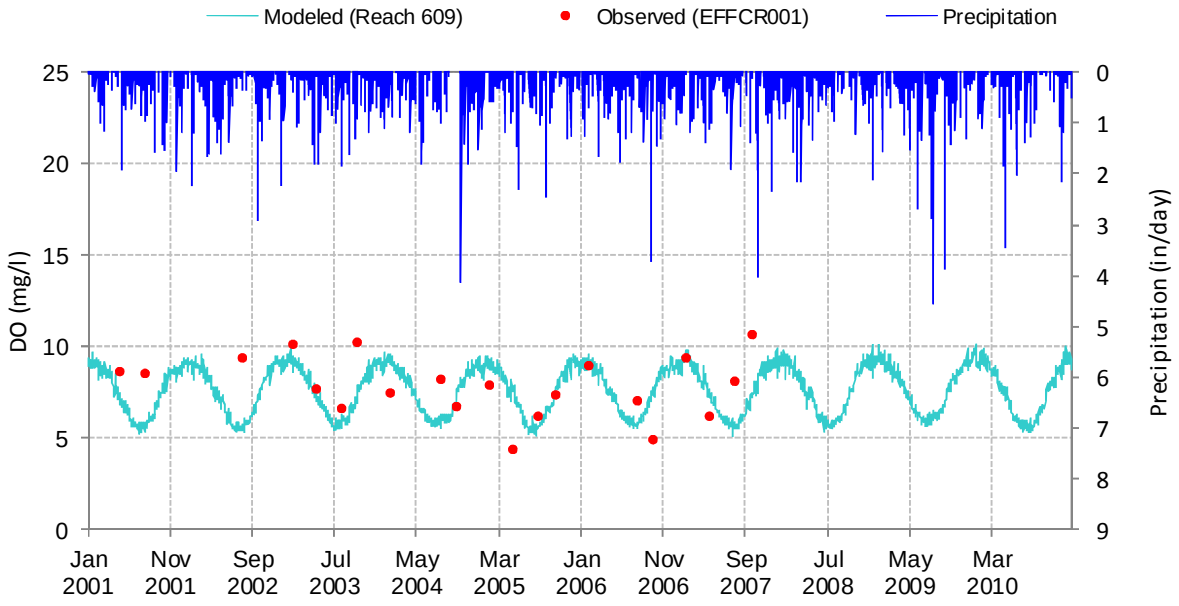

Figure B-296 Modeled vs. Observed DO (mg/l) at EFFCR001

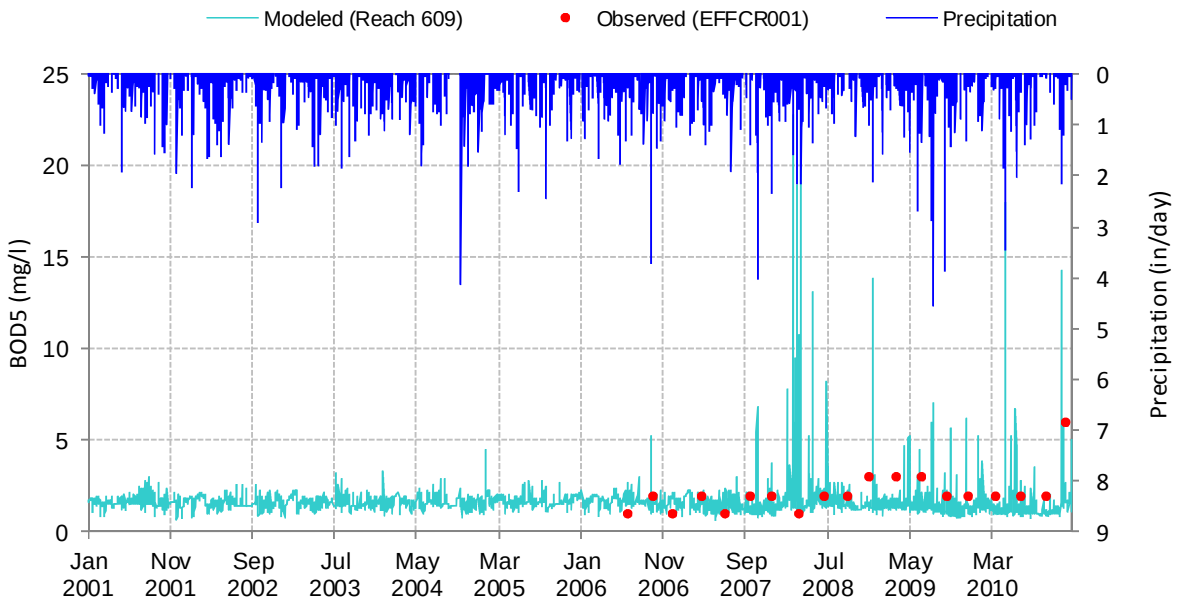

Figure B-297 Modeled vs. Observed BOD5 (mg/l) at EFFCR001

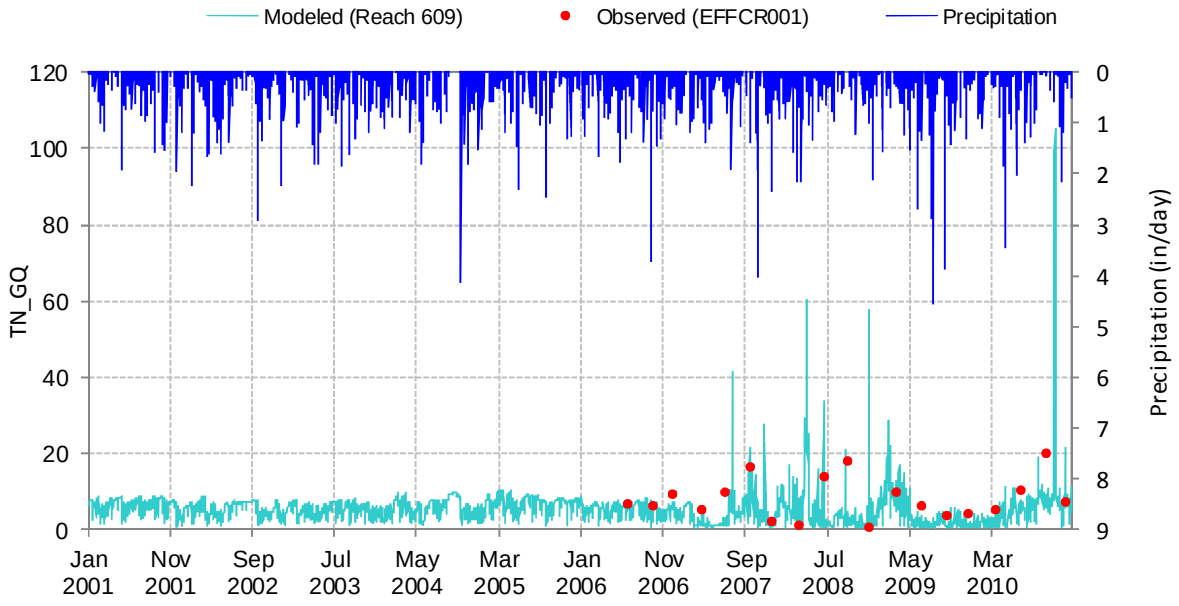

Figure B-298 Modeled vs. Observed TN_GQ at EFFCR001

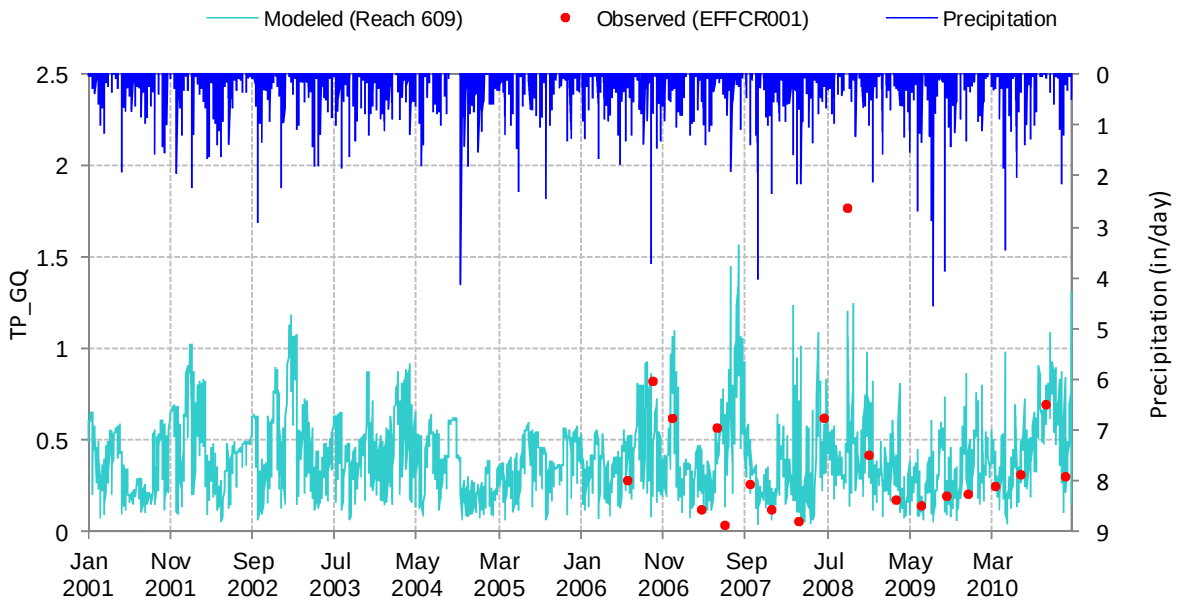

Figure B-299 Modeled vs. Observed TP_GQ at EFFCR001

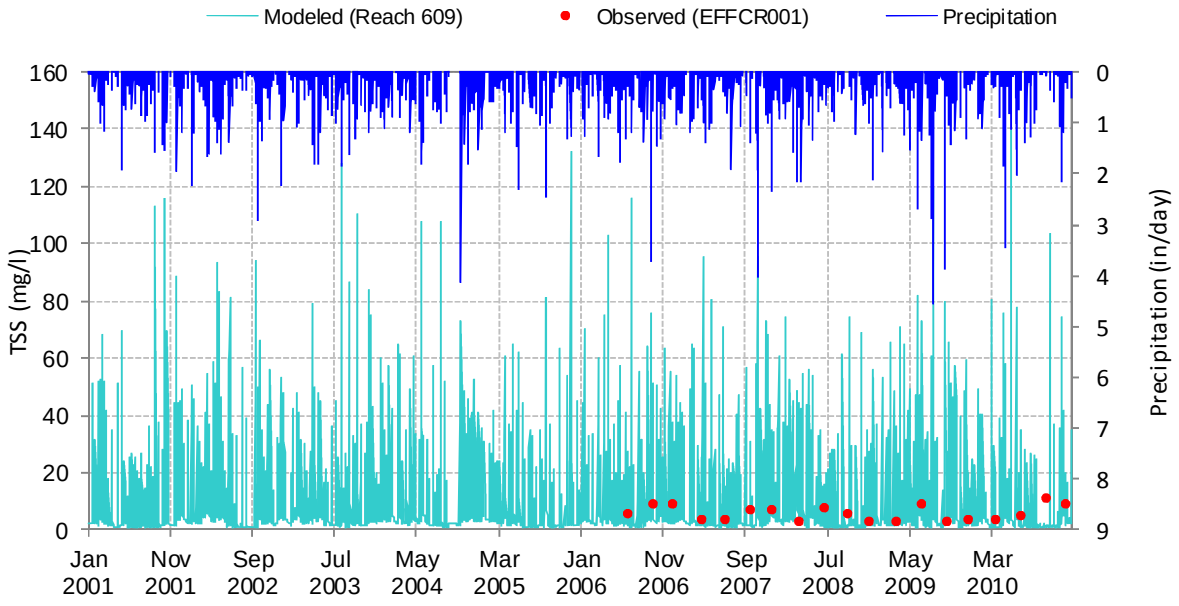

Figure B-300 Modeled vs. Observed TSS (mg/l) at EFFCR001

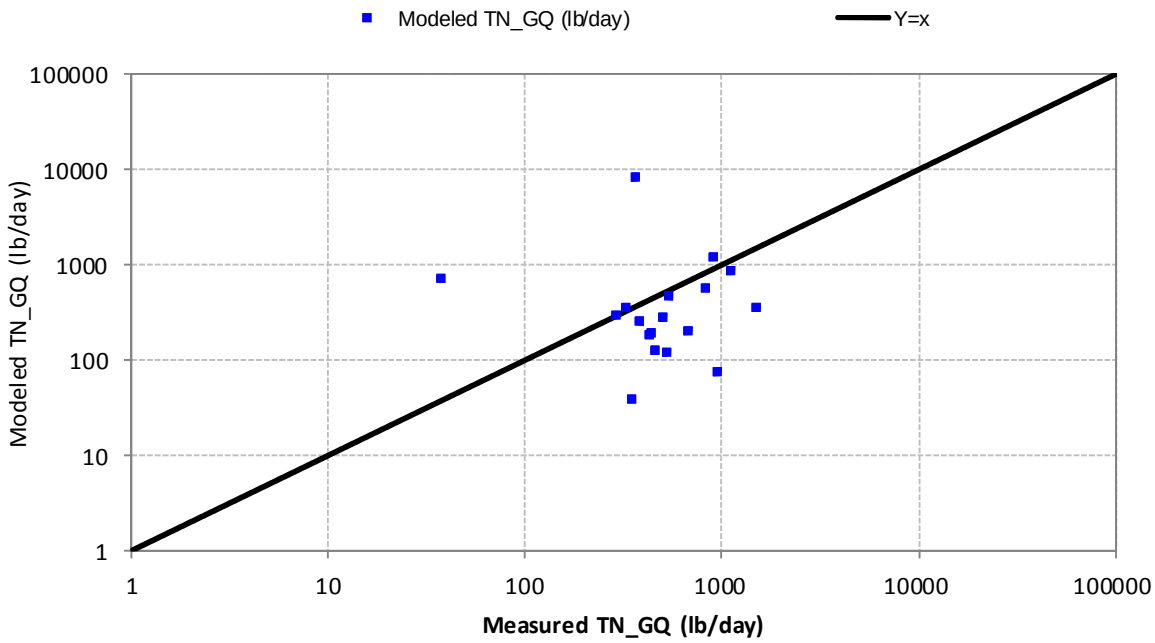

Figure B-301 Modeled vs. Observed Load TN_GQ at EFFCR001

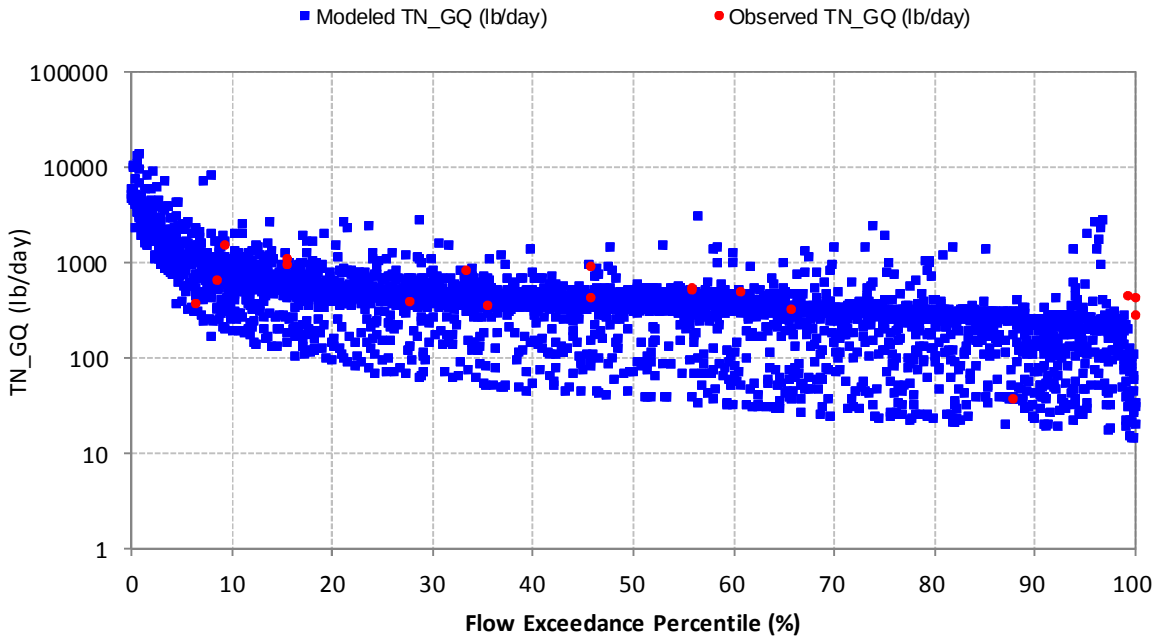

Figure B-302 Modeled vs. Observed Load TN_GQ at EFFCR001

Table B-62 Modeled vs. Observed Load TN_GQ at EFFCR001

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2006	211,871	446,026	-52.5	450,969	-53.02
2007	141,307	539,661	-73.82	417,142	-66.12
2008	252,336	268,601	-6.06	351,971	-28.31
2009	166,443	300,637	-44.64	317,338	-47.55
2010	149,011	332,179	-55.14	356,227	-58.17

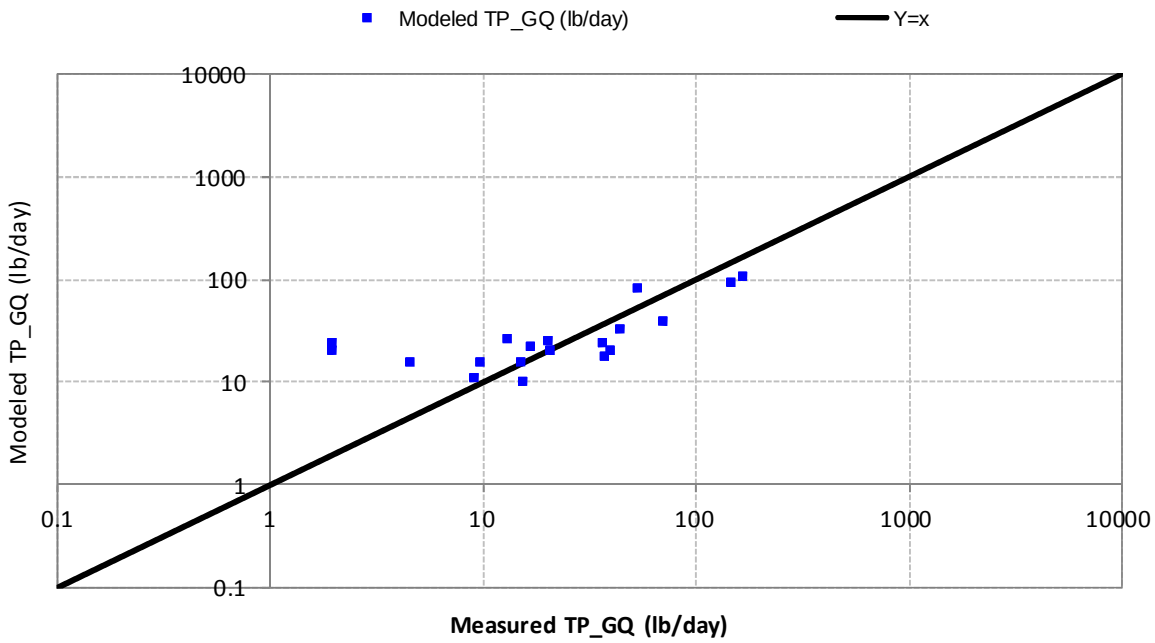

Figure B-303 Modeled vs. Observed Load TP_GQ at EFFCR001

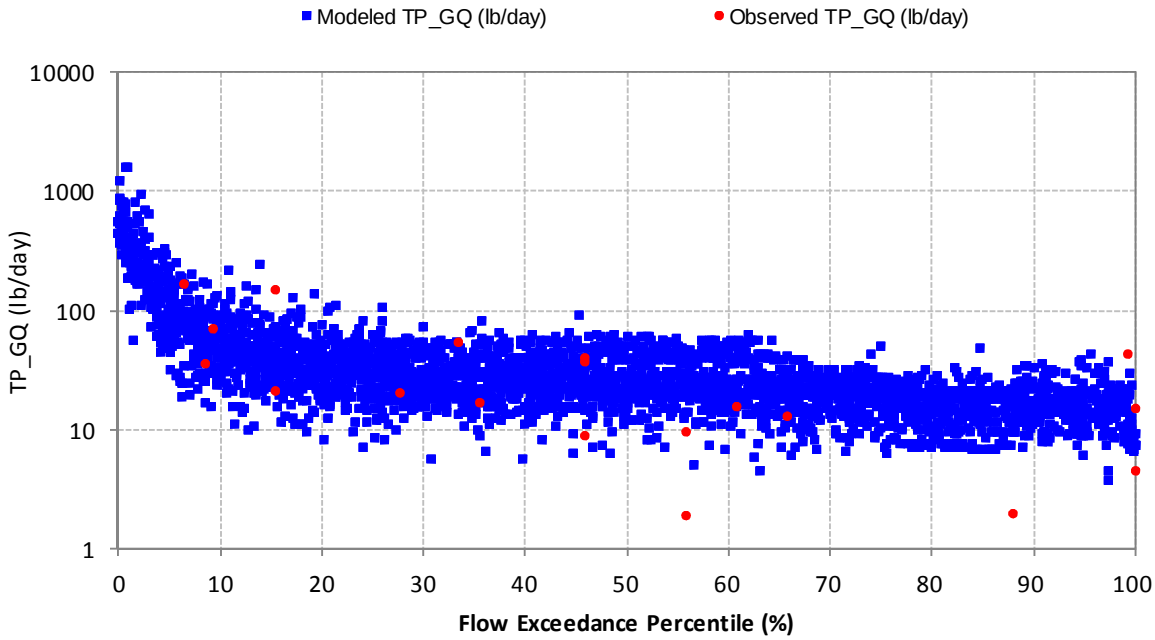

Figure B-304 Modeled vs. Observed Load TP_GQ at EFFCR001

Table B-63 Modeled vs. Observed Load TP_GQ at EFFCR001

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2006	17,904	25,393	-29.49	31,437	-43.05
2007	12,918	18,746	-31.09	13,827	-6.57
2008	17,947	17,437	2.93	21,867	-17.93
2009	14,689	11,839	24.08	10,414	41.06
2010	14,985	13,098	14.4	13,375	12.03

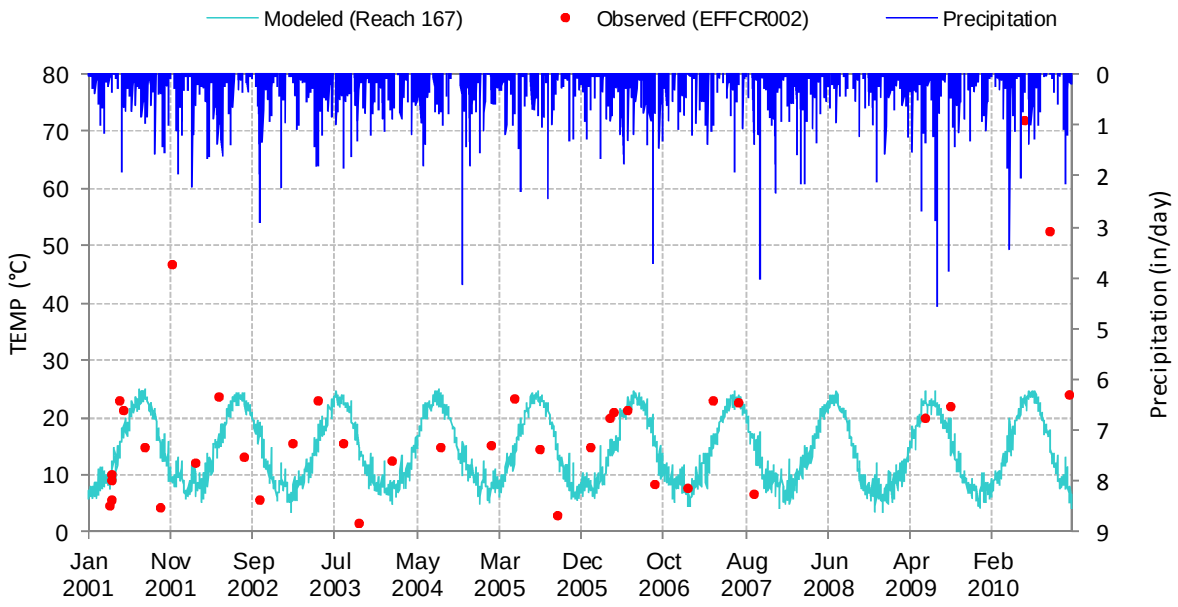

Figure B-305 Modeled vs. Observed TEMP (°C) at EFFCR002

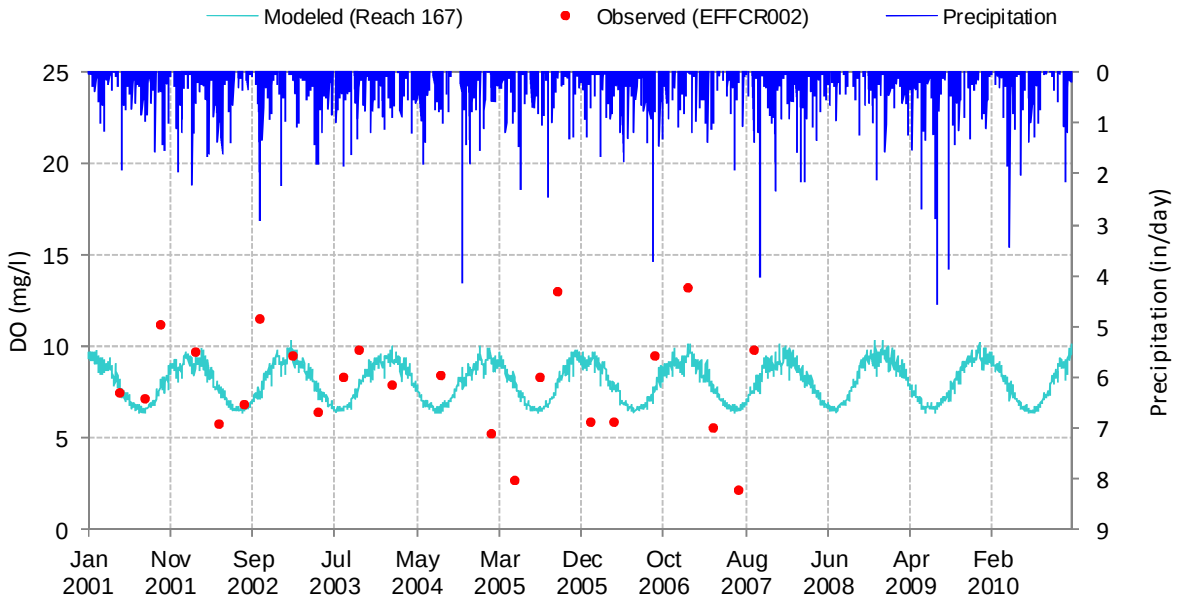

Figure B-306 Modeled vs. Observed DO (mg/l) at EFFCR002

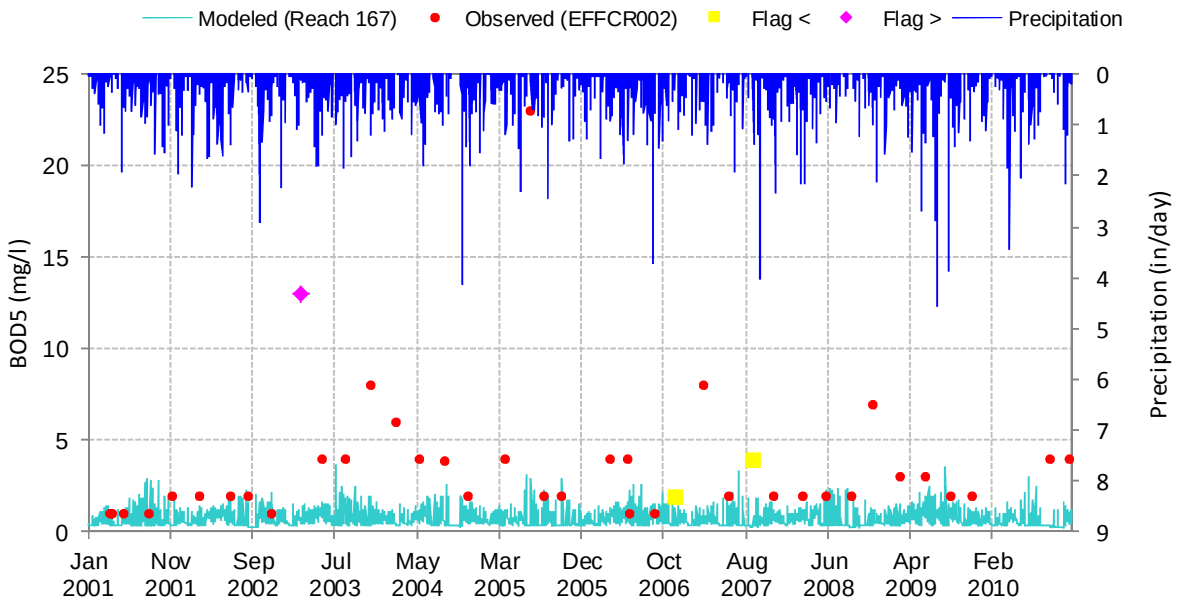

Figure B-307 Modeled vs. Observed BOD5 (mg/l) at EFFCR002

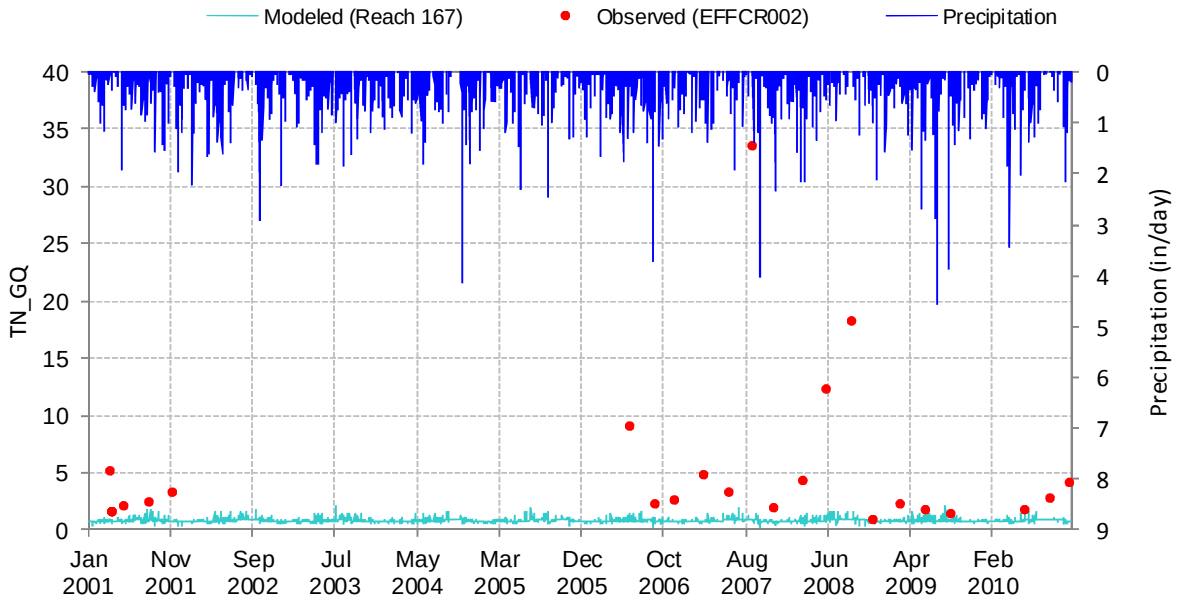

Figure B-308 Modeled vs. Observed TN_GQ at EFFCR002

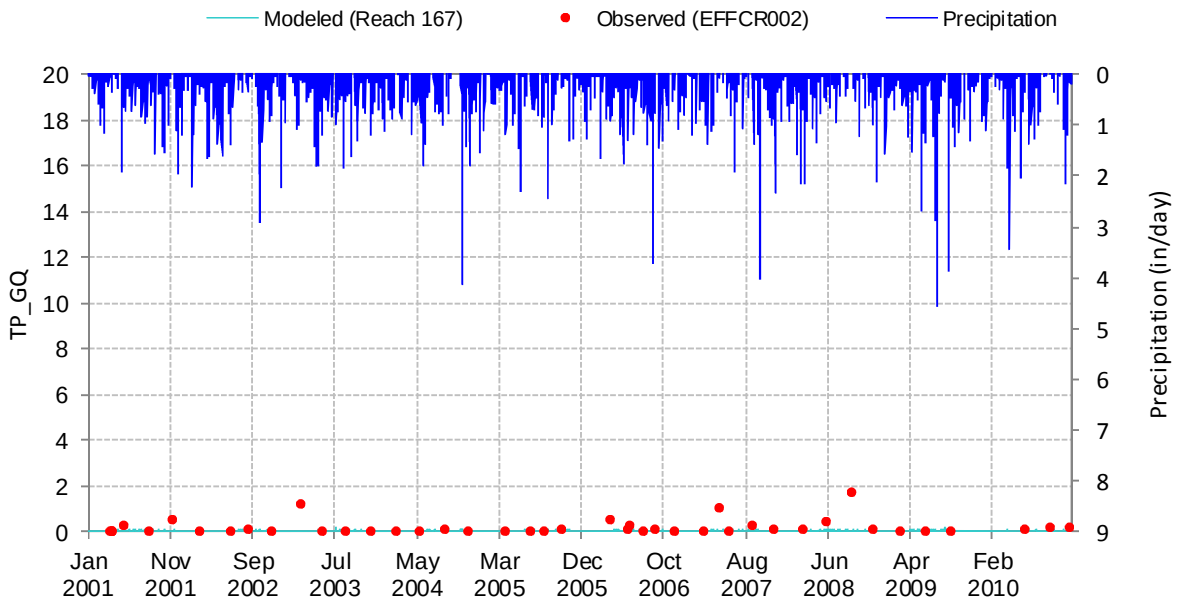

Figure B-309 Modeled vs. Observed TP_GQ at EFFCR002

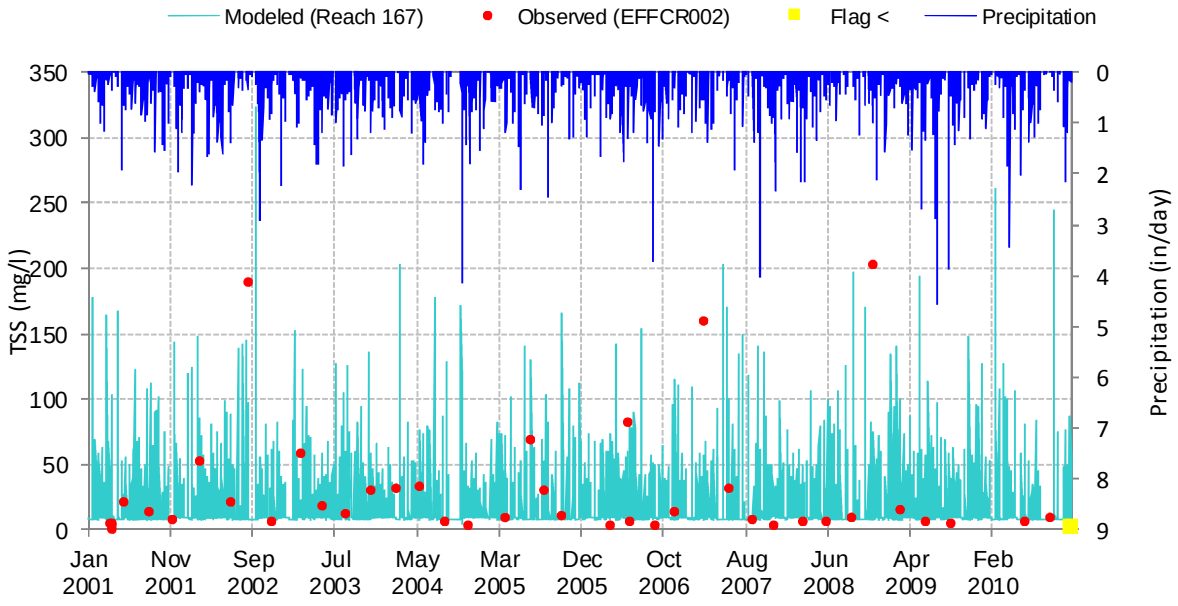

Figure B-310 Modeled vs. Observed TSS (mg/l) at EFFCR002

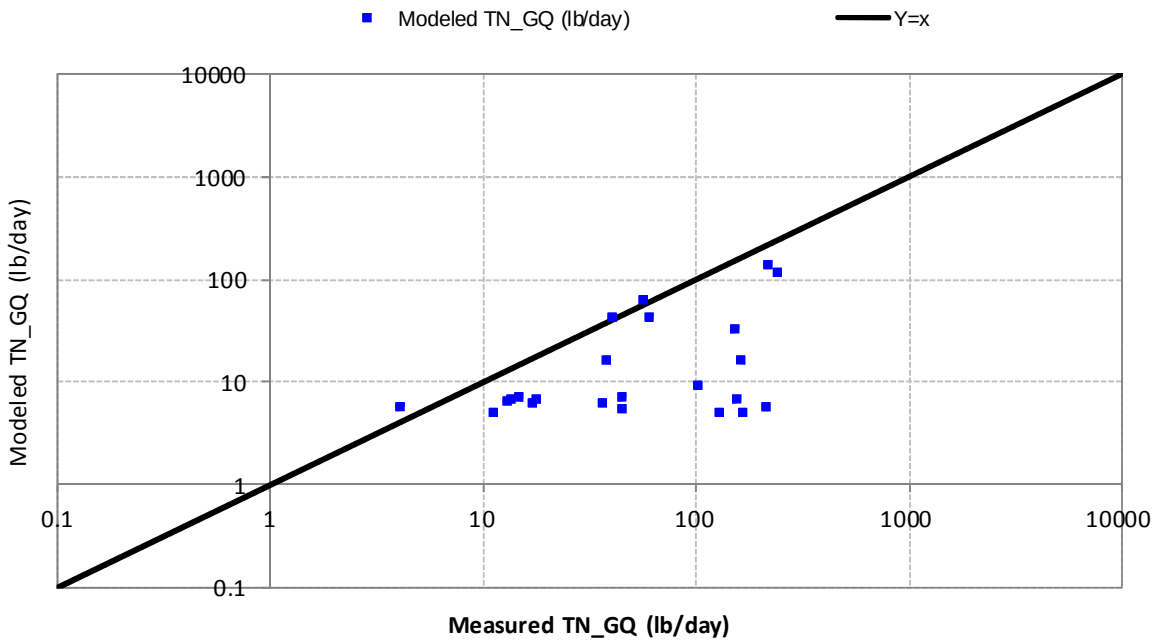

Figure B-311 Modeled vs. Observed Load TN_GQ at EFFCR002

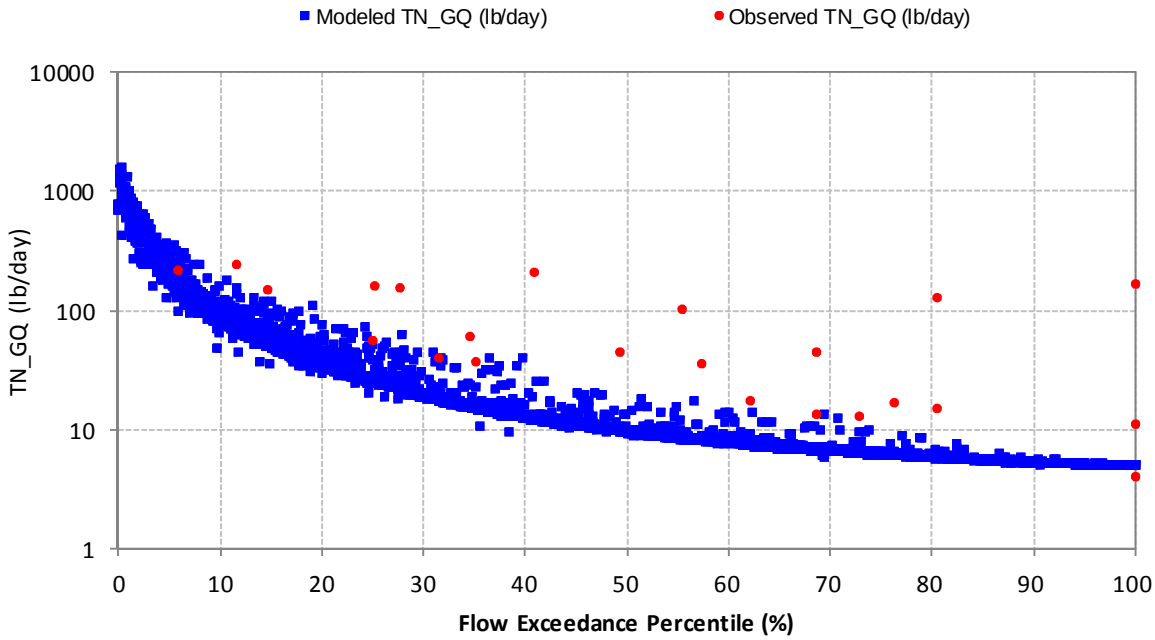

Figure B-312 Modeled vs. Observed Load TN_GQ at EFFCR002

Table B-64 Modeled vs. Observed Load TN_GQ at EFFCR002

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2001	14,101	39,161	-63.99	49,620	-71.58
2006	19,148	124,203	-84.58	144,091	-86.71
2007	14,758	214,398	-93.12	151,334	-90.25
2008	16,686	119,864	-86.08	151,013	-88.95
2009	22,138	34,552	-35.93	34,958	-36.67

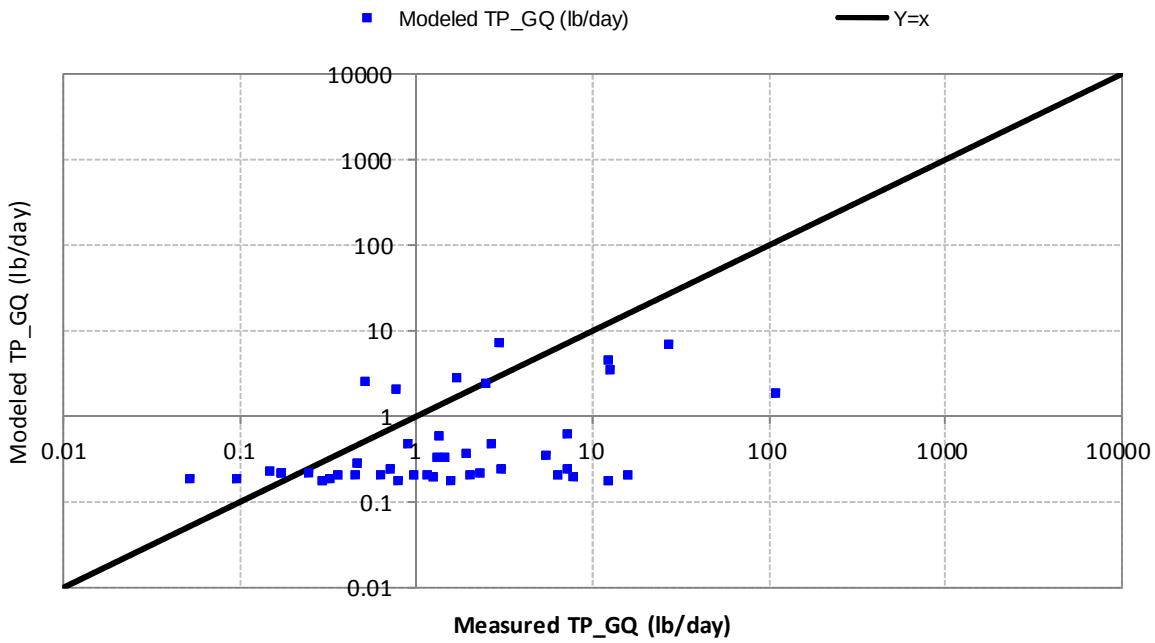

Figure B-313 Modeled vs. Observed Load TP_GQ at EFFCR002

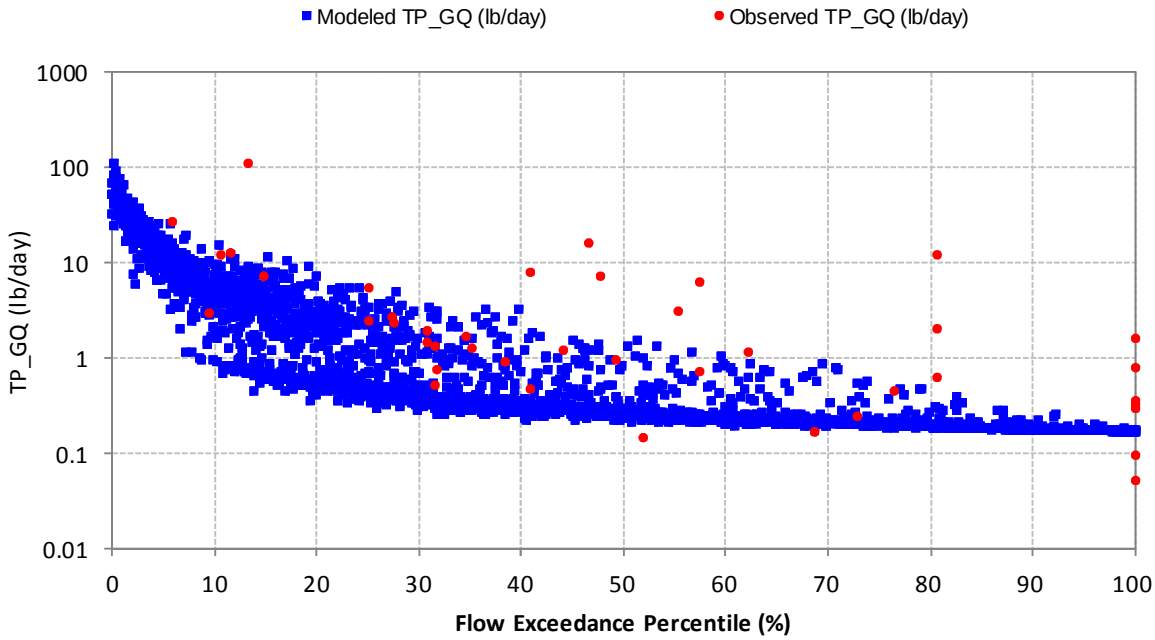

Figure B-314 Modeled vs. Observed Load TP_GQ at EFFCR002

Table B-65 Modeled vs. Observed Load TP_GQ at EFFCR002

Year	Simulated	Measured Stepwise		Measured Interpolation	
	(lb/yr)	(lb/yr)	% Error	(lb/yr)	% Error
2001	741	4,590	-83.86	4,476	-83.45
2002	1,076	3,325	-67.65	3,735	-71.21
2003	907	8,485	-89.31	7,512	-87.92
2004	1,069	1,467	-27.11	1,357	-21.19
2005	655	584	12.18	808	-19
2006	931	4,700	-80.18	5,655	-83.53
2007	779	3,404	-77.11	3,966	-80.35
2008	831	6,248	-86.7	7,381	-88.74
2009	1,159	1,472	-21.23	1,393	-16.8

Table B-66 Summary Qualitative and Quantitative scores for the MSD Water Quality Validation stations

Water Quality Station location: Main Stem- Floyds Fork					
USGS Station ID	Station name	Qualitative Score		Quantitative Score	
		TN	TP	TN	TP
EFFFF001	Floyds Fork at Ash Avenue	G	G	55	39
EFFFF002	Floyds Fork at BardStown Road	VG	F	13	82
EFFFF003	Floyds Fork at Old Taylorsville Road	VG	F	2	79
Water Quality Station location: Tributaries					
EFFCR001	Chenoweth Run # 1 at Gelhaus Lane	G	VG	52	21
EFFCR002	Chenoweth Run # 1 at Rickriegal Parkway	F	F	84	76

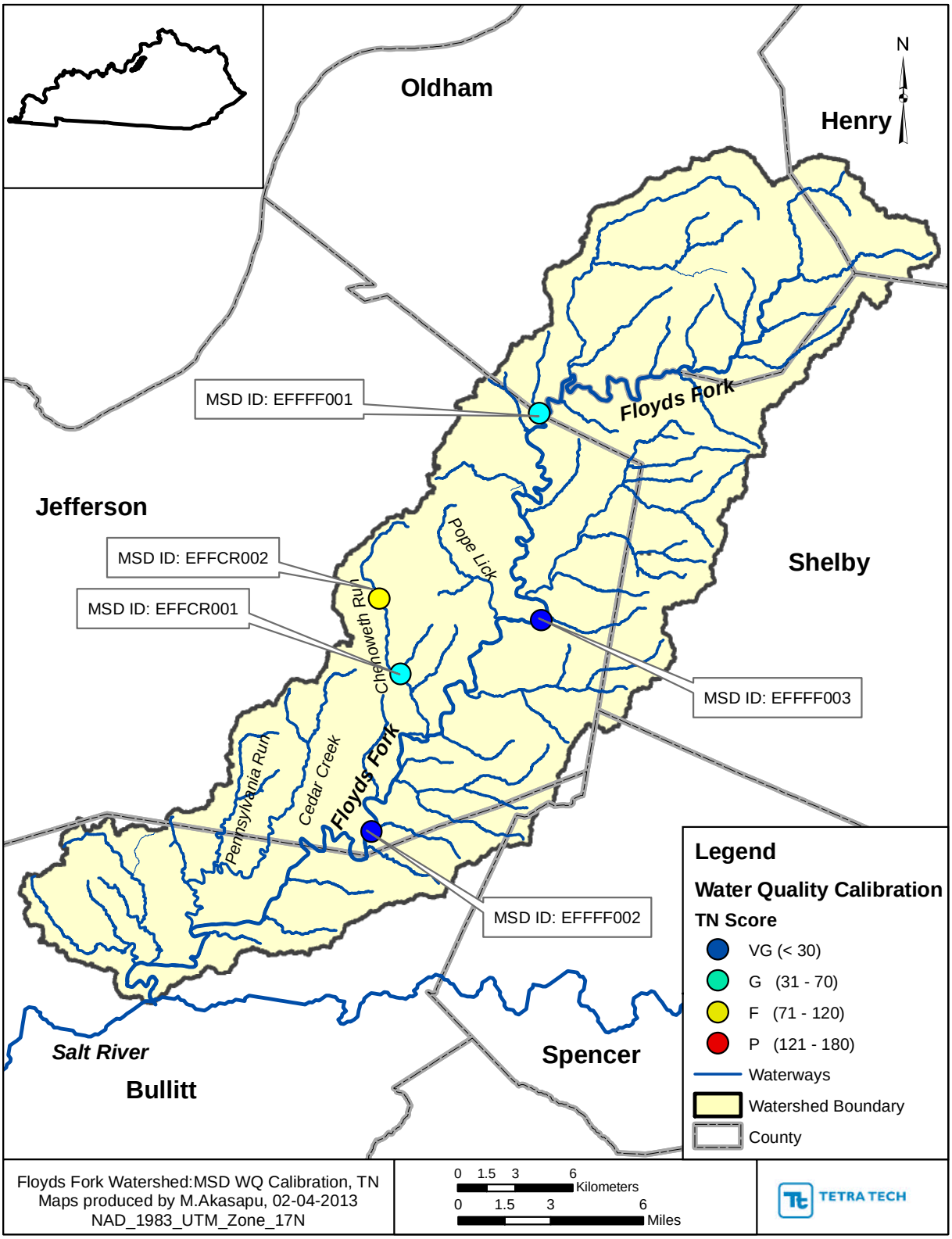

Figure B-315 MSD Water Quality for TN in the Floyds Fork Watershed

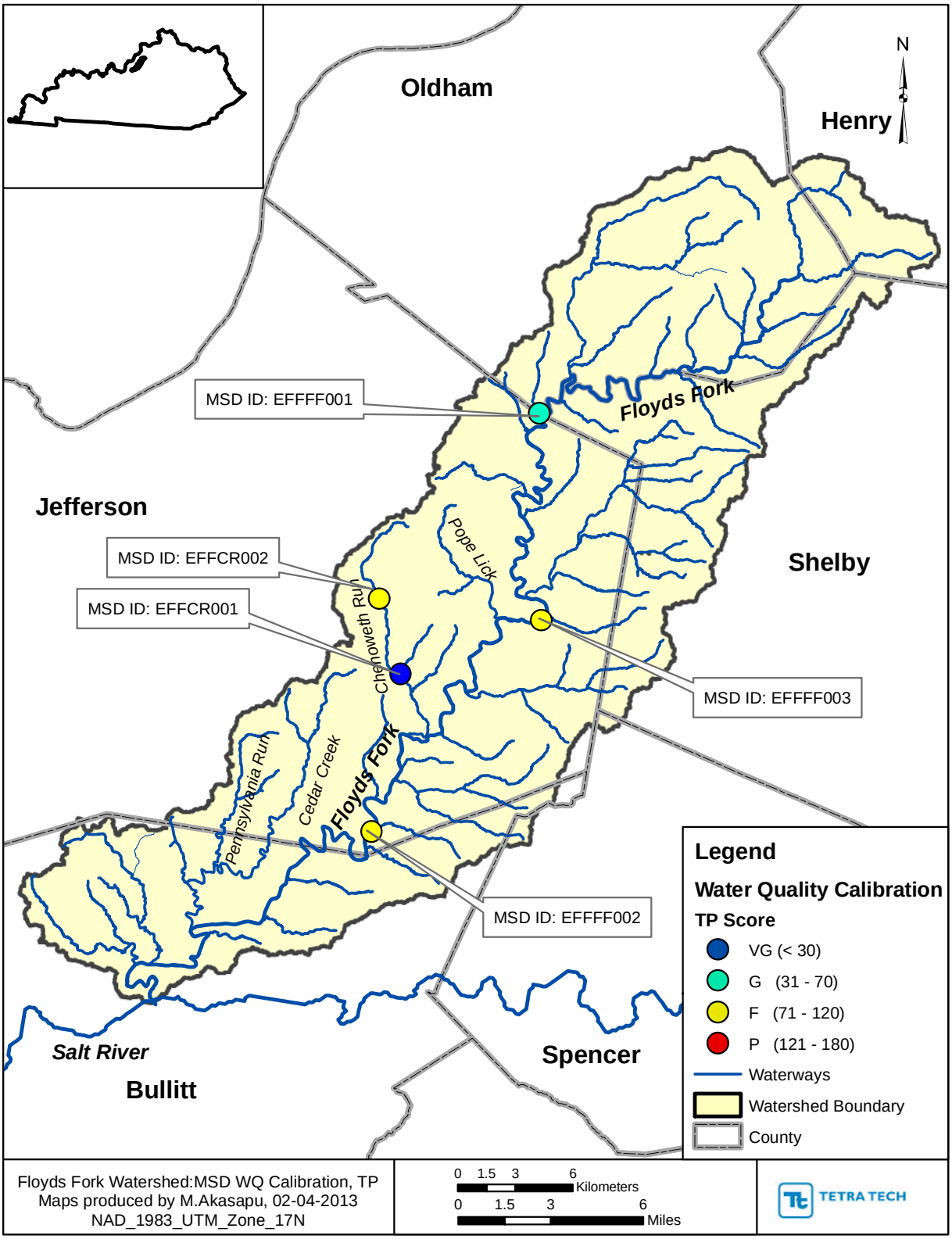

Figure B-316 MSD Water Quality for TP in the Floyds Fork Watershed