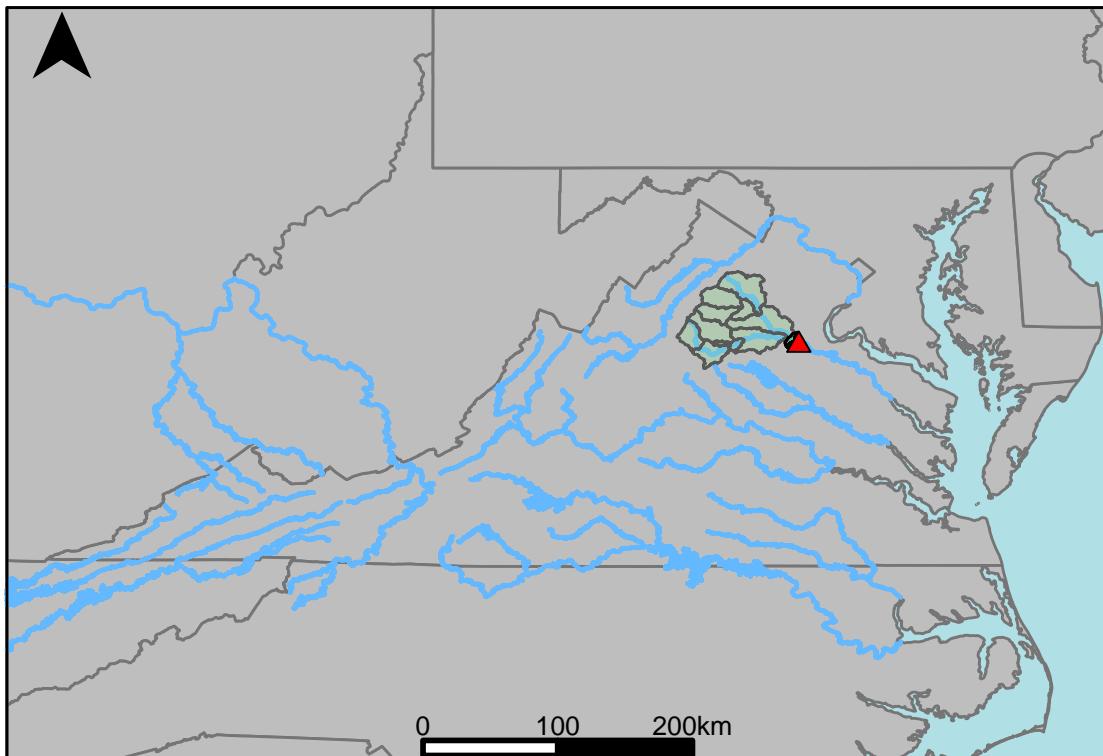


River Segment: RU5_6030_0001 - Scenario :
CFBASE30Y20180615 : Gage 01668000 vs. VAHydro



This river segment follows part of the flow of the Rappahannock River near Fredericksburg, VA. Gage 01668000 is located in Spotsylvania County, VA (Lat 38°18'30", Long 77°31'46") approximately 5.3 miles upstream from Fredericksburg, VA. Drainage area is 1,595 sq. miles. This gage started taking data in 1907 and is still taking data currently. There are no significant anthropogenic alterations in this area that would affect the flow conditions. The average daily discharge change between scenario 1 and scenario 2 for the 20 year timespan was -0.571429%, with 43.3% of its rolling three month time spans above 20% difference.

Table 1: Monthly Low Flows

	USGS Gage	VAHydro	Pct. Difference
Jan. Low Flow	287	384	33.8
Feb. Low Flow	406	473	16.5
Mar. Low Flow	789	856	8.49
Apr. Low Flow	824	1060	28.64
May Low Flow	966	1150	19.05
Jun. Low Flow	964	1270	31.74
Jul. Low Flow	1160	1060	-8.62
Aug. Low Flow	670	672	0.3
Sep. Low Flow	459	651	41.83
Oct. Low Flow	281	369	31.32
Nov. Low Flow	197	394	100
Dec. Low Flow	138	221	60.14

Table 2: Monthly Average Flows

	USGS Gage	VAHydro	Pct. Difference
Overall Mean Flow	1750	1740	-0.57
Jan. Mean Flow	2340	2160	-7.69
Feb. Mean Flow	2330	2490	6.87
Mar. Mean Flow	2960	2990	1.01
Apr. Mean Flow	2340	2460	5.13
May Mean Flow	1960	1710	-12.76
Jun. Mean Flow	1460	1250	-14.38
Jul. Mean Flow	898	966	7.57
Aug. Mean Flow	640	835	30.47
Sep. Mean Flow	1310	1250	-4.58
Oct. Mean Flow	1020	1210	18.63
Nov. Mean Flow	1800	1520	-15.56
Dec. Mean Flow	1960	2090	6.63

Table 3: Monthly High Flows

	USGS Gage	VAHydro	Pct. Difference
Jan. High Flow	1500	1570	4.67
Feb. High Flow	9120	1650	-81.91
Mar. High Flow	7500	3150	-58
Apr. High Flow	9000	3780	-58
May High Flow	3570	3030	-15.13
Jun. High Flow	8950	4850	-45.81
Jul. High Flow	5570	3540	-36.45
Aug. High Flow	4160	2420	-41.83
Sep. High Flow	3200	2000	-37.5
Oct. High Flow	2780	1230	-55.76
Nov. High Flow	1680	1060	-36.9
Dec. High Flow	1380	931	-32.54

Table 4: Period Low Flows

	USGS Gage	VAHydro	Pct. Difference
Min. 1 Day Min	8.8	44.7	407.95
Med. 1 Day Min	113	169	49.56
Min. 3 Day Min	8.8	46.1	423.86
Med. 3 Day Min	117	178	52.14
Min. 7 Day Min	9.76	49.9	411.27
Med. 7 Day Min	123	185	50.41
Min. 30 Day Min	35.2	86.4	145.45
Med. 30 Day Min	183	266	45.36
Min. 90 Day Min	85.1	179	110.34
Med. 90 Day Min	463	576	24.41
7Q10	36.6	88.9	142.9
Year of 90-Day Min. Flow	2002	1999	-0.15
Drought Year Mean	440	882	100.45
Mean Baseflow	833	1080	29.65

Table 5: Period High Flows

	USGS Gage	VAHydro	Pct. Difference
Max. 1 Day Max	54600	32400	-40.66
Med. 1 Day Max	25700	9450	-63.23
Max. 3 Day Max	40700	28000	-31.2
Med. 3 Day Max	16300	8660	-46.87
Max. 7 Day Max	22500	22000	-2.22
Med. 7 Day Max	12000	7510	-37.42
Max. 30 Day Max	10200	10700	4.9
Med. 30 Day Max	5040	4040	-19.84
Max. 90 Day Max	6840	7190	5.12
Med. 90 Day Max	2910	2680	-7.9

Table 6: Non-Exceedance Flows

	USGS Gage	VAHydro	Pct. Difference
1% Non-Exceedance	61.7	118	91.25
5% Non-Exceedance	134	200	49.25
50% Non-Exceedance	983	1150	16.99
95% Non-Exceedance	5460	5440	-0.37
99% Non-Exceedance	14300	11800	-17.48
Sept. 10% Non-Exceedance	98	172	75.51

Fig. 1: Hydrograph

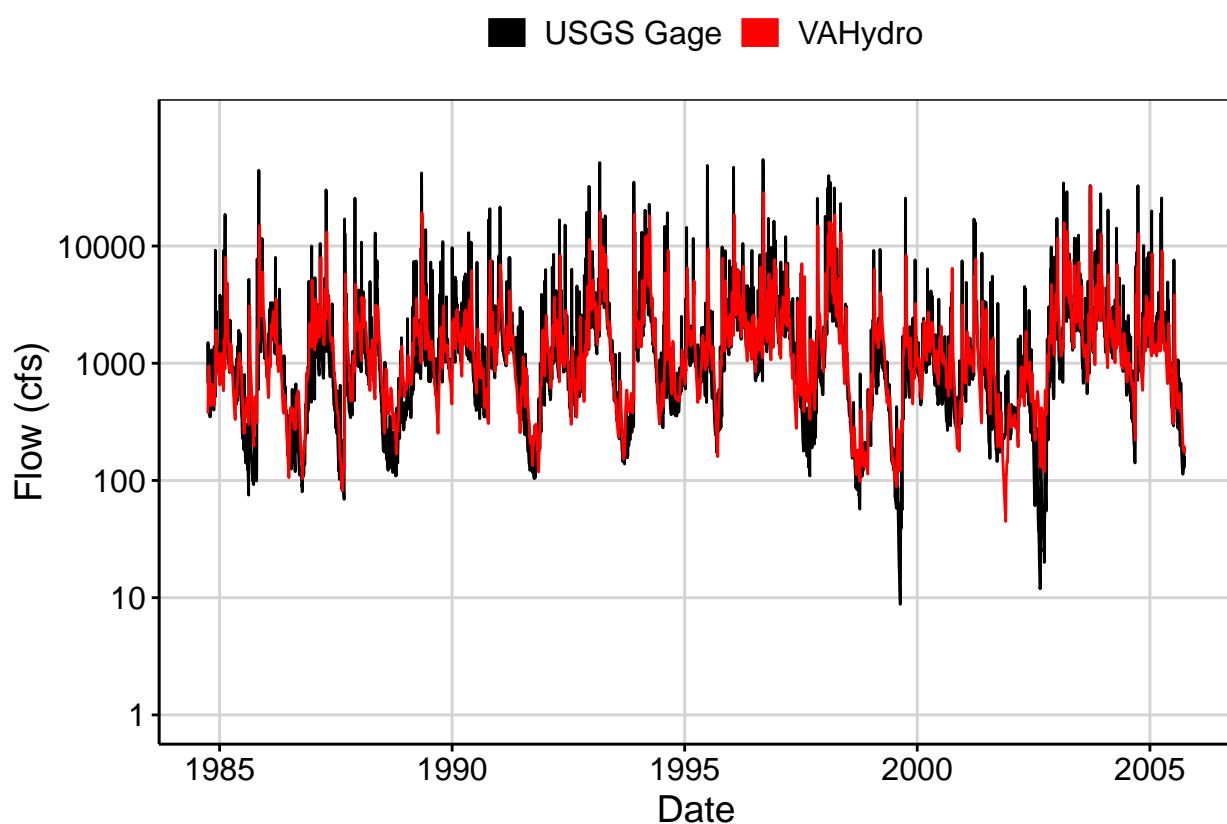


Fig. 2: Zoomed Hydrograph

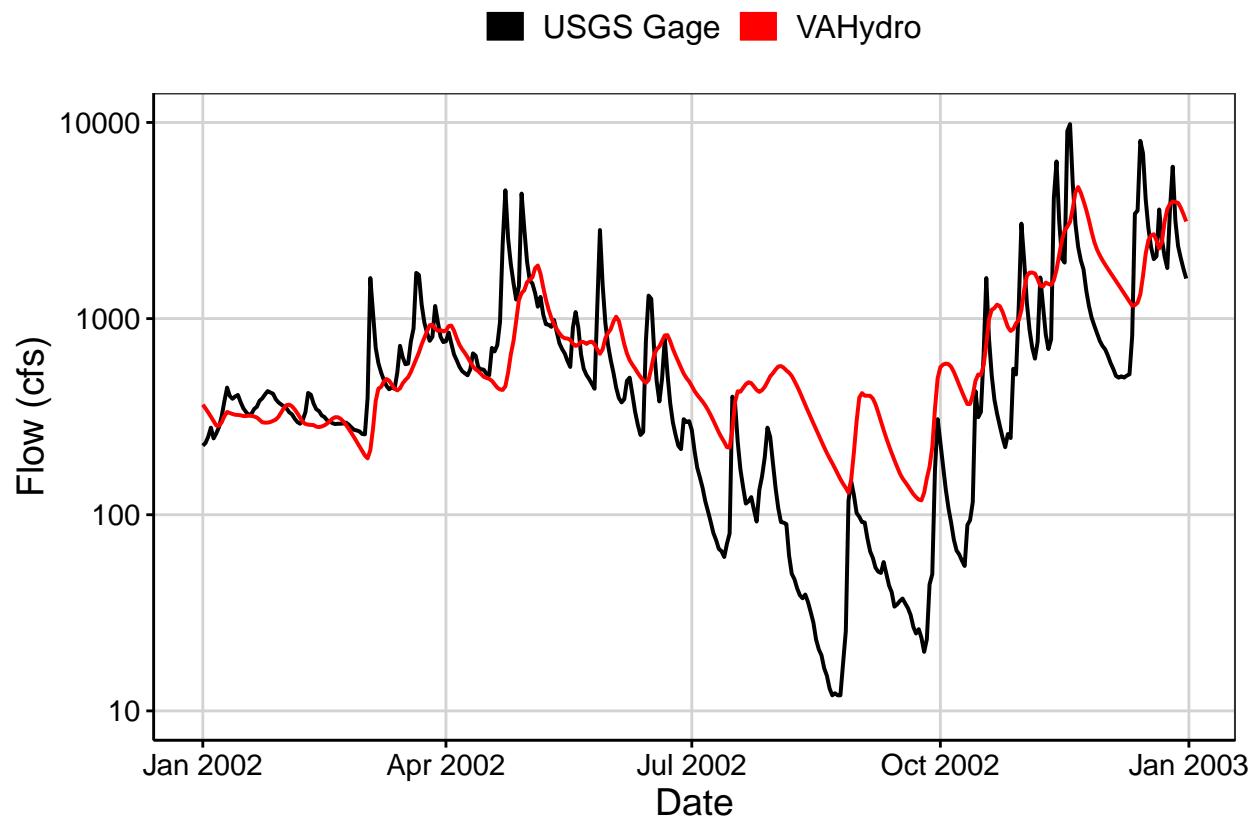


Fig. 3: Flow Exceedance

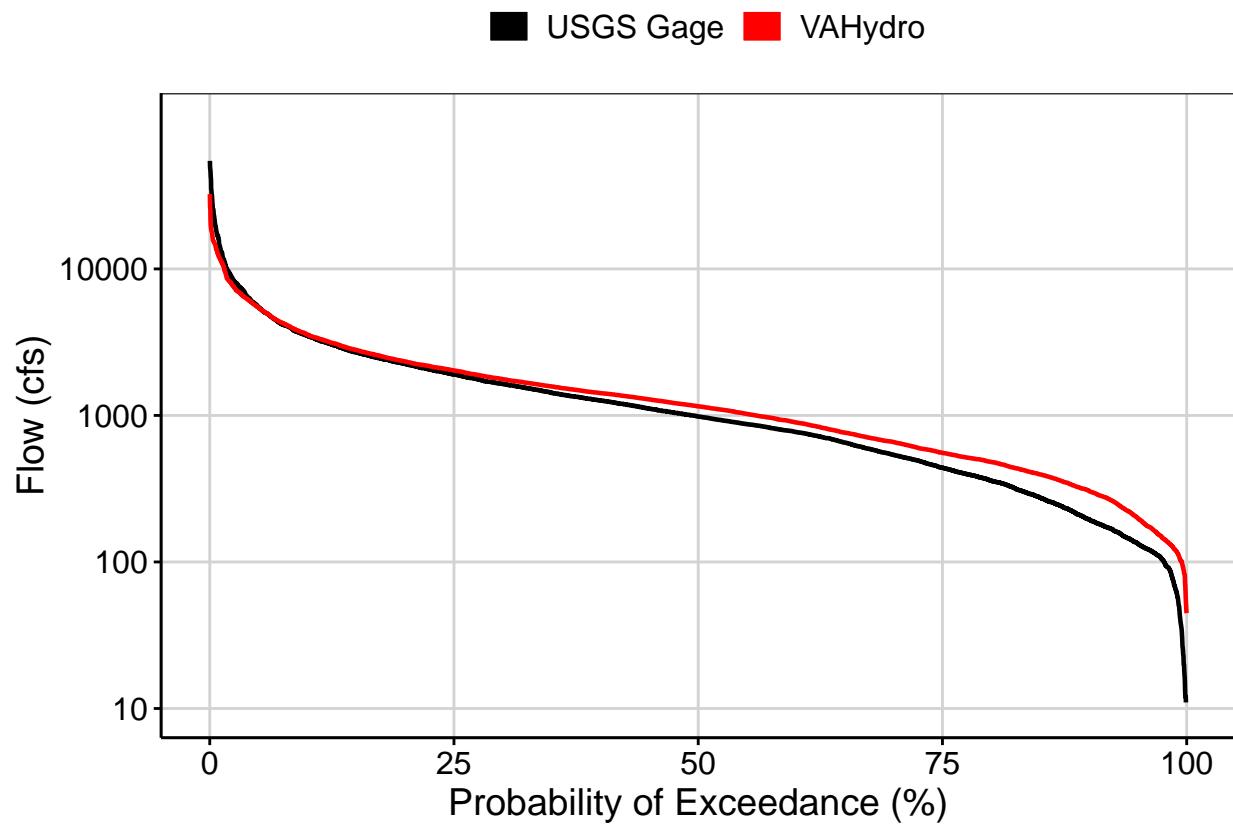


Fig. 4: Baseflow

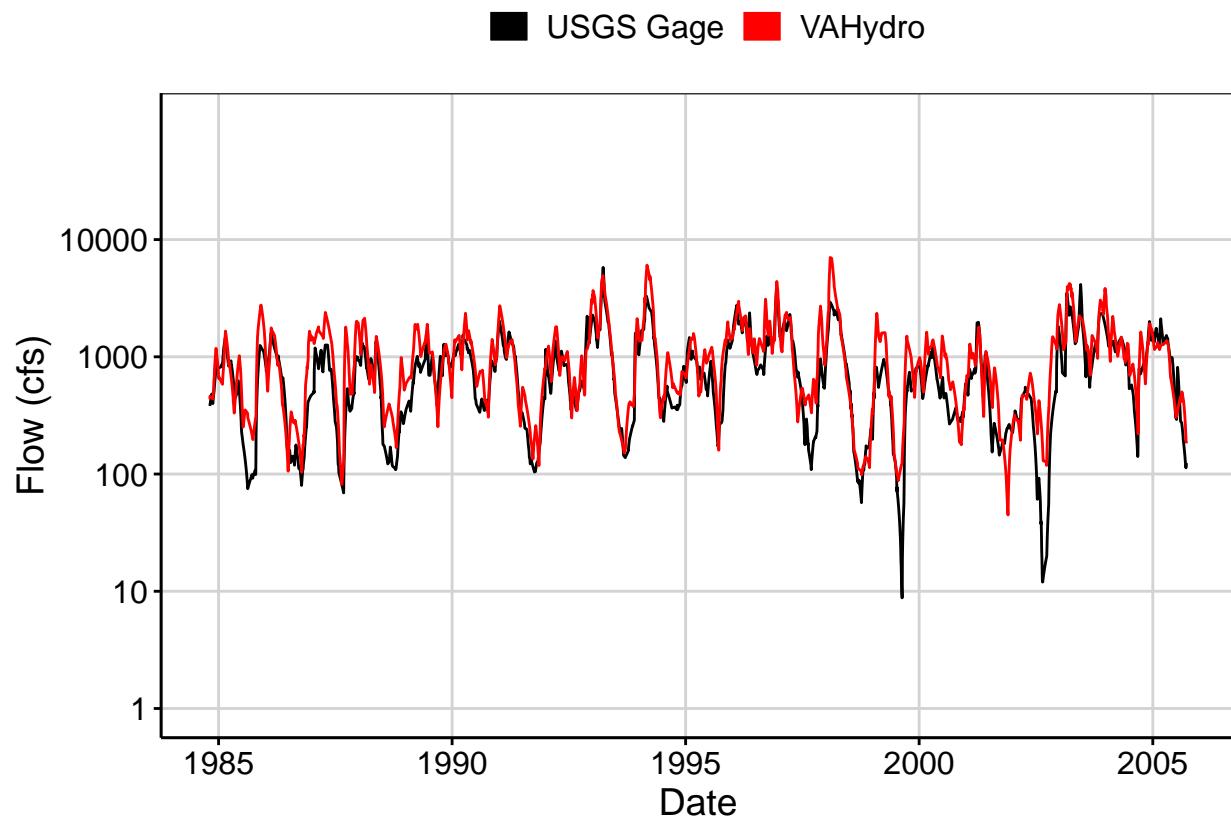


Fig. 5: Combined Baseflow

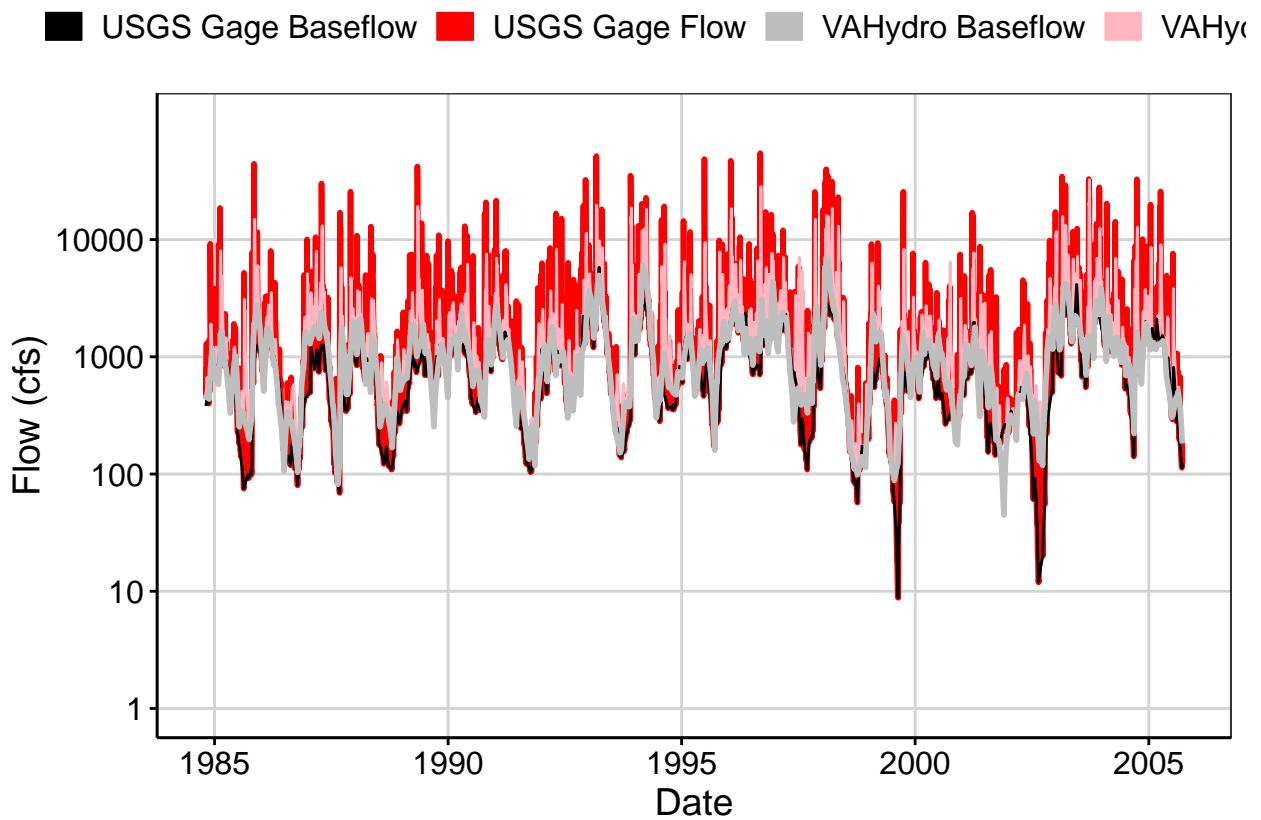


Fig. 6: Largest Difference Segment

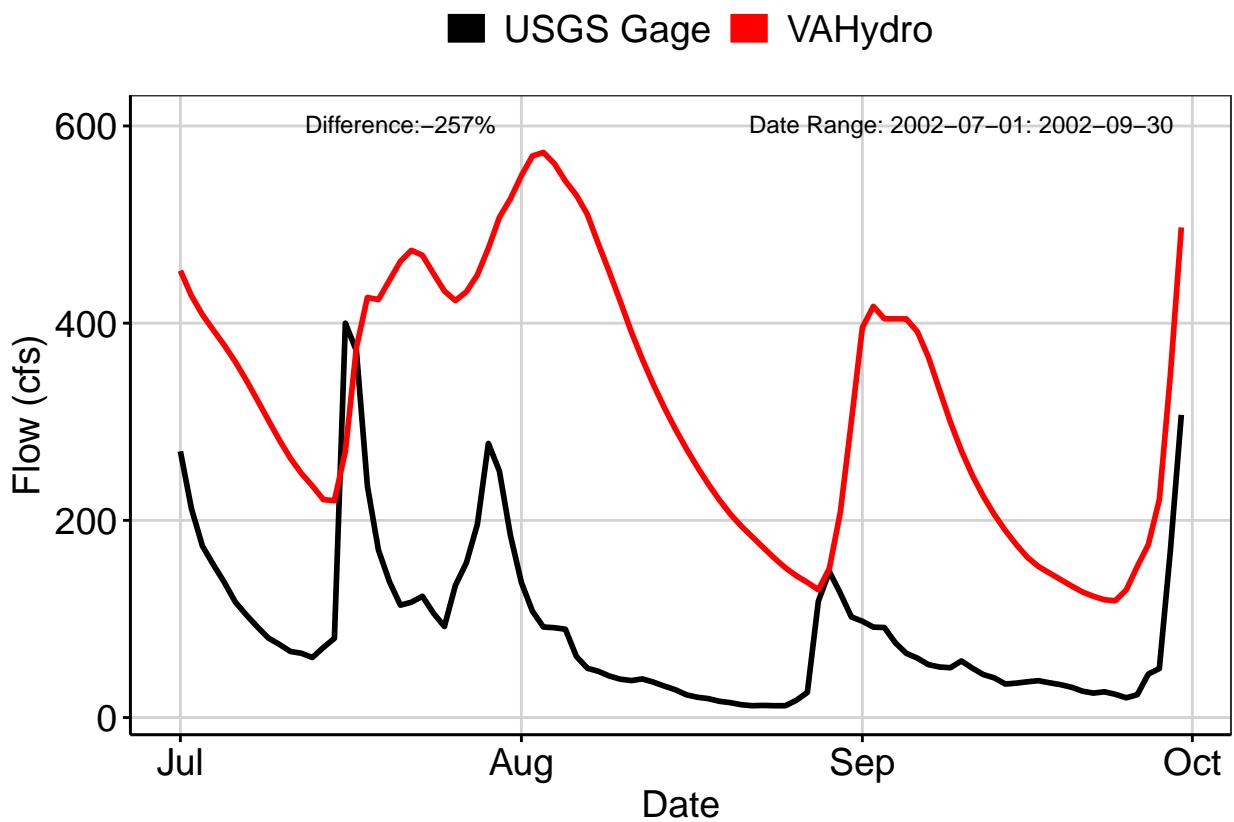


Fig. 7: Second Largest Difference Segment

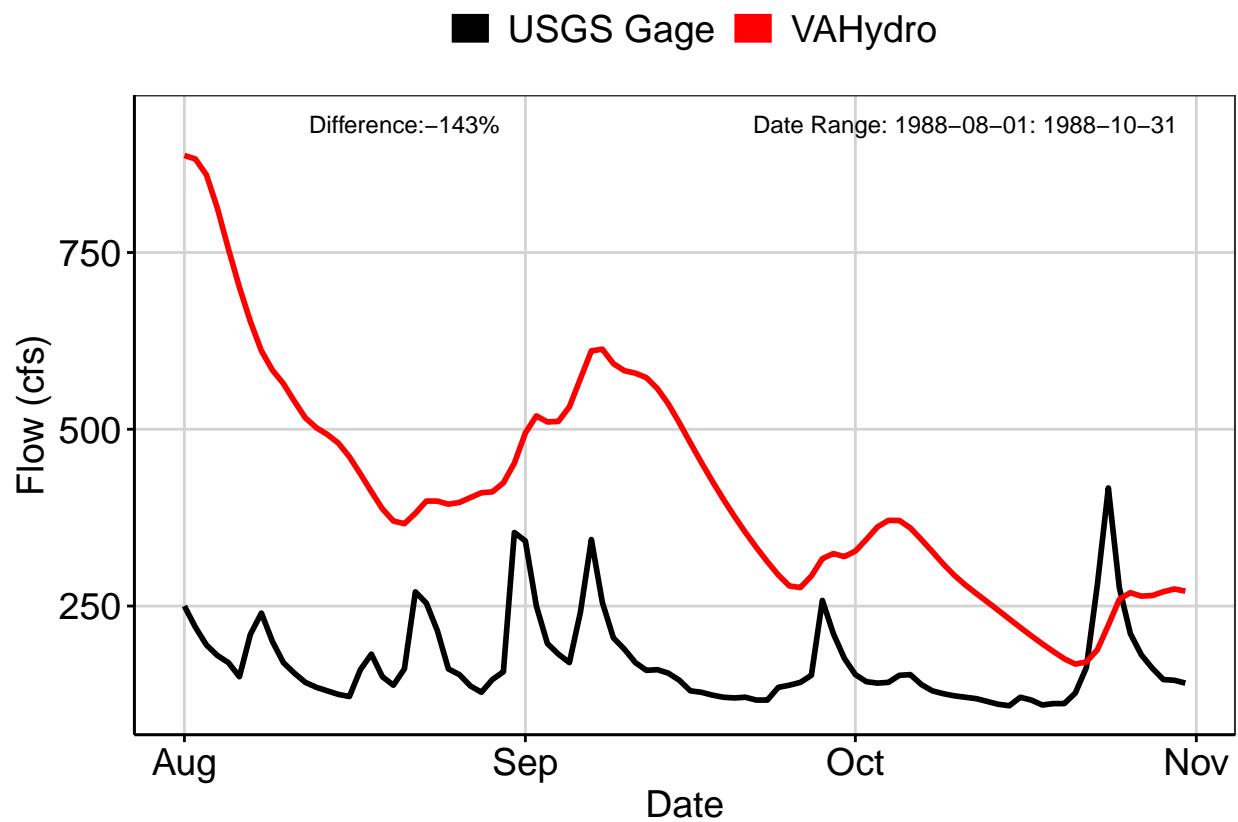


Fig. 8: Third Largest Difference Segment

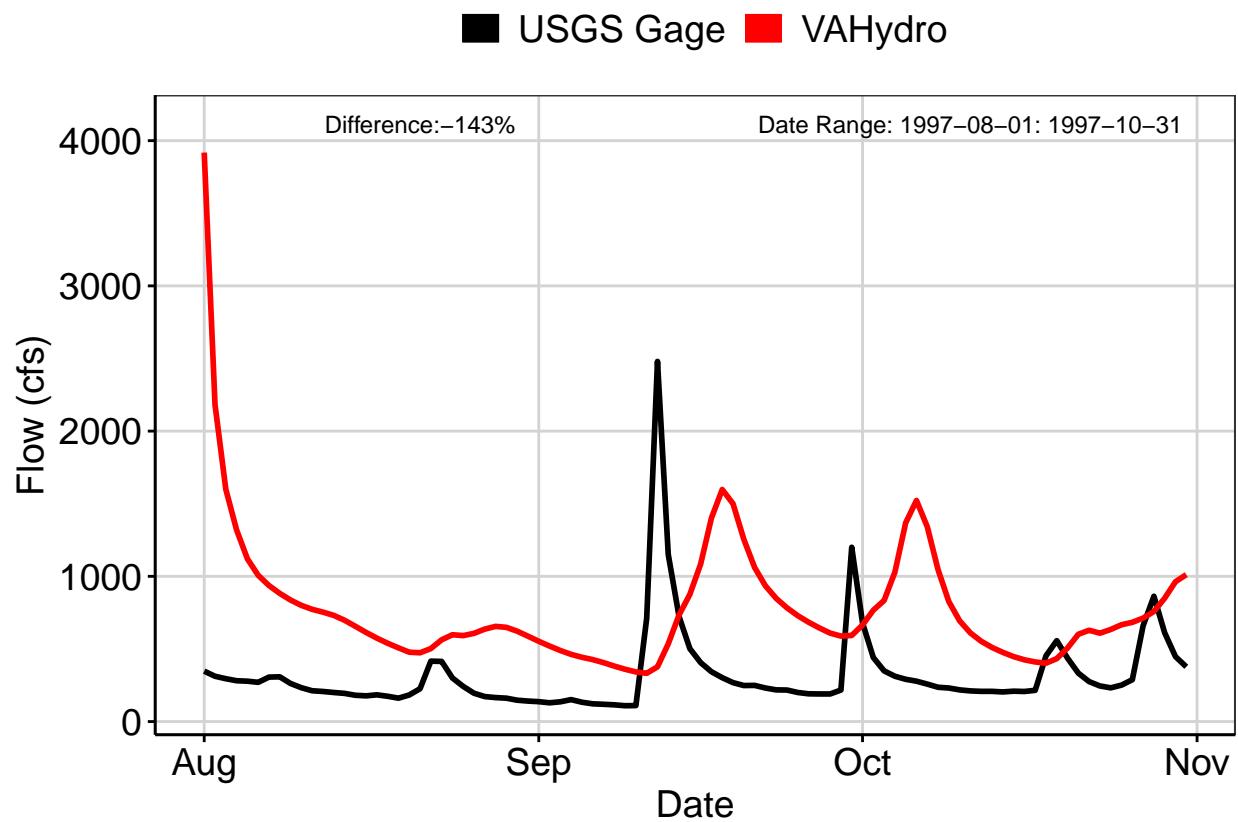


Fig. 9A: Residuals Plot

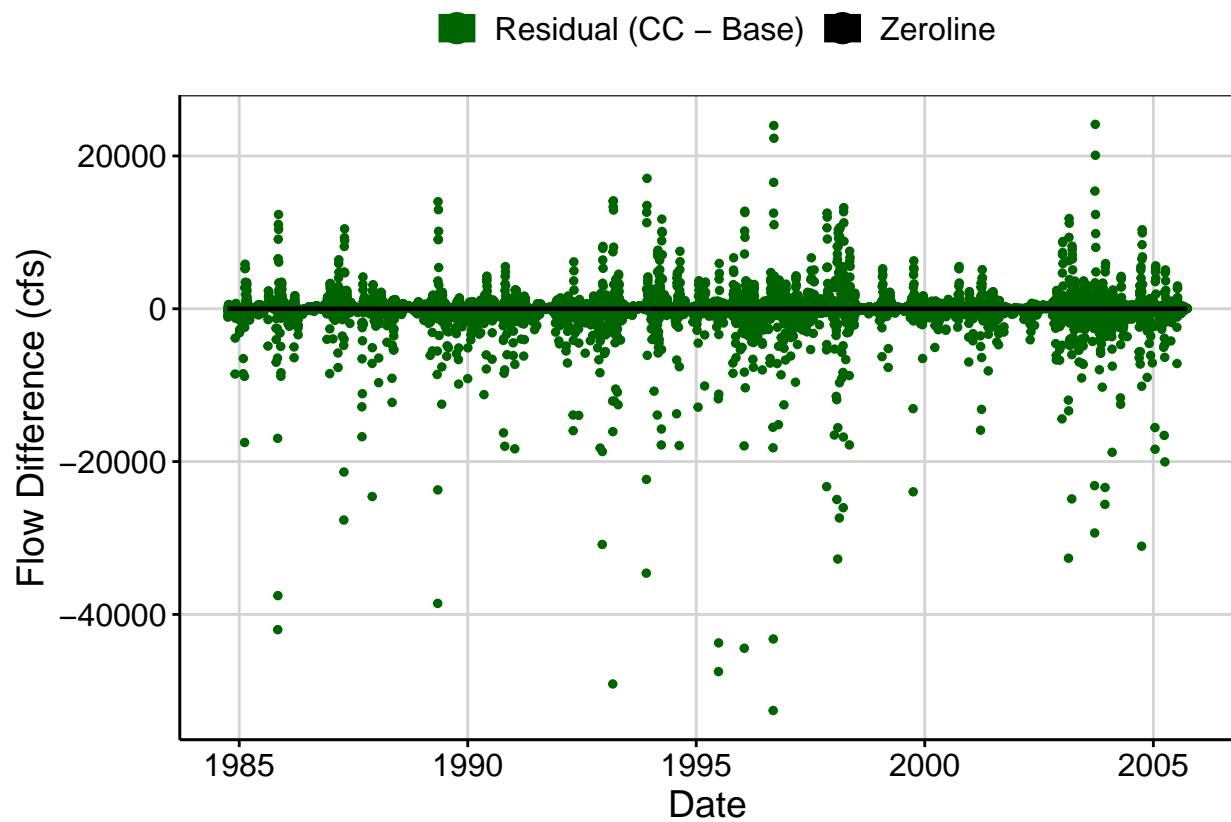


Fig. 9B: Area Weighted Residuals Plot

