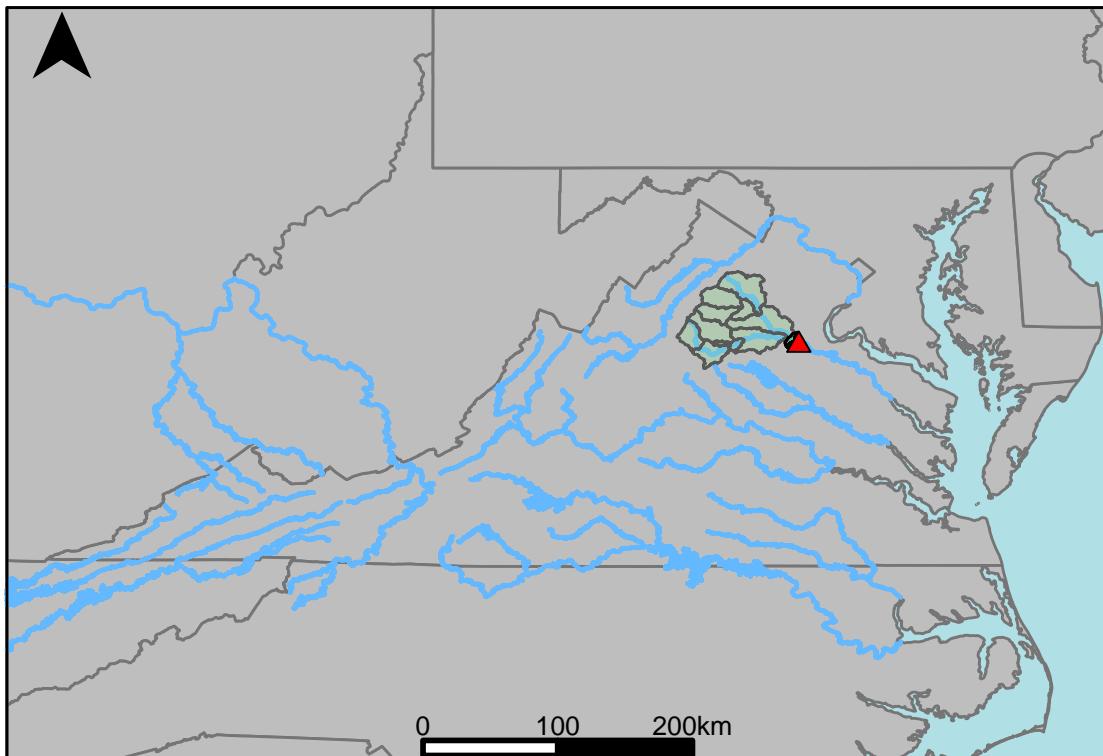


River Segment: RU5\_6030\_0001 - Scenario :  
CFBASE30Y20180615 : Gage 01668000 vs. VAHydro



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 2.90698%, with 46.6% of its rolling three month time spans above 20% difference.

**Table 1: Monthly Low Flows**

	USGS Gage	VAHydro	Pct. Difference
Jan. Low Flow	214	491	129.4
Feb. Low Flow	433	1050	142.5
Mar. Low Flow	782	1180	50.9
Apr. Low Flow	834	1220	46.3
May Low Flow	958	1380	44
Jun. Low Flow	978	1340	37
Jul. Low Flow	1060	1280	20.8
Aug. Low Flow	742	1030	38.8
Sep. Low Flow	452	898	98.7
Oct. Low Flow	262	625	138.6
Nov. Low Flow	154	542	251.9
Dec. Low Flow	140	339	142.1

**Table 2: Monthly Average Flows**

	USGS Gage	VAHydro	Pct. Difference
Overall Mean Flow	1720	1770	2.91
Jan. Mean Flow	2210	2130	-3.62
Feb. Mean Flow	2200	2340	6.36
Mar. Mean Flow	2920	2820	-3.42
Apr. Mean Flow	2320	2340	0.86
May Mean Flow	2200	1940	-11.82
Jun. Mean Flow	1500	1380	-8
Jul. Mean Flow	835	1100	31.74
Aug. Mean Flow	564	942	67.02
Sep. Mean Flow	1090	1260	15.6
Oct. Mean Flow	1110	1310	18.02
Nov. Mean Flow	1680	1590	-5.36
Dec. Mean Flow	2050	2090	1.95

**Table 3: Monthly High Flows**

	USGS Gage	VAHydro	Pct. Difference
Jan. High Flow	2820	2010	-28.7
Feb. High Flow	6400	2090	-67.3
Mar. High Flow	7480	3190	-57.4
Apr. High Flow	6800	2900	-57.4
May High Flow	4850	2930	-39.6
Jun. High Flow	9150	4150	-54.6
Jul. High Flow	6090	3460	-43.2
Aug. High Flow	4760	2540	-46.6
Sep. High Flow	3300	1950	-40.9
Oct. High Flow	2290	1420	-38
Nov. High Flow	1640	1300	-20.7
Dec. High Flow	1400	1260	-10

**Table 4: Period Low Flows**

	USGS Gage	VAHydro	Pct. Difference
Min. 1 Day Min	8.8	44.7	407.95
Med. 1 Day Min	111	237	113.51
Min. 3 Day Min	8.8	46.1	423.86
Med. 3 Day Min	114	240	110.53
Min. 7 Day Min	9.76	49.9	411.27
Med. 7 Day Min	122	258	111.48
Min. 30 Day Min	35.2	86.4	145.45
Med. 30 Day Min	184	447	142.93
Min. 90 Day Min	85.1	179	110.34
Med. 90 Day Min	416	804	93.27
7Q10	34.7	98.7	184.44
Year of 90-Day Min. Flow	2002	1999	-0.15
Drought Year Mean	440	882	100.45
Mean Baseflow	810	1200	48.15

**Table 5: Period High Flows**

	USGS Gage	VAHydro	Pct. Difference
Max. 1 Day Max	54600	32400	-40.66
Med. 1 Day Max	27300	9160	-66.45
Max. 3 Day Max	40700	28000	-31.2
Med. 3 Day Max	16400	8560	-47.8
Max. 7 Day Max	22500	22000	-2.22
Med. 7 Day Max	10800	7050	-34.72
Max. 30 Day Max	10200	10700	4.9
Med. 30 Day Max	4830	3750	-22.36
Max. 90 Day Max	6840	7190	5.12
Med. 90 Day Max	2910	2620	-9.97

**Table 6: Non-Exceedance Flows**

	USGS Gage	VAHydro	Pct. Difference
1% Non-Exceedance	54.3	127	133.89
5% Non-Exceedance	129	247	91.47
50% Non-Exceedance	967	1330	37.54
95% Non-Exceedance	5300	4880	-7.92
99% Non-Exceedance	14400	10700	-25.69
Sept. 10% Non-Exceedance	92	191	107.61

**Fig. 1: Hydrograph**

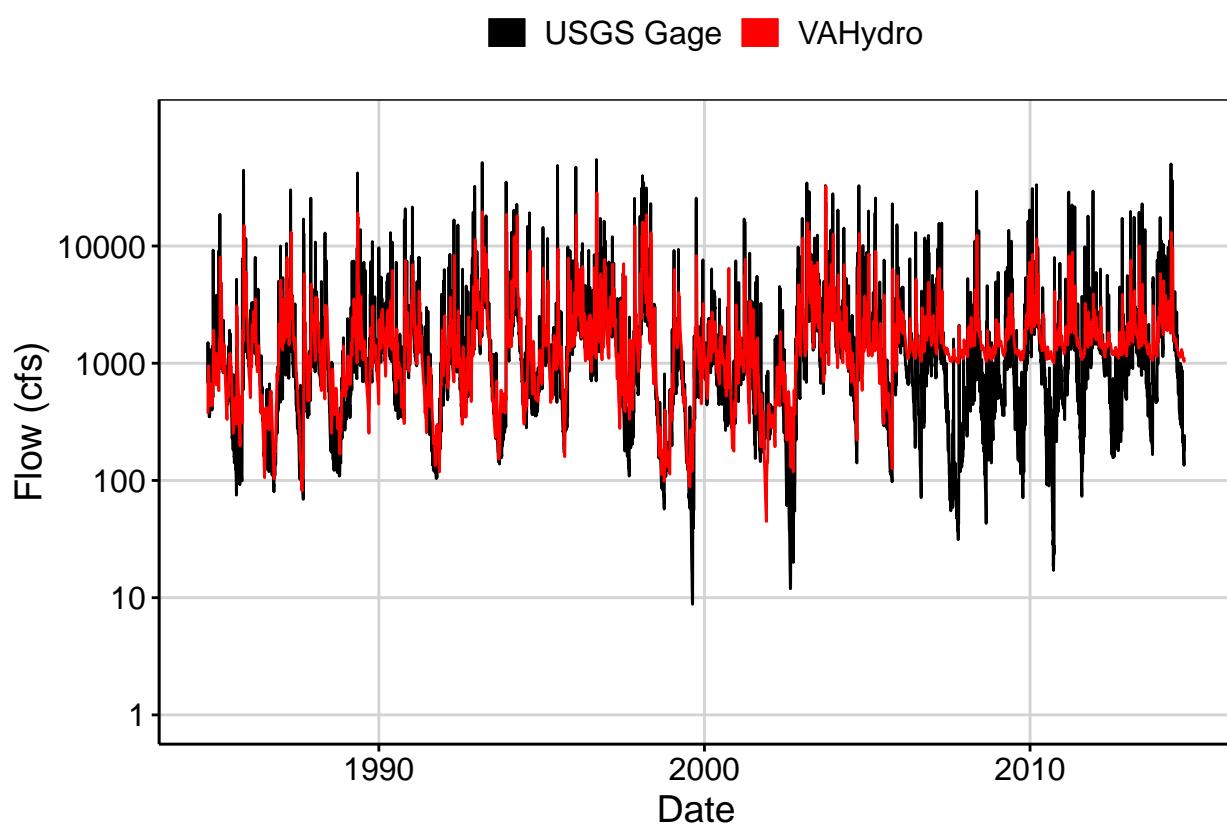


Fig. 2: Zoomed Hydrograph

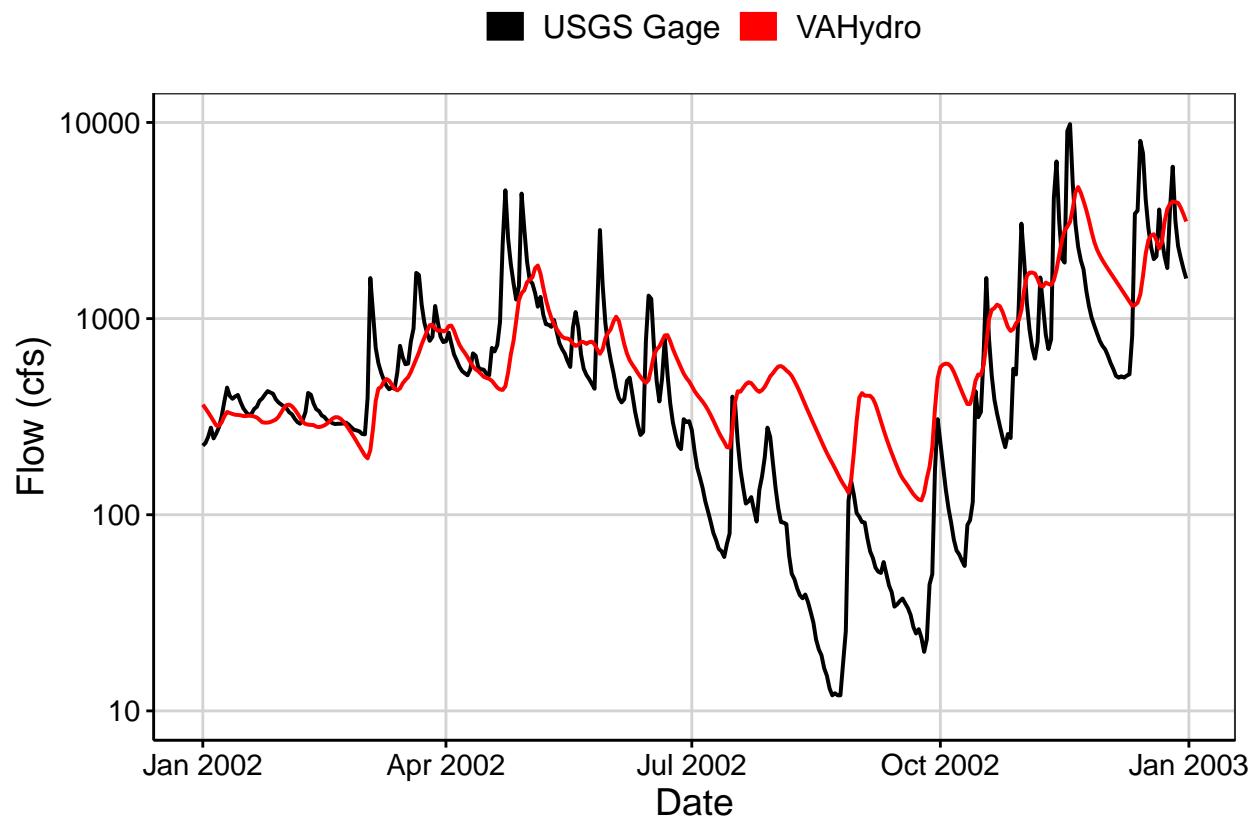


Fig. 3: Flow Exceedance

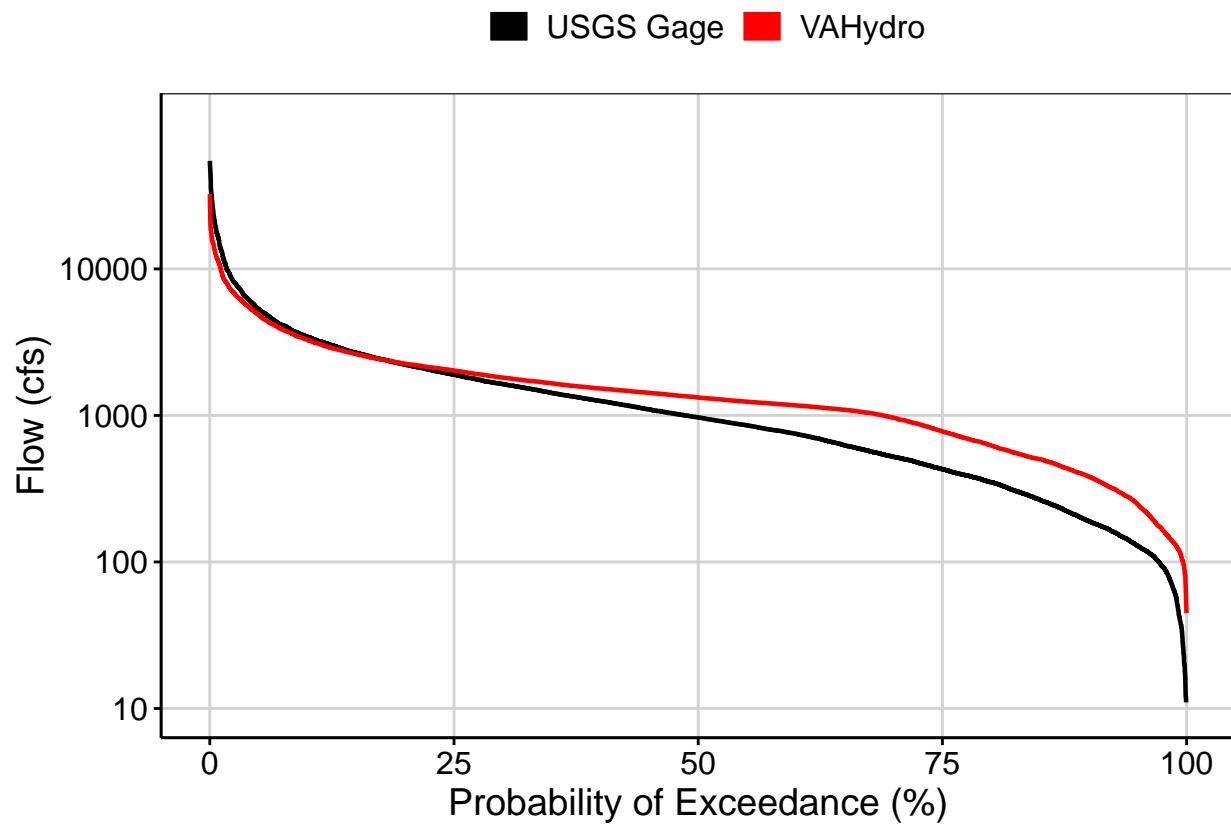


Fig. 4: Baseflow

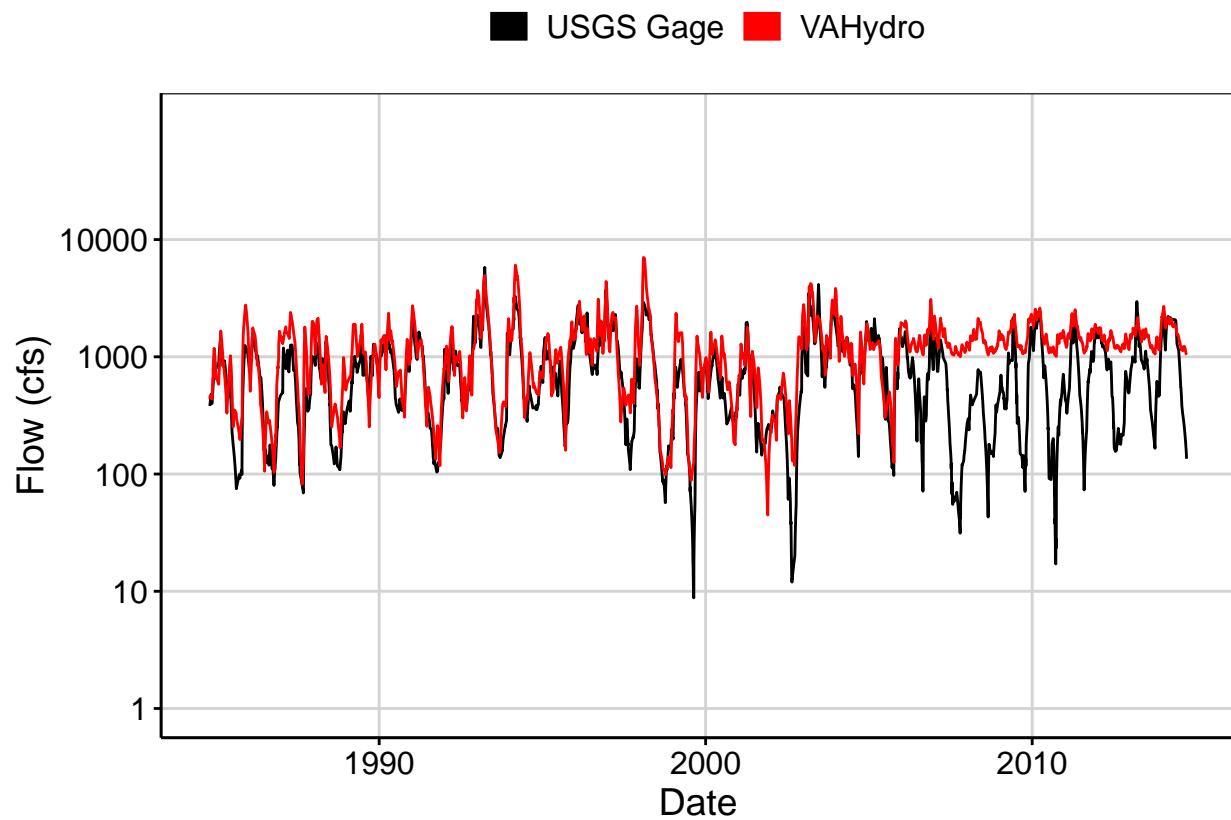


Fig. 5: Combined Baseflow

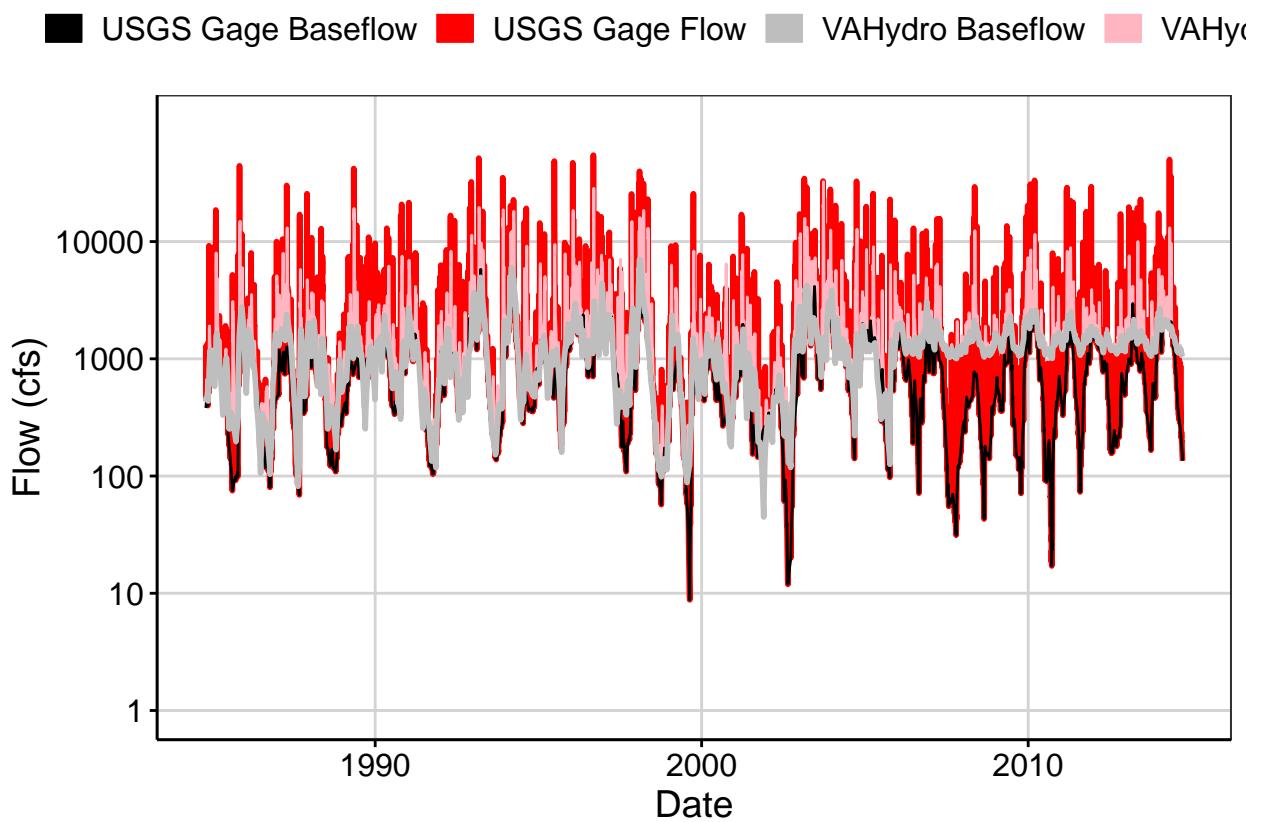


Fig. 6: Largest Difference Segment

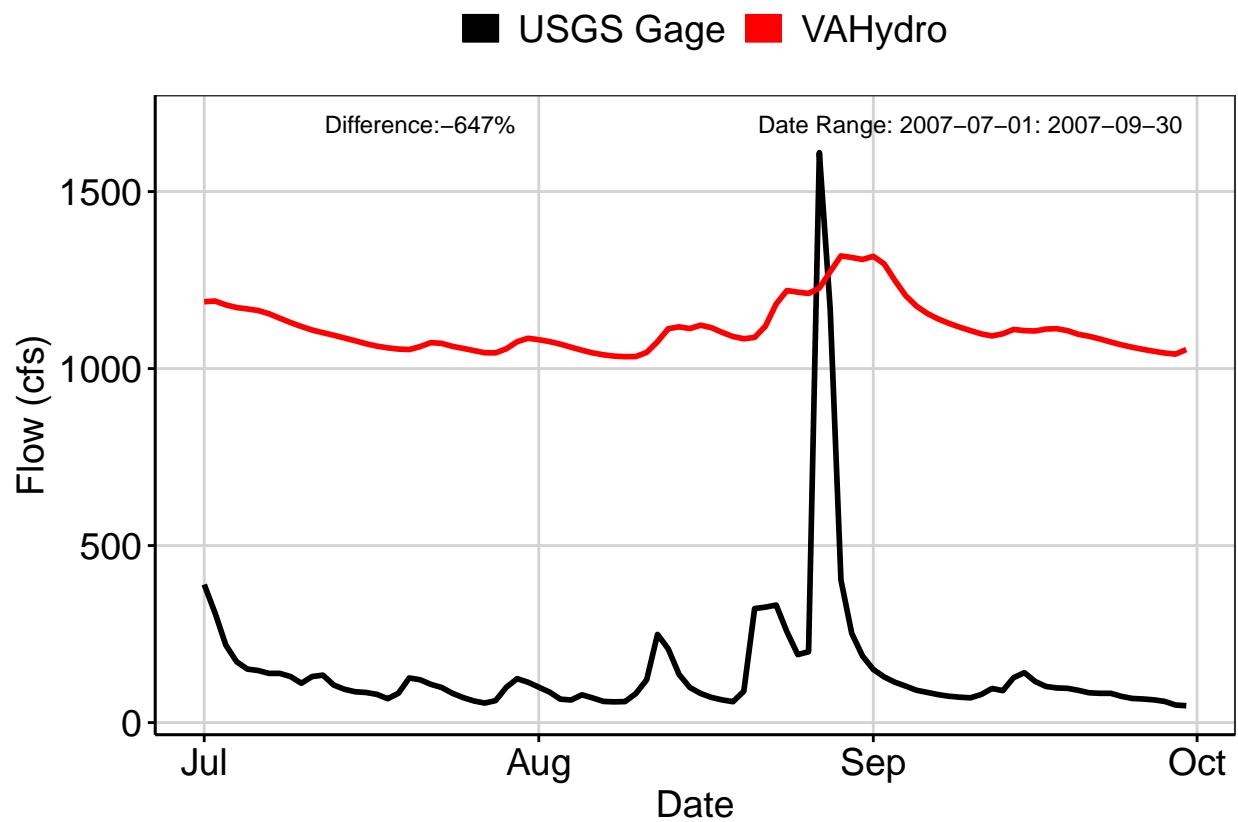


Fig. 7: Second Largest Difference Segment

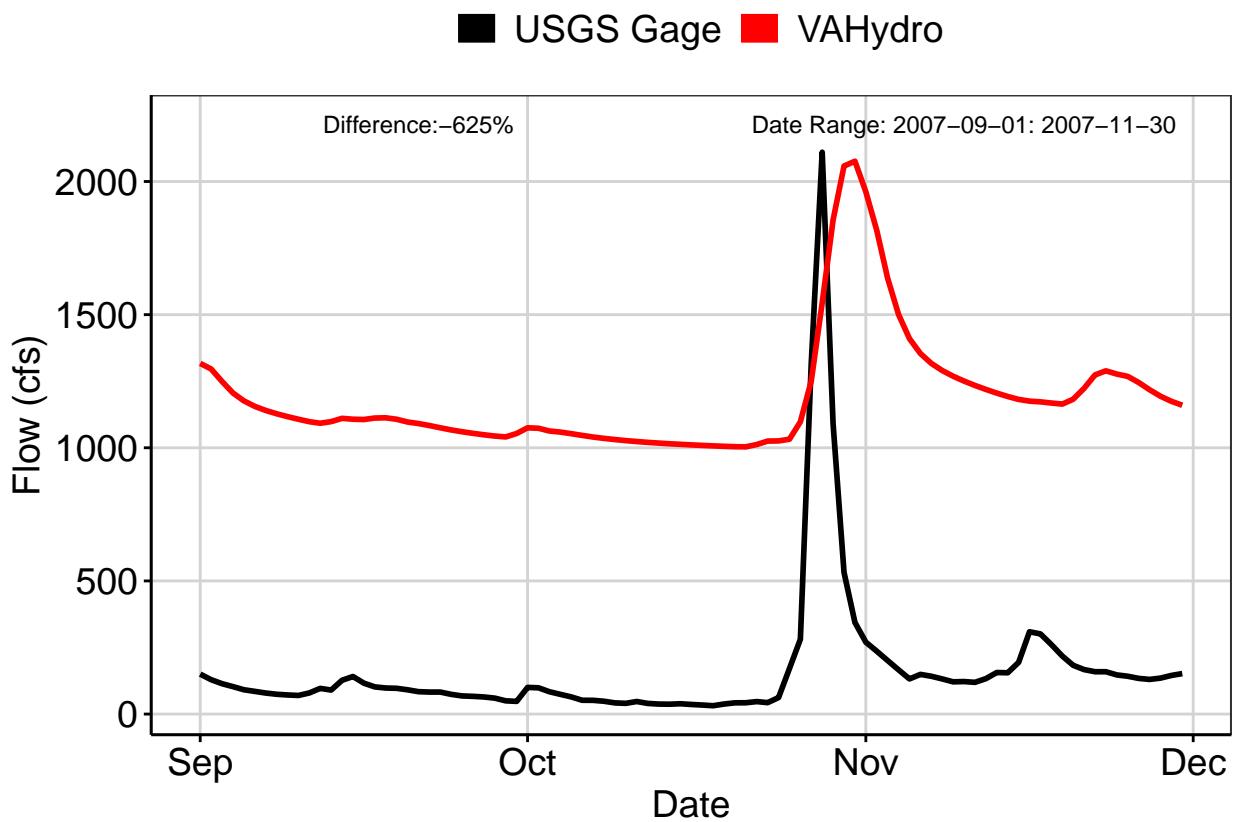


Fig. 8: Third Largest Difference Segment

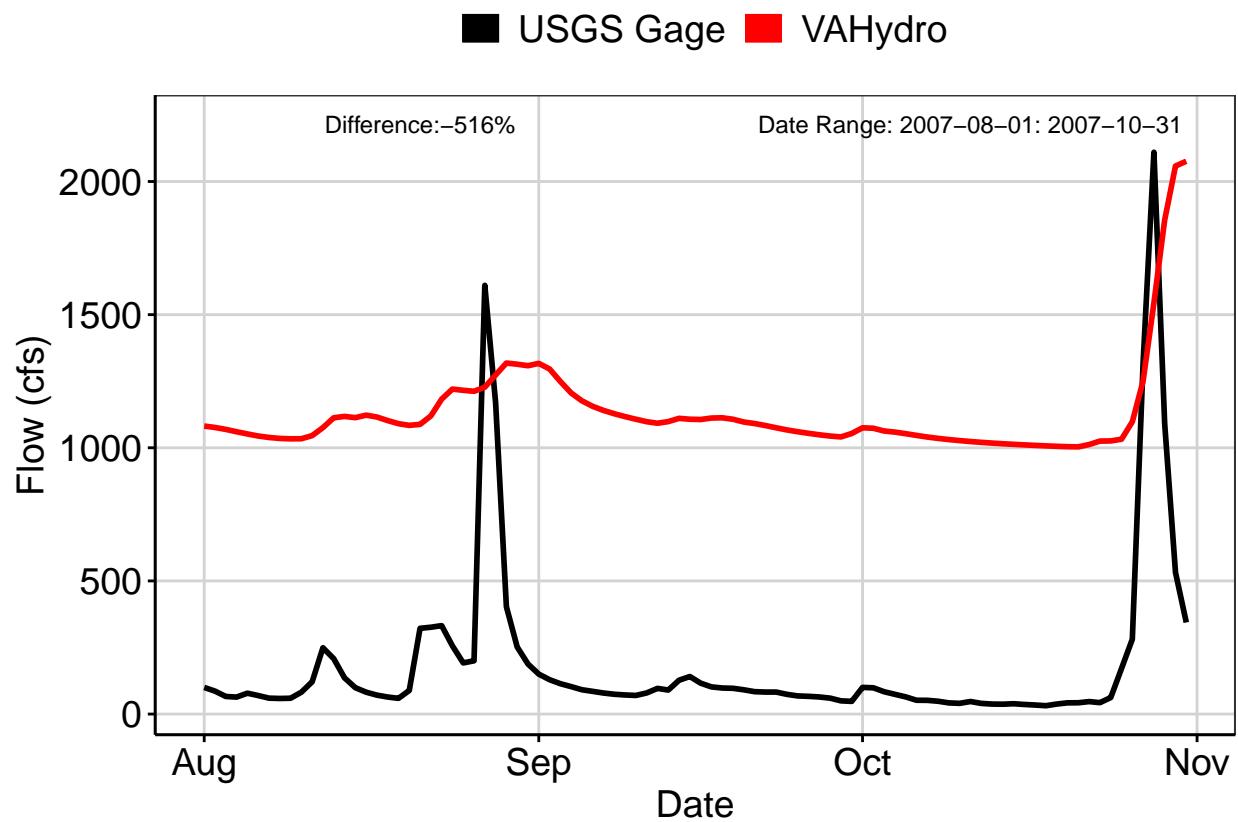


Fig. 9A: Residuals Plot

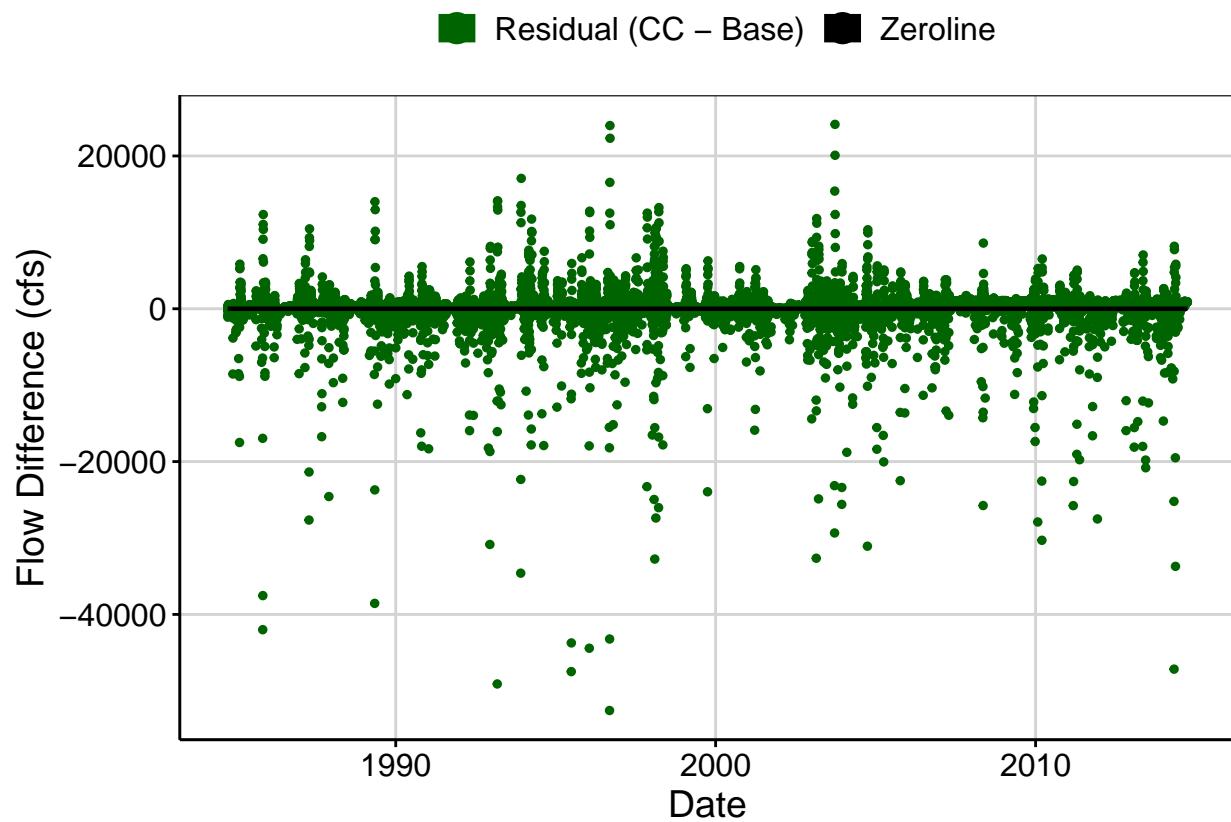


Fig. 9B: Area Weighted Residuals Plot

