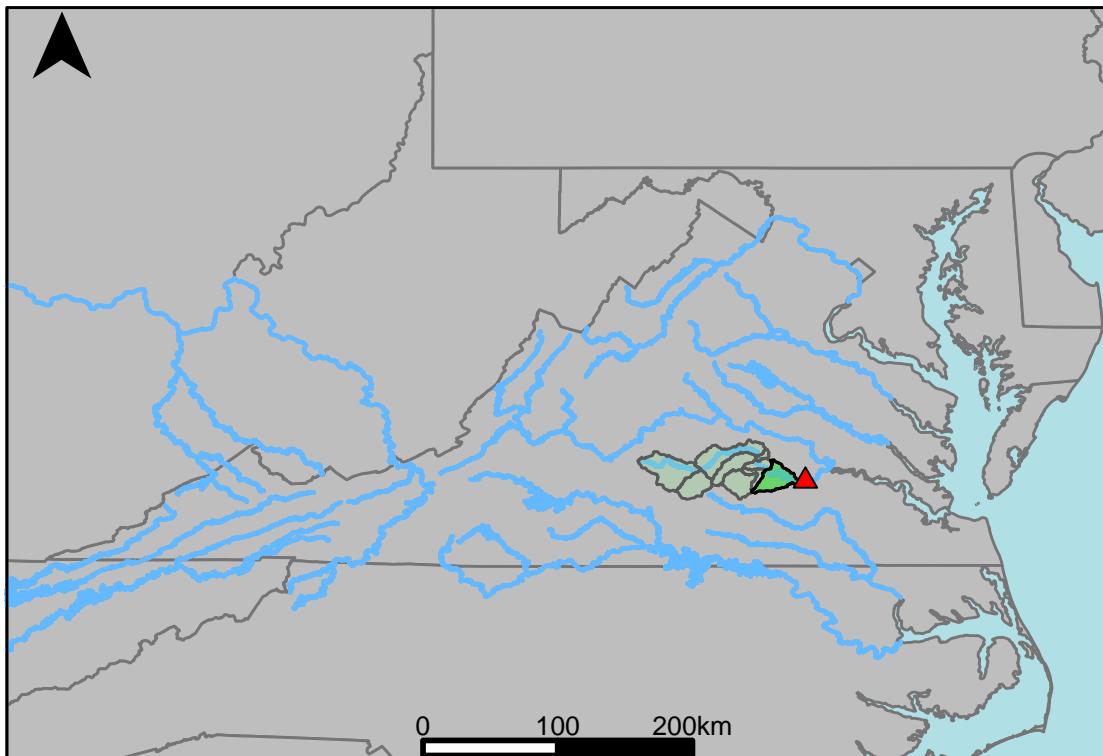


River Segment: JA5\_7480\_0001 - Scenario :  
CFBASE30Y20180615 : Gage 02041650 vs. VAHydro



This river segment follows the flow of the Appomattox River, a tributary of the James River. Gage 02041650 is located in Chesterfield County, VA (Lat 37° 13'30", Long 77° 28'32") approximately 0.2 miles south of Matoaca, VA. Drainage area is 1,342 sq. miles. This gage started taking data in 1969 and is still taking data. Flow is regulated by Appomattox Water Authority at Lake Chesdin, capacity 36,000 acre-ft, 2.8 mi upstream. Records do not include the flow of Upper Appomattox Canal of the city of Petersburg, which diverts around station. The average daily discharge change between scenario 1 and scenario 2 for the 20 year timespan was -1.75439%, with 42.8% of its rolling three month time spans above 20% difference.

**Table 1: Monthly Low Flows**

	USGS Gage	VAHydro	Pct. Difference
Jan. Low Flow	108	125	15.74
Feb. Low Flow	272	203	-25.37
Mar. Low Flow	431	473	9.74
Apr. Low Flow	548	697	27.19
May Low Flow	696	817	17.39
Jun. Low Flow	736	806	9.51
Jul. Low Flow	604	596	-1.32
Aug. Low Flow	326	430	31.9
Sep. Low Flow	185	245	32.43
Oct. Low Flow	122	145	18.85
Nov. Low Flow	93.6	135	44.23
Dec. Low Flow	94.5	109	15.34

**Table 2: Monthly Average Flows**

	USGS Gage	VAHydro	Pct. Difference
Overall Mean Flow	1140	1120	-1.75
Jan. Mean Flow	1640	1600	-2.44
Feb. Mean Flow	1770	1770	0
Mar. Mean Flow	2090	2100	0.48
Apr. Mean Flow	1720	1660	-3.49
May Mean Flow	1230	1140	-7.32
Jun. Mean Flow	642	648	0.93
Jul. Mean Flow	476	415	-12.82
Aug. Mean Flow	426	377	-11.5
Sep. Mean Flow	754	709	-5.97
Oct. Mean Flow	483	608	25.88
Nov. Mean Flow	1110	982	-11.53
Dec. Mean Flow	1430	1410	-1.4

**Table 3: Monthly High Flows**

	USGS Gage	VAHydro	Pct. Difference
Jan. High Flow	528	919	74
Feb. High Flow	1680	953	-43.3
Mar. High Flow	2860	2110	-26.2
Apr. High Flow	3890	2970	-23.6
May High Flow	3520	2800	-20.4
Jun. High Flow	4720	3710	-21.4
Jul. High Flow	4560	3110	-31.8
Aug. High Flow	1930	1580	-18.1
Sep. High Flow	1080	712	-34.1
Oct. High Flow	664	448	-32.5
Nov. High Flow	688	548	-20.4
Dec. High Flow	254	422	66.1

**Table 4: Period Low Flows**

	USGS Gage	VAHydro	Pct. Difference
Min. 1 Day Min	18.3	19.9	8.74
Med. 1 Day Min	65.5	80.6	23.05
Min. 3 Day Min	18.6	20.8	11.83
Med. 3 Day Min	67.7	87.6	29.39
Min. 7 Day Min	18.9	22.1	16.93
Med. 7 Day Min	74.1	97.5	31.58
Min. 30 Day Min	25.8	25.6	-0.78
Med. 30 Day Min	97.2	123	26.54
Min. 90 Day Min	32.9	61.5	86.93
Med. 90 Day Min	223	233	4.48
7Q10	36.2	44.4	22.65
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	255	207	-18.82
Mean Baseflow	480	604	25.83

**Table 5: Period High Flows**

	USGS Gage	VAHydro	Pct. Difference
Max. 1 Day Max	21200	20100	-5.19
Med. 1 Day Max	8690	8230	-5.29
Max. 3 Day Max	18300	18600	1.64
Med. 3 Day Max	8300	7590	-8.55
Max. 7 Day Max	15300	15400	0.65
Med. 7 Day Max	6780	5700	-15.93
Max. 30 Day Max	7240	7480	3.31
Med. 30 Day Max	2820	2930	3.9
Max. 90 Day Max	5510	5580	1.27
Med. 90 Day Max	2040	1970	-3.43

**Table 6: Non-Exceedance Flows**

	USGS Gage	VAHydro	Pct. Difference
1% Non-Exceedance	37.4	56.3	50.53
5% Non-Exceedance	80.7	94.2	16.73
50% Non-Exceedance	581	635	9.29
95% Non-Exceedance	4700	3800	-19.15
99% Non-Exceedance	8840	8250	-6.67
Sept. 10% Non-Exceedance	71.4	92.4	29.41

**Fig. 1: Hydrograph**

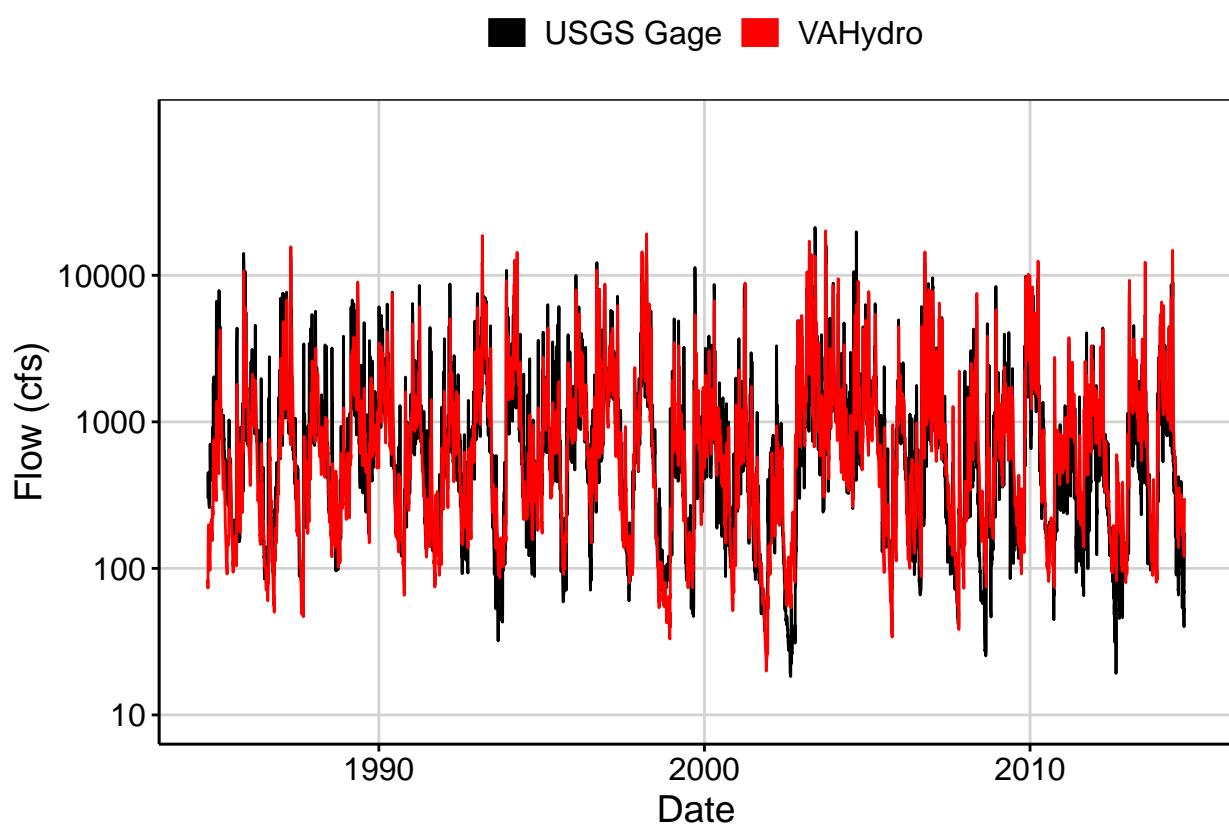


Fig. 2: Zoomed Hydrograph

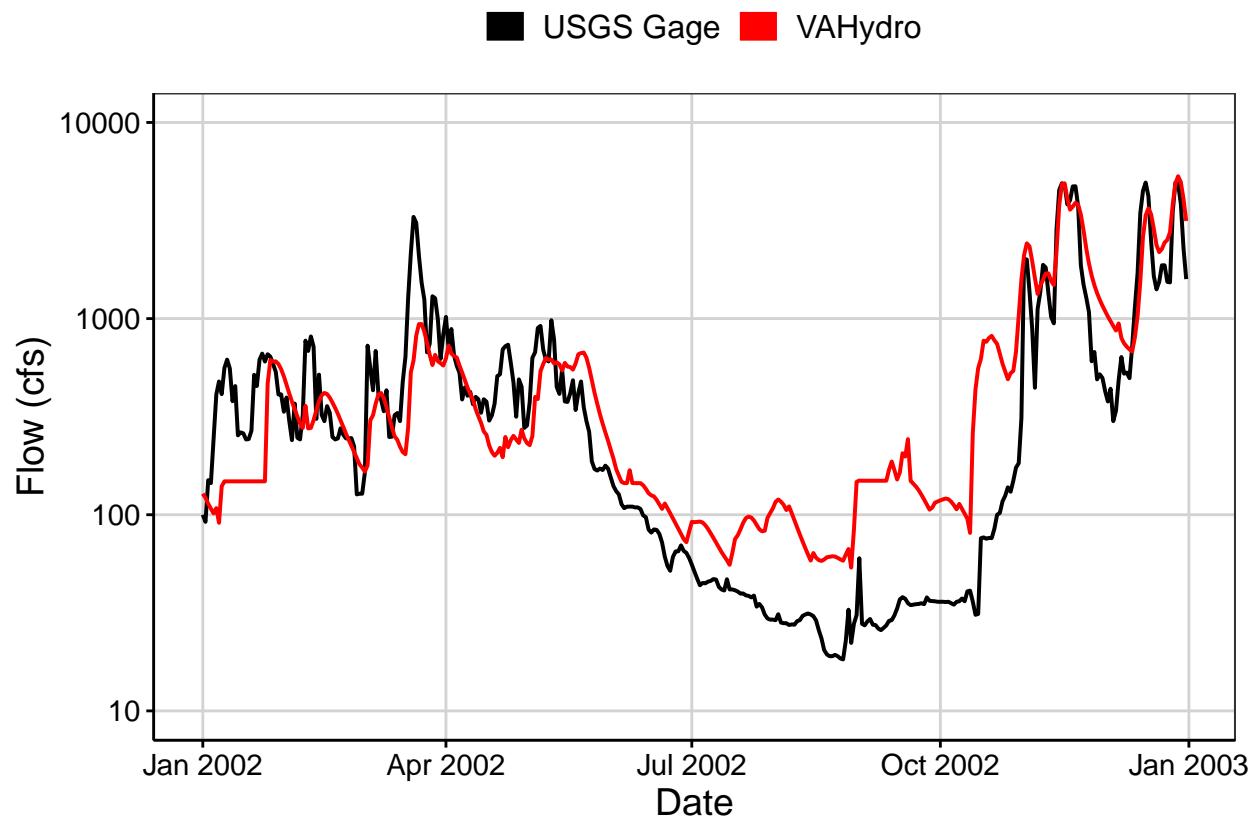


Fig. 3: Flow Exceedance

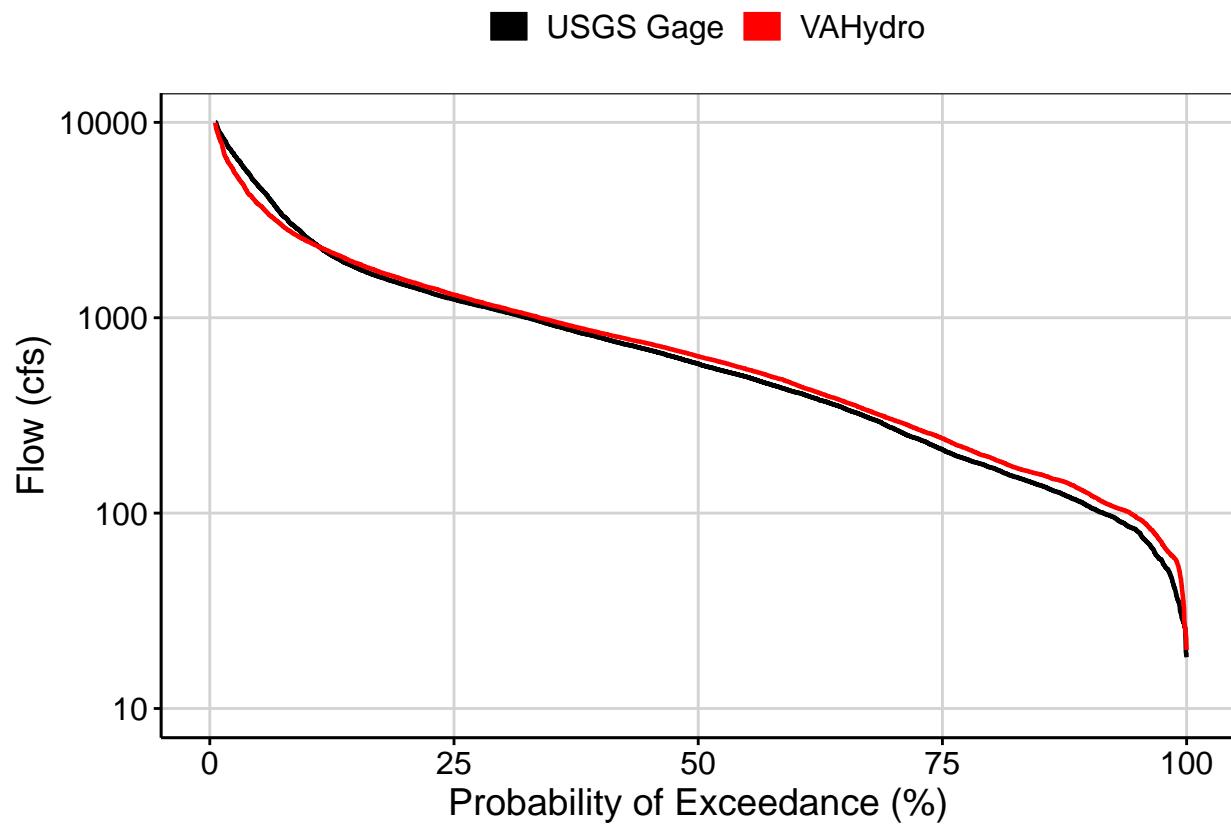
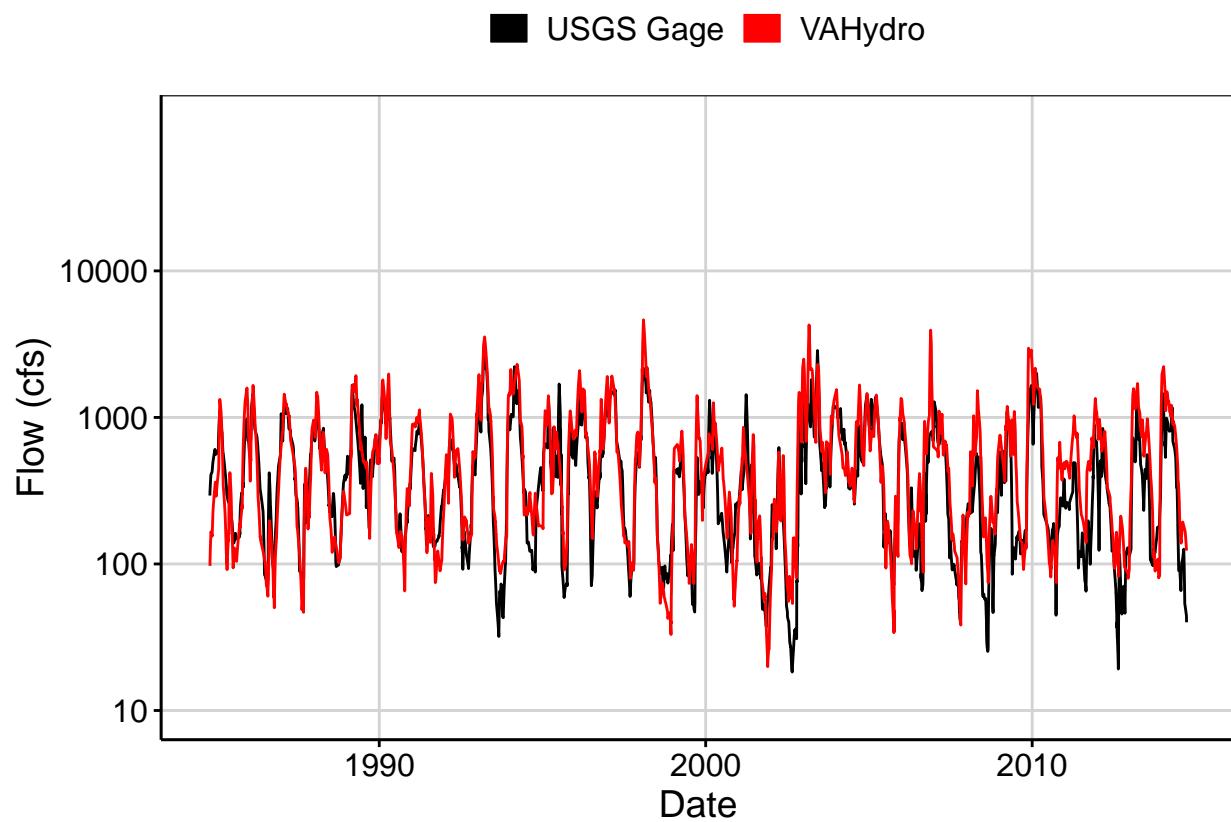


Fig. 4: Baseflow



**Fig. 5: Combined Baseflow**

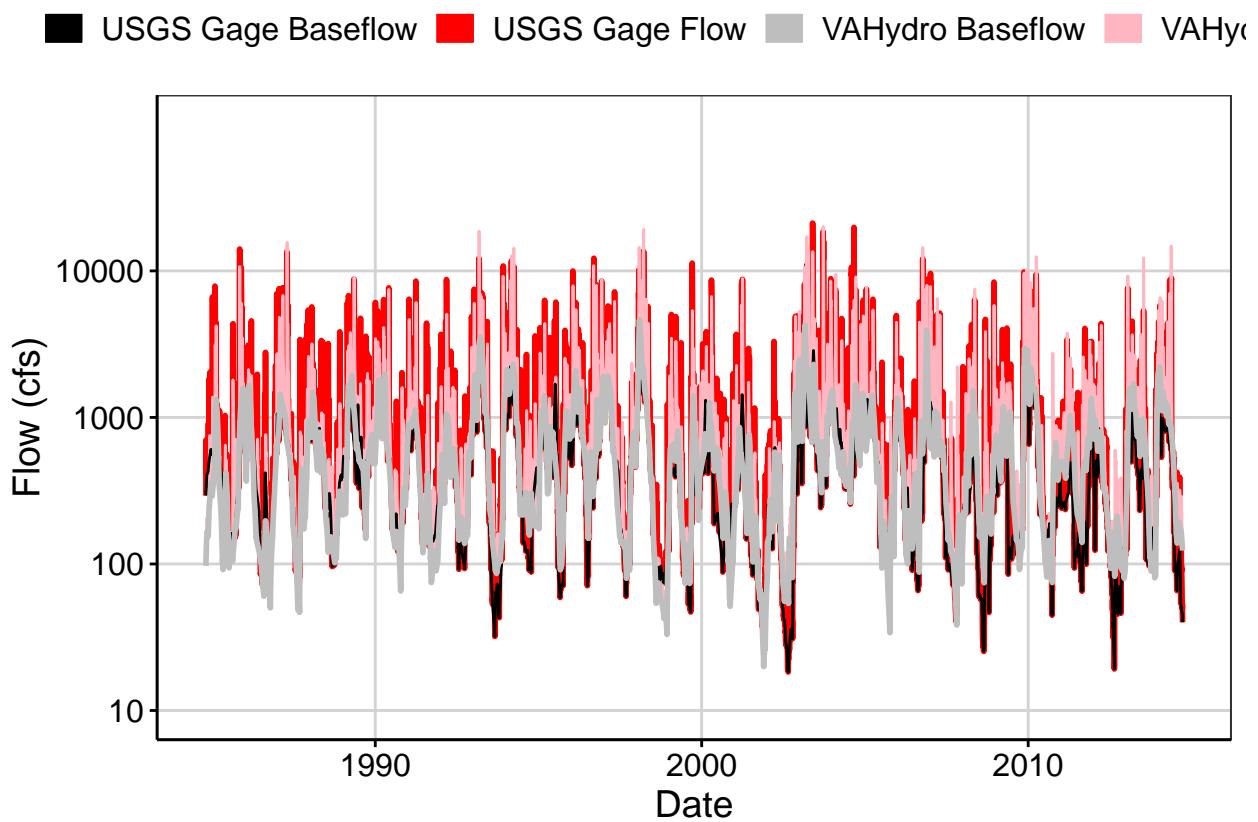


Fig. 6: Largest Difference Segment

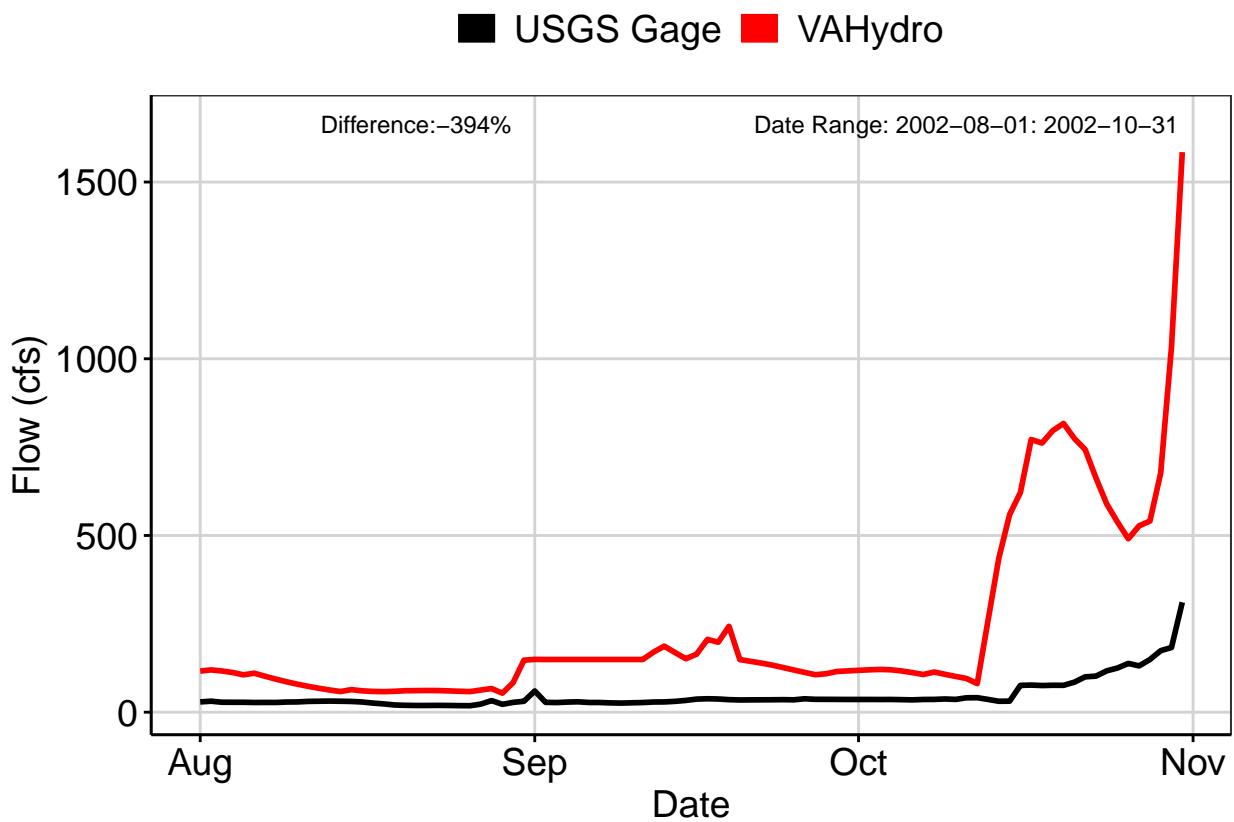


Fig. 7: Second Largest Difference Segment

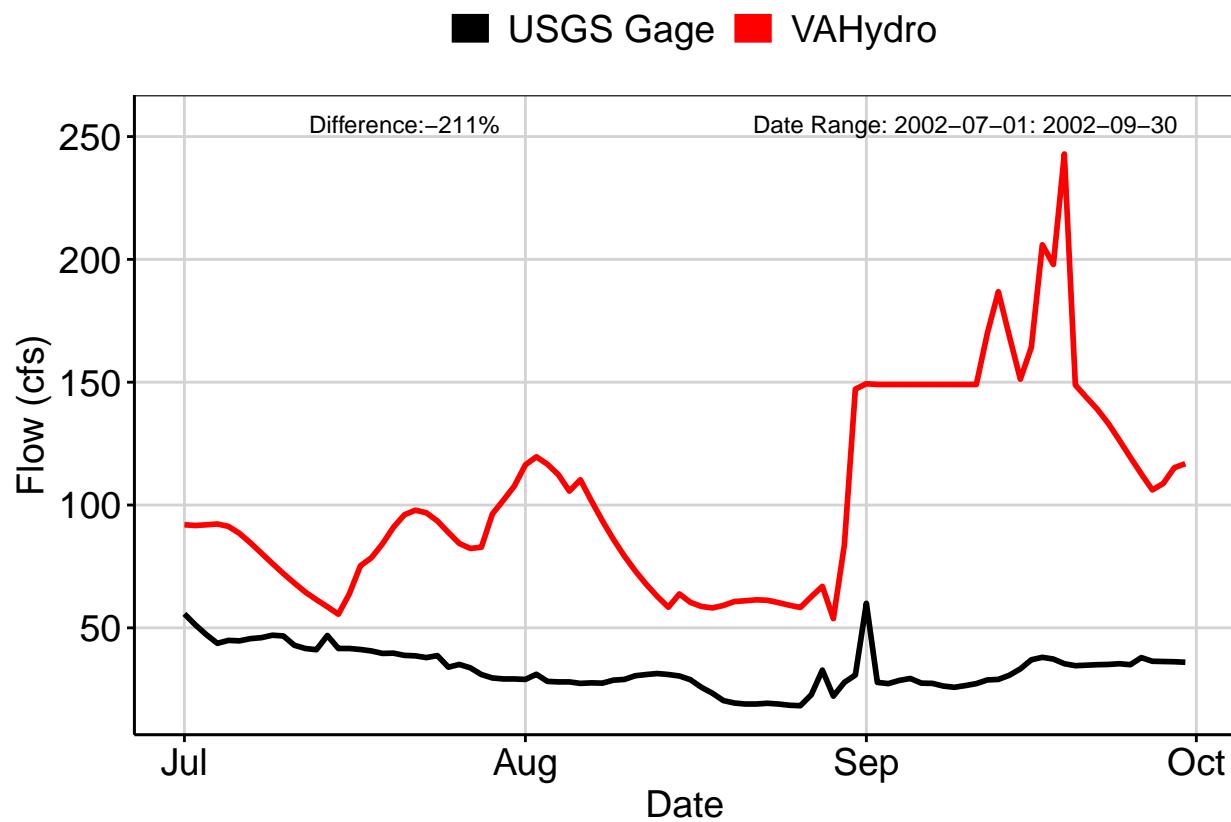


Fig. 8: Third Largest Difference Segment

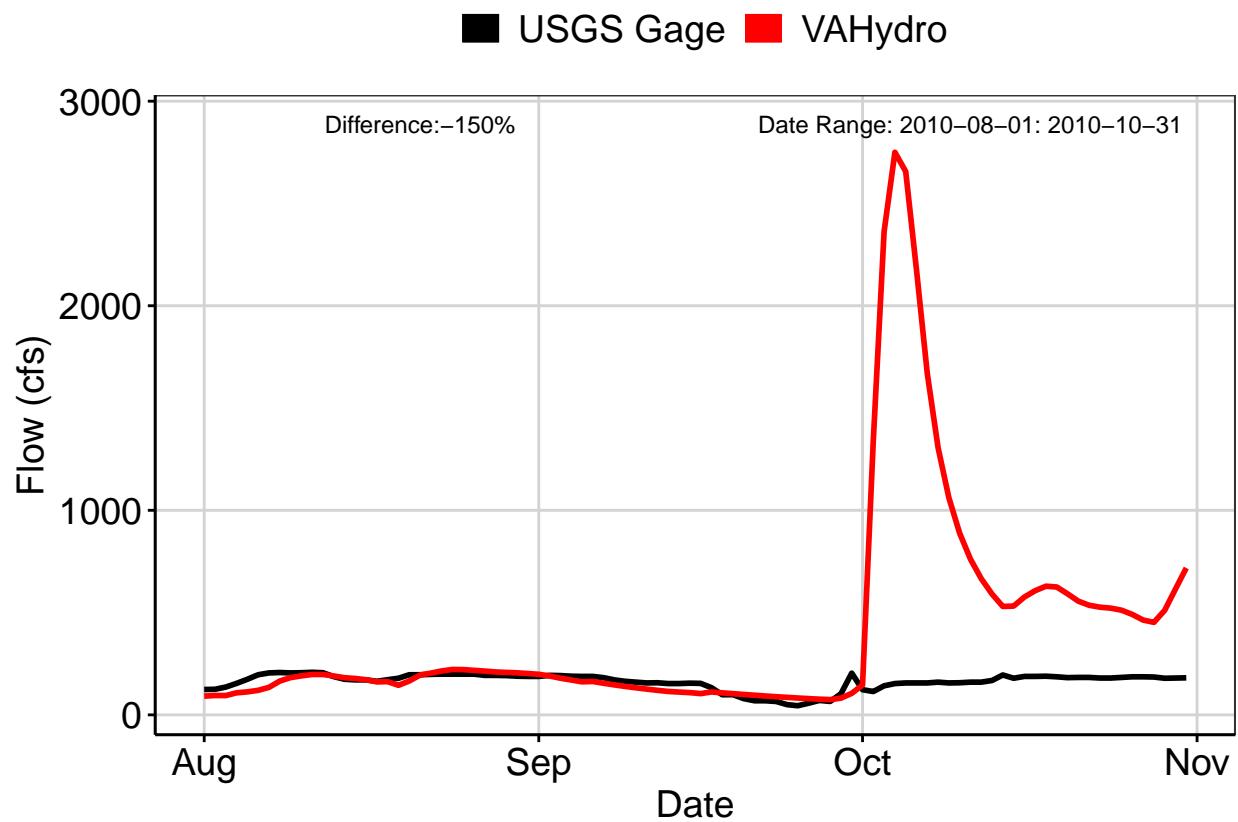


Fig. 9A: Residuals Plot

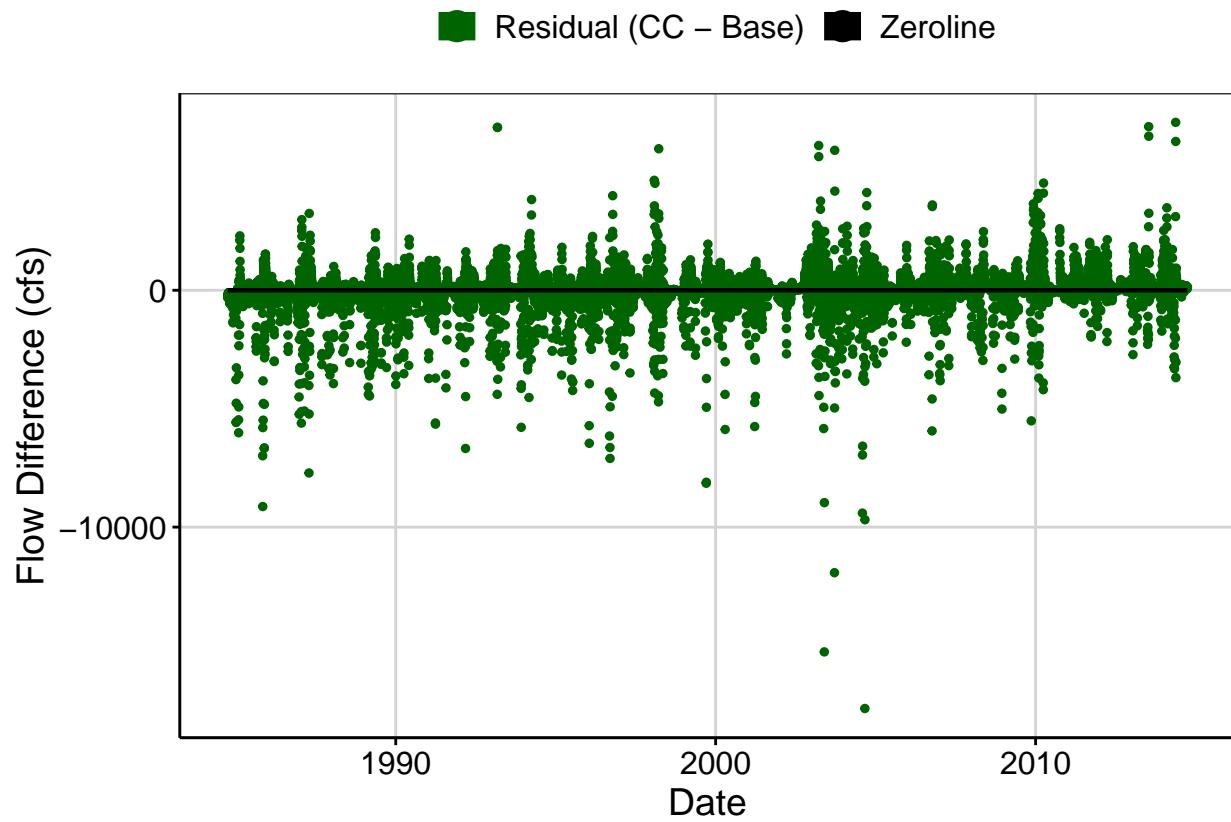


Fig. 9B: Area Weighted Residuals Plot

