

Michigan Department of Environment, Great Lakes, and Energy
Huron River Watershed June-August 2020 Surface Water Sampling Status Update
9/16/2020

The EGLE Water Resources Division Surface Water Assessment Section (WRD-SWAS) recently collected surface water samples for PFAS analysis from the Huron River Watershed on the following dates:

- June 4 and 16, 2020: The Huron River Impoundments: Argo Pond and Kent Lake, respectively
- July 26, 2020: The Ford Lake Impoundment of the Huron River
- August 3-4, 2020: Huron River, Norton Creek, South Ore Creek, Portage Lake tributaries, Honey Creek in Washtenaw County, Willow Run, Washago Pond, and three lakes not connected to the river (Silver, Mirror, and Fonda)
- August 13, 2020: The Base Line Lake impoundment of the Huron River
- August 25, 2020: Washago Pond, Regan Drain, Huron River and Flat Rock impoundment of the Huron River

Table 1 lists sampling location details and corresponding PFOS and PFOA concentrations for samples received to date (ng/L; parts per trillion). An overview of sampling locations and detailed maps with PFOS concentrations are also provided in Figures 1-7.

Overall, many samples were below the detection limit (K-flagged) or below the reporting limit (J-flagged) for PFOS and PFOA. No surface water samples exceeded the Rule 57 Human Noncancer Value (HNV) for PFOA. Five surface water samples exceeded the HNV for PFOS (12 ng/L), more details for those samples are provided below. Samples with PFOS concentrations above the reporting limit are also discussed.

Two surface water samples collected in August 2020 from Norton Creek, downstream of the Wixom WWTP, had PFOS detections of 8.28 ng/L (NC0100 at Buno Road) and 12.2 ng/L (NC0010 at Garden Road). PFOS concentrations in Norton Creek have continued to decline since July 2018 when it was first observed at 5,600 ng/L. Surface water PFOS and PFOA concentrations in the Huron River upstream of Norton Creek (HR0240) continues to be low (< 3 ng/L). PFOS concentrations in the Huron River downstream of Norton Creek (HR0235) and in Kent Lake (HR0199) were elevated but were below the HNV (Figure 2; Table 1).

Surface water samples collected from tributaries to Portage Lake and in the Base Line Lake impoundment of the Huron River were below the PFOS Rule 57 HNV (Figure 4; Table 1). PFOS in samples from Kent Lake, Fonda Lake, Mirror Lake and South Ore Creek were low and below the laboratory reporting limit (Figure 3; Table 1).

One surface water sample collected in August 2020 from Willow Run (WR0010; 19.2 ng/L PFOS) exceeded the HNV for PFOS (Figure 6; Table 1). This sampling location is downstream of the stormwater outfalls from the Willow Run airport. Further upstream in Willow Run and adjacent to the airport (WR0150), PFOS was 6.7 ng/L. A sample from the Ford Lake impoundment of the Huron River (HR0065) which is upstream of Willow Run confluence had a PFOS concentration of 3.6 ng/L. Downstream of Willow Run, the PFOS concentration in the Huron River was 3.5 ng/L (HR0050). It is important to note that the Ford Lake sample was a composited sample of the entire water column and collected a week prior to the HR-0050

sample, which was a subsurface grab sample. Therefore, a direct comparison in PFOS concentration between these two sites is not possible.

A sample collected on August 4th, 2020 from the Washago Pond of the Regan Drain in the Willow Metropark exceeded the Rule 57 HNV for PFOS (RG0005; 29.5 ng/L; Figure 7; Table 1). Further downstream, PFOS in the Huron River at the Flat Rock Impoundment (HR0020) was elevated above anthropogenic background at 4.7 ng/L but did not exceed the Rule 57 HNV. Additional water samples were collected on August 25, 2020 from the Washago Pond area. PFOS was 32.5 ng/L in Washago Pond (RG0005), 81.5 ng/L upstream of Washago Pond in the Regan Drain (RG0010), 3.6 ng/L in the Huron River upstream of Washago Pond/Regan Drain (HR0023), and 3.11 ng/L in the Flat Rock Impoundment of the Huron River (HR0020). The source of PFAS contamination to the Regan Drain is currently unknown and warrants further investigation.

Status update prepared by: Sarah Bowman, Toxicologist
Water Resources Division
Department of Environment, Great Lakes, and Energy

Table 1: EGLE June-August 2020 Huron River surface water PFOS and PFOA results. PFOS results that exceeded the Rule 57 HNV are underlined.

Database Site Code	Waterbody	Description	Collection Date	Latitude	Longitude	PFOS (ng/L)	PFOS Flag	PFOA (ng/L)	PFOA Flag
HR0240	Huron River	HR at Wixom Rd	8/3/2020	42.57425	-83.55990	1.43	K	2.25	J
NC0010	Norton Creek	Norton Creek US Huron River	8/3/2020	42.57256	-83.57001	<u>12.2</u>		2.41	J
NC0100	Norton Creek	Norton Creek at E Buno Rd.	8/3/2020	42.55270	-83.56223	8.28		2.09	J
HR0235	Huron River	HR at Burns Rd	8/3/2020	42.57870	-83.58002	6.13		2.17	J
HR0199	Huron River	Kent Lake	6/14/2020	42.52019	-83.65732	3.88	J	1.9	J
SO0050	South Ore Creek	Hamburg Rd	8/3/2020	42.49796	-83.80237	2.05	J, Q	2.75	J
FNLK-0001	Fonda Lake	Fonda Lake	8/3/2020	42.51069	-83.74930	1.41	K	3.64	J
MRLK-0001	Mirror Lake	Mirror Lake	8/3/2020	42.51118	-83.75463	1.37	K	3.53	J
SILV0001	Silver Lake	at Beach	8/3/2020	42.41565	-83.96175	1.49	K	1.87	J
HCL0100	Honey Creek-Livingston Co.	HCL at Darwin Rd	8/3/2020	42.44285	-83.92494	1.37	K	1.37	K
PR0010	Portage River	PR US Little Portage Lake	8/4/2020	42.41908	-83.93010	1.4	K	1.4	K
UTS0050	Unnamed	Unnamed Trib at D19	8/3/2020	42.40728	-83.94222	1.4	K	3.08	J
HR0170	Huron River	Base Line Lake	8/13/2020	42.42486	-83.89431	4.83		1.48	K
HR0165	Huron River	HR DS Base Line and Portage Lakes	8/4/2020	42.41488	-83.90695	1.41	K	1.41	K
UHCL0010	U.T. to Honey Creek	S. Dexter St.	8/3/2020	42.45526	-83.93650	3.85	J, Q	1.36	K
UHCL0100	U. T. to Honey Creek	Pumpkin Lane	8/3/2020	42.45680	-83.93314	2.45	J	1.44	K
HR0145	Huron River	Zeeb Rd	8/4/2020	42.32357	-83.84071	1.48	K	1.48	K
HR0143	Huron River	Chrysler SCIO	8/4/2020	42.32857	-83.82691	1.64	J	1.44	K
HC0010	Honey Creek	Honey Creek	8/4/2020	42.31808	-83.79538	1.43	K	1.43	K
HC0500	Honey Creek	Dexter-Ann Arbor Rd	8/4/2020	42.29600	-83.82007	1.43	K	1.43	K
HC1000	Honey Creek	btwn I94 & Jackson	8/4/2020	42.28730	-83.82627	1.56	J	1.45	K
HCT1000	Honey Creek	HC Trib behind Stowe St	8/4/2020	42.29610	-83.79530	NS		NS	
HR0120	Huron River	Argo Pond	6/4/2020	42.29054	-83.74565	1.98	J	1.67	J
HR0065	Huron River	Ford Lake Fish Sampling	7/26/2020	42.21126	-83.56930	3.58	J	1.5	J
WR0150	Willow Run	WR just US Tyler Rd.	8/4/2020	42.23283	-83.54724	6.76		4.65	
WR0010	Willow Run	DS Ypsilanti WWTP	8/4/2020	42.21930	-83.53661	<u>19.2</u>		5.63	
WRW0100	Willow Run	West Trib to Willow Run	8/4/2020	42.22380	-83.55220	NS		NS	
HR0050	Huron River	HR at E Huron River Dr	8/4/2020	42.21079	-83.43472	3.46	J	2	J
HR0023	Huron River	u/s Regan Drain	8/25/2020	42.13302	-83.37096	3.6	J	1.92	J
RG0010	Regan Drain	u/s Washago Pond	8/25/2020	42.12649	-83.37362	<u>81.5</u>		8.61	
RG0005	Washago Pond	Willow Metropark	8/4/2020	42.13046	-83.37297	<u>29.5</u>		4.48	
RG0005	Washago Pond	Willow Metropark	8/25/2020	42.13046	-83.37297	<u>32.5</u>		4.49	
HR0020	Huron River	Flat Rock Impoundment	8/4/2020	42.10700	-83.31775	4.7		2.01	J
HR0020	Huron River	Flat Rock Impoundment	8/25/2020	42.10700	-83.31775	3.11	J	1.63	J

NS = No sample collected because waterbody was dry at time of sampling.; K = Result is below detection limit; therefore, the method detection limit is displayed.
 J = Result is above detection limit, below the reporting limit.; Q = The ion transition ratio is outside of the acceptance criteria.

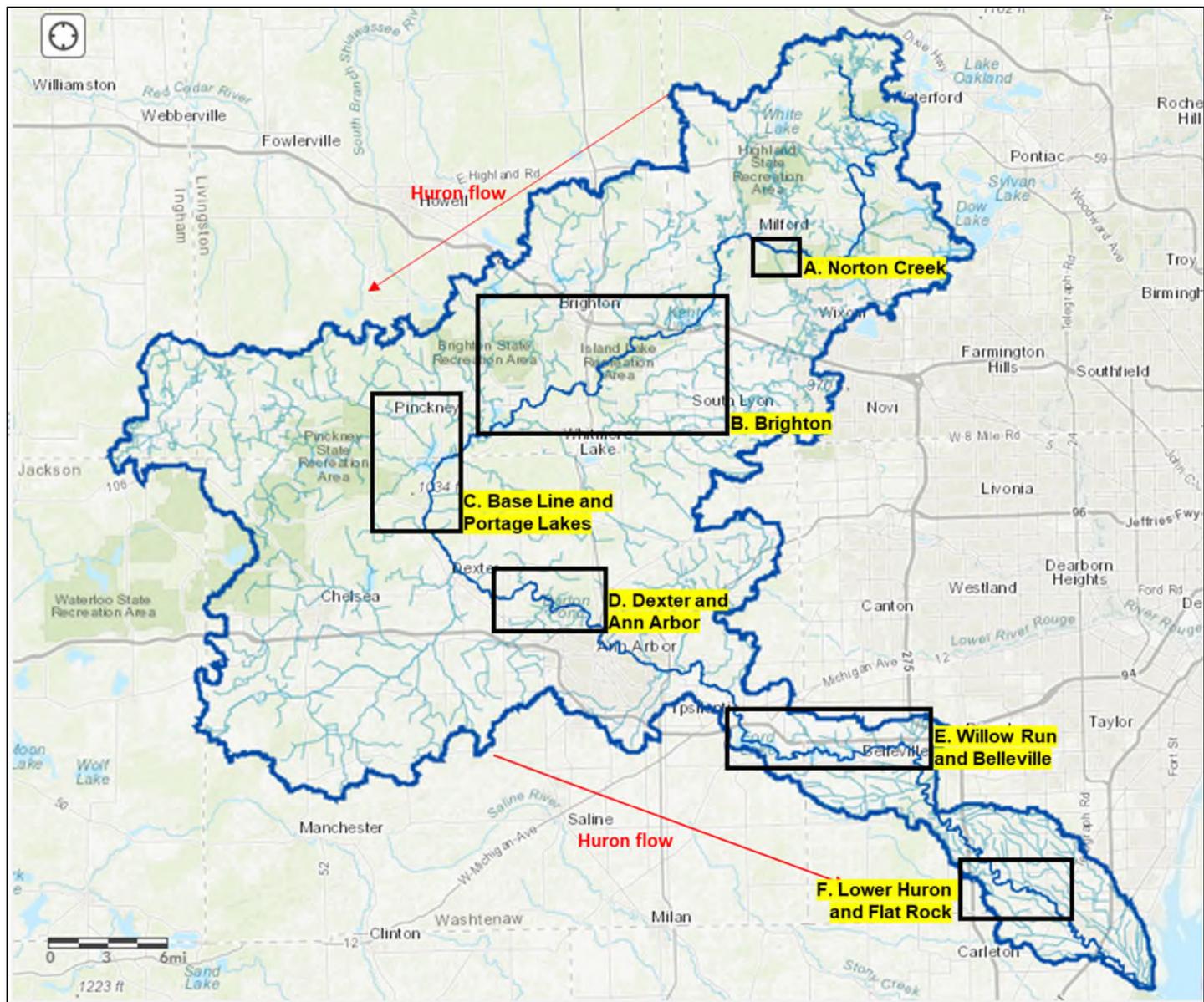


Figure 1: Overview of EGLE sampling locations for June-August 2020 PFAS sampling. Figures 2-7 provide detailed information for the following areas: (A) Norton Creek, (B) Brighton, (C) Base Line and Portage Lakes, (D) Dexter and Ann Arbor, (E) Willow Run and Belleville, and (F) Lower Huron and Flat Rock.

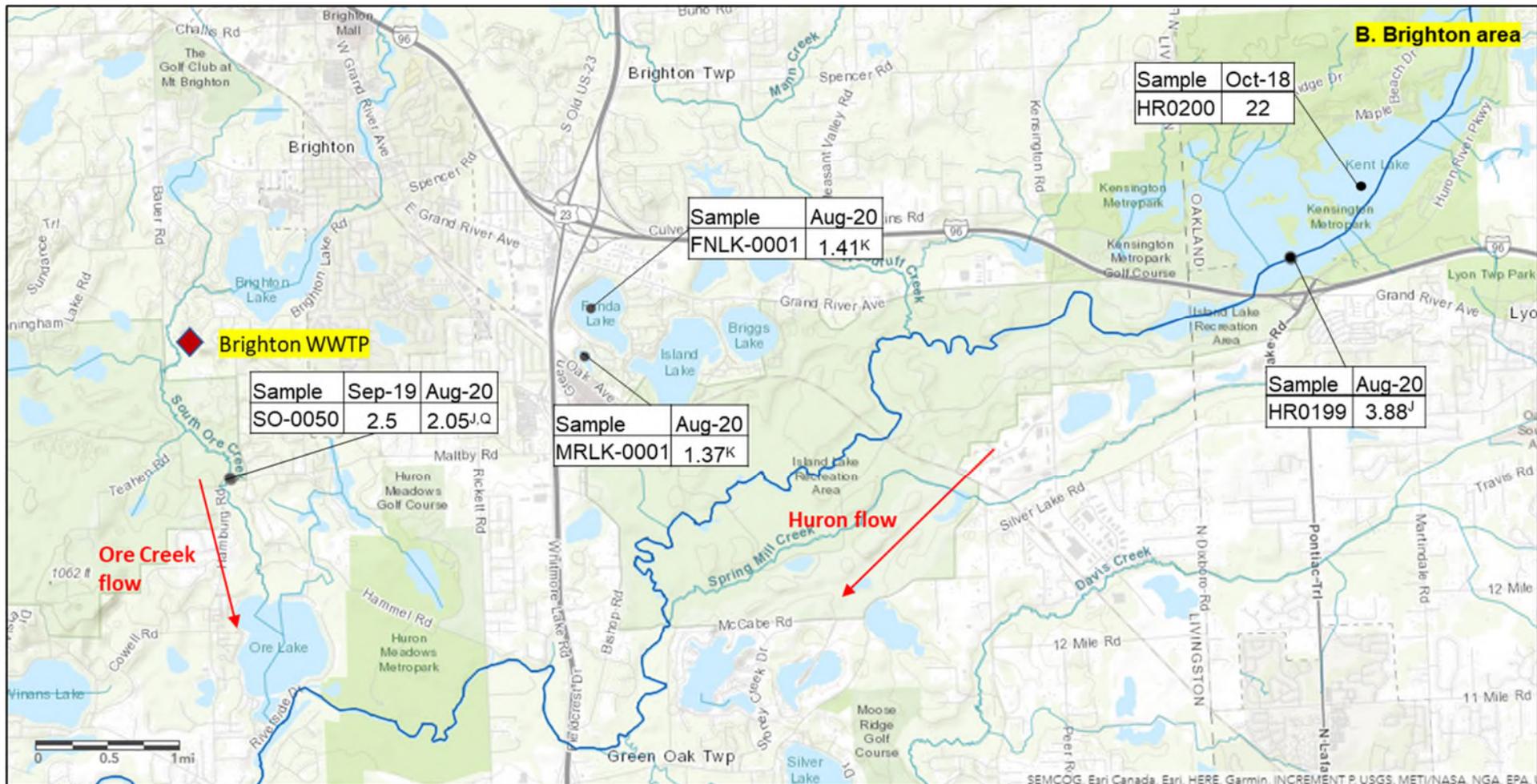


Figure 3: PFOS (ng/L) in surface water samples collected from the (B) Brighton area including Kent Lake, Fonda Lake, Mirror Lake, and Ore Creek. Sample dates are listed as Month-Year. Previous sampling data provided for reference. J = Result is above detection limit, below the reporting limit; K = Result is below detection limit; therefore, the method detection limit is displayed; and Q = The ion transition ratio is outside of the acceptance criteria.

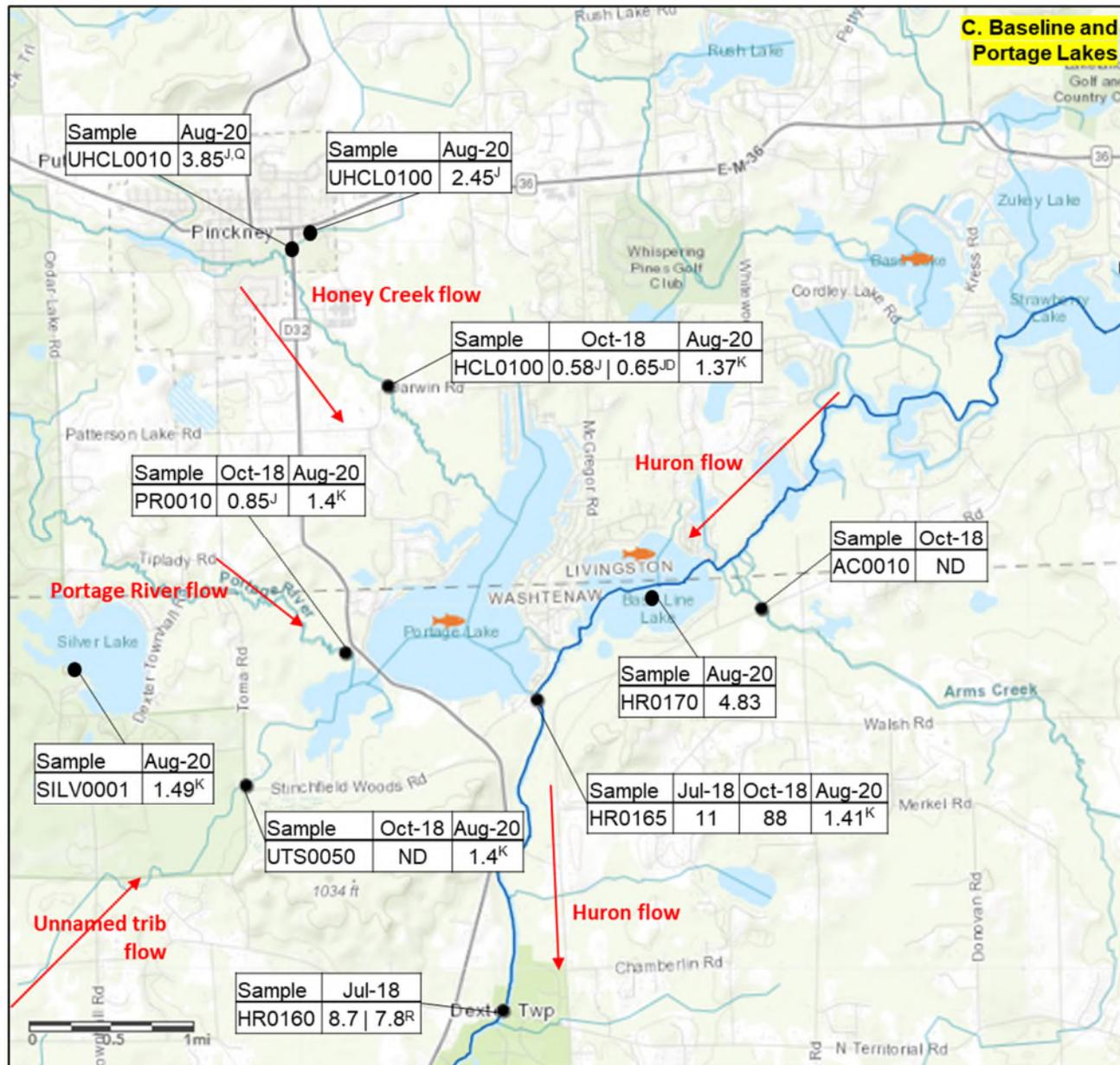


Figure 4: PFOS (ng/L) in surface water samples collected from the (C) Portage Lake and Base Line Lake area. Previous sampling data provided for reference. Fish icon represents location where fish contaminant data available. D = Duplicate sample; R = Replicate sample; J = Result is above detection limit, below the reporting limit; K = Result is below detection limit; therefore, the method detection limit is displayed, ND = non-detect

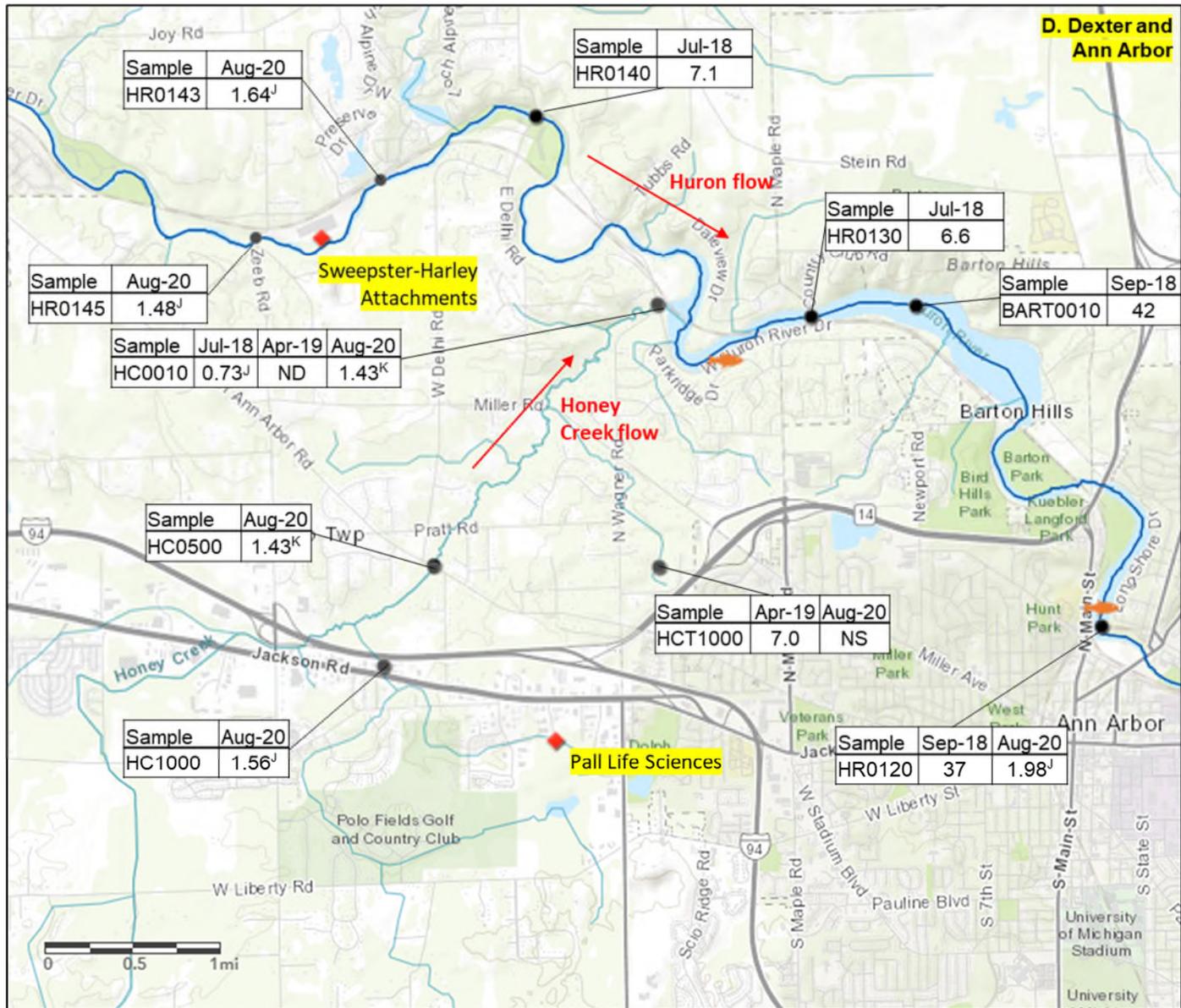


Figure 5: PFOS (ng/L) in surface water samples collected from the (D) Dexter and Ann Arbor area. Sample dates are listed as Month-Year. Previous sampling data provided for reference. Fish icon represents location where fish contaminant data available. J = Result is above detection limit, below the reporting limit; K = Result is below detection limit; therefore, the method detection limit is displayed, ND = non-detect, NS = no sample collected.

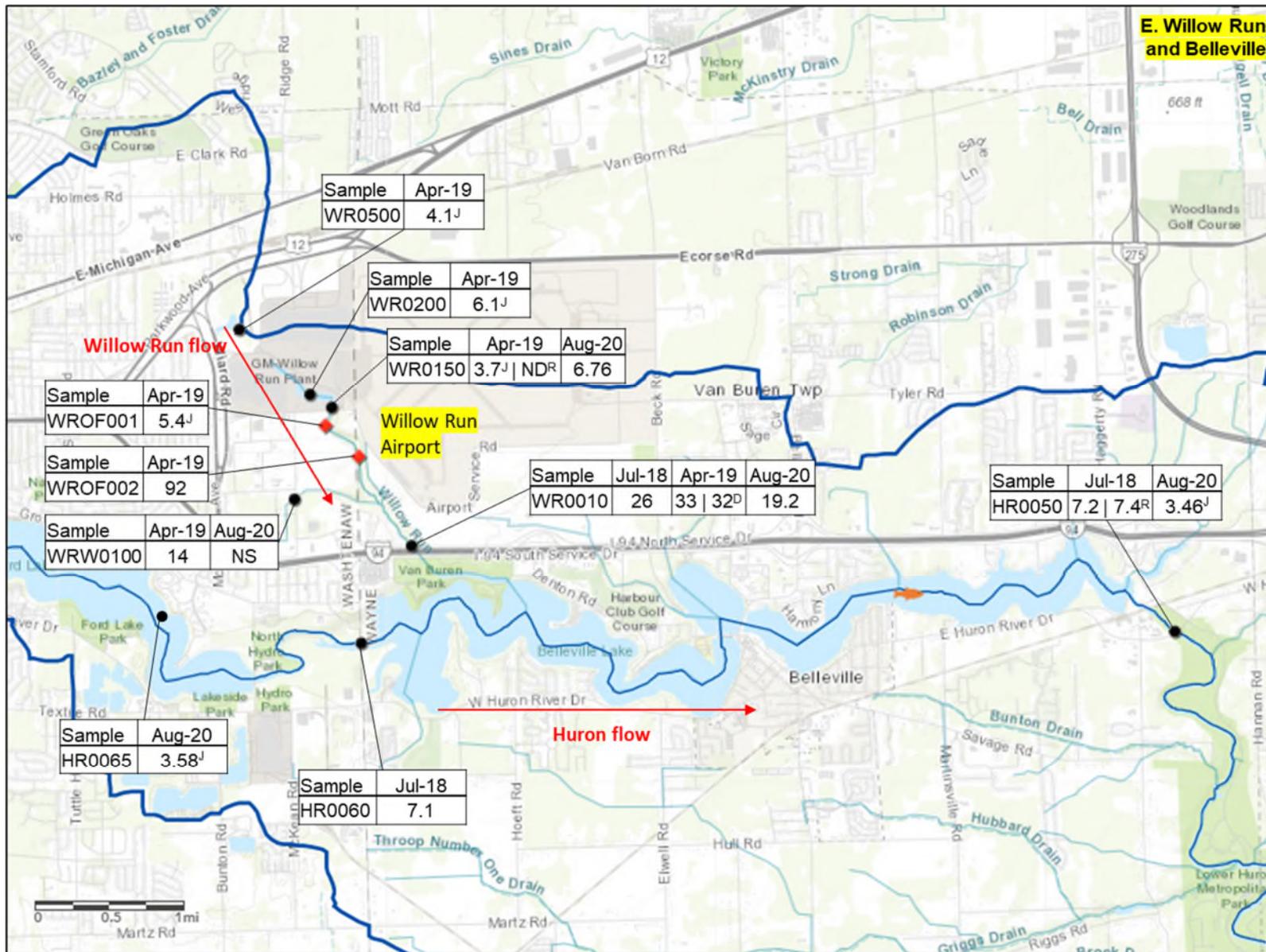


Figure 6: PFOS (ng/L) in surface water samples collected from the (E) Willow Run and Belleville area. Sample dates are listed as Month-Year. Previous sampling data provided for reference. Fish icon represents location where fish contaminant data available. D = Duplicate sample; R = Replicate sample; J = Result is above detection limit, below the reporting limit; ND = non-detect.

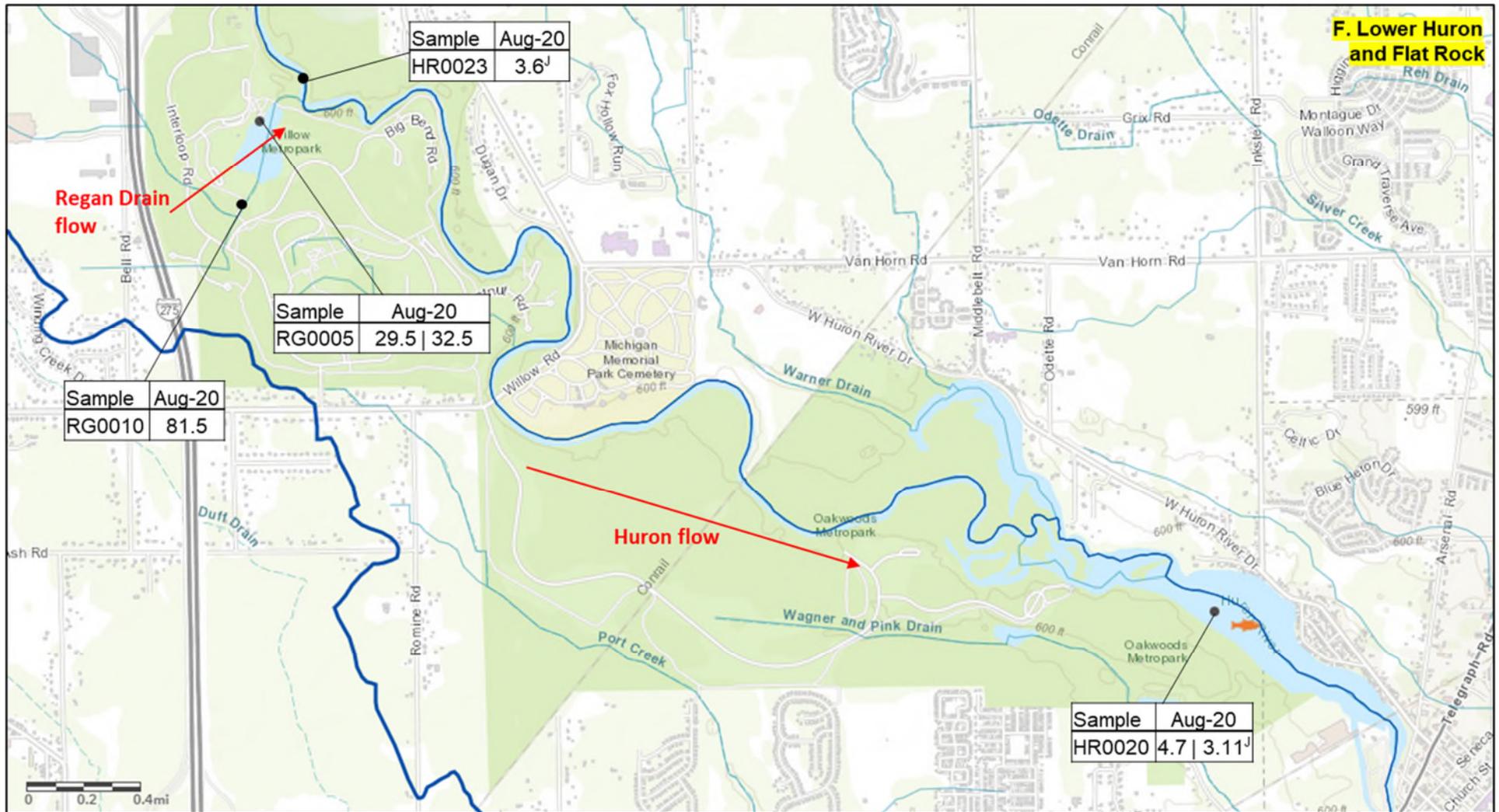


Figure 7: PFOS (ng/L) in surface water samples collected from the (F) Lower Huron and Flat Rock area. Sample dates are listed as Month-Year. Fish icon represents location where fish contaminant data available. J = Result is above detection limit, below the reporting limit.