

Environmentally Concerned Citizens of South Central Michigan - 2017-2020 Raisin/Bean Cyanobacteria, cyanotoxins, and source species DNA 8.14.2020

Date	Site #	Stream	Location	Watershed	Latitude	Longitude	Township	Temperature (deg. F)	Dissolved Oxygen	E. coli, /100ml	Nitrate (ppm)	Nitrite (ppm)	Orthophosphate (PO4) (ppm)	Ammonia (ppm)	DNA Cattle	DNA Swine	DNA Human	Cyanobacteria No genus/other	Cyanobacteria Microcystis	Cyanobacteria Planktothrix	Cyanobacteria Anabaena	Microcystin	Anatoxin
5.16.2019	3	Fisk Cr. to Black Creek to Wolf Creek (E. Coli TMDL)	Teachout Rd./Pentecost & Elton	S. Branch/Raisin	41.98385556	-84.10806944	Adrian	NO FLOW															
7.22.2020								NO FLOW															
8.17.2017	4	Black Creek to Wolf Creek (E. coli TMDL)	Wolf Creek Hwy./ Rome & Hunt	S. Branch/Raisin	41.93621389	-84.10382222	Adrian	--	--	1900	1	0	15	0.5	Y	NA*	NA	Y	NA	NA	NA	N	NA
7.22.2020								71.5	--	980	7	1.20	0.02	<.06	N	NA	Y	NA	Y	N	Y	Y	Y
7.25.2019	5	Turner Dr. to Wolf Creek (E. coli TMDL)	Tipton Hwy./Hunt & Country Club	S. Branch/Raisin	41.9013	-84.06543056	Adrian	61.7	5.11	1000	1	0	30	0	N	NA	Y	NA	N	Y	N	Y	Y
7.25.2019	6	Wolf Creek to Lake Adrian (E. coli TMDL)	Tipton Hwy./Hunt & Country Club	S. Branch/Raisin	41.91674167	-84.06485556	Adrian	65.6	4.3	700	1	0	30	0.25	Y	NA	Y	NA	Y	Y	Y	Y	Y
7.17.2018	9	Lime Lake Inlet (E. coli TMDL)	Lime Lake Rd.	Bean Cr./Tiffin	41.78952222	-84.37675	Wright	--	--	5300	1	0	30	0.25	N	N	N	N	Y	Y	NA	Y	NA
7.25.2019								65.8	6.41	730	2	0	30	0	Y	Y	Y	NA	Y	Y	N	Y	Y
7.22.2020								70.9	--	1200	<3	0.21	0.41	<.06	Y	Y	Y	NA	Y	Y	N	Y	Y
8.17.2017	13	South Br., River Raisin (trib.) (E. coli TMDL)	Henning Hwy./Plank & Beecher	S. Branch/Raisin	41.88819722	-84.26147778	Hudson	NO FLOW															
7.25.2019								65.1	5.05	1800	10	0	30	0.25	Y	NA	Y	NA	Y	N	N	Y	Y
7.22.2020								68.6	--	2400	4	0.77	0.18	<.06	Y	NA	Y	NA	N	N	N	Y	Y
7.17.2018	14	Medina Drain	Ingall Hwy./Medina & Canandaigua Rds.	Bean Cr./Tiffin	41.80291111	-84.29298056	Medina	--	--	1900	10	0	15	0.25	Y	N	NA	N	N	Y	NA	Y	NA
8.17.2017	15	South Br., River Raisin (E. coli TMDL)	Cadmus Rd./Morey & Wheeler Hwys.	S. Branch/Raisin	41.87175	-84.22246111	Dover	--	--	1000	5	1	15	1	Y	NA	NA	Y	NA	NA	NA	N	NA
5.16.2019								64	4.94	4400	5	0	30	0	Y	NA	Y	NA	N	N	N	Y	Y
8.17.2017	18	Hazen Cr. To S. Br. Raisin (E. coli TMDL)	Plank Rd./Bates & Springville	S. Branch/Raisin	41.90023889	-84.16654722	Rome	--	--	2600	0	0	15	0.25	Y	NA	NA	Y	NA	NA	NA	N	NA
7.25.2019	19	Wallace Dr. to Hazen Cr. To S. Br. Raisin (E. Coli TMDL)	Forrister Rd./Onsted & Springville	S. Branch/Raisin	41.91458611	-84.17164722	Rome	62.7	5.04	430	5	0	30	0.25	Y	NA	Y	N	N	N	N	Y	Y
8.17.2017	24	Rice Lake Drain	Haley Rd./Morey Hwy & Wheeler	Bear Creek/Raisin	41.82824444	-84.2206	Dover	--	--	1300	0	0	30	0.25	Y	NA	NA	Y	NA	NA	NA	Y	NA
7.25.2019	26	Durfee Cr Ext	Dillon Hwy/Medina & Packard	Bean Cr./Tiffin	41.78788056	-84.31153333	Medina	NO FLOW															
8.17.2017	27	Bear Cr.	Lake Hudson Inlet, Tomer Rd.	Bear Creek/Raisin	41.84236944	-84.25025833	Hudson	--	--	240	1	1.5	15	0	Y	NA	NA	Y	NA	NA	NA	N	NA
7.17.2018	29	trib to St. Joseph Cr	Culbert Rd/Somerset & U. S. 127	Bean Cr./Tiffin	41.89597778	-84.36956389	Pittsford	--	--	18000	5	0	30	0.25	Y	N	NA	N	Y	N	NA	Y	NA
7.17.2018	38	Silver Cr.	Mulberry Rd./Fay & Seneca	Bean Cr./Tiffin	41.73930278	-84.19318889	Seneca	--	--	1400	5	0	15	0.25	Y	N	NA	Y	N	N	NA	Y	NA
7.17.2018	45	Carter Dr.	Mulberry Rd./M156 & Fay	Bean Cr./Tiffin	41.739075	-84.20793056	Seneca	--	--	380	2	0	30	0.25	N	N	NA	N	N	Y	NA	N	NA
7.17.2018	46	trib. to Lime Cr.	Ingall Hwy./Canandaigua & Packard Rds.	Bean Cr./Tiffin	41.78216111	-84.29188333	Medina	--	--	21000	0	0	30	1	Y	N	NA	Y	N	N	NA	N	NA
7.25.2019								64.7	3.25	780	5	0.3	30	0.25	Y	NA	Y	NA	N	Y	N	Y	Y
7.22.2020								71.7	--	940	6	0.56	<.02	<.06	Y	NA	Y	NA	N	Y	N	Y	Y

Date	Site #	Stream	Location	Watershed	Latitude	Longitude	Township	Temperature (deg. F)	Dissolved Oxygen	E.coli. /100ml	Nitrate (ppm)	Nitrite (ppm)	Orthophosphate (PO4) (ppm)	Ammonia (ppm)	DNA Cattle	DNA Swine	DNA Human	Cyanobacteria No genus/other	Cyanobacteria Microcystis	Cyanobacteria Planktonrix	Cyanobacteria Anabaena	Microcystin	Anatoxin
8.17.2017	48	Loch Erin Shannon Park (E. coli TMDL)	Wadding Rd./Dalton & Dalton	S. Branch/Raisin	42.009083	-84.151706	Cambridge	--	--	10	0	0	5	0.25	Y	NA	NA	Y	NA	NA	NA	Y	NA
8.17.2017	49	Black Creek (E. coli TMDL)	Brazeo Rd./Wolf Creek Hwy. & Knight	S. Branch/Raisin	41.949169	-84.094828	Adrian	--	--	1000	0	0	15	0.25	Y	NA	NA	Y	NA	NA	NA	Y	NA
7.22.2020	50	Toad Cr.	Ingall Hwy./Lime Cr. & Ridgeville Rds.	Bean Cr./Tiffin	41.75628056	-84.2908	Medina	70.9	--	1500	47	0.49	<.02	<.06	Y	NA	Y	NA	Y	N	Y	Y	Y
7.22.2020	LLE	Lime Lake east (E. coli TMDL)	Lime Lake Rd.	Bean Cr./Tiffin			Wright	--	--	20	<3	<.07	<.02	<.06	Y	Y	Y	NA	Y	N	Y	Y	Y
7.25.2019	LLC	Lime Lake center (E. coli TMDL)	Lime Lake Rd.	Bean Cr./Tiffin			Wright	--	--	<10	2	0.15	30	0	Y	Y	Y	NA	Y	Y	Y	Y	Y

*NA = Not applicable/did not test for that parameter

Key Sampling Parameters:

Parameter	In Natural Streams	Of Concern	MI Water Quality Standards
Ammonia	0.01-0.10 mg/L	above 0.10 mg/L	-----
Orthophosphate	varies	above .005/mg/L	-----
Total Phosphorus	0.05-0.10 m/L	above .10 mg/L	1 mg/L or less (max. monthly avg./point sources)
Nitrate	varies	above 10 mg/L	10 mg/L (drinking water)
BOD5	4-10 mg/L	above 15 mg/L	-----
DO	5-13 mg/L	below 5 mg/L	5.0 mg/L or higher (warmwater streams)
		below 7 mg/L	7.0 mg/L or higher (coldwater streams)
Fecal Coliform	varies	above 2,000 mg/L	-----
E. coli	varies	above 1,000/100ml surface water	1,000/100 mg/L or less (partial body contact)
		>0 mg/L drinking water	130/100 mg/L or less (total body contact)
			0 mg/L (drinking water)

adapted from "Key Sampling Parameters" fact sheet, Ohio EPA; Michigan Water Standards (Administrative Rules Part , P. O. 51, Natural Resources and Environmental Protection Act), and from <http://www.epa.gov/safewater/mcl.html>

Note: mg/L is approximately, but not exactly, equivalent to ppm