

## White Clay Wild and Scenic River Stream Watch Monitoring Program

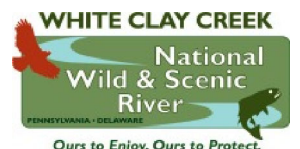
The mission of the Stream Watch Monitoring Program is to *improve knowledge of stream conditions* based on water quality trends measured over time at both fixed and temporary sites and to *increase citizen and municipal engagement in water resource protection*. ([whiteclay.org](http://whiteclay.org))

### White Clay Wild and Scenic River Stream Watch Monitoring Program - Site List

SiteID	State	Location	Sensor Station for Continuous Monitoring
SL031	PA	Stroud Water Research Center	Owned by Stroud
SL177	PA	Broad Run above Somerset	Owned by New Garden Township/Save Our Water
WCCDE28	DE	Hickory Hill at Erikson Ave	SL132
WCCDE29	DE	Northpointe Main on Mill Creek	
WCCDE30	DE	Northpointe Trib to Mill Creek	
WCCDE31	DE	Middle Run Main Stem	
WCCDE32	DE	Middle Run Trib to Main Stem	SL157 (upstream of summer bacteria grab site)
WCCDE37	DE	Fairfield Run	
WCCDE38	DE	Bogey's Run/Blue Hen Creek	
WCCDE39	DE	Jenney's Run	
WCCDE40	DE	Main @ Kirkwood & A Street	
WCCDE42	DE	Lower Pike Creek	
WCCPA01	PA	Strickersville Main near USGS gage	
WCCPA03	PA	Sharpless Bridge West Branch	
WCCPA05	PA	Good Hope East Branch	
WCCPA06	PA	Watson's Mill	SL109
WCCPA06_A	PA	Broad Run	
WCCPA06_B	PA	Somerset out	
WCCPA06_C	PA	Somerset in	
WCCPA07	PA	Egypt Run	SL110
WCCPA07_B	PA	Pelham	
WCCPA08	PA	Clay Creek east branch	
WCCPA09	PA	Guernsey Middle Branch	
WCCPA11	PA	Flint Hill West branch	
WCCPA12	PA	Wickerton middle branch	
WCCPA13	PA	Avondale WWTP East	
WCCPA15	PA	Avondale Playground East	
WCCPA16	PA	ELG west fork upper east	
WCCPA18	PA	Laurel Woods East	
WCCPA19	PA	Loyd Road Upper East SUEZ Stroud site	
WCCPA20	PA	WLG SUEZ Stroud site	
WCCPA23	PA	WCC Stroud Lab	
WCCPA24	PA	Mercer Mill on Middle Branch	
WCCPA43	PA	Welcome and Rosehill	SL272



# Stream Monitoring Sites in the White Clay Creek Watershed



Map produced by the University of Delaware Water Resources Center, Dec. 2019.

## White Clay Wild and Scenic River Stream Watch Monitoring Program

Statistics for Total Suspended Solids (TSS), Nitrates (NO3N), Orthophosphate (OP), Chlorides (CL), and Enterococcus (ENT) at Base Flow (baseflow defined as <0.25" rain in 48 hour period), stormflow, and combined. Date Range 7/6/2018-12/17/2019

Exceedance of standards (in red text) indicates impairment. Note where water quality standards don't exist we used DNREC water quality goals. In the case of Chlorides (CL) we used the average concentration where aquatic biota respond negatively (250mg/ml is the potable water standard)

Sensor Station Site ID	Site Description	Date Range	PREC48	# of samples	Average CL (mg/L)	Average NO3N (mg/L)	Average OP (mg/L)	Average TSS (mg/L)
SL109	Watson's Mill (Broad Run Creek, PA)	7/6/2018-12/17/19	Storm Flow	6	14.58	4.31	0.12	8.92
SL109	Watson's Mill (Broad Run Creek, PA)	7/6/2018-12/17/19	Base Flow	18	19.31	5.23	0.10	6.16
SL109	Watson's Mill (Broad Run Creek, PA)	7/6/2018-12/17/19	Total Combined Samples	24	18.13	5.00	0.11	6.85
SL110	Egypt Run (PA)	7/6/2018-12/17/19	Storm Flow	6	10.00	7.96	0.24	8.45
SL110	Egypt Run (PA)	7/6/2018-12/17/19	Base Flow	18	23.61	9.62	0.12	6.60
SL110	Egypt Run (PA)	7/6/2018-12/17/19	Total Combined Samples	24	20.21	9.20	0.15	7.06
SL132	Hickory Hill (Mill Creek, DE)	7/6/2018-12/17/19	Storm Flow	6	10.00	3.88	0.15	20.32
SL132	Hickory Hill (Mill Creek, DE)	7/6/2018-12/17/19	Base Flow	18	16.03	4.42	0.12	7.74
SL132	Hickory Hill (Mill Creek, DE)	7/6/2018-12/17/19	Total Combined Samples	24	14.52	4.28	0.13	10.89
SL157	Middle Run Trib to Main Stem (DE)	7/6/2018-12/17/19	Storm Flow	6	10.50	3.23	0.08	10.02
SL157	Middle Run Trib to Main Stem (DE)	7/6/2018-12/17/19	Base Flow	19	16.05	3.20	0.11	6.52
SL157	Middle Run Trib to Main Stem (DE)	7/6/2018-12/17/19	Total Combined Samples	25	14.72	3.21	0.10	7.36
SL272	Rosehill and Welcome Ave (Upper East Branch, PA)	8/28/19 - 12/17/19	Storm Flow	2	50.00	5.63	0.16	8.60
SL272	Rosehill and Welcome Ave (Upper East Branch, PA)	8/28/19 - 12/17/19	Base Flow	3	58.33	6.44	0.13	5.00
SL272	Rosehill and Welcome Ave (Upper East Branch, PA)	8/28/19 - 12/17/19	Total Combined Samples	5	55.00	6.12	0.14	6.44

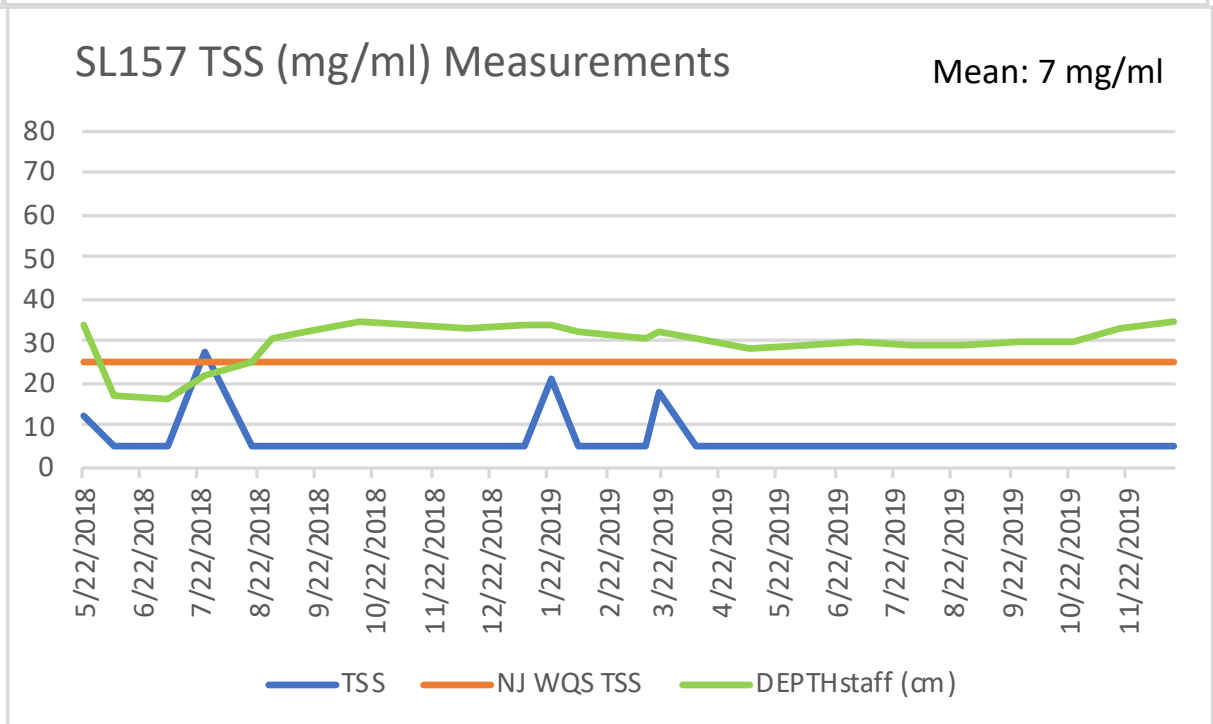
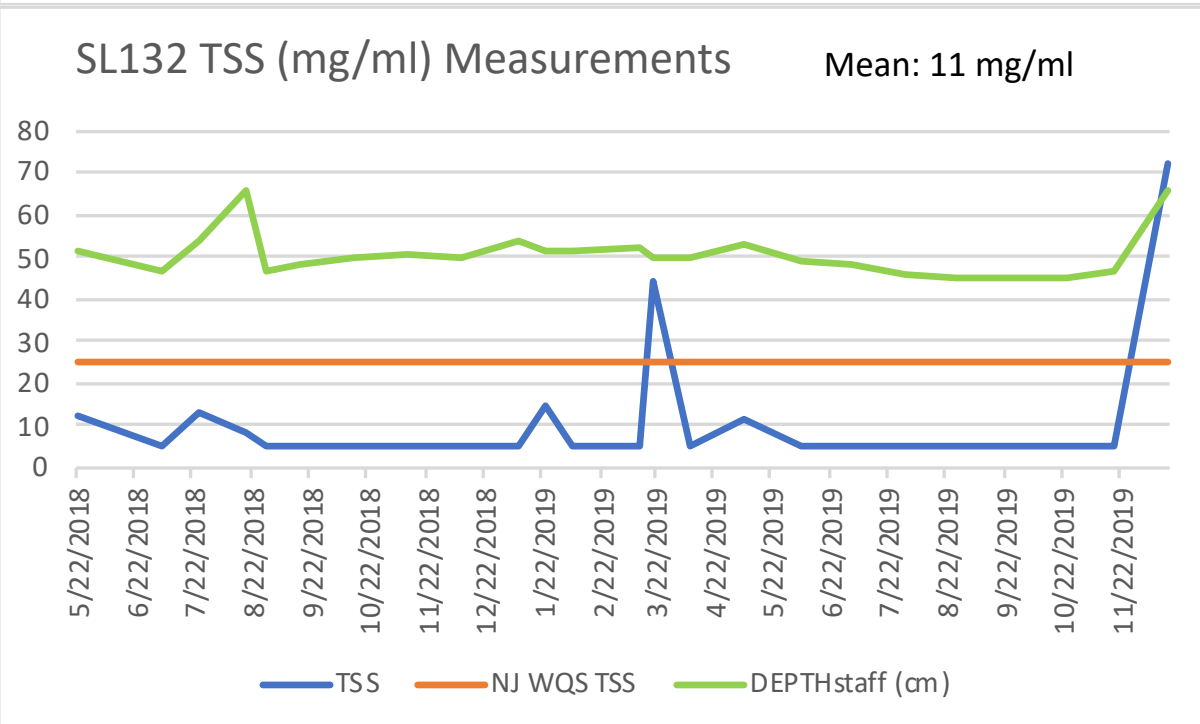
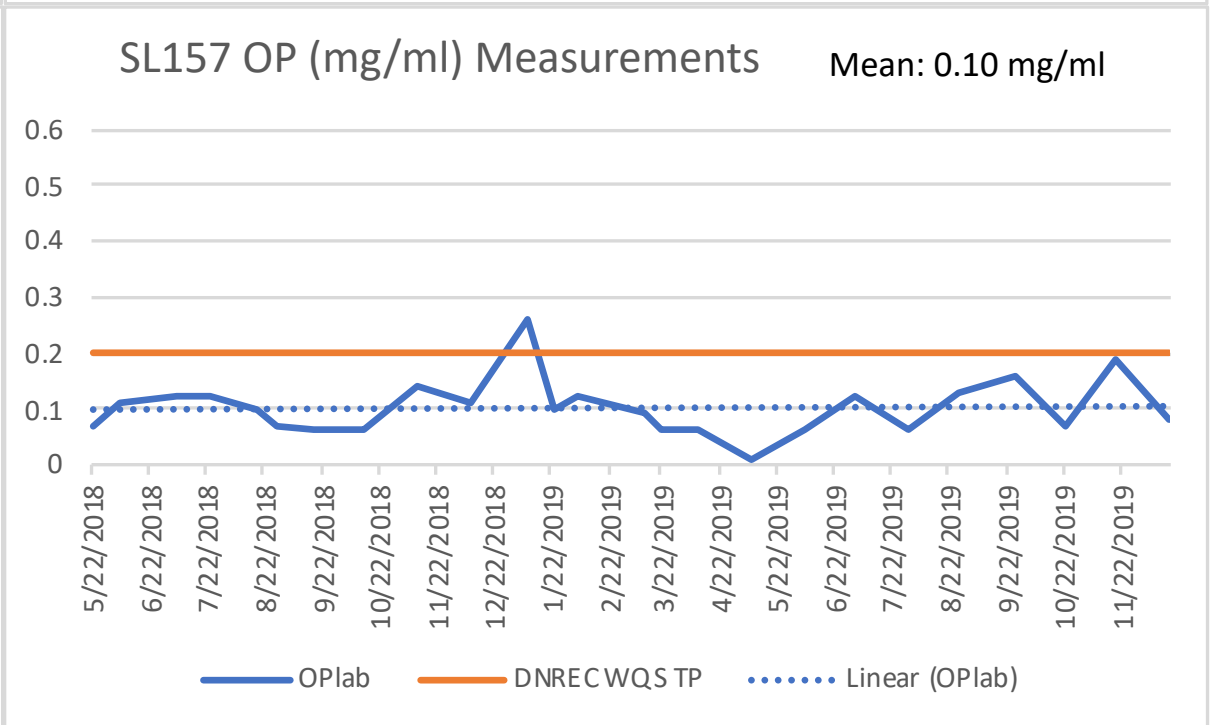
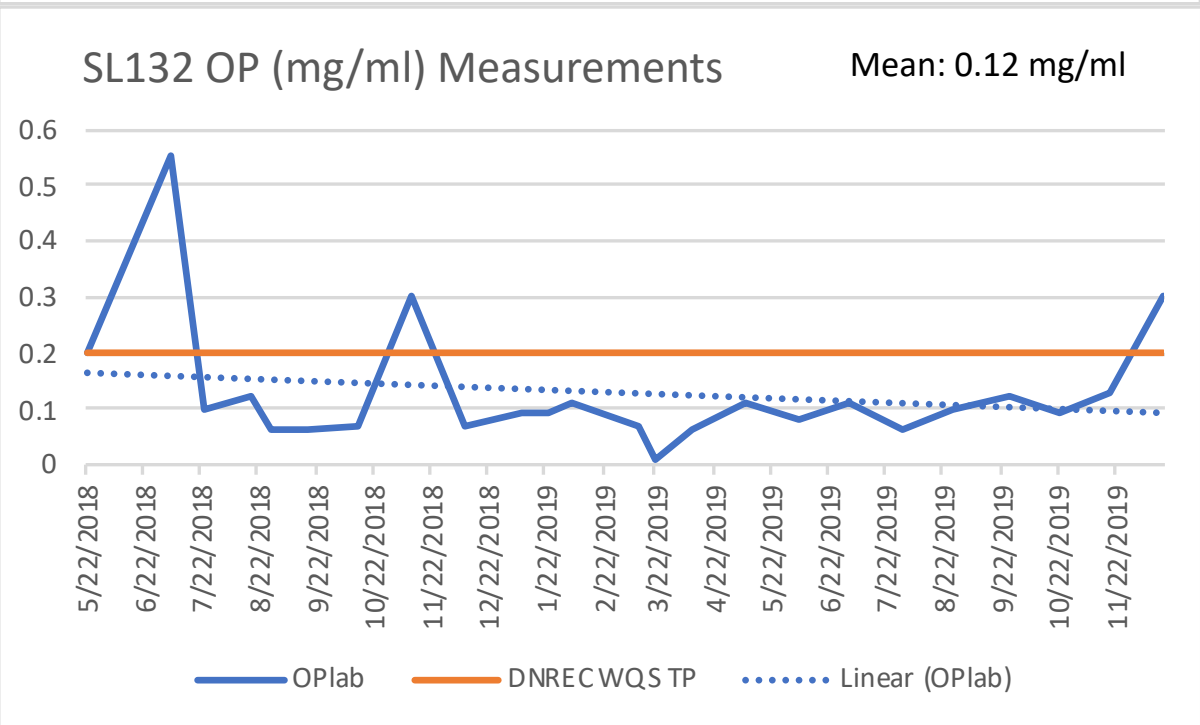
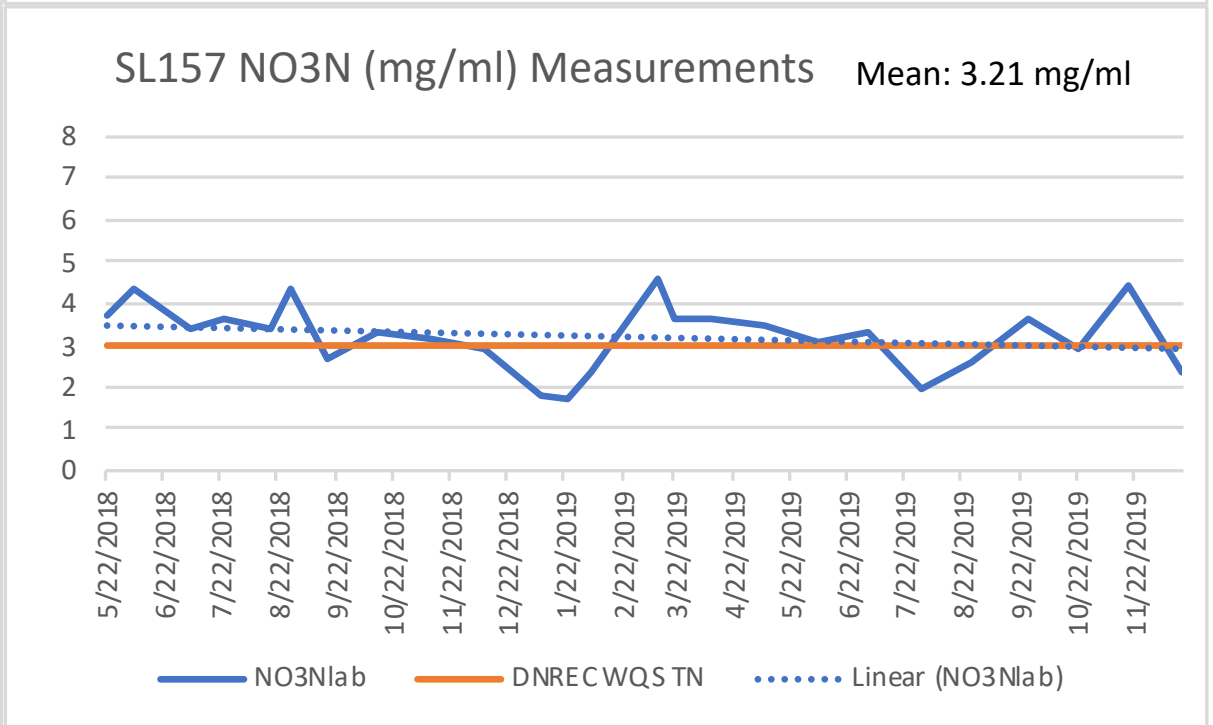
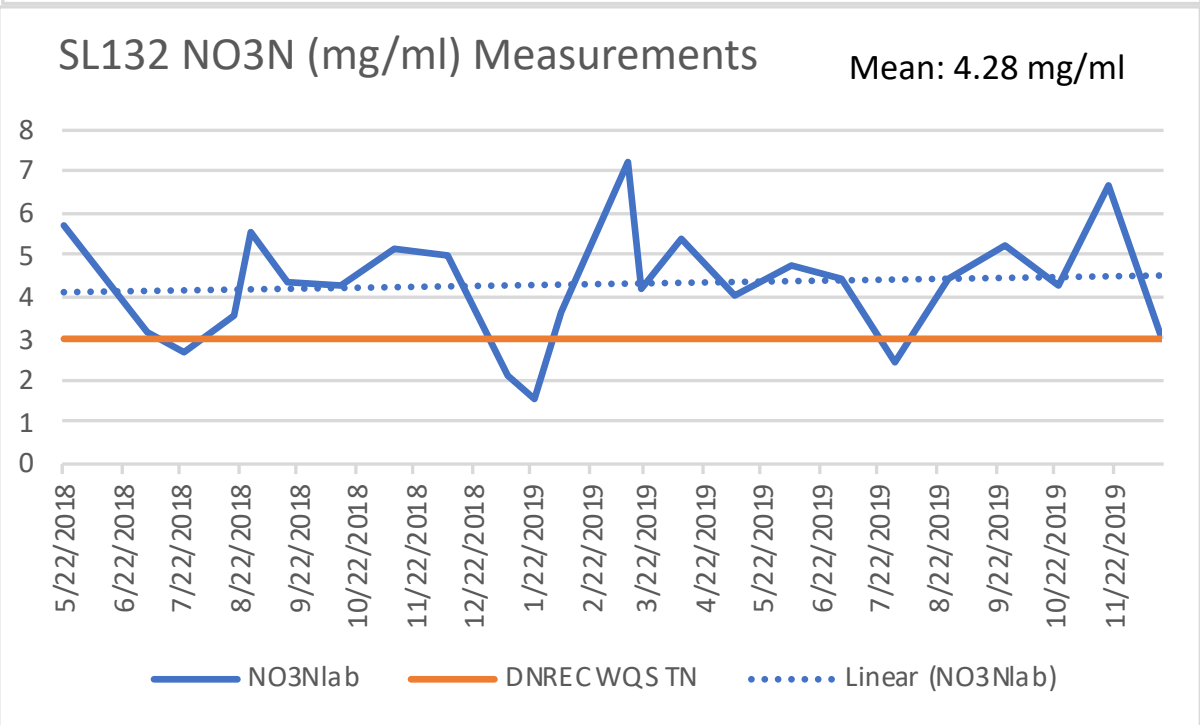
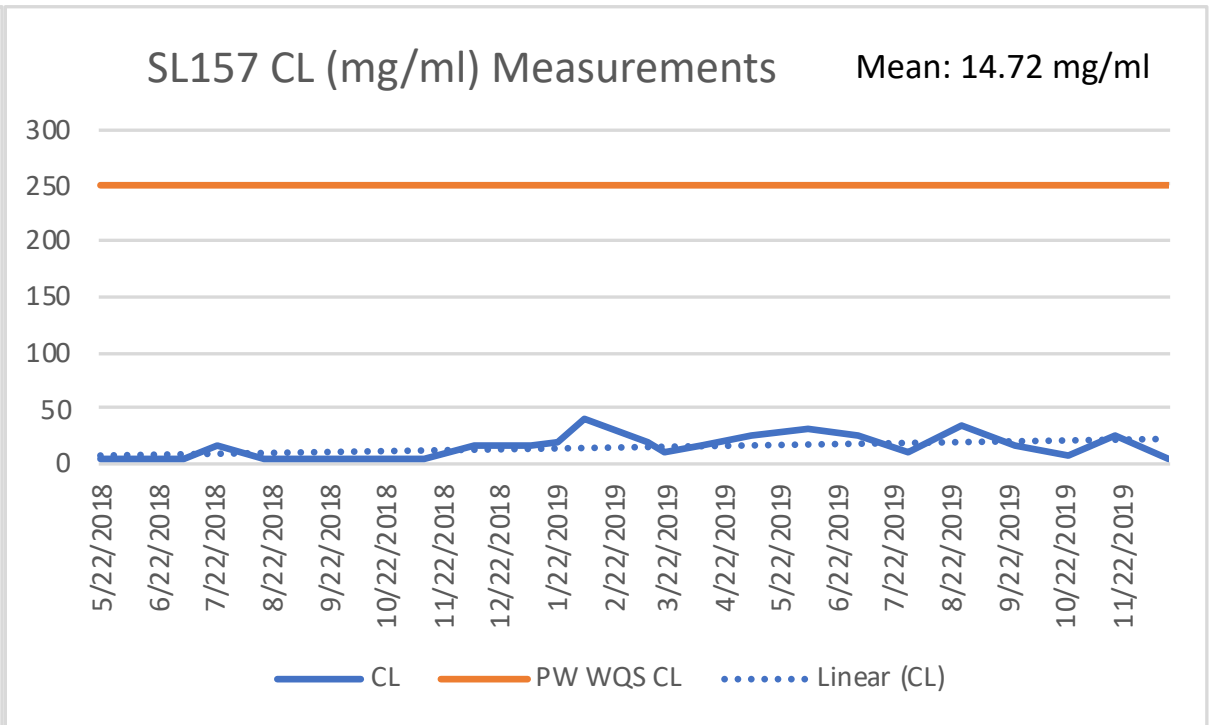
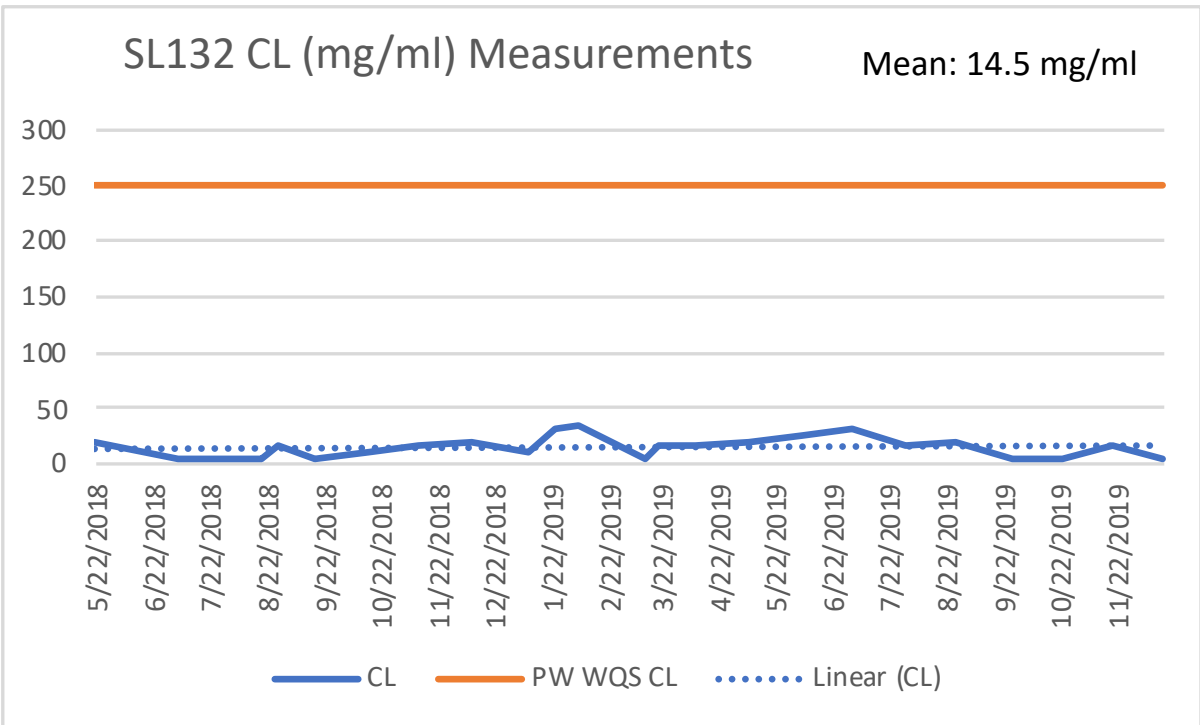
**White Clay Wild and Scenic River Stream Watch Monitoring Program**

Graphic presentation of all data points for Chlorides (CL), Nitrates (NO3N), Orthophosphate (OP), Total Suspended Solids (TSS).

Date Range 7/6/2018-12/17/2019. Exceedance of standards (red line) indicates impairment.

**Hickory Hill on Mill Creek (SL132)**

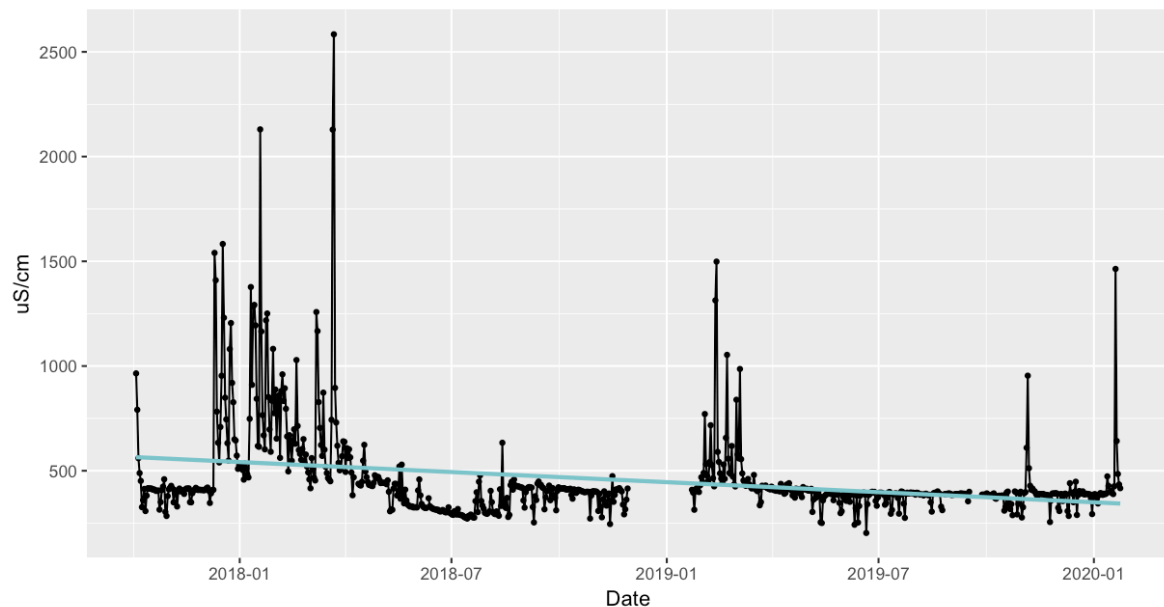
**Tributary to Middle Run Below Paper Mill Road (SL157)**



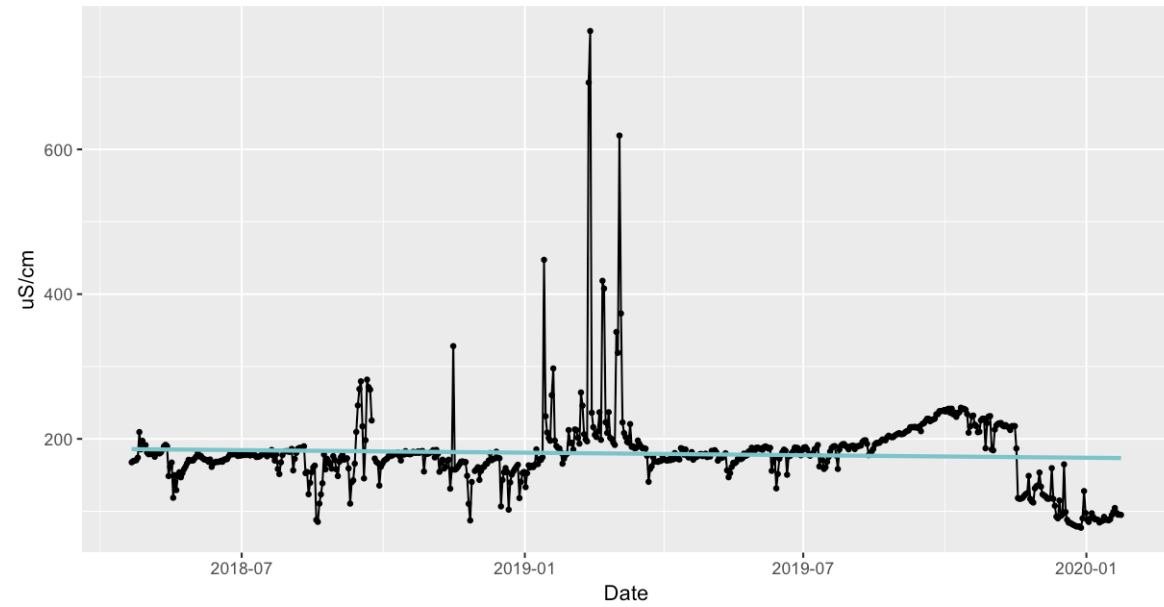
# White Clay Wild and Scenic River Stream Watch Monitoring Program

Graphic presentation of Conductivity, Water Temperature, and Depth readings taken by in-stream continuous data loggers. Date Range 7/6/2018-12/17/2019.

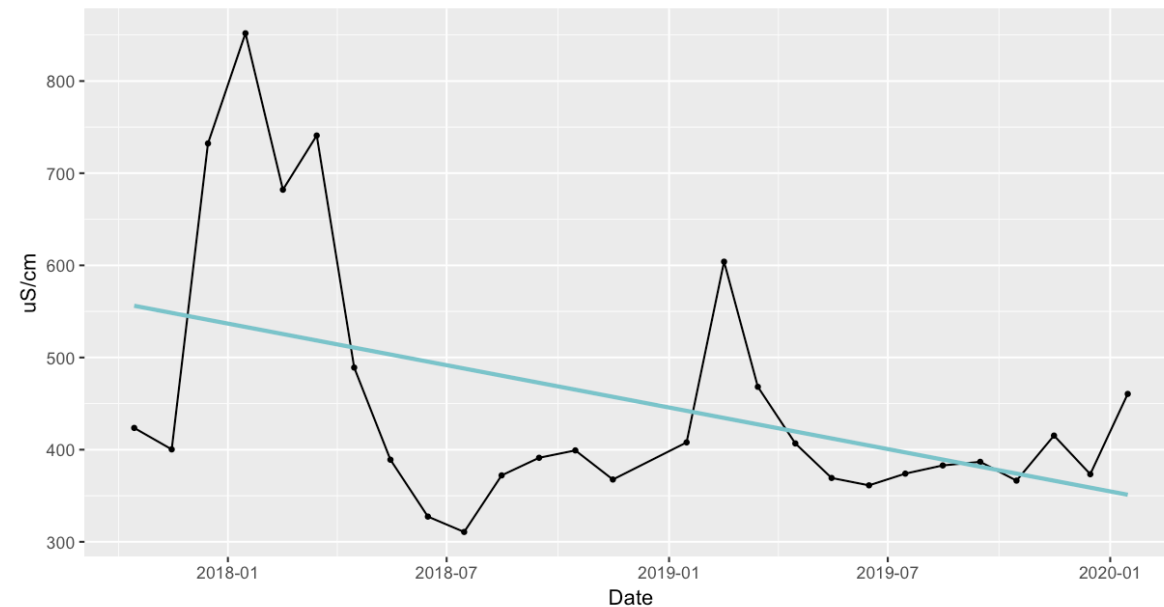
### Hickory Hill on Mill Creek Daily Mean Conductivity (SL132)



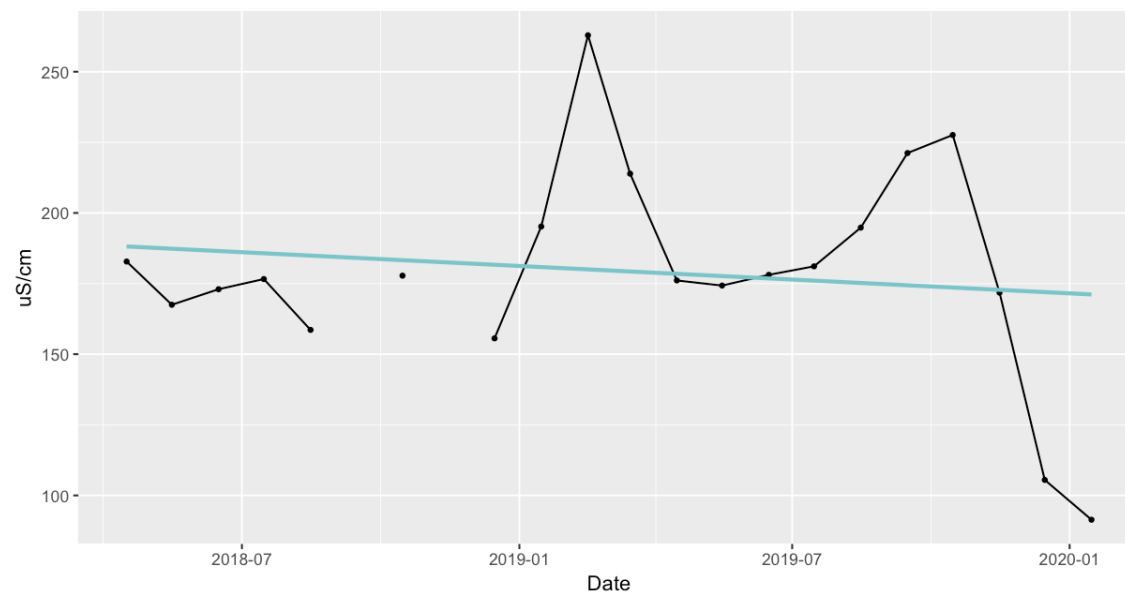
### Tributary to Middle Run Daily Mean Conductivity (SL157)



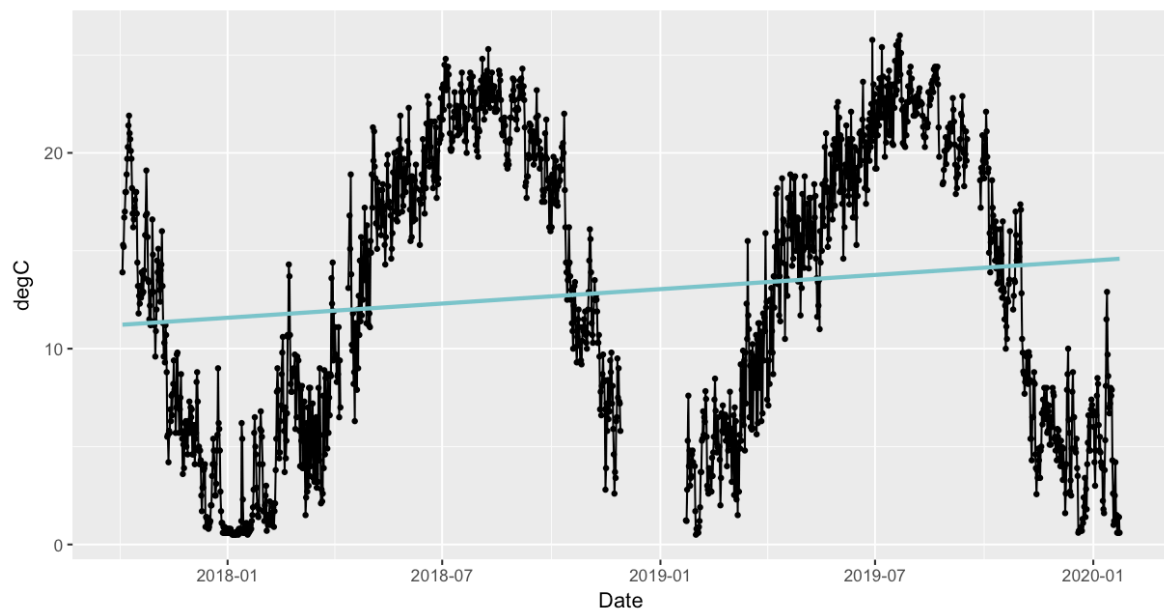
### Hickory Hill on Mill Creek Monthly Mean Conductivity (SL132)



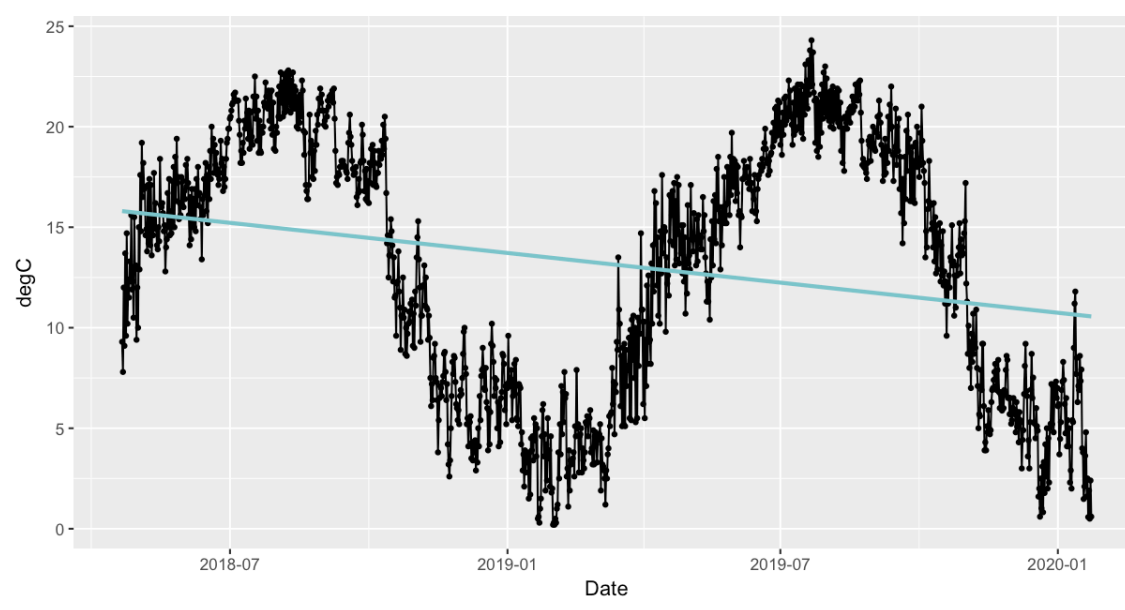
### Tributary to Middle Run Monthly Mean Conductivity (SL157)



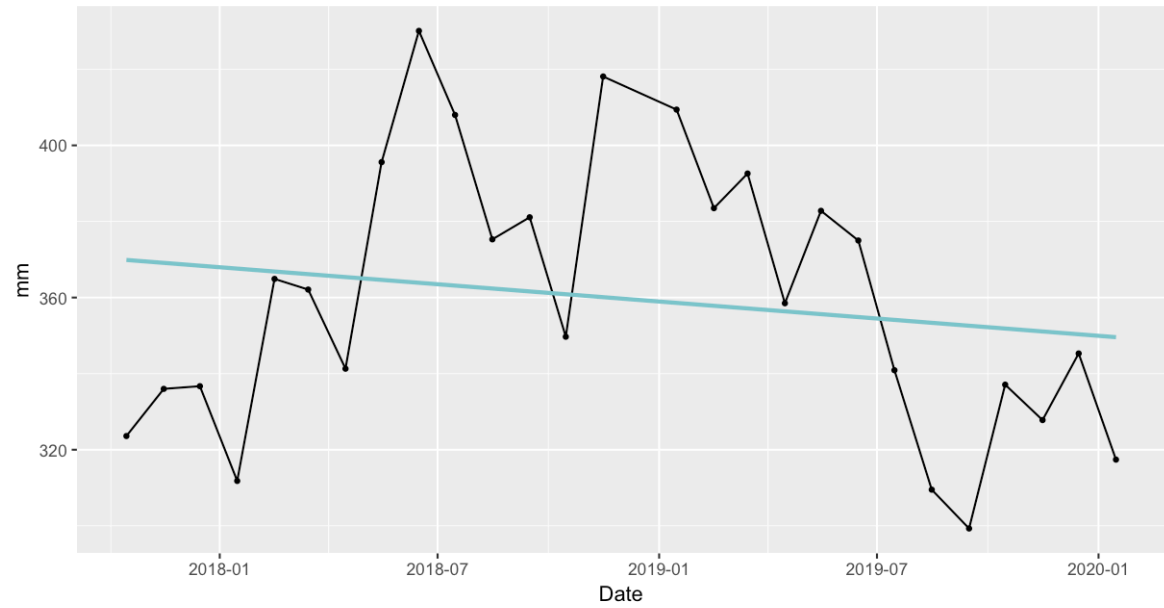
### Hickory Hill on Mill Creek Water Temperature (degrees C) (SL132)



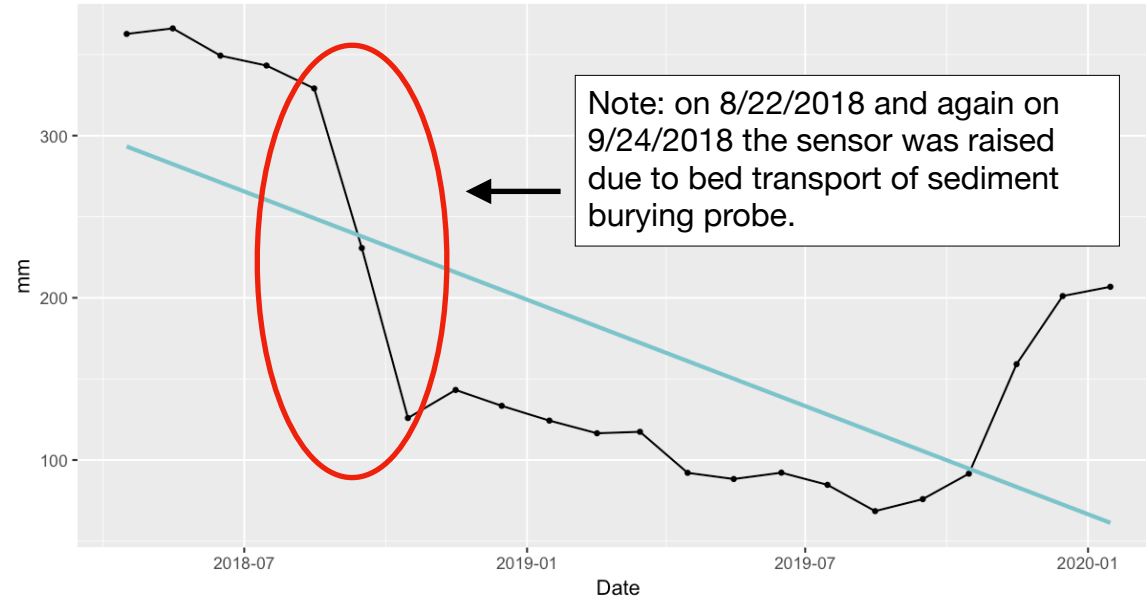
### Tributary to Middle Run Water Temperature (degrees C) (SL157)



### Hickory Hill on Mill Creek Monthly Mean Depth (mm) (SL132)



### Tributary to Middle Run Monthly Mean Depth (mm) (SL157)



### White Clay Wild and Scenic River Stream Watch Monitoring Program

Statistics for Bacteria Enterococcus (ENT) during the summer recreational season at Baseflow (baseflow defined as <0.25" rain in 48 hour period) . Five samples were collect at each site within a 30 day period during the summer season (2013-2019)

The geometric mean averaged over entire sampling period. Exceedance of standards indicates impairment.

Site ID	Site Description	Sampling Years	Samples Taken	Enterococcus GeoMean (MPN)	DNREC Standard for Primary Contact ENT (MPN)
WCCDE28	Hickory Hill at Erikson Ave	2013-2019	35	1039	100
WCCDE29	Northpointe Main on Mill Creek	2016-2019	25	331	100
WCCDE30	Northpointe Trib to Mill Creek	2016-2019	25	429	100
WCCDE31	Middle Run Main Stem	2016-2019	25	590	100
WCCDE32	Middle Run Trib to Main Stem just above confluence	2016-2019	25	380	100
WCCDE37	Fairfield Run	2018-2019	10	726	100
WCCDE38	Bogey's Run/Blue Hen Creek	2018-2019	10	1471	100
WCCDE39	Jenney's Run	2018-2019	10	852	100
WCCDE40	Main @ Kirkwood & A Street	2018-2019	10	478	100
WCCDE42	Lower Pike Creek	2019	5	965	100

### White Clay Wild and Scenic River Stream Watch Monitoring Program

Statistics for Bacteria Enterococcus (ENT) during the summer recreational season at Baseflow (baseflow defined as <0.25" rain in 48 hour period) . Five samples were collect at each site within a 30 day period during the summer season (2013-2019)

Geometric Means separated by 30 day sampling period. Exceedance of standards indicates impairment.

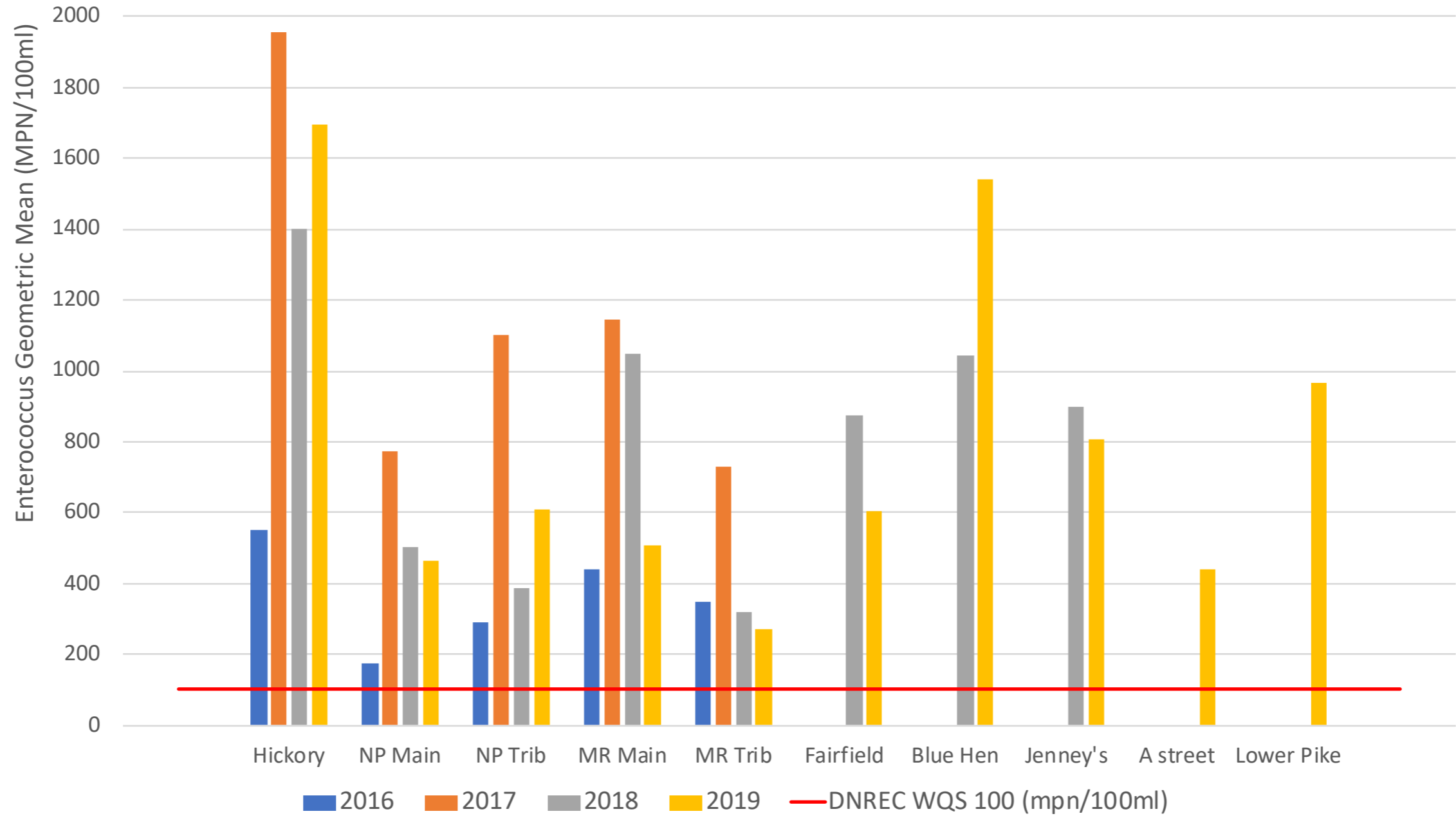
Site ID	Site Description	Sampling Month	Samples Taken	Enterococcus GeoMean (MPN)	DNREC Standard for Primary Contact ENT (MPN)
WCCDE28	Hickory Hill at Erikson Ave	2013-06-26	5	2214.30	100
WCCDE28	Hickory Hill at Erikson Ave	2014-07-23	5	1077.40	100
WCCDE28	Hickory Hill at Erikson Ave	2016-08-04	5	423.60	100
WCCDE28	Hickory Hill at Erikson Ave	2016-08-25	5	678.30	100
WCCDE28	Hickory Hill at Erikson Ave	2017-08-10	5	1956.60	100
WCCDE28	Hickory Hill at Erikson Ave	2018-07-03	5	576.00	100
WCCDE28	Hickory Hill at Erikson Ave	2019-08-05	5	1696.30	100
WCCDE29	Northpointe Main on Mill Creek	2016-08-04	5	81.20	100
WCCDE29	Northpointe Main on Mill Creek	2016-08-25	5	270.50	100
WCCDE29	Northpointe Main on Mill Creek	2017-08-10	5	774.50	100
WCCDE29	Northpointe Main on Mill Creek	2018-07-17	5	504.00	100
WCCDE29	Northpointe Main on Mill Creek	2019-08-05	5	463.10	100
WCCDE30	Northpointe Trib to Mill Creek	2016-08-04	5	120.80	100
WCCDE30	Northpointe Trib to Mill Creek	2016-08-25	5	463.20	100
WCCDE30	Northpointe Trib to Mill Creek	2017-08-10	5	1103.20	100
WCCDE30	Northpointe Trib to Mill Creek	2018-07-17	5	386.40	100
WCCDE30	Northpointe Trib to Mill Creek	2019-08-05	5	609.30	100
WCCDE31	Middle Run Main Stem	2016-08-04	5	166.30	100
WCCDE31	Middle Run Main Stem	2016-08-25	5	711.30	100
WCCDE31	Middle Run Main Stem	2017-08-10	5	1145.50	100
WCCDE31	Middle Run Main Stem	2018-07-17	5	1046.10	100
WCCDE31	Middle Run Main Stem	2019-08-05	5	505.60	100

Site ID	Site Description	Sampling Month	Samples Taken	Enterococcus GeoMean (MPN)	DNREC Standard for Primary Contact ENT (MPN)
WCCDE32	Middle Run Trib to Main Stem just above confluence	2016-08-04	5	199.00	100
WCCDE32	Middle Run Trib to Main Stem just above confluence	2016-08-25	5	494.90	100
WCCDE32	Middle Run Trib to Main Stem just above confluence	2017-08-10	5	731.90	100
WCCDE32	Middle Run Trib to Main Stem just above confluence	2018-07-12	5	407.30	100
WCCDE32	Middle Run Trib to Main Stem just above confluence	2019-08-05	5	270.70	100
WCCDE37	Fairfield Run	2018-07-17	5	874.20	100
WCCDE37	Fairfield Run	2019-08-05	5	603.70	100
WCCDE38	Bogey's Run/Blue Hen Creek	2018-07-17	5	1405.10	100
WCCDE38	Bogey's Run/Blue Hen Creek	2019-08-05	5	1540.60	100
WCCDE39	Jenney's Run	2018-07-17	5	899.30	100
WCCDE39	Jenney's Run	2019-08-05	5	807.20	100
WCCDE40*	Main @ Kirkwood & A Street	2018-07-30	5	516.81	100
WCCDE40	Main @ Kirkwood & A Street	2019-08-05	5	442.30	100
WCCDE42	Lower Pike Creek	2019-08-05	5	964.90	100
<i>*5 samples over a 31 day period</i>					

**White Clay Wild and Scenic River Stream Watch Monitoring Program**

Graphical presentation of fecal bacteria concentrations, Enterococcus (ENT) during summer recreational seasons (2016-2019) at baseflow (baseflow defined as <0.25" rain in 48 hour period) . A minimum of five samples were collected at each site within a 30 day period during the summer season and geometric means were recorded. Exceedance of standards (red line) indicates impairment. Top chart Delaware sites only. Bottom chart bistate comparison of sites.

**Delaware Recreational Bacteria Sampling Sites**



**Enterococcus Geometric Means Recreational Season  
White Clay Creek 2016-2019**

