

# Your data in action



Susan Libes

Volunteer Water Quality Monitoring Luncheon 2018

# TOPICS

## Murrells Inlet

- Assessment of new stormwater water treatment practices
- Turbidity at BHR

## Waccamaw River tracking of illicit discharges

- Sediment in Sterritt Swamp
- Fecal bacteria in Crabtree Canal
- USGS metal measurements

## Surfside Beach

- Assessment of aeration devices
- Sustained water quality improvement in coastal waters



# Murrells Inlet

Assessment of new stormwater water treatment practices

Woodland Drive Pond

Marina Colony Pond

HS

Bike Bridge

Additional *E. coli* sampling at terminus of wetlands near MI 2020

Turbidity IDDE event at BHR

Jim Wilkie Memorial weather station relocated and renamed



**Murrells Inlet 2020 KSCMURRE111**



Bob Steffens sampling

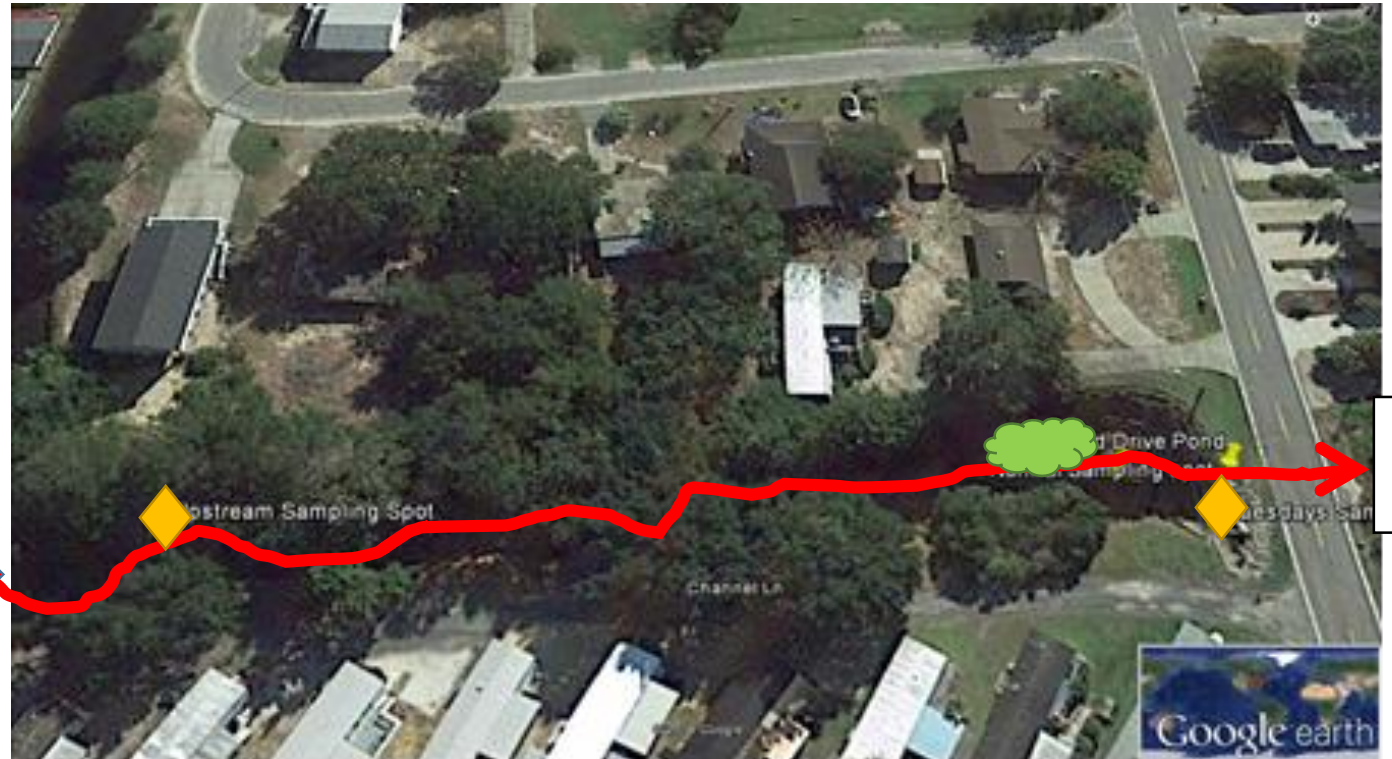
Team#1 - Point Drive Canal

# Pond at Woodland Drive

- Comparing upstream to downstream
- Funded by Horry Co
  - Volunteer Monitoring
  - EQL (one rain event per



Surfside → Oceanside Village



Murrells Inlet

# HS Filter Strips

- Cleared drainage ditch
- Long term record of elevated E. coli
- Funded by MI2020 and performed by volunteers
- Longest assessment record



# Special Project Report

48-hr Prior	Downstream		Sampling Date/time		Upstream (CFU/100 mL)			Downstream (CFU/100 mL)			% Removal efficiency	
Date	Turbidity (NTU)	Conductivity (μS/cm)	Date	Time	<i>E. coli</i>	Total coliforms	% <i>E. coli</i>	<i>E. coli</i>	Total coliforms	% <i>E. coli</i>	<i>E. coli</i>	Total coliforms
0.00	2.7	782	5/9/2017	8:45 AM	100	2400	4%	100	1800	6%	0%	25%
0.00	2.87	486	5/23/2017	8:39 AM	1500	6400	23%	1200	6000	20%	20%	6%
0.00	1.97	394	6/13/2017	8:35 AM	1000	2300	43%	800	4500	18%	20%	-96%
0.20	21.13	531	6/27/2017	8:53 AM	700	3500	20%	500	2200	23%	29%	37%
0.00	2.42	752	7/25/2017	8:46 AM	1200	2700	44%	800	2300	35%	33%	15%
0.20	2.98	619	8/8/2017	8:52 AM	600	1700	35%	500	1800	28%	17%	-6%
0.30	2.29	686	8/22/2017	8:50 AM	300	933	32%	133	433	31%	56%	54%
0.30	1.96	354	10/10/2017	8:40 AM	600	3700	16%	900	3400	26%	-50%	8%
0.00	2.15	287	10/24/2017	8:49 AM	1200	5400	22%	900	4300	21%	25%	20%
0.80	1.18	391	10/31/2017	8:45 AM	200	2100	10%	100	2400	4%	50%	-14%
0.00	1.39	505	11/14/2017	8:46 AM	200	600	33%	600	1900	32%	-200%	-217%
0.00	2.62	29430	12/5/2017	8:40 AM	200	2000	10%	0	2200	0%	100%	-10%
0.00	1.59	504	1/9/2018	8:35 AM	0	400	0%	100	200	50%	ND	50%
0.33	7.18	395	1/23/2018	8:46 AM	500	1100	45%	500	2000	25%	0%	-82%
0.17	1.88	429	2/13/2018	8:35 AM	0	200	0%	500	900	56%	ND	-350%
0.22	1.54	1862	2/27/2018	8:44 AM	400	900	44%	400	1000	40%	0%	-11%

# Marina Colony Pond

- Floating wetlands
- Two aeration pumps
- Potential site of assessment work to be funded by Georgetown County and performed by EQL



# Created Wetlands at Bike Bridge

## Agencies, volunteers build wetland to protect inlet marsh

By Anita Crone news@southstrandnews.com Feb 14, 2018 (1)



Vicky Smith, a mosquito control and stormwater inspector, installs rushes in the recently constructed wetland in Murrells Inlet.

Buy Now

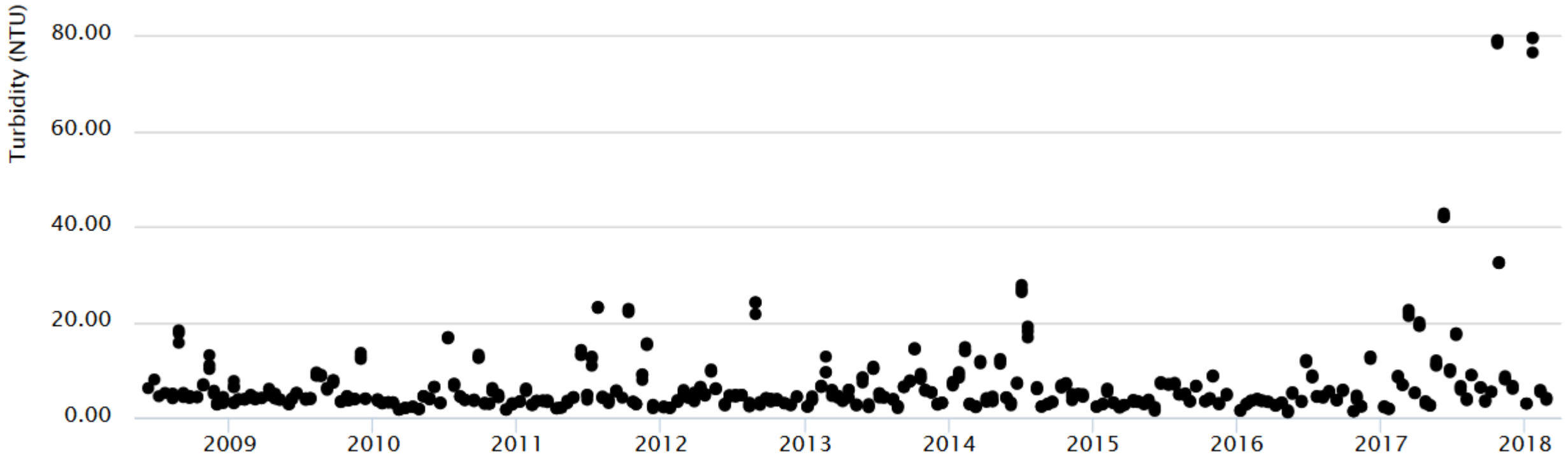
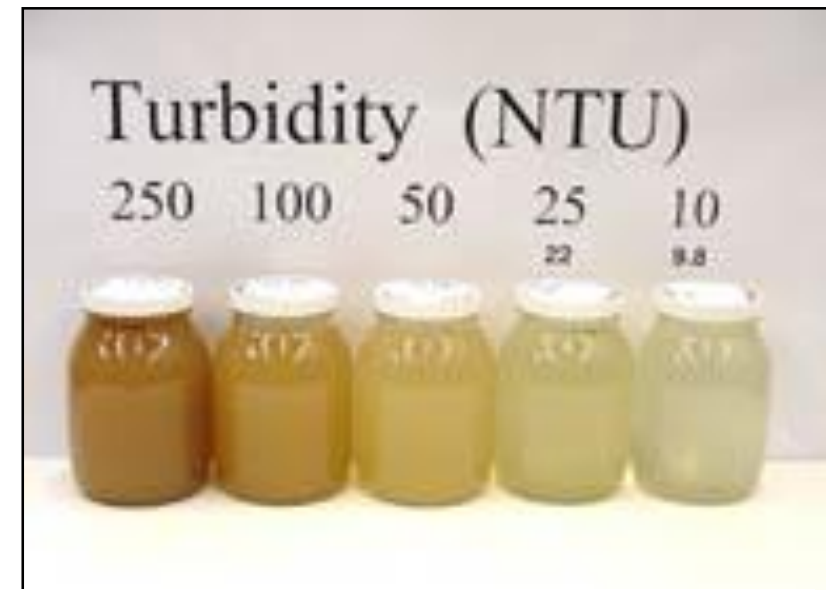


Carolinan section

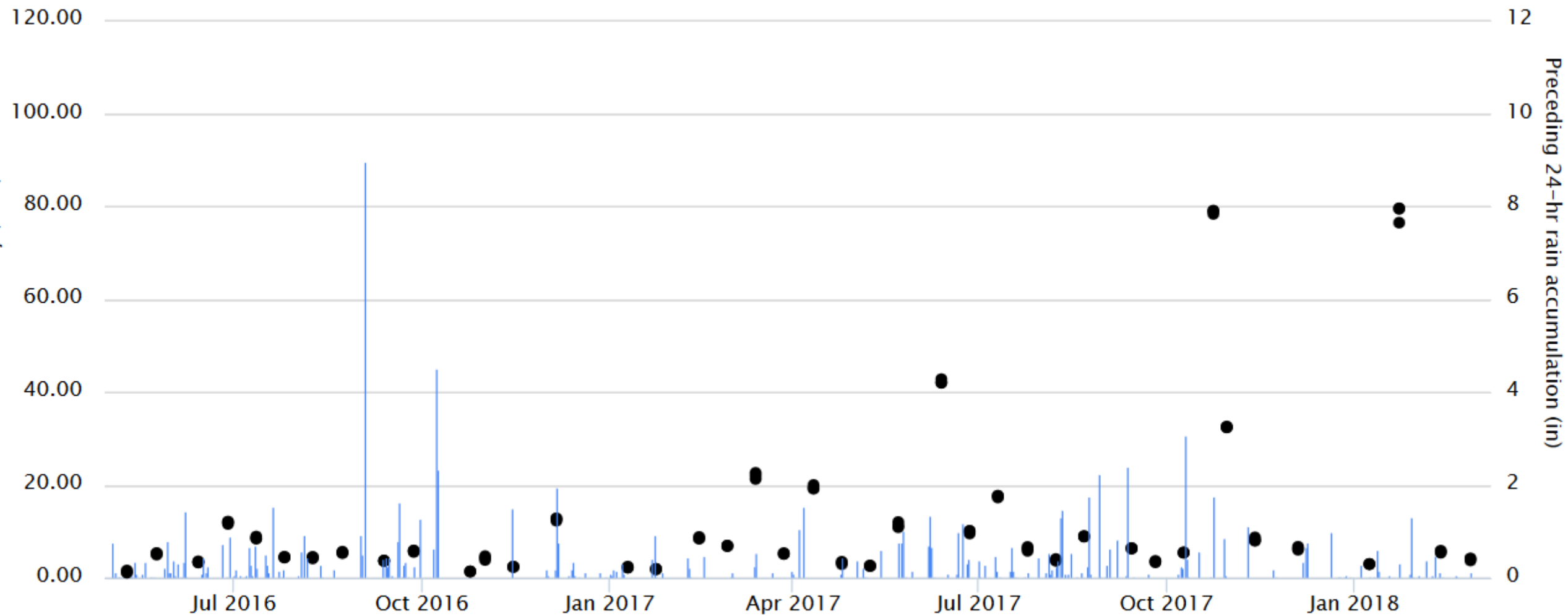
\$3K reward offered for



# Turbidity at BHR



# Turbidity (NTU) at BHR

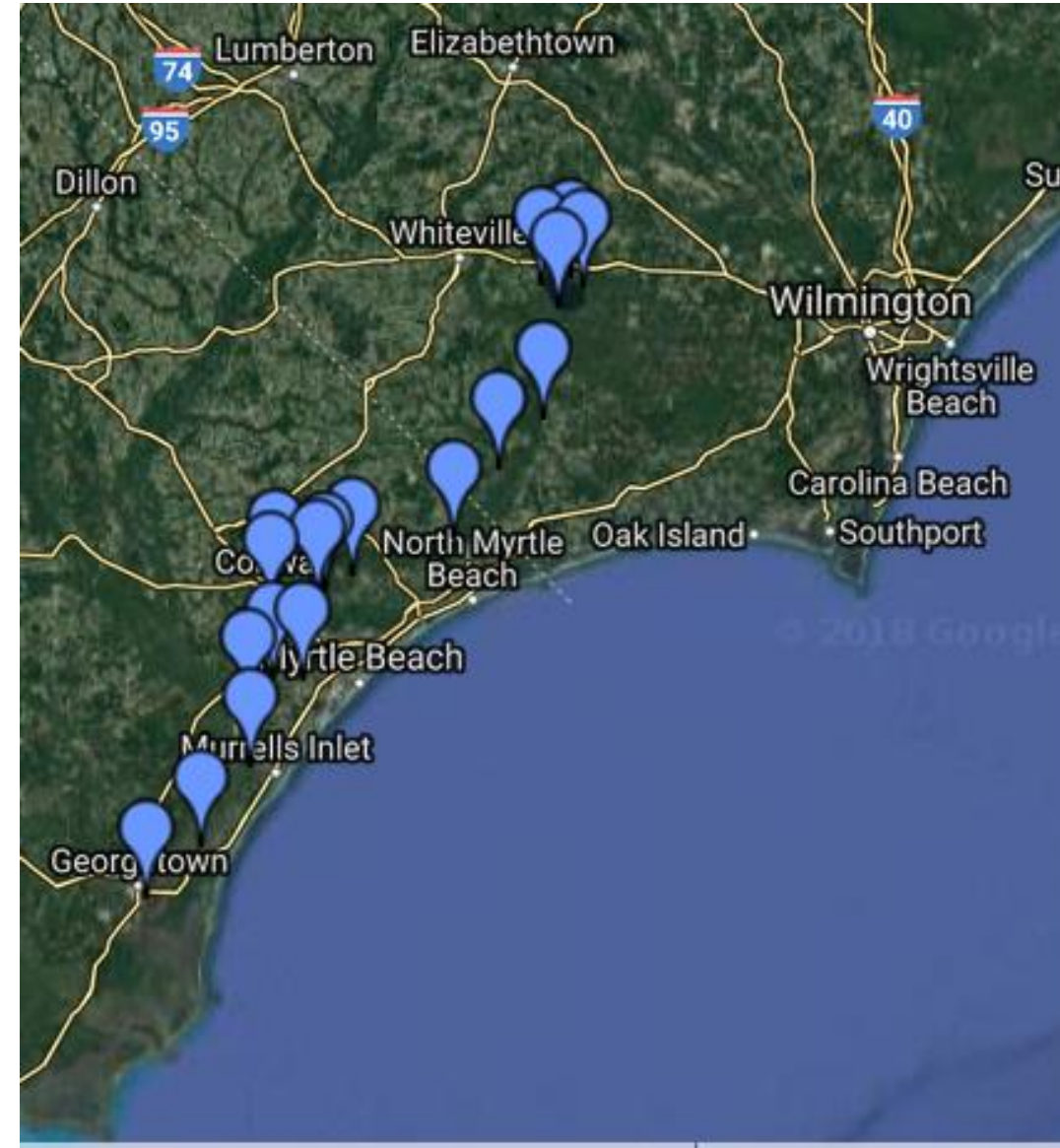


# Waccamaw river tracking of illicit discharges

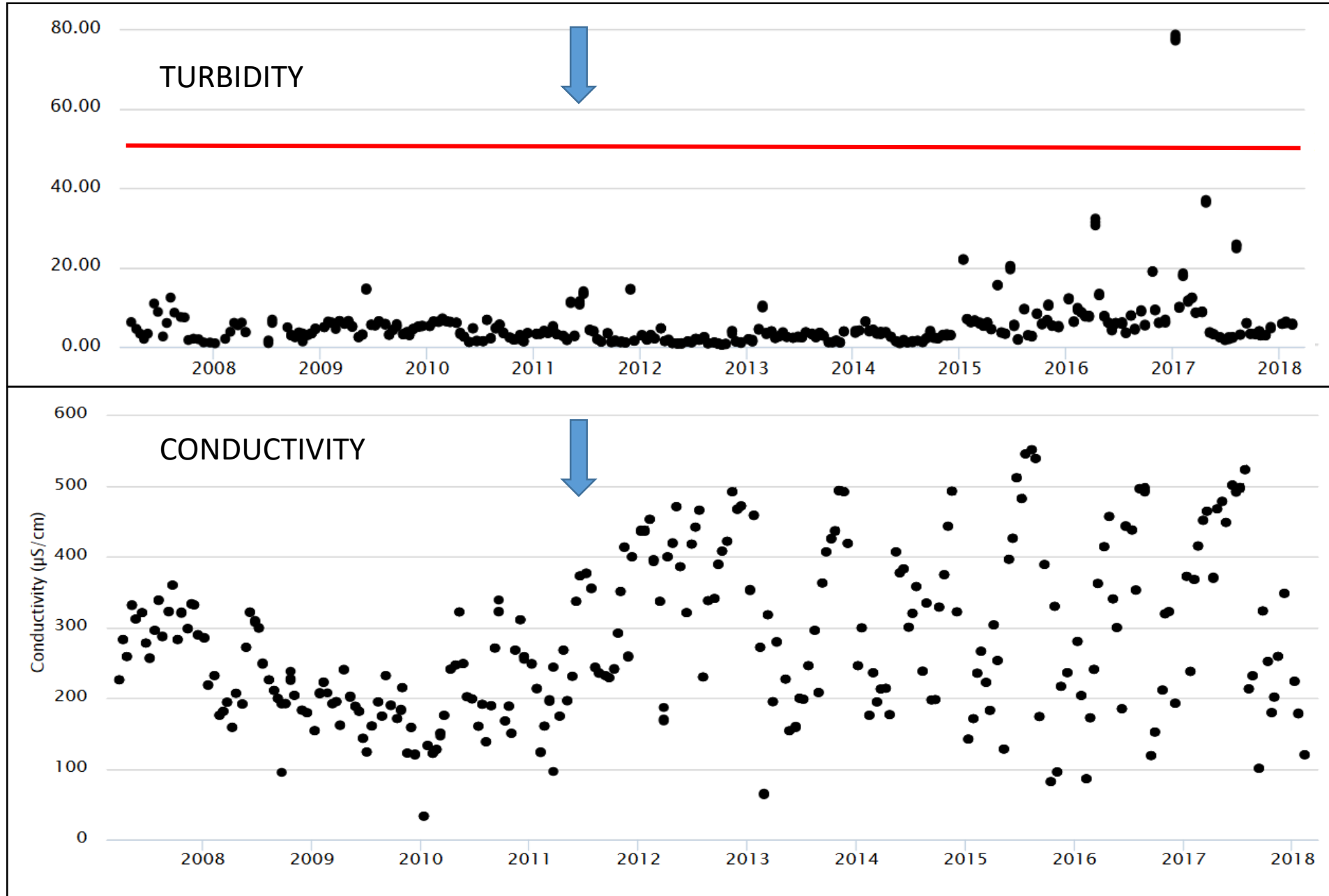
Sediment in Sterritt Swamp

Fecal bacteria in Crabtree Canal

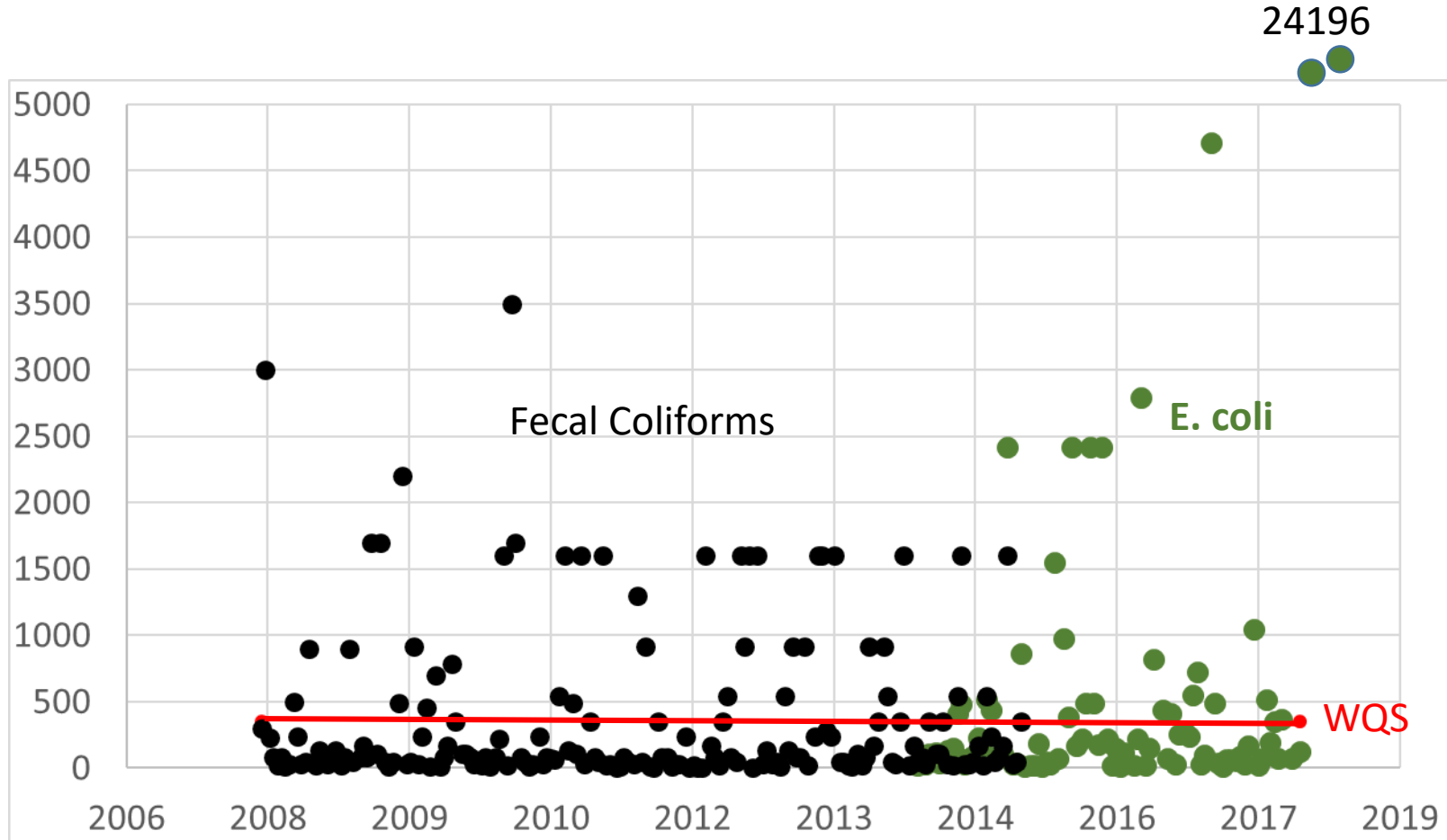
USGS metal measurements

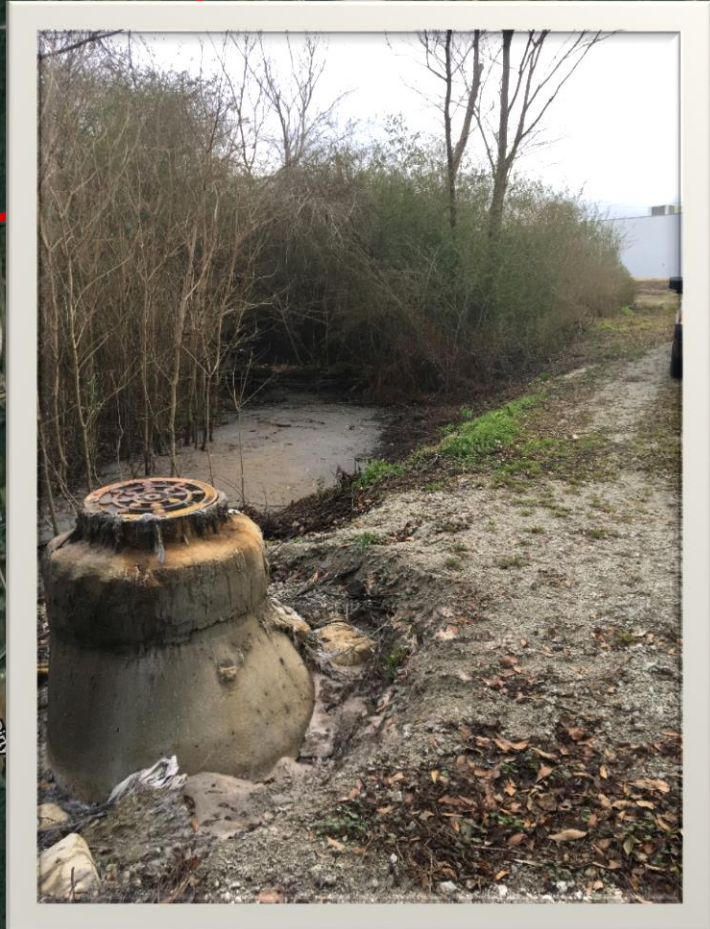
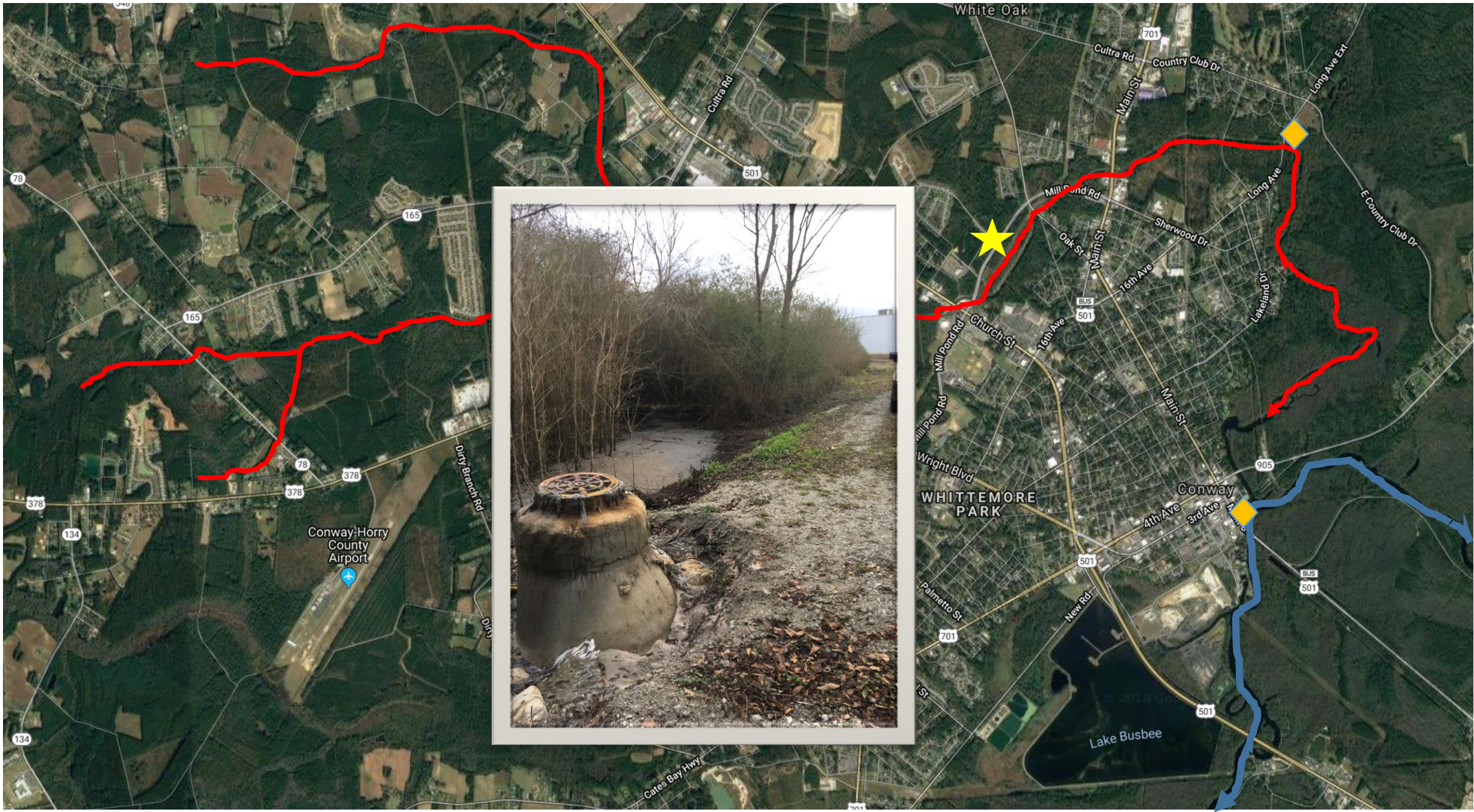


# Sterritt Swamp turbidity and conductivity



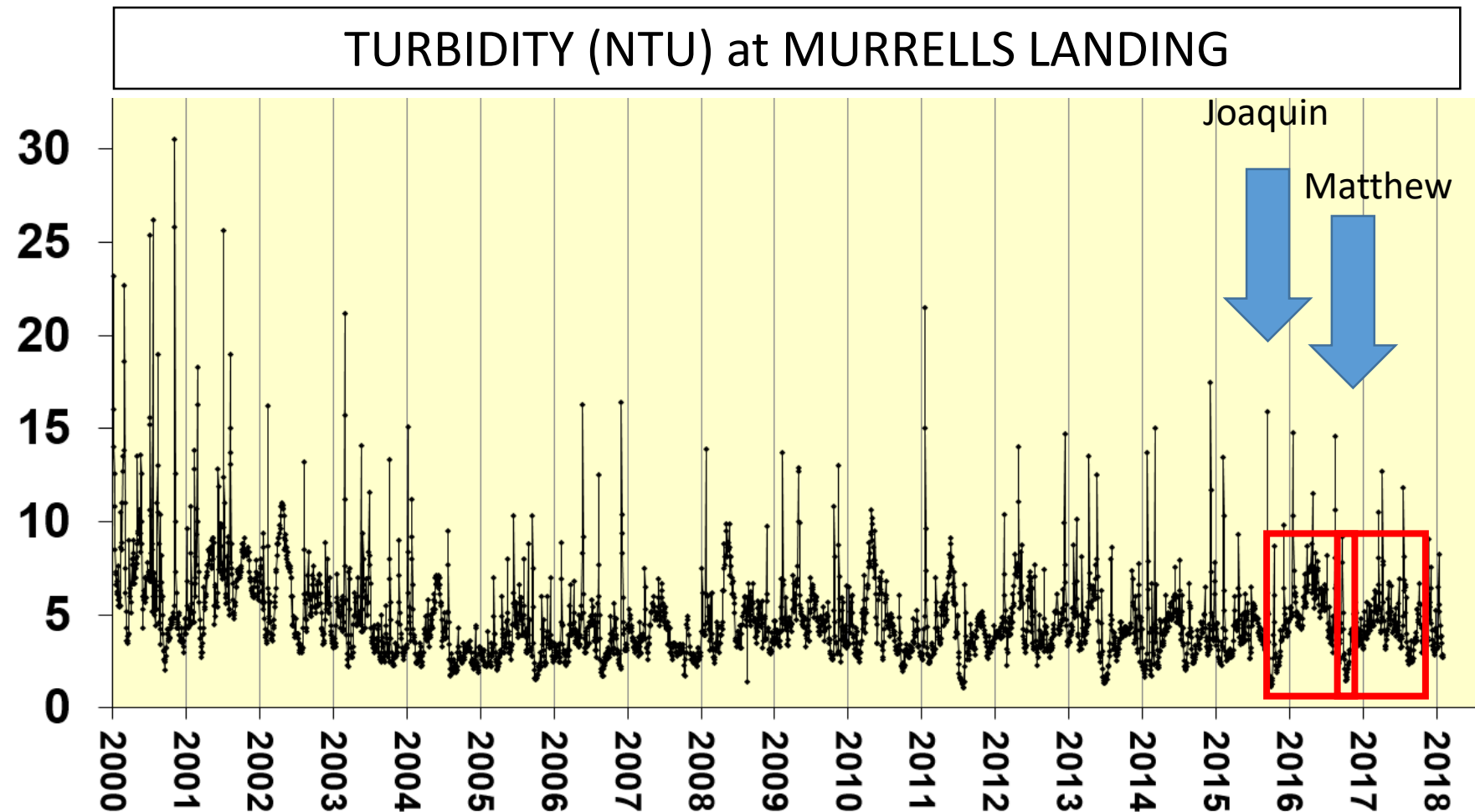
# Crabtree Canal Bacteria





# Particulate metals?

- Elevated water table
- Seeps of dissolved metals into river
- Oxidizes to particulate form
- Probably iron and manganese
- Fouls surface water treatment plan



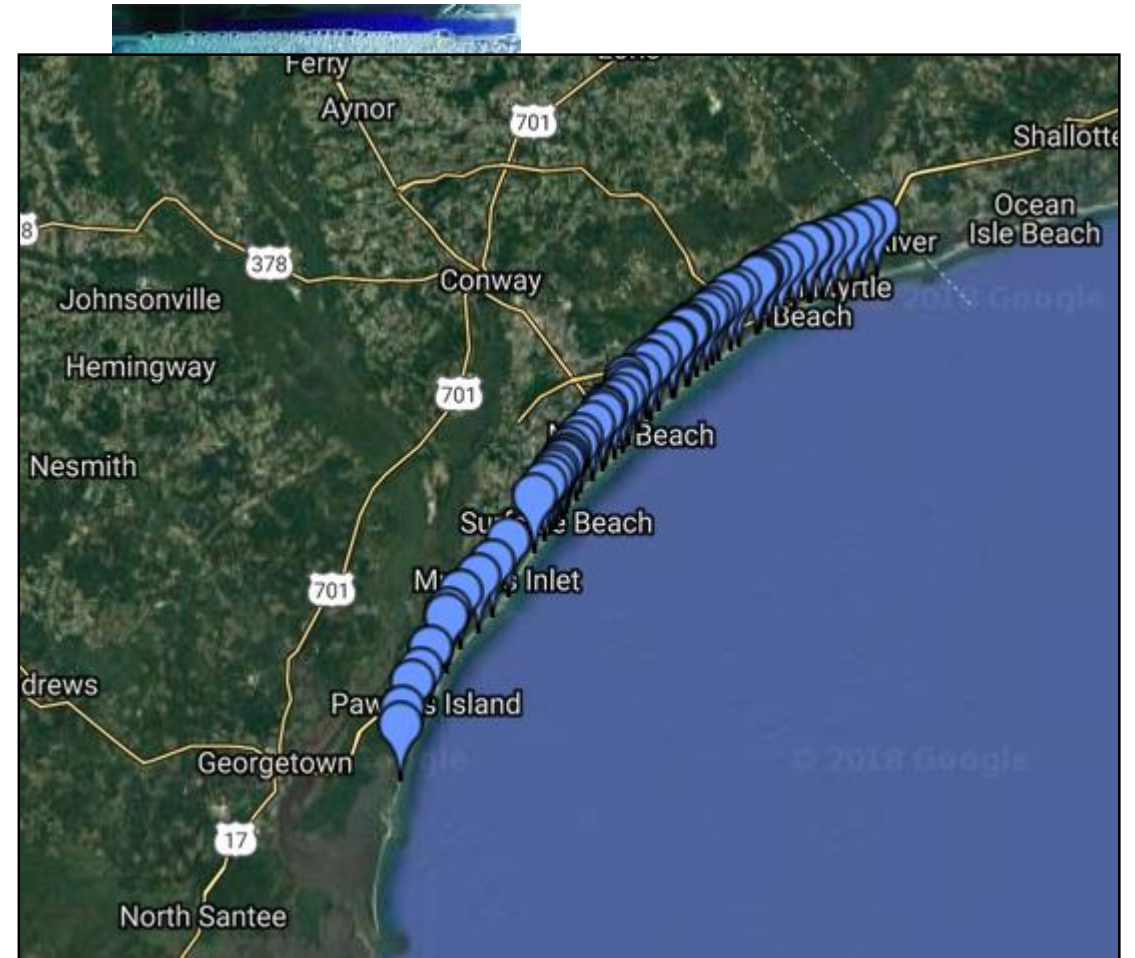
# Surfside Beach

Assessment of aeration devices



Sustained water quality  
improvement in coastal waters

<http://bccmws.coastal.edu/enteroview/>





# Surfside SC DHEC Ocean Monitoring 2017 (as of 10/11/17)

Values <10 are represented numerically as "9".

long-term advisory  
draft 2016 303(d) list

Date	3-d prior rain accumulation (in)	WAC-30, 16th Ave N	WAC-31, 11th Ave N	WAC-31A, 4/5th Ave N	WAC-33, 3rd Ave S	WAC-34, 8th Ave S	WAC-35, 13th Ave S	Number > 104
5/2/17	0.4	9	9	9	9			0
5/8/17	0.1	9	9	10	9	9	41	0
5/16/17	ND	9	10	9	9	9	9	0
5/23/17	0.6	86	20	10	144	10	10	1
5/24/17	1.5				9			0
5/30/17	0.2	10	9	9	9	10	9	0
6/6/17	1.3	20	20	9	9	9	9	0
6/13/17	0.0	645	10	9	30	9	9	1
6/14/17	0.0	10						0
6/20/17	0.2	10	10	10	9	20	9	0
6/27/17	0.8	10	9	31	9	10	9	0
7/5/17	0.2	9	10	10	9	9	10	0
7/11/17	0.5	10	9	9	10	10	20	0
7/18/17	0.9	97	10	10	10	10	20	0
7/25/17	0.1	10	9	ND	10	9	9	0
8/1/17	0.3	9	10	9	20	9	75	0
8/8/17	0.3	9	9	9	9	9	10	0
8/15/17	0.1	9	9	9	41	226	10	1
8/16/17	0.1					9		0
8/22/17	0.2	9	9	ND	9	10	10	0
8/29/17	2.3	30	9	158	10	31	10	1
9/5/17	0.6	9	9	9	9	20	20	0
9/14/17	1.6	9	9	10	9	9	9	0
9/19/17	0.0	9	10	9	9	9	9	0
9/26/17	0.0	9	9	9	9	9	9	0

12033



# Enterococci (MPN/100mL)

Data collected between May 01, 2015 and Feb 28, 2018

Used to sample 7 sites  
Now down to 6 sites

