

Little Sewickley Creek Watershed Association Water Quality Report

Sewickley Heights Borough | March 2022

Mission

The mission of the Little Sewickley Creek Watershed Association ([LSCWA](#)) is to protect and conserve the natural beauty and the environmental health of Little Sewickley Creek and its watershed.



Watershed Assessment 2017-2018



In 2017 LSCWA engaged CEC (Civil and Environmental Consultants, Inc.) to coordinate a field watershed assessment of the physical, chemical, and biological conditions in the streams of the Little Sewickley Creek watershed.

Based on the results of the watershed assessment and on data collected from a previous survey in 1981-82, LSCWA engaged CEC to do a water quality study of selected streams in the watershed.

Water Quality Study 2020-2021

Based on a preliminary survey of water samples taken from 115 separate locations in the watershed during July 2020:

Site Selection

CEC selected 20 sites where specific conductance was abnormally high. High specific conductance is an indicator of possible water pollution.

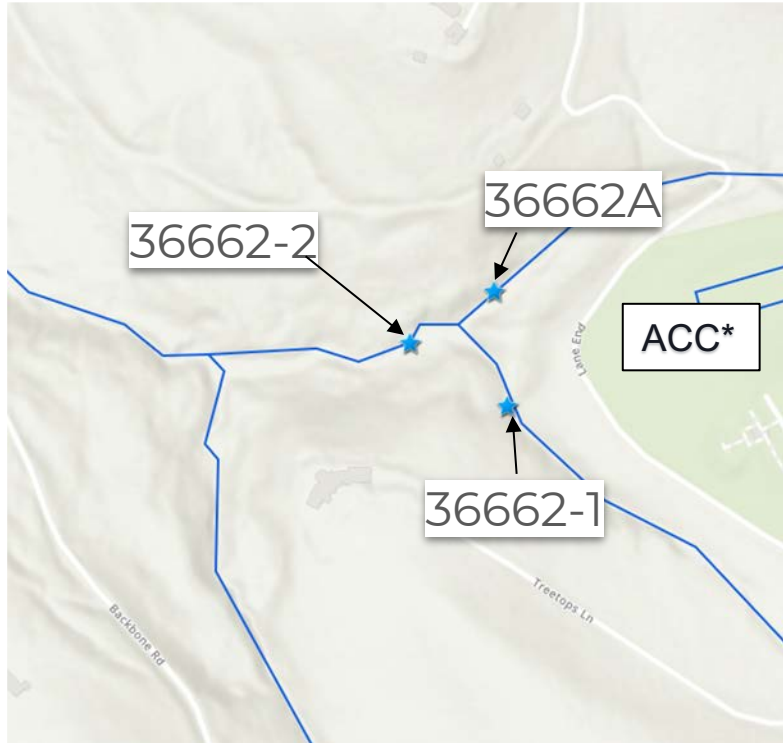
Repeat Testing

CEC collected water samples from each of these 20 sites four times. September & December 2020
March & June of 2021

Results Analysis

An independent laboratory tested all samples for 17 different pollutants. CEC analyzed the results and issued a report to LSCWA in July 2021.

Backbone Road Testing Sites



Downstream of 36662-1



Downstream of 36662A

*ACC = Allegheny Country Club

Backbone Road Site 36662-1 | Aluminum & Chloride

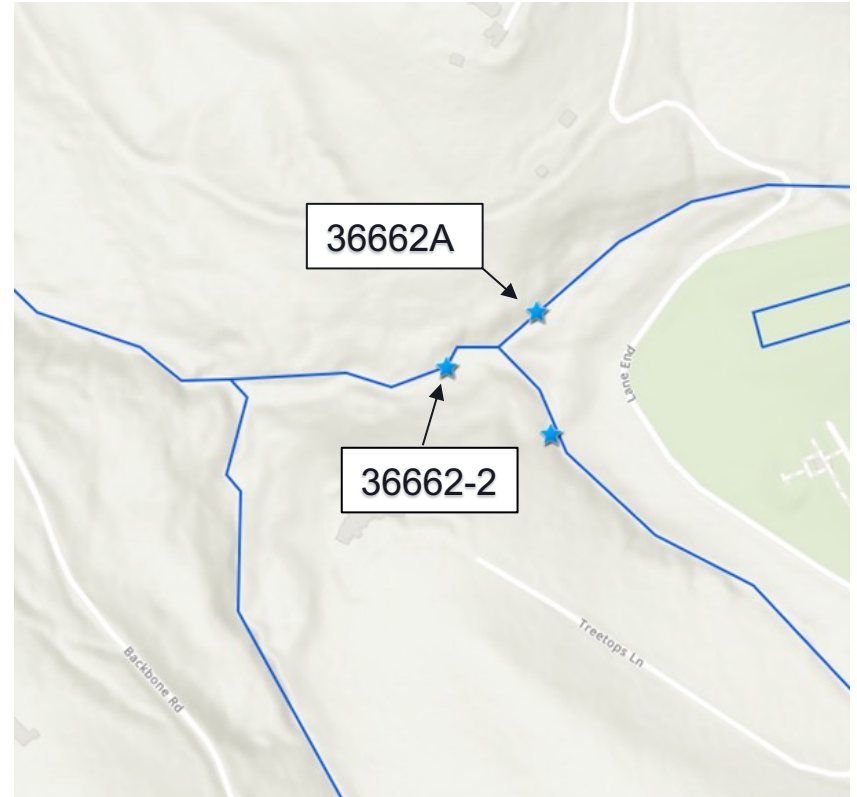
Water samples at [36662-1](#) exceeded the [Chap. 93 PA State Water Quality Standards](#) for aluminum (0.75 mg/L) in September 2020 and chloride (250 mg/L) in September 2020 and June 2021.

Date	Aluminum	Aluminum Excess %	Chloride	Chloride Excess %
Sept. 2020	0.85	+13%	268	+7%
Dec. 2020	0.067	-	199	-
Mar. 2021	0.077	-	164	-
Jun. 2021	0.28	-	260	+4%

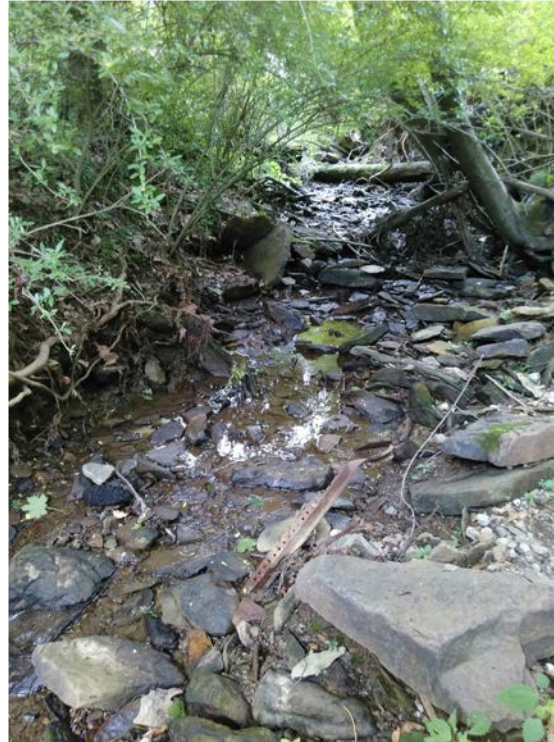
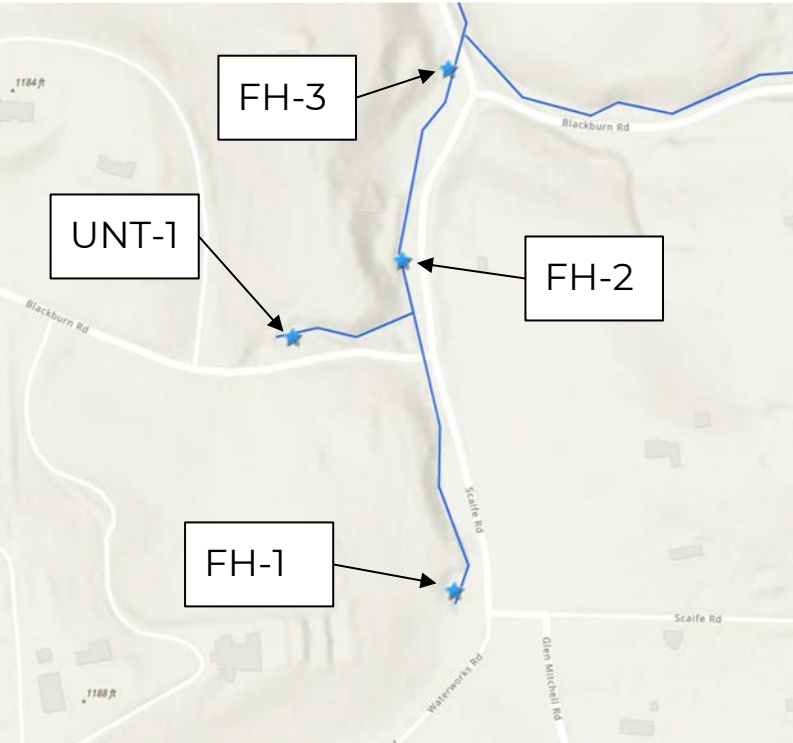


Backbone Road Site | Phosphates

In September 2020, December 2020, and June 2021 samples collected at [36662-2](#) and [36662A](#) contained elevated levels of phosphate averaging 0.90 mg/L compared with the average of 0.36 mg/L for all twenty observed sites during the same time period.



Fern Hollow Headwater Testing Sites



Upstream of FH-2



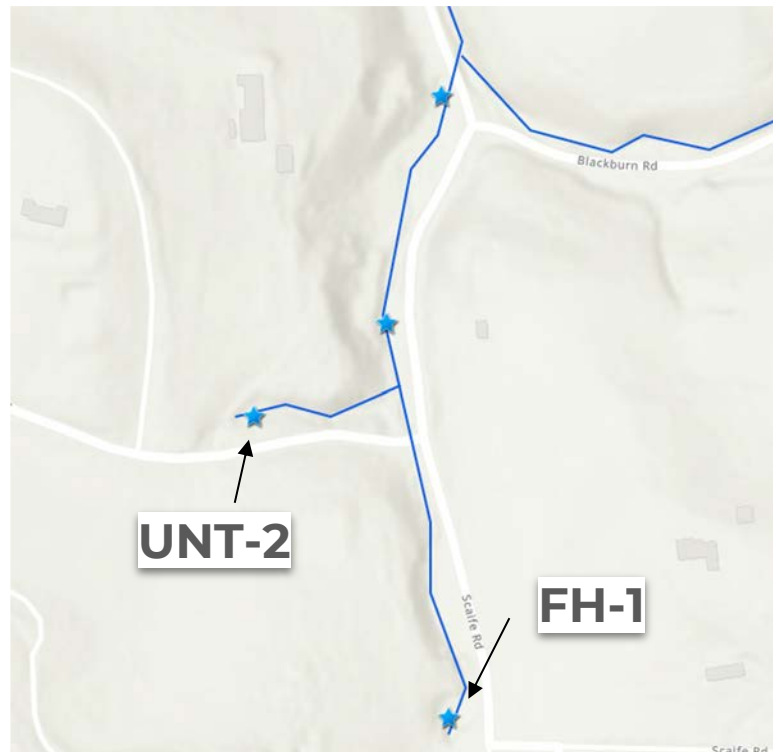
FH-1

Fern Hollow Headwater | Fecal Coliform Bacteria

Water samples at [UNT-2](#) and [FH-1](#) exceeded the [Chap. 93 PA State Water Quality Standards](#) for fecal coliform bacteria (200 colony forming units/100 ml).

Date	UNT-2	UNT-2 Fecal Coliform Excess %	FH-1	FH-1 Fecal Coliform Excess %
Sept. 2020	104		345	73%
Dec. 2020	TNTC*	+400%	857	329%
Mar. 2021	231	16%	109	
Jun. 2021	112		264	32%

* TNTC = too numerous to count



Fern Hollow Headwater Sites | Additional Contaminants

- Elevated levels of **anionic surfactants** used in detergents and common in gray water were detected at
 - [UNT-2](#) in December 2020 and March 2021
 - [FH-1](#) in March 2021
- Elevated levels of **chemical oxygen demand** indicating greater levels of oxidizable organic matter and lower amounts of dissolved oxygen available to aquatic life forms were detected at
 - [UNT-2](#) in September 2020 and March 2021
 - [FH-1](#) in in September 2020



Possible Backbone Road Conclusions

Chloride & Total Dissolved Solids

Road salt mixing with precipitation and entering streams would be the most likely source of elevated chloride and total dissolved solids at Backbone Road site [36662-1](#).

Phosphates

Elevated levels of phosphates (common in turf fertilizer) observed at [Backbone Road](#) sites could be related to **surface water runoff from areas around maintenance/storage buildings at Allegheny Country Club.**

Possible Fern Hollow Headwater Conclusions

Fecal Coliform Bacteria

Elevated fecal coliform bacteria at the [FH-1](#) and [UNT-2](#) sites suggests a **leaking sewer line** or **poorly draining septic fields**.

Anionic Surfactants

Elevated levels of anionic surfactants used in detergents and chemical oxygen demand at [FH-1](#) and [UNT-2](#) suggest **leakage of gray water** from neighboring properties.

Possible Large Scale Mitigation Projects

Runoff Controls

Evidence of sediment accumulation was observed in many of the study areas. Installation of erosion, sediment and runoff controls could help in reducing the sedimentation loading and could reduce chloride concentrations.

Infiltration Trenches

Infiltration trenches are permanent excavated trenches three to eight feet deep that are backfilled with stone to create precipitation retention and percolation into the subsoil. Properly designed infiltration trenches are the best management practice and effectively remove sediment and other runoff pollutants.

Possible Small Scale Mitigation Projects

Municipal authorities and neighboring property owners could work together to:

Identify

Identify sources of nitrates and phosphates impacting runoff and shallow groundwater.

Determine potential sources of fecal coliform bacteria (sewage) and anionic surfactants and chemical oxygen demand (gray water) pollution impacting the Fern Hollow headwaters.

Develop

Ensure Allegheny Country Club is implementing best management practices for storing and handling turf fertilizers which are the probable sources of excessive nitrate and phosphate pollution into the [Backbone Road](#) sites.

Develop plans to remove the sources of sewage and grey water and/or control the infiltration.

Resources

Watershed Restoration and Protection Program

<https://dced.pa.gov/programs/watershed-restoration-protection-program-wrpp/>

Civil and Environmental Consultants, Inc., 333
Baldwin Road, Pittsburgh, PA 15205, phone: 412-429-
2324 or Brianne Hastings (bhastings@cecinc.com)

[Interactive Map](#) of Little Sewickley Creek watershed

EPA www.epa.gov



Thank You

*“In every walk
with nature one
receives far more
than he seeks.”*

—John Muir