LITTLE SEWICKLEY CREEK WATERSHED
SURFACE WATER QUALITY INVESTIGATION

SEWICKLEY, PA

Prepared For:

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION

Prepared By:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
Pittsburgh, Pennsylvania

CEC Project 193-229

JULY 2021

Civil & Environmental Consultants, Inc.

Pittsburgh 333 Baldwin Road | Pittsburgh, PA 15205 | p: 412-429-2324 f: 412-429-2114 | www.cecinc.com

TABLE OF CONTENTS

FIGURES

TABLE

1.0 INTRODUCTION

The Little Sewickley Creek Watershed Association (Association)'s mission is to protect and to conserve the natural beauty and environmental health of Little Sewickley Creek and its watershed. The Little Sewickley Creek Watershed (Watershed) is located in Allegheny County, Pennsylvania (Figure 1). It covers 9.6 square miles and encompasses parts of Bell Acres, Edgeworth, Franklin Park, Leetsdale, Leet Township, Sewickley Heights, and Sewickley Hills. The total length of the creek and its main tributaries is approximately 26.7 stream miles; it flows from east to west, towards the Ohio River.

Little Sewickley Creek (LSC) currently has a Pennsylvania Department of Environmental Protection (DEP) designation of High Quality/Trout Stocking Fishery. In 2012, the Association submitted a petition to the DEP to upgrade the stream designation to Exceptional Value. The DEP surveyed the stream at five points along the main stem in 2015, and rejected the petition due to a number of generalized water quality-related issues such as: elevated conductivity, sediment pollution, low biological diversity, and an abundance of pollutant tolerant species. The Association approached Civil & Environmental Consultants, Inc. (CEC) in May 2017 to team with the volunteers from their organization and the Allegheny County Conservation District (ACCD) to perform an assessment of the physical, chemical, and biological characteristics of the Watershed. This assessment provided a first step in identifying possible water-quality concerns within the Watershed. Analytical data from 1981 and 1982 showed elevated levels of dissolved solids, specific conductance, chloride and sodium. One of the recommendations at the conclusion of that 2017/2018 assessment was for the Association to develop and implement a watershed-wide water-quality monitoring program to update historical data and identify potential areas or discharge points of impacted water sources.

In May 2019, the Association approached Civil & Environmental Consultants, Inc. (CEC) to assess the Watershed's water quality. This document summarizes the findings of the water-quality testing program conducted by CEC in response to that request. The study was conducted to gain a better understanding of potential impacts to the Watershed and provide recommendations to improve the health and biodiversity of the Watershed. Water samples were collected quarterly between

September 2020 and June 2021 and analyzed for a variety of parameters to quantify base-flow surface water quality and identify potential point and nonpoint pollution sources within the Watershed.

2.0 METHODOLOGY

This investigation focuses on the general base-flow status of the surface water within the Watershed. The first phase of work involved two separate sampling events during which specific conductivity, pH and temperature data were collected and evaluated to direct future water quality sampling. The second phase of work involved completing quarterly surface water sampling and laboratory analyses at 20 locations across the Watershed.

2.1 PHASE I – TWO DAY FIELD RECONNAISSANCE

CEC conducted an initial field reconnaissance study in July of 2020, taking water quality parameters at 115 locations throughout the Watershed. Data were collected working upstream to downstream, starting at the headwaters of the streams, in order to be better able to capture small conductivity nuisances between the lower flowing branches. Measurements were taken in the approximate center of flow at half the depth of the water body. When accessing the stream to take measurements, field personnel moved in a downstream to upstream direction to minimize potential for disturbances to affect water chemistry. Data was collected at each location (Figure 2) using a Myron Ultra Meter and analyzed in the field for specific conductance, pH, and temperature. The physical appearances of the water and stream channel were also noted. Field parameters and observations were recorded on a handheld Trimble Global Positioning Unit (GPS) unit. Specific conductance values collected during the survey are shown in Figure 2.

Six areas were found during the initial screening in which tributaries exhibited elevated levels of specific conductance (i.e. greater than 800 µS/cm):

- LSC Headwaters, along Magee Road, at the far northeastern end of the Watershed,
- Fern Hollow Creek Headwaters, along Water Works Road, at the far southern end of the Watershed,
- Tributaries 36662 and 36662A, along Backbone Road, west of Allegheny Country Club, at the southern end of the Watershed,
- Tributary 36658 along Little Sewickley Creek Road in the Borough of Edgeworth, at the eastern end of the Watershed,

- The headwaters of 3660 and adjacent unnamed tributary, southeast of Camp Meeting Road and west of Sevin Road, at the northeast end of the Watershed, and
- Tributaries 36659 and 36659A, near Devil's Hallow Conservation Area, west of Sewickley Heights Golf Club and Tributary 36666, east of Sewickley Heights Golf Club, at the northern end of the Watershed.

CEC established 20 locations (Figures 3A to 3E), for the collection of water samples for laboratory analysis to investigate the potential causes of the elevated specific conductivity in the six areas identified above.

2.2 PHASE II - QUARTERLY SAMPLE COLLECTION

CEC collected water samples and stream quality data at each of the 20 locations over four quarterly sampling events between September 2020 and June 2021. Additional information pertaining to the areas focused on for this investigation is provided below:

Phase II Study Areas

Area	Description	Sample Points
Little Sewickley Creek Headwaters	Near Acorn Park, headwaters of LSC with several small springs in area	LSC-1, LSC-2, UNT-1A, UNT-1B
Fern Hollow Headwaters	Along Fern Hollow Rd, tributary to LSC, several smaller tributaries feed into Fern Hollow	FH-1, FH-2, FH-3, UNT-2
Backbone Road	West of Allegheny Country Club, tributary to LSC with several small branches	36662-1, 36662-2, 3666A
Edgeworth	Along Little Sewickley Creek Road, Borough of Edgeworth, small tributary to LSC	36658
Sevin Road	Along Sevin Road, south of Camp Meeting Road, tributary to LSC with several small branches	36660-1, 3660-2, UNT-3A, UNT-3B
Devil's Hollow Conservation Area, Tributary 36666	East of Sevin Road, west of Sewickley Heights Golf Club, 36666 lies east of Sewickley Heights Golf Club, 36659 feeds into 36660	36659-1, 36659-2, 36659A, 36666

Sampling events were conducted under base-flow conditions and not within 48 hours of a precipitation event of 0.1" or more of rain. Collecting during base-flow conditions reduces the influence of stormwater runoff. Water quality parameters collected at the time of sampling included pH, specific conductivity, and temperature. Other observations such as qualitative flow volumes, water appearance, and odor were recorded on a handheld GPS unit. Samples were collected in a manner similar to that described in Section 2.1. The GPS unit was also used to navigate to ensure consistent sample locations.

Samples were placed directly on ice in coolers and submitted to Eurofins TestAmerica Laboratories or Campbell Laboratories for the following suite of parameters:

- Aluminum
- Calcium
- Chemical oxygen demand
- Chloride
- Fecal coliform
- Iron
- Magnesium
- Manganese
- Nitrate nitrogen
- Phosphate (total)
- Potassium
- Sodium
- Specific conductance
- Sulfate
- Surfactants
- Total dissolved solids
- Total petroleum hydrocarbons

3.0 SUMMARY OF RESULTS

Results are summarized on Table 1 and discussed under the specific Study Areas noted below. Data was compared to available Pennsylvania water quality criteria outlined in Pennsylvania Code, Title 25, and Chapter 93 (Chapter 93, DEP, 2020). Constituents without Chapter 93 water quality criteria were assessed for indications of potential sources of pollutants.

3.1 LITTLE SEWICKLEY CREEK HEADWATERS

LSC-2 exceeded the Chapter 93 water quality criteria (SWQC) for fecal coliforms (200 colony forming units (CFU)/100mL) in September 2020. LSC-2 is located directly downgradient of the confluence of an unnamed tributary and LSC. No other sample in this area contained elevated fecal coliform concentrations during the study period. UNT-1A exceeded the Chapter 93 SWQC for chloride (250 mg/L) and total dissolved solids (TDS, 750 mg/L) during the entire study. Chloride ranged between 311 mg/L and 452 mg/L and TDS ranged between 820 and 970 mg/L. UNT-1A is located at the headwaters of the unnamed tributary that enters LSC and is directly downgradient from Magee Road, within Acorn Park. No other Chapter 93 standards were exceeded in this area. UNT-1A and UNT-1B also had elevated levels of nitrate and phosphate relative to other tributary samples.

Concentrations of metals without Chapter 93 water quality standards were highest at UNT-1A and UNT-1B. Specific conductivity average for this unnamed tributary was elevated at approximately 1,433 µs/cm.

3.2 FERN HOLLOW HEADWATERS

In September 2020, December 2020, and June 2021 at FH-1 and in December 2020 and March 2021 at UNT-2, fecal coliform levels exceeded the Chapter 93 SWQC. Concentrations ranged between 231 CFU/100 mL and a levels of bacteria colonies that were too numerous to count. FH-1 is located and the headwaters of Fern Hollow and UNT-2 is located at the headwaters of an unnamed tributary that feed Fern Hollow. Both of these sample locations are near the intersection

of Blackburn and Scaife Roads. No other sample in this area indicated elevated fecal coliform during the study period, nor were any other Chapter 93 standards exceeded. Analytical results from FH-1 and UNT-2 samples also included elevated levels of chemical oxygen demand and MBAS relative to samples obtained from other parts of the Watershed. Specific conductivity average for Fern Hollow was approximately 942 µs/cm. The average specific conductivities and levels of TDS were also elevated relative to the rest of the Watershed.

3.3 BACKBONE ROAD

36662-1 exceeded the Chapter 93 maximum concentration fish and aquatic life standard for aluminum in September 2020 (0.85 mg/L) and for chloride in September 2020 and June 2021 (averaged 264 mg/L). No other samples exceeded any Chapter 93 standards during the study period. These sampling locations are down gradient of the Allegheny Golf Course.

Specific conductivity average this area was elevated at approximately 947.5 µs/cm. The lowest specific conductivity readings were recorded in March (660 us/cm) with the highest readings being recorded in September (1,400 us/cm). Phosphate was detected in September 2020, December 2020, and June 2021 at levels ranging between 1.1 to 0.31 mg/L. MBAS was detected (0.11 mg/L) in March 2021 at 36662A and TPH was detected (5.3 mg/L) in September 2020 at 36662-2.

3.4 EDGEWORTH - TRIBUTARY 36658

Tributary 36658 is located downgradient of Walker Park, along Little Sewickley Creek Road. 36658 exceeded the Chapter 93 SWQC standard for chloride in December 2020 (251 mg/L). No other samples exceeded any Chapter 93 standards during the study period.

Specific conductivity average was elevated at approximately 882.5 µs/cm. The lowest specific conductivity readings were recorded in March (700 us/cm) with the highest readings being recorded in December (1,100 us/cm). Phosphate and MBAS were not detected above their respective reporting limits. TPH was detected (5.8 mg/L) in March 2021.

3.5 SEVIN ROAD - TRIBUTARY 36660 AND UNT-3

UNT-3A exceeded the Chapter 93 maximum concentration fish and aquatic life standard for aluminum in September 2020 (1.1 mg/L). UNT-3A is located at the headwaters of the unnamed tributary that enters and is directly downgradient from the intersection of Camp Meeting Road and Sevin Road. 36660-2 exceeded the Chapter 93 SWQC for fecal coliform (273 CFU/100mL) in June 2021. 36660-2 is located downgradient of two unnamed tributaries that enter Tributary 36660 along Sevin Road. All sampling points exceeded the Chapter 93 SWQC for chloride and TDS at least once during the entire study, with the highest concentrations being at UNT-3A (chloride, 1,170 mg/L and TDS, 2,100 mg/L). No other Chapter 93 standards were exceeded in this area.

The samples within the Sevin Road area had the highest sodium concentrations of the Watershed (average 224 mg/L). UNT-3A had the highest specific conductivity readings in the Watershed, ranging from 1,700 - 2,200 µs/cm, with the highest readings recorded in March of 2021. Phosphate was detected at 36660-1 and UNT-3A in all quarters (maximum concentration 0.59 mg/L), at 36660-2 in March 2021 and June 2021 (maximum concentration 0.33 mg/L), and at UNT-3B in September 2020, March 2021, and June 2021 (maximum concentration 0.43 mg/L). MBAS was detected at low levels in samples from UNT-3A and UNT-3B in June 2021. 6.4 mg/l of TPH was detected in the March 2021 UNT-3B sample.

3.6 DEVIL'S HOLLOW CONSERVATION AREA AND TRIBUTARY 36666

The study area sits on either side of Sewickley Heights Golf Club (36659-1, 36659-2, and 36659A to the west and 36666 to the east). No samples exceeded any Chapter 93 standards during the study period.

Specific conductivity average was approximately 579.3 µs/cm. The lowest specific conductivity readings were recorded in December 2020 (440 us/cm) with the highest readings being recorded in March 2021 (870 us/cm). Phosphate was detected above the reporting limit at 36659-2 in June 2021 (0.37 mg/L) and at 36659A in September 2021, March 2021, and June 2021 (average concentration 0.42 mg/L). MBAS was detected above the reporting limit at 36659-1 in September

2020, December 2020, and June 2021 (average concentration 0.065 mg/L), at 36659-2 in September 2020, March 2021, and June 2021 (average concentration 0.078 mg/L), and at 36659A and 36666 in March 2021 (concentrations of 0.059 mg/L and 0.12 mg/L, respectfully). TPH was not detected above the reporting limit.

4.0 CONCLUSIONS AND POTENTIAL MITIGATION PROJECTS

4.1 CONCLUSIONS

The areas of elevated specific conductance identified in Phase I of the project lead to areas of the Watershed that may be experiencing runoff and/or infiltrating shallow groundwater that contains various contaminants. Phase II identified the following potential contaminants and general source locations:

- Little Sewickley Creek Headwaters (Figure 3A, unnamed tributary adjacent to Acorn Park) – Elevated chloride, nitrate and phosphate
- Fern Hollow Headwaters (Figure 3B, South Branch Fern Hollow and unnamed trib. along Blackburn Road) – Elevated fecal coliform, MBAS and oxygen demand
- Backbone Road (Figure 3C, Trib. 36662) – Elevated chloride, TPH and nitrate
- Sevin Road (Figure 3E, Trib. 36660, unnamed trib. along Sevin Road) – Elevated chloride, TDS, sodium, phosphate, MBAS, TPH, oxygen demand and fecal coliform

Road salt mixing with precipitation and entering the stream would be the mostly likely source the elevated levels of chloride and related levels of TDS, which continued into June at some locations. In addition, there are some instances (March 2021 at UNT-1B, 36658, UNT-3B, and 36666) where elevated TPH levels occurred in the same quarters as elevated chloride and specific conductance, which provides additional support that the source of the chloride and dissolved solids detected in these samples is likely runoff from nearby roads.

There were elevated levels of fecal coliform observed occasionally throughout the Watershed; however, high levels fecal coliform levels were reoccurring near the headwaters of Fern Hollow, between FH-1 and UNT-2 and along Sevin Road. These patterns suggests a continuing source of sewage, such as a leaking sewer line or poorly draining septic field may be present in these areas. Elevated oxygen demands were also associated with these areas that would likely have a direct impact on aquatic organisms. Elevated levels of MBAS were also detected in these areas. MBAS are surfactants commonly found in detergents and commercially available cleaners.

In 2007, LSCWA members testified to the inadequacies of the Bell Acres sewage treatment plant located upstream from its Sevin Road property. Three of the Bell Acres Municipal Authority STPs that discharged into the Little Sewickley basin were reportedly in a state of disrepair and had routine overflows and violations of effluent limits. On July 5, 2012, the PADEP approved an Act 537 sewage plan to pump sewage from Bell Acres to the Leetsdale Municipal Authority sewage treatment plant. Residual effects from the inefficiencies of the Bell Acres sewage treatment plant may be the cause of the elevated potential contaminants observed in the Sevin Road area.

There were elevated levels of phosphate observed occasionally throughout the Watershed, however there were some locations that saw elevated concentrations throughout the extent of the study. These concentrations could be related to surface water runoff from nearby residents and/or the Sewickley Heights Golf Club. Phosphate is a common turf fertilizer component.

4.2 POTENTIAL MITIGATION PROJECTS

4.2.1 Larger Scale Potential Mitigation Projects

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 also reduce metals, organics and chloride concentrations. Permanent erosion and sedimentation control best management practices that could be considered include:

- Grassed swales; that can slow the flow of runoff water, allowing sediment to settle out and water to infiltrate into the soil. Grassed swales can also remove small amounts of pollutants such as nutrients and heavy metals. Check dams can be added to grass swales to further reduce flow velocity and promote infiltration and pollutant removal.
- Filter strips are wide strips of vegetation located to intercept overland sheet flows of runoff. They can remove organic material, sediment, and heavy metals from runoff. Filter strips can consist of any type of dense vegetation from woods to grass and are best suited to low-density developments.

- Infiltration trenches; three to eight feet deep excavated trenches that are backfilled with stone to create precipitation retention and percolation into the subsoil. Properly designed infiltration trenches effectively remove sediment and other runoff pollutants.
- Constructed wetlands; areas inundated by water for a sufficient time to support vegetation adapted for life in saturated soil conditions. Wetlands can effectively filter sediment, nutrients, and some heavy metals from runoff waters.

The adaption of advanced erosion and sedimentation features would require, at a minimum, the cooperation of state and municipal highway departments, and long-term access agreements with landowners situated between the roadways and the streams within the watershed.

Additional watershed surveys would be required to locate sources of sediment that are significant in size and situated such that improved erosion and sedimentation practices could be employed.

4.2.2 Smaller Scale Potential Mitigation Projects

The locations in which evidence of runoff or shallow groundwater having been impacted by sewage, is entering the Watershed (elevated levels of fecal coliform, surfactants, nitrates, phosphate and chemical oxygen demand). The Association could provide this data to the municipal sewer authorities and neighboring property owners to help determine potential sources for the contamination. The Association could cooperate with the municipal authorities and neighboring property owners to further identify the sources of the impacted runoff and shallow groundwater and develop plans to remove the sources and/or control the infiltration of the impacted water.

The evidence of impacted runoff from the Sewickley Heights Golf Club could be presented by the Association to the Club administration for a discussion of potential corrective measures. Levels of nutrients and the organic compounds detected during the Phase II survey could be reduced through the addition of passive wetland treatment and/or improved pond aeration.

5.0 RESOURCES

CEC's 2017/2018 Report summarized findings of the physical, chemical, and biological assessment of the Watershed and provided numerous grant opportunities and organizations the Association could reach out to address the more significant mitigation projects. Many of those resources are still applicable to mitigation projects suggested in Section 4.2. Examples of the opportunities, which could be applicable to the types of mitigation noted in Section 4.2, are noted below. All URLs were active and working as of July 28, 2021. CEC recommends referring to Section 5.0 of the *Little Sewickley Creek Watershed Assessment* (CEC, 2018) for a complete list of grant opportunities.

Healthy Watersheds Protection, Healthy Watersheds Consortium Grants

www.epa.gov/hwp/healthy-watersheds-consortium-grants-hwcg

The Healthy Watersheds Consortium (HWC) is a partnership between the U.S. Endowment for Forestry and Communities, the U.S. Environmental Protection Agency, and the USDA Natural Resources Conservation Service. The goal of the HWC Grant Program is to "accelerate strategic protection of healthy, freshwater ecosystems and their watersheds", with primary focus on prevention of land deterioration in the watershed by:

- Developing funding mechanisms, plans, or other strategies to implement large-scale watershed protection, source water protection, green infrastructure, or related landscape conservation objectives
- Building the sustainable organizational infrastructure, social support, and long-term funding commitments necessary to implement large-scale protection of healthy watersheds
- Supporting innovative or catalytic projects that may accelerate funding for or implementation of watershed protection efforts, or broadly advance this field of practice.

Conservation Innovation Grants

www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/cig/

Conservation Innovation Grants (CIG) are competitive grants that drive public and private sector innovation in resource conservation. Through the CIG program, public and private grantees develop the tools, technologies, and strategies to support next-generation conservation efforts on

working lands and develop market-based solutions to resource challenges. Grantees leverage the federal investment by at least matching it. CIG projects inspire creative problem-solving that boosts production on farms, ranches, and private forests - ultimately they improve water quality, soil health, and wildlife habitat.

Watershed Restoration and Protection Program

dced.pa.gov/programs/watershed-restoration-protection-program-wrpp/

The overall goal of the Watershed Restoration and Protection Program (WRPP) is to restore, and maintain restored stream reaches impaired by the uncontrolled discharge of nonpoint source polluted runoff, and ultimately to remove these streams from the Department of Environmental Protection's Impaired Waters list.

Riparian Forest Buffer Funding

www.dcnr.pa.gov/Communities/Grants/RiversConservationandRiparianBufferGrants/Pages/default.aspx

DCNR provides grants to install riparian forest buffers along waterways in Pennsylvania. Eligible projects for Riparian Forest Buffer Program funding include:

- Landowner outreach
- Buffer design
- Site preparation and buffer installation
- Plant materials and tree shelters
- Post-planting establishment (approximately three years)

Conservation Leadership and Innovation Program

www.conservationsolutioncenter.org/grants

The purpose of the District's Conservation Leadership and Innovation Program is to promote, support, and fund projects that align with Conservation District's mission and vision. Most projects funded through the program should aim to reduce the impacts of non-point source pollution, improve the health of our water resources, and/or habitat restoration.

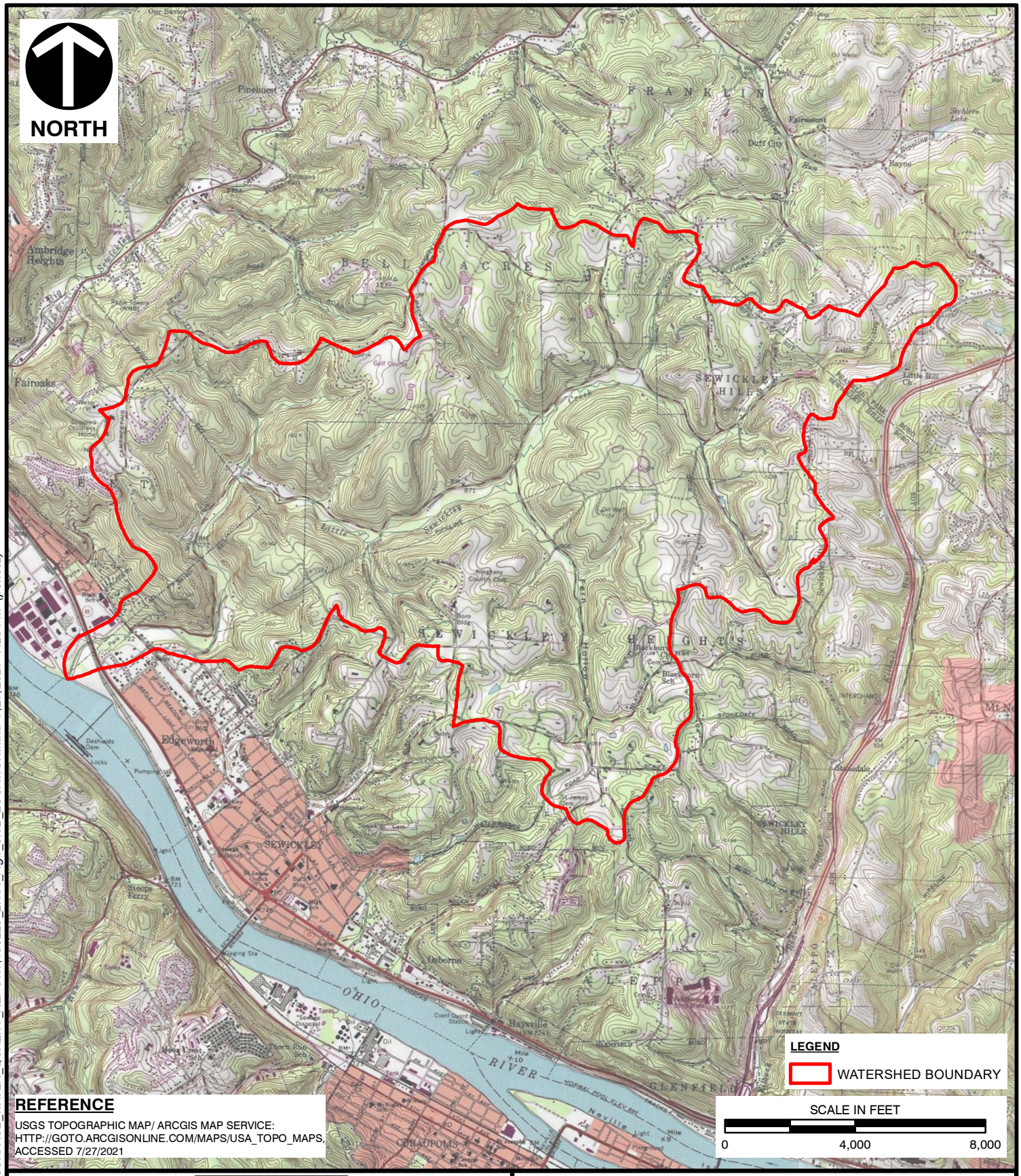
6.0 REFERENCES

CEC, 2018. Little Sewickley Creek Watershed Assessment, Allegheny County, Pennsylvania, Prepared for Little Sewickley Creek Watershed Association, Prepared by Civil & Environmental Consultants, Inc., Pittsburgh, Pennsylvania, CEC Project 164-549, September 2018.

DEP, 2015. Little Sewickley Creek, Allegheny County, Water Quality Standards Review, Stream Redesignation Evaluation Report, Segment: Basin, Stream Code: 3667, Drainage List W. Water Quality Monitoring Section, Division of Water Quality Standards, Bureau of Point and Non-Point Source Management, Department of Environmental Protection. February 2015.

DEP, 2020. Pennsylvania Department of Environmental Protection, Title 25 – Environmental Protection, Chapter 93, Water Quality Standards. Updated July 11, 2020.

FIGURES



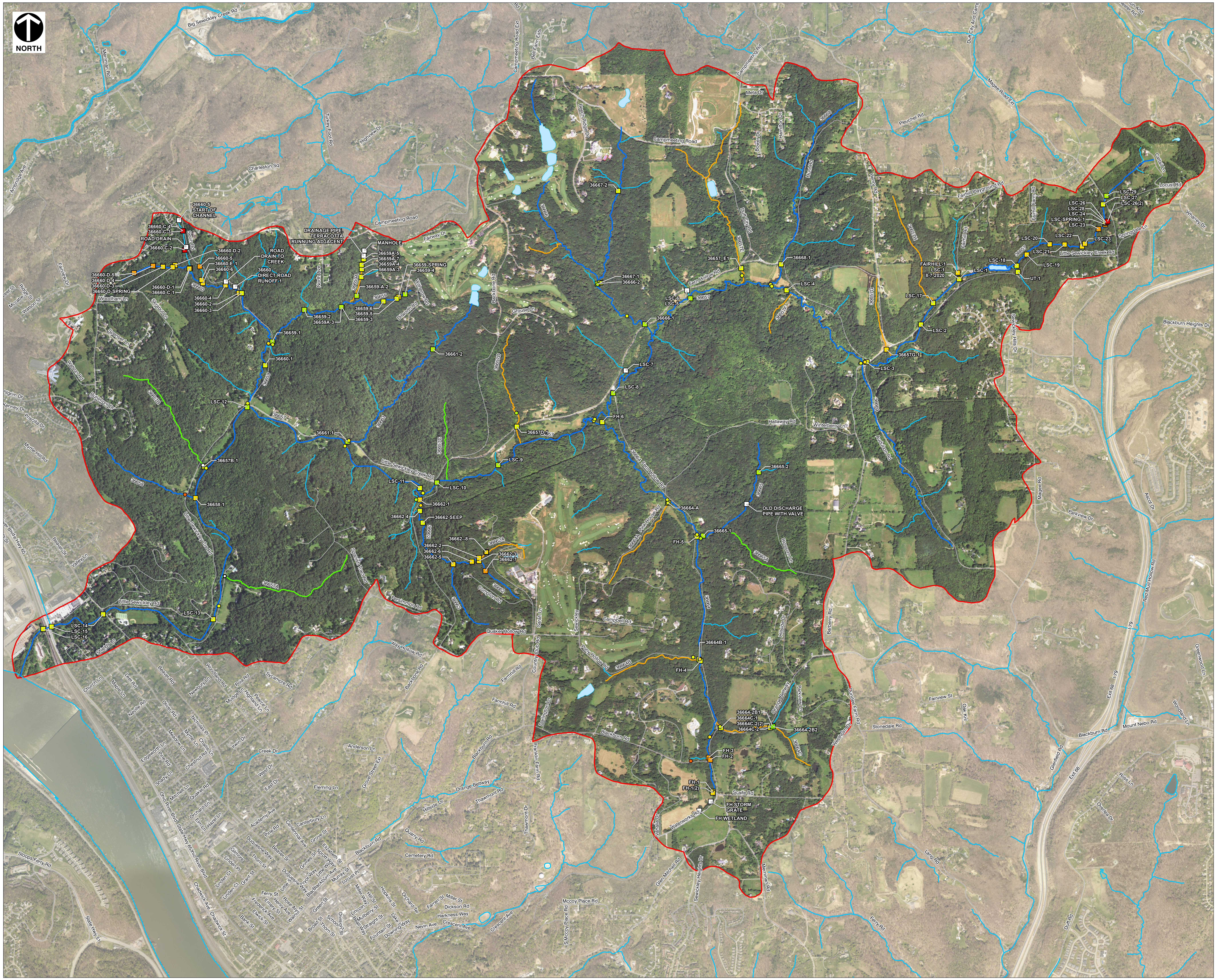
P:\2019\193-229\-GIS\Maps\EN04_SURFACE_WATER_QUALITY_REPORT\193229_EN04_Fig1_SITE_LOCATION.mxd 7/27/2021 7:26 PM (jrokosz)

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 · 800-365-2324
www.cecinc.com

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
SURFACE WATER QUALITY INVESTIGATION
ALLEGHENY COUNTY, PENNSYLVANIA

SITE LOCATION MAP

DRAWN BY:	JLR	CHECKED BY:	BJH	APPROVED BY: * Hand signature on file	DSR*	FIGURE NO:	1
DATE:	7/27/2021	SCALE:	1 " = 4,000 '	PROJECT NO:	193-229		



REVISION RECORD

NO	DATE	DESCRIPTION

SUBMITTAL RECORD

NO	DATE	DESCRIPTION

LEGEND

- ☐ CEC-COLLECTED SPECIFIC CONDUCTIVITY
- ○ LSCWA-COLLECTED SPECIFIC CONDUCTIVITY

SPECIFIC CONDUCTANCE (μS/cm)

- 0 or N/A
- 0.000001 - 250.000000
- 250.000001 - 500.000000
- 500.000001 - 750.000000
- 750.000001 - 1000.000000
- 1000.000001 - 1250.000000
- 1250.000001 - 1500.000000
- 1500.000001 - 1750.000000
- NAMED USGS OR PADEP 5-DIGIT CODE STREAMS (19.69 MI)
- ADDITIONAL STREAMS WITH POTENTIAL IMPAIRMENT (4.96 MI)
- POTENTIAL REFERENCE STREAMS (2.06 MI)
- STREAMS (ALLEGHENY COUNTY)
- POND
- WATERSHED BOUNDARY

REFERENCE

NAIP IMAGERY FOR PENNSYLVANIA, 2015.

SCALE IN FEET

0 1,000 2,000 3,000 4,000

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
Ph: 412.429.2324 - 800.365.2324 - Fax: 412.429.2114
www.cecinc.com

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
SURFACE WATER QUALITY INVESTIGATION
ALLEGHENY COUNTY, PENNSYLVANIA

DRAWN BY:	DER/JLR	CHECKED BY:	BJH	APPROVED BY: * Hand signature on file	DSR*
DATE:	7/27/2021	SCALE:	1 " = 1,000 '	PROJECT NO:	193-229

PHASE I SAMPLE LOCATIONS

FIGURE NO: **2**

NORTH

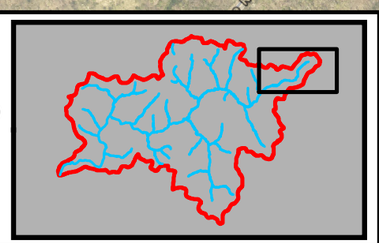
Trib 36625 Of Rippling Run
Mapes Rd Ext
Brent Ln
Carriage Ln
Rochester Rd
Marble Ln
Fairhill Playground Rd
Dicenzo Ln
Fairhill Rd
Fairstone Ln
Mapes Rd Ext
Orchard Ln
Summit Ln
Locust Rd
Locust Rd
Locust Rd
Locust Rd
Wharrey Dr
LSC-1
UNT-1A
LSC-2
UNT-1B
Fairhill Farm Rd
Fairhill Rd
Rhoda Trail Ln
Mapes Rd Ext
36657
Springdale Ln
Little Sewickley Creek
Little Sewickley Creek Rd
Little Sewickley Creek Rd
Springdale Ln
Kilbuck Run
Cheviot Dr
Rd Ext
I-79 S
I-79 N
Raymond P Shafer Hwy
I-79 S
I-79 N
Raymond P Shafer Hwy
I-79 S
I-79 N
Raymond P Shafer Hwy
Nicholson Rd
Blaine's Way
Elm Pointe Ct
Shipley
36657
Little Sewickley Creek Rd
Fairhill Rd

REFERENCE
NAIP IMAGERY FOR PENNSYLVANIA, 2015.

SCALE IN FEET
0 500 1,000

LEGEND

- QUARTERLY SAMPLING LOCATIONS
- NAMED USGS OR PADEP 5-DIGIT CODE STREAMS (19.69 MI)
- ADDITIONAL STREAMS WITH POTENTIAL IMPAIRMENT (4.96 MI)
- POTENTIAL REFERENCE STREAMS (2.06 MI)
- POND
- STREAMS (ALLEGHENY COUNTY)
- WATERSHED BOUNDARY
- ROADS



Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 • 800-365-2324
www.cecinc.com

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
SURFACE WATER QUALITY INVESTIGATION
ALLEGHENY COUNTY, PENNSYLVANIA

PHASE II
LITTLE SEWICKLEY CREEK HEADWATERS

DRAWN BY:	JLR	CHECKED BY:	BJH	APPROVED BY:	* Hand signature on file DSR*	FIGURE NO:	3A
DATE:	7/28/2021	SCALE:	1 " = 500 '	PROJECT NO:	193-229		

P:\2019\193-229\-GIS\Maps\EN04_SURFACE_WATER_QUALITY_REPORT\193229_EN04_Fig3_PHASE_II.mxd 7/28/2021 8:43 AM (jrokosz)

NORTH

Pony Hollow

36664B

Fair Acres Dr

Fern Hollow Rd

36664

FH-3

36664C

Blackburn Rd

Fair Acres Dr

Fern Hollow

Blackburn Rd

Sciffe Rd

Oak Knol

Stonedale Rd

UNT-2

FH-2

Blackburn Rd

Sciffe Rd

FH-1

Scaife Rd

Waterworks Rd

Glen Mitchell Rd

Merriman Rd

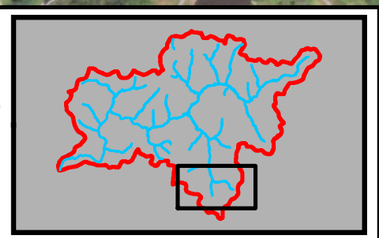
Lang Rd

REFERENCE
NAIP IMAGERY FOR PENNSYLVANIA, 2015.

SCALE IN FEET
0 500 1,000

LEGEND

- QUARTERLY SAMPLING LOCATIONS
- NAMED USGS OR PADEP 5-DIGIT CODE STREAMS (19.69 MI)
- ADDITIONAL STREAMS WITH POTENTIAL IMPAIRMENT (4.96 MI)
- POTENTIAL REFERENCE STREAMS (2.06 MI)
- POND
- STREAMS (ALLEGHENY COUNTY)
- WATERSHED BOUNDARY
- ROADS



Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 • 800-365-2324
www.cecinc.com

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
SURFACE WATER QUALITY INVESTIGATION
ALLEGHENY COUNTY, PENNSYLVANIA

PHASE II
FERN HOLLOW HEADWATERS

DRAWN BY:	JLR	CHECKED BY:	BJH	APPROVED BY:	* Hand signature on file DSR*	FIGURE NO:	3B
DATE:	7/28/2021	SCALE:	1 " = 500 '	PROJECT NO:	193-229		

P:\2019\193-229\-GIS\Maps\EN04_SURFACE_WATER_QUALITY_REPORT\193229_EN04_Fig3_PHASE_II.mxd 7/28/2021 8:43 AM (jrokosz)

NORTH

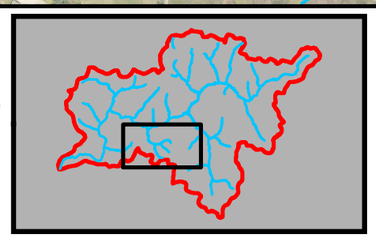
Little Sewickley Creek
36657C
Little Sewickley Creek
36657
Yarn Hollow Rd
36664
Spanish Trail
Lee Rd
Backbone Rd
Trib 36662 To Little Sewickley Creek
36662
Lane End
36662A
36662A
36662-2
36662-1
Trib 36662 To Little Sewickley Creek
36662
Allegheny
Country Club
36664A
Quick Hollow Rd
36657A
Trib 36662 To Little Sewickley Creek
36663
Persimmon Rd
Treetops Ln
Lane End
County Club Rd
Pink House Rd
Pink House Ln
Goodwood Ln
Quaker Hollow Rd
Backbone Rd
Quaker Hollow Rd
Quaker Hollow Rd
Way Hollow Rd
Way Hollow Rd
County Club Rd
Persimmon Rd

REFERENCE
NAIP IMAGERY FOR PENNSYLVANIA, 2015.

SCALE IN FEET
0 500 1,000

LEGEND

- QUARTERLY SAMPLING LOCATIONS
- NAMED USGS OR PADEP 5-DIGIT CODE STREAMS (19.69 MI)
- ADDITIONAL STREAMS WITH POTENTIAL IMPAIRMENT (4.96 MI)
- POTENTIAL REFERENCE STREAMS (2.06 MI)
- POND
- STREAMS (ALLEGHENY COUNTY)
- WATERSHED BOUNDARY
- ROADS



Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 • 800-365-2324
www.cecinc.com

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
SURFACE WATER QUALITY INVESTIGATION
ALLEGHENY COUNTY, PENNSYLVANIA

PHASE II
BACKBONE ROAD

DRAWN BY:	JLR	CHECKED BY:	BJH	APPROVED BY:	* Hand signature on file DSR*	FIGURE NO:	3C
DATE:	7/28/2021	SCALE:	1 " = 500 '	PROJECT NO:	193-229		

P:\2019\193-229\GIS\Maps\EN04_SURFACE_WATER_QUALITY_REPORT\193229_EN04_Fig3_PHASE_II.mxd 7/28/2021 8:43 AM (jrokosz)

NORTH

Buhlmont Dr
Kenney Dr
Camp Meeting Rd
Myrtle Hill Rd
Perry St
Brock Hill Dr
Brock Dr
Riverview Dr
Oak Dr
Beaver St
Victory Ln
Elm Ln
Valley Ln
Winding Rd
Ohio River Blvd
Wood Spur
Spanish Tract
Lee Rd

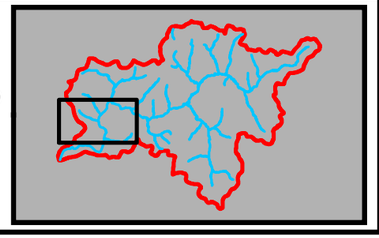
36657B
Trib 36658 To Little Sewickley Creek
36658
Little Sewickley Creek
36657
36659
Little Sewickley Creek Rd
36661
36657A

SCALE IN FEET
0 500 1,000

REFERENCE
NAIP IMAGERY FOR PENNSYLVANIA, 2015.

LEGEND

- QUARTERLY SAMPLING LOCATIONS
- NAMED USGS OR PADEP 5-DIGIT CODE STREAMS (19.69 MI)
- ADDITIONAL STREAMS WITH POTENTIAL IMPAIRMENT (4.96 MI)
- POTENTIAL REFERENCE STREAMS (2.06 MI)
- POND
- STREAMS (ALLEGHENY COUNTY)
- WATERSHED BOUNDARY
- ROADS



Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 • 800-365-2324
www.cecinc.com

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
SURFACE WATER QUALITY INVESTIGATION
ALLEGHENY COUNTY, PENNSYLVANIA

PHASE II
EDGEWORTH

DRAWN BY:	JLR	CHECKED BY:	BJH	APPROVED BY:	* Hand signature on file DSR*	FIGURE NO:	3D
DATE:	7/28/2021	SCALE:	1 " = 500 '	PROJECT NO:	193-229		

P:\2019\193-229\-GIS\Maps\EN04_SURFACE_WATER_QUALITY_REPORT\193229_EN04_Fig3_PHASE_II.mxd 7/28/2021 8:43 AM (jrokosz)

NORTH

UNT-3A

36660

UNT-3B

36660-1

36660-2

36659-2

Trib 36602 Of Big Sewickley Creek

Trib 36660 Of Little Sewickley Creek

Trib 36659 To Little Sewickley Creek

36659

36659

36657B

Sewin Rd

Camp Meeting Rd

Pine Mnr

Charleston Sq

Summertown Dr

Cherry Dr

North Ln

Lee Rd

North Ave

Skrabut Ln

Woodham Rd

Spenser Ln

Chaucer Ct N

Chaucer Ct S

Watson St

Flinn Run St

Local St

Ricco Ave

Ricerbo St

Water St

SCALE IN FEET

0 500 1,000

REFERENCE

NAIP IMAGERY FOR PENNSYLVANIA, 2015.

LEGEND

- QUARTERLY SAMPLING LOCATIONS
- NAMED USGS OR PADEP 5-DIGIT CODE STREAMS (19.69 MI)
- ADDITIONAL STREAMS WITH POTENTIAL IMPAIRMENT (4.96 MI)
- POTENTIAL REFERENCE STREAMS (2.06 MI)
- POND
- STREAMS (ALLEGHENY COUNTY)
- WATERSHED BOUNDARY
- ROADS

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 • 800-365-2324
www.cecinc.com

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
SURFACE WATER QUALITY INVESTIGATION
ALLEGHENY COUNTY, PENNSYLVANIA

PHASE II
SEVIN ROAD

DRAWN BY:	JLR	CHECKED BY:	BJH	APPROVED BY:	* Hand signature on file DSR*	FIGURE NO:	3E
DATE:	7/28/2021	SCALE:	1 " = 500 '	PROJECT NO:	193-229		

P:\2019\193-229\-GIS\Maps\EN04_SURFACE_WATER_QUALITY_REPORT\193229_EN04_Fig3_PHASE_II.mxd 7/28/2021 8:43 AM (jrokosz)

NORTH

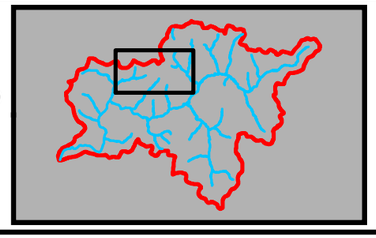
Turkey Foot Rd
Trib 36600 To Big Sewickley Creek
Camp Meeting Rd
Fairway Rd
Backbone Rd
36666
36669
Trib 36666 To Little Sewickley Creek
36667
Trib 36667 Of Little Sewickley Creek
Trib 36666 To Little Sewickley Creek
36666
Camp Meeting Rd
North Ln
Lee Rd
North Ave
Witherow Rd
36659A
Sewickley Heights Golf Club
Fox Hill Dr
36659-2
Trib 36659 To Little Sewickley Creek
36659-1
36659
Dilworth Rd
Trib 36661 To Little Sewickley Creek
36661
Witherow Rd Exit
Grouse Ln
36657D

REFERENCE
NAIP IMAGERY FOR PENNSYLVANIA, 2015.

SCALE IN FEET
0 500 1,000

LEGEND

- QUARTERLY SAMPLING LOCATIONS
- NAMED USGS OR PADEP 5-DIGIT CODE STREAMS (19.69 MI)
- ADDITIONAL STREAMS WITH POTENTIAL IMPAIRMENT (4.96 MI)
- POTENTIAL REFERENCE STREAMS (2.06 MI)
- POND
- STREAMS (ALLEGHENY COUNTY)
- WATERSHED BOUNDARY
- ROADS



Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 • 800-365-2324
www.cecinc.com

LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
SURFACE WATER QUALITY INVESTIGATION
ALLEGHENY COUNTY, PENNSYLVANIA

PHASE II
DEVIL'S HOLLOW CONSERVATION AREA, TRIBUTARY 36666

DRAWN BY:	JLR	CHECKED BY:	BJH	APPROVED BY:	* Hand signature on file DSR*	FIGURE NO:	3F
DATE:	7/28/2021	SCALE:	1 " = 500 '	PROJECT NO:	193-229		

P:\2019\193-229\-GIS\Maps\EN04_SURFACE_WATER_QUALITY_REPORT\193229_EN04_Fig3_PHASE_II.mxd 7/28/2021 8:43 AM (jrokosz)

TABLE

TABLE 1 (PAGE 2 of 5)
SUMMARY OF LABORATORY ANALYTICAL RESULTS - QUARTERLY MONITORING
LITTLE SEWICKLEY CREEK WATERSHED
SEWICKLEY BOROUGH, ALLEGHENY COUNTY, PENNSYLVANIA
LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
CEC PROJECT NUMBER 193-229

SAMPLE LOCATION:	Fern Hollow																Surface Water Screening Criteria: Pennsylvania SWQS [1,2]			
SAMPLE ID:	FH-1				FH-2				FH-3				UNT-2				Fish & Aquatic Life ($SWQS_{AQ}$) [3]		Human Health Criteria ($SWQS_{HH}$) [4]	Specific Water Quality Criteria
DATE COLLECTED:	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/11/2020	12/9/2020	3/3/2021	6/17/2021	Continuous Concentration (Chronic)	Maximum Concentration (Acute)		
Total Metals (mg/L)																				
Aluminum	0.13 J	0.15 J	**0.24**	0.062 J	< 0.053	< 0.053	0.076 J	0.14 J	< 0.053	< 0.053	0.08 J	0.065 J	**0.23**	0.12 J	0.12 J	0.12 J	nse	0.75	nse	nse
Calcium	**82**	**59**	**54**	**83**	**74**	**71**	**50**	**78**	**71**	**69**	**51**	**75**	**64**	**62**	**42**	**69**	nse	nse	nse	nse
Iron	**0.27**	**0.22**	**0.33**	**0.21**	0.068 J	0.044 J	**0.12**	**0.23**	< 0.031	0.04 J	< 0.089	0.091 J	**0.34**	**0.16**	**0.15**	**0.2**	nse	nse	nse	1.5
Magnesium	**17**	**13**	**9**	**15**	**15**	**14**	**8.5**	**15**	**14**	**14**	**8.7**	**14**	**14**	**13**	**7.5**	**14**	nse	nse	nse	nse
Manganese	**0.11**	**0.029**	**0.057**	**0.12**	0.013 J	0.0086 J	0.014 J	**0.033**	**0.016**	0.0051 J	0.008 J	0.014 J	**0.046**	**0.024**	**0.026**	**0.036**	nse	nse	nse	1
Potassium	2.7 J	2.5 J	2.3 J	2.6 J	3.1 J	2.4 J	2.1 J	2.7 J	3.1 J	2.5 J	2.3 J	2.7 J	2.9 J	2.5 J	1.6 J	2.3 J	nse	nse	nse	nse
Sodium	**61**	**79**	**100**	**89** B	**97**	**94**	**120**	**120** B	**87**	**100**	**120**	**120** B	**100**	**71**	**96**	**110** B	nse	nse	nse	nse
Anions (mg/L)																				
Chloride	**146**	**131**	**184**	**188**	**171**	**166**	**219**	**235**	**155**	**176**	**226**	**225**	**170**	**132**	**161**	**182**	nse	nse	nse	250[7]
Nitrate as N	**0.97**	**2.35**	**0.909**	**0.682**	**0.727**	**1.04**	**0.999**	**0.807**	**0.756**	**1.13**	**1.09**	**1.12**	**2.6**	**1.44**	**1.36**	**1.85**	nse	nse	nse	10[7]
Sulfate	**88.6**	**53.9**	**34.9**	**43.6**	**50.6**	**55.6**	**35.4**	**46**	**55.1**	**63.3**	**35.2**	**45.4**	**51.4**	**42**	**32.6**	**48.9**	nse	nse	nse	250[7]
General Chemistry (mg/L unless otherwise noted)																				
Chemical Oxygen Demand	**18**	4.8 J	< 9.1	< 1.8	7.1 J	< 4.1	< 9.1	4.7 J	8.1 J	< 4.1	< 9.1	1.9 J	**10**	5.5 J	**11**	6.8 J	nse	nse	nse	nse
Methylene Blue Active Substances	< 0.049	**1.3**	**0.13**	< 0.049	< 0.049	< 0.049	**0.12**	< 0.049	< 0.049	< 0.049	**0.1**	< 0.049	< 0.049	< 0.049	**0.15**	**0.06**	nse	nse	nse	nse
Phosphate as PO_4	0.16 J	**0.39**	< 0.11	< 0.11	0.24 J	< 0.11	< 0.11	< 0.11	< 0.11	0.11 J	< 0.11	0.24 J	**0.56**	0.17 J	< 0.11	**0.39**	nse	nse	nse	nse
Specific Conductance (umhos/cm)	**900**	**800**	**900**	**1,000**	**990**	**940**	**970**	**1,100**	**900**	**940**	**980**	**1,100**	**970**	**780**	**800**	**1,000**	nse	nse	nse	nse
Total Dissolved Solids	**600**	**450**	**480**	**600**	**530**	**530**	**530**	**610**	**600**	**500**	**520**	**600**	**660**	**430**	**420**	**580**	nse	nse	nse	500/750[7,8]
Total Petroleum Hydrocarbons	< 1.4	< 0.57	< 3.3	< 1.4	< 1.4	< 0.59	< 3.6	< 1.5	< 1.5	0.86 J	3.6 J	< 1.6	< 1.5	< 0.57	< 3.1	< 1.5	nse	nse	nse	nse
Bacteriological (cfu/100 mL)																				
Fecal Coliform	**345**	**857**	**109**	**264**	**87**	**40**	**184**	**180**	**82**	**22**	**131**	**115**	**104**	**TNTC**	**231**	**112**	nse	nse	nse	200
Field Data																				
Specific Conductance (umhos/cm)	**839.2**	**903**	**868**	**960.1**	**924.9**	**899**	**931**	**1,043**	**854**	**902**	**643**	**1,019**	**901.6**	**791**	**770**	**980.6**	nse	nse	nse	nse
pH (S.U.)	**7.33**	**7.91**	**8.01**	**7.83**	**7.38**	**7.88**	**7.9**	**7.81**	**7.88**	**7.81**	**7.97**	**7.75**	**7.95**	**7.77**	**7.62**	**7.77**	nse	nse	nse	6.0-9.0
Temperature (°C)	**19.2**	**7.92**	**4.95**	**16.8**	**19.1**	**3.66**	**5.21**	**16.4**	**19.1**	**3.48**	**5.24**	**17.5**	**19**	**5.81**	**4.84**	**17**	nse	nse	nse	nse

Notes:
1. Pennsylvania Surface Water Quality Standards (SWQS) from Pennsylvania Code, Title 25, Chapter 93.
2. Water Quality Criteria for toxic substances from Pennsylvania Code, Title 25, Chapter 93.
3. Based on ingestion from drinking water, fish consumption and other modes of exposure.
4. Specific water quality criteria applicable to all waters of the state unless noted. Standards from Table 3 of Pennsylvania Code, Title 25, Chapter 93.
7. PA SWQS only applicable at planned or existing Public Water Supply intakes. Data being presented without highlights.
8. The first value is a monthly average. The second value is a maximum.

"mg/L" denotes milligrams per liter
"umhos/cm" denotes micromhos/centimeter
"cfu" denotes colony forming unit
"nse" denotes no standard established

Qualifiers:
< - Analyte was not detected above the Laboratory Method Detection Limit.
J - Result is less than the RL but greater than the MDL and the concentration is an approximate value
B - Analyte was found in the blank.
FL - MS and/or MSD recovery above control limits.

TABLE 1 (PAGE 4 of 5)
SUMMARY OF LABORATORY ANALYTICAL RESULTS - QUARTERLY MONITORING
LITTLE SEWICKLEY CREEK WATERSHED
SEWICKLEY BOROUGH, ALLEGHENY COUNTY, PENNSYLVANIA
LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
CEC PROJECT NUMBER 193-229

SAMPLE LOCATION:	Sevin Road																Surface Water Screening Criteria			
																	Pennsylvania SWQS [1,2]			
SAMPLE ID:	36660-1				36660-2				UNT-3A				UNT-3B				Fish & Aquatic Life ($SWQS_{AQ}$) [3]		Human Health Criteria ($SWQS_{HH}$) [4]	Specific Water Quality Criteria
DATE COLLECTED:	9/10/2020	12/8/2020	3/4/2021	6/16/2021	9/10/2020	12/8/2020	3/4/2021	6/16/2021	9/10/2020	12/8/2020	3/4/2021	6/16/2021	9/10/2020	12/8/2020	3/4/2021	6/16/2021	Continuous Concentration (Chronic)	Maximum Concentration (Acute)		
Total Metals (mg/L)																				
Aluminum	**0.57**	0.11 J	< 0.053	**0.35**	0.14 J	< 0.053	0.19 J	**0.51**	**1.1**	**0.73**	**0.25**	**0.44**	**0.25**	**0.34**	0.15 J	**0.61**	nse	0.75	nse	nse
Calcium	**58**	**46**	**51**	**64**	**68**	**64**	**56**	**68**	**51**	**63** FL	**150**	**79**	**78**	**96**	**110**	**96**	nse	nse	nse	nse
Iron	**0.85**	**0.13**	< 0.089	**0.47**	**0.14**	0.054 J	**0.18**	**0.65**	**0.9**	**0.88**	**0.37**	**0.49**	**0.22**	**0.5**	**0.14**	**0.75**	nse	nse	nse	1.5
Magnesium	**19**	**15**	**16**	**21** B	**18**	**17**	**15**	**18** B	**13**	**18**	**41**	**22** B	**17**	**28**	**28**	**24** B	nse	nse	nse	nse
Manganese	**0.099**	0.013 J	0.0032 J	**0.095**	0.014 J	0.014 J	0.0094 J	**0.033**	**0.083**	**0.079**	**0.042**	**0.031**	0.013 J	**0.071**	0.0055 J	**0.032**	nse	nse	nse	1
Potassium	2.3 J	2.3 J	2.4 J	2.8 J	3 J	2.3 J	2.1 J	2.9 J	3 J	3 J	4.7 J	4.2 J	3.4 J	2.6 J	3.3 J	3.4 J	nse	nse	nse	nse
Sodium	**190**	**170**	**160**	**200**	**99**	**110**	**130**	**120**	**250**	**280**	**570**	**430**	**180**	**71**	**360**	**260**	nse	nse	nse	nse
Anions (mg/L)																				
Chloride	**371**	**306**	**306**	**405**	**211**	**245**	**248**	**260**	**388**	**490**	**1,170**	**757**	**339**	**230**	**695**	**559**	nse	nse	nse	250[7]
Nitrate as N	**5.25**	**6.83**	**4.13**	**4.96**	**0.439**	**1.34**	**1.73**	**1.24**	**3.7**	**4.37**	**3.2**	**3.32**	**0.493**	0.066 J	**1.76**	**0.841**	nse	nse	nse	10[7]
Sulfate	**53.6**	**49.1**	**45.6**	**48.8**	**48.5**	**53.2**	**38.1**	**46.7**	**53.6**	**54.5**	**58.2**	**47.9**	**56.2**	**66.3**	**51.2**	**53.9**	nse	nse	nse	250[7]
General Chemistry (mg/L unless otherwise noted)																				
Chemical Oxygen Demand	**32**	8.6 J	< 9.1	**13**	5.4 J	4.5 J	< 9.1	**11**	**14**	**10**	**14**	**11**	6 J	7.2 J	< 9.1	**13**	nse	nse	nse	nse
Methylene Blue Active Substances	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	**0.06**	< 0.049	< 0.049	< 0.049	**0.053**	nse	nse	nse	nse
Phosphate as PO_4	**0.36**	0.17 J	**0.37**	**0.39**	< 0.11	< 0.11	0.3 J	**0.33**	0.23 J	0.24 J	0.18 J	**0.59**	0.13 J	< 0.11	0.19 J	**0.43**	nse	nse	nse	nse
Specific Conductance (umhos/cm)	**1,500**	**1,300**	**1,200**	**1,500**	**1,000**	**1,100**	**1,100**	**1,100**	**1,700**	**1,900**	**4,000**	**2,600**	**1,500**	**1,100**	**2,500**	**2,100**	nse	nse	nse	nse
Total Dissolved Solids	**1,000**	**770**	**670**	**880**	**680**	**630**	**870**	**620**	**1,100**	**1,100**	**2,200**	**1,500**	**750**	**670**	**1,300**	**1,200**	nse	nse	nse	500/750[7,8]
Total Petroleum Hydrocarbons	< 1.5	< 0.6	< 0.55	< 1.5	< 1.4	< 0.56	< 0.56	< 1.5	< 1.5	< 0.58	< 0.58	< 1.5	< 1.5	< 0.55	**6.4** B	< 1.5	nse	nse	nse	nse
Bacteriological (cfu/100 mL)																				
Fecal Coliform	**144**	**33**	**3**	**128**	**83**	**4**	**24**	**273**	**117**	**28**	**22**	**184**	**97**	**4**	**7**	**169**	nse	nse	nse	200
Field Data																				
Specific Conductance (umhos/cm)	**1,419**	**1,237**	**1,198**	**1,512**	**954.1**	**1,067**	**1,040**	**1,075**	**1,566**	**1,844**	**3,904**	**2,605**	**1,395**	**1,094**	**2,491**	**2,006**	nse	nse	nse	nse
pH (S.U.)	**7.45**	**7.69**	**7.36**	**7.98**	**6.69**	**7.54**	**7.06**	**7.62**	**7.66**	**7.7**	**6.94**	**7.58**	**7.58**	**7.52**	**7.05**	**7.9**	nse	nse	nse	6.0-9.0
Temperature (°C)	**17.6**	**4.55**	**6.1**	**15.7**	**21**	**3.57**	**4.5**	**15.1**	**20.8**	**5.46**	**5.1**	**16.6**	**20.6**	**5.48**	**4.1**	**14.9**	nse	nse	nse	nse

Notes:
1. Pennsylvania Surface Water Quality Standards (SWQS) from Pennsylvania Code, Title 25, Chapter 93.
2. Water Quality Criteria for toxic substances from Pennsylvania Code, Title 25, Chapter 93.
3. Based on ingestion from drinking water, fish consumption and other modes of exposure.
4. Specific water quality criteria applicable to all waters of the state unless noted. Standards from Table 3 of Pennsylvania Code, Title 25, Chapter 93.
7. PA SWQS only applicable at planned or existing Public Water Supply intakes. Data being presented without highlights.
8. The first value is a monthly average. The second value is a maximum.

"mg/L" denotes milligrams per liter
"umhos/cm" denotes micromhos/centimeter
"cfu" denotes colony forming unit
"nse" denotes no standard established

Qualifiers:
< - Analyte was not detected above the Laboratory Method Detection Limit.
J - Result is less than the RL but greater than the MDL and the concentration is an approximate value
B - Analyte was found in the blank.
FL - MS and/or MSD recovery above control limits.

TABLE 1 (PAGE 1 of 5)
SUMMARY OF LABORATORY ANALYTICAL RESULTS - QUARTERLY MONITORING
LITTLE SEWICKLEY CREEK WATERSHED
SEWICKLEY BOROUGH, ALLEGHENY COUNTY, PENNSYLVANIA
LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
CEC PROJECT NUMBER 193-229

SAMPLE LOCATION:	Little Sewickley Creek Headwaters																Surface Water Screening Criteria			
																	Pennsylvania SWQS [1, 2]			
SAMPLE ID:	LSC-1				LSC-2				UNT-1A				UNT-1B				Fish & Aquatic Life ($SWQS_{AQ}$) [3]		Human Health Criteria ($SWQS_{HH}$) [4]	Specific Water Quality Criteria
DATE COLLECTED:	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/11/2020	12/9/2020	3/3/2021	6/17/2021	Continuous Concentration (Chronic)	Maximum Concentration (Acute)		
Total Metals (mg/L)																				
Aluminum	**0.2**	0.1 J	**0.22**	0.15 J	**0.3**	**0.36**	**0.22**	0.11 J	**0.62**	**0.23**	0.059 J	< 0.053	**0.53**	**0.64**	**0.44**	0.053 J	nse	0.75	nse	nse
Calcium	**51**	**47**	**23**	**37**	**90**	**82**	**27**	**51**	**110**	**110**	**78**	**120**	**97**	**91**	**54**	**100**	nse	nse	nse	nse
Iron	**0.74**	**0.21**	**0.25**	**0.25**	**0.39**	**0.55**	**0.3**	**0.16**	**0.89**	**0.34**	< 0.089	< 0.089	**0.85**	**0.98**	**0.57**	< 0.089	nse	nse	nse	1.5
Magnesium	**10**	**10**	4.6 J	**7.4**	**18**	**15**	**5.1**	**10**	**24**	**22**	**16**	**25**	**18**	**17**	**8.6**	**19**	nse	nse	nse	nse
Manganese	0.82	**0.11**	**0.021**	**0.066**	**0.04**	**0.2**	**0.022**	**0.017**	**0.081**	**0.036**	0.0057 J	0.0064 J	**0.08**	**0.11**	**0.054**	0.01 J	nse	nse	nse	1
Potassium	3.2 J	2.1 J	1.6 J	1.8 J	3.4 J	2.5 J	1.7 J	2 J	3.8 J	3.4 J	3.5 J	2.9 J	4 J	3.8 J	3.1 J	3.3 J	nse	nse	nse	nse
Sodium	**69**	**38**	**32**	**30 B**	**100**	**74**	**44**	**54 B**	**170**	**150**	**250**	**190 B**	**110**	**120**	**120**	**140 B**	nse	nse	nse	nse
Anions (mg/L)																				
Chloride	**103**	**72**	**64.3**	**49.8**	**205**	**165**	**93.2**	**102**	**331**	**311**	**452**	**371**	**241**	**239**	**217**	**298**	nse	nse	nse	250^{7}
Nitrate as N	**0.335**	**1.19**	**1.23**	**0.522**	**1.82**	**0.977**	**1.25**	**0.8**	**4.24**	**4.07**	**2.23**	**2.79**	**5.46**	**4.15**	**1.82**	**2.81**	nse	nse	nse	10^{7}
Sulfate	**38.6**	**38.5**	**21.4**	**25.9**	**53.6**	**60.4**	**23.2**	**33.6**	**62**	**56**	**51.1**	**67.6**	**56.7**	**52.8**	**42.5**	**57.8**	nse	nse	nse	250^{7}
General Chemistry (mg/L unless otherwise noted)																				
Chemical Oxygen Demand	**12**	< 4.1	< 9.1	< 1.8	8.7 J	5.2 J	< 9.1	< 1.8	**11**	< 4.1	< 9.1	5 J	**11**	**11**	< 9.1	7.1 J	nse	nse	nse	nse
Methylene Blue Active Substances	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	**0.1**	**0.11**	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	**0.13**	< 0.049	nse	nse	nse	nse
Phosphate as PO_4	< 0.11	< 0.11	< 0.11	0.13 J	**0.57**	< 0.11	< 0.11	0.22 J	**1.2**	**0.8**	0.26 J	**0.57**	**1.1**	**0.81**	0.22 J	**0.59**	nse	nse	nse	nse
Specific Conductance (umhos/cm)	**730**	**540**	**350**	**420**	**1,100**	**940**	**440**	**610**	**1,700**	**1,500**	**1,800**	**1,700**	**1,200**	**1,200**	**970**	**1,400**	nse	nse	nse	nse
Total Dissolved Solids	**490**	**290**	**180**	**230**	**610**	**500**	**270**	**350**	**890**	**820**	**960**	**970**	**660**	**710**	**530**	**740**	nse	nse	nse	$500/750^{7,8}$
Total Petroleum Hydrocarbons	< 1.5	< 0.61	< 3.2	< 1.5	< 1.5	< 0.59	< 3.2	< 1.5	< 1.5	< 0.58	3.7 J	< 1.6	< 1.5	< 0.61	3.8 J	< 1.7	nse	nse	nse	nse
Bacteriological (cfu/100 mL)																				
Fecal Coliform	**129**	**11**	**182**	**189**	**236**	**11**	**16**	**161**	**85**	**30**	**8**	**76**	**27**	**15**	**10**	**122**	nse	nse	nse	200
Field Data																				
Specific Conductance (umhos/cm)	**687.1**	**521**	**333**	**381.7**	**1,082**	**763**	**453**	**596.4**	**1,562**	**1,402**	**1,720**	**1,652**	**1,160**	**1,156**	**942**	**1,304**	nse	nse	nse	nse
pH (S.U.)	**7.63**	**8.05**	**7.23**	**7.59**	**7.56**	**7.98**	**8.16**	**6.95**	**7.2**	**7.43**	**7.23**	**7.14**	**7.65**	**7.88**	**7.24**	**7.21**	nse	nse	nse	6.0-9.0
Temperature (°C)	**20.1**	**5.09**	**4.15**	**15.4**	**18.6**	**4.41**	**3.15**	**12.9**	**16.1**	**9.72**	**7.13**	**12.7**	**18.5**	**7.38**	**7.32**	**12.5**	nse	nse	nse	nse

Notes:
1. Pennsylvania Surface Water Quality Standards (SWQS) from Pennsylvania Code, Title 25, Chapter 93.
2. Water Quality Criteria for toxic substances from Pennsylvania Code, Title 25, Chapter 93.
3. Based on ingestion from drinking water, fish consumption and other modes of exposure.
4. Specific water quality criteria applicable to all waters of the state unless noted. Standards from Table 3 of Pennsylvania Code, Title 25, Chapter 93.
7. PA SWQS only applicable at planned or existing Public Water Supply intakes. Data being presented without highlights.
8. The first value is a monthly average. The second value is a maximum.

"mg/L" denotes milligrams per liter
"umhos/cm" denotes micromhos/centimeter
"cfu" denotes colony forming unit
"nse" denotes no standard established

Qualifiers:
< - Analyte was not detected above the Laboratory Method Detection Limit.
J - Result is less than the RL but greater than the MDL and the concentration is an approximate value
B - Analyte was found in the blank.
FL - MS and/or MSD recovery above control limits.

TABLE 1 (PAGE 3 of 5)
SUMMARY OF LABORATORY ANALYTICAL RESULTS - QUARTERLY MONITORING
LITTLE SEWICKLEY CREEK WATERSHED
SEWICKLEY BOROUGH, ALLEGHENY COUNTY, PENNSYLVANIA
LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
CEC PROJECT NUMBER 193-229

SAMPLE LOCATION:	Backbone Road												Edgewoth				Surface Water Screening Criteria			
																	Pennsylvania SWQS [1,2]			
SAMPLE ID:	36662-1				36662-2				36662A				36658				Fish & Aquatic Life ($SWQS_{AQ}$) [3]		Human Health Criteria ($SWQS_{HH}$) [4]	Specific Water Quality Criteria
DATE COLLECTED:	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/11/2020	12/9/2020	3/3/2021	6/17/2021	9/10/2020	12/8/2020	3/4/2021	6/16/2021	Continuous Concentration (Chronic)	Maximum Concentration (Acute)		
Total Metals (mg/L)																				
Aluminum	**0.85**	0.067 J	0.077 J	**0.28**	0.086 J	< 0.053	0.098 J	< 0.053	0.15 J	< 0.053	0.15 J	0.098 J	0.59 J	< 0.053	0.13 J	0.084 J	nse	0.75	nse	nse
Calcium	**110**	**95**	**69**	**110**	**93**	**84**	**67**	**94**	**91**	**93**	**79**	**98**	**44**	**42**	**24**	**41**	nse	nse	nse	nse
Iron	**1.3**	0.095 J	0.095 J	**0.42**	**0.12**	0.044 J	**0.11**	< 0.089	**0.17**	0.052 J	**0.18**	**0.11**	0.068 J	< 0.031	**0.17**	**0.13**	nse	nse	nse	1.5
Magnesium	**25**	**22**	**15**	**24**	**19**	**18**	**14**	**19**	**18**	**19**	**15**	**20**	**13**	**13**	**8**	**13 B**	nse	nse	nse	nse
Manganese	**0.07**	0.0049 J	0.0057 J	**0.024**	0.0057 J	0.0025 J	0.0055 J	< 0.0027	0.0064 J	0.0023 J	0.0085 J	**0.016**	< 0.0021	< 0.0021	0.0031 J	0.0047 J	nse	nse	nse	1
Potassium	4 J	3 J	2.5 J	3.5 J	3.8 J	3.1 J	2.5 J	3.5 J	3.9 J	3.5 J	2.7 J	3.7 J	3.8 J	3.2 J	2.4 J	3.3 J	nse	nse	nse	nse
Sodium	**120**	**85**	**68**	**110 B**	**73**	**54**	**41**	**68 B**	**61**	**45**	**33**	**60 B**	**100**	**150**	**100**	**98**	nse	nse	nse	nse
Anions (mg/L)																				
Chloride	**268**	**199**	**164**	**260**	**147**	**101**	**84.3**	**122**	**108**	**73.6**	**56.1**	**95.1**	**188**	**251**	**136**	**172**	nse	nse	nse	250 [7]
Nitrate as N	**0.809**	**1.47**	**2.52**	**0.958**	**1.84**	**1.98**	**1.74**	**1.34**	**2.12**	**2.37**	**1.54**	**1.4**	**0.939**	**1.21**	**1.93**	**0.94**	nse	nse	nse	10 [7]
Sulfate	**94.2**	**77.1**	**52.2**	**77.3**	**71.5**	**70.6**	**54.4**	**60.8**	**66.4**	**70.6**	**59.3**	**59.1**	**49.4**	**52**	**42.2**	**47.7**	nse	nse	nse	250 [7]
General Chemistry (mg/L unless otherwise noted)																				
Chemical Oxygen Demand	**15**	4.1 J	< 9.1	7.1 J	9 J	< 4.1	< 9.1	8.2 J	5.9 J	< 4.1	< 9.1	4 J	< 4.1	< 4.1	< 9.1	7.8 J	nse	nse	nse	nse
Methylene Blue Active Substances	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	< 0.049	**0.11**	< 0.05 FL	< 0.049	< 0.049	< 0.049	< 0.049	nse	nse	nse	nse
Phosphate as PO_4	**0.31**	< 0.11	< 0.11	0.25 J	**0.78**	**0.69**	0.19 J	**0.78**	**1.1**	**0.97**	0.18 J	**1.1**	< 0.11	< 0.11	0.14 J	0.16 J	nse	nse	nse	nse
Specific Conductance (umhos/cm)	**1,400**	**1,100**	**860**	**1,300**	**990**	**850**	**660**	**940**	**890**	**820**	**660**	**900**	**900**	**1,100**	**700**	**830**	nse	nse	nse	nse
Total Dissolved Solids	**740**	**650**	**460**	**740**	**540**	**480**	**360**	**580**	**480**	**490**	**360**	**530**	**620**	**640**	**380**	**510**	nse	nse	nse	500/750 [7,8]
Total Petroleum Hydrocarbons	< 1.5	< 0.57	< 3.2	< 1.7	**5.3 FL**	< 0.59	< 3.1	< 1.5	< 1.5	< 0.59	3.7 J	< 1.5	< 1.5	< 0.59	**5.8 B**	< 1.6	nse	nse	nse	nse
Bacteriological (cfu/100 mL)																				
Fecal Coliform	**49**	**3**	**30**	**148**	**47**	**15**	**7**	**56**	**43**	**24**	**5**	**106**	**59**	**11**	**15**	**122**	nse	nse	nse	200
Field Data																				
Specific Conductance (umhos/cm)	**1,289**	**1,048**	**825**	**1,236**	**935.5**	**826**	**416**	**886.6**	**854.8**	**787**	**640**	**856.6**	**853.5**	**1,279**	**442**	**831.7**	nse	nse	nse	nse
pH (S.U.)	**7.72**	**7.78**	**7.78**	**7.91**	**7.72**	**7.13**	**7.6**	**7.52**	**7.92**	**7.82**	**7.9**	**7.99**	**6.78**	**6.9**	**6.63**	**6.51**	nse	nse	nse	6.0-9.0
Temperature (°C)	**18.5**	**3.64**	**3.43**	**14.2**	**18.1**	**4.19**	**3.59**	**14.2**	**17.6**	**4.69**	**4.83**	**13.2**	**18.7**	**4.25**	**2.59**	**15**	nse	nse	nse	nse

Notes:
1. Pennsylvania Surface Water Quality Standards (SWQS) from Pennsylvania Code, Title 25, Chapter 93.
2. Water Quality Criteria for toxic substances from Pennsylvania Code, Title 25, Chapter 93.
3. Based on ingestion from drinking water, fish consumption and other modes of exposure.
4. Specific water quality criteria applicable to all waters of the state unless noted. Standards from Table 3 of Pennsylvania Code, Title 25, Chapter 93.
7. PA SWQS only applicable at planned or existing Public Water Supply intakes. Data being presented without highlights.
8. The first value is a monthly average. The second value is a maximum.

"mg/L" denotes milligrams per liter
"umhos/cm" denotes micromhos/centimeter
"cfu" denotes colony forming unit
"nse" denotes no standard established

Qualifiers:
< - Analyte was not detected above the Laboratory Method Detection Limit.
J - Result is less than the RL but greater than the MDL and the concentration is an approximate value
B - Analyte was found in the blank.
FL - MS and/or MSD recovery above control limits.

TABLE 1 (PAGE 5 of 5)
SUMMARY OF LABORATORY ANALYTICAL RESULTS - QUARTERLY MONITORING
LITTLE SEWICKLEY CREEK WATERSHED
SEWICKLEY BOROUGH, ALLEGHENY COUNTY, PENNSYLVANIA
LITTLE SEWICKLEY CREEK WATERSHED ASSOCIATION
CEC PROJECT NUMBER 193-229

SAMPLE LOCATION:	Devil's Hallow Conservation Area																Surface Water Screening Criteria			
																	Pennsylvania SWQS [1,2]			
SAMPLE ID:	36659-1				36659-2				36659A				36666				Fish & Aquatic Life ($SWQS_{AQ}$) [3]		Human Health Criteria ($SWQS_{HH}$) [4]	Specific Water Quality Criteria
DATE COLLECTED:	9/10/2020	12/8/2020	3/4/2021	6/16/2021	9/10/2020	12/8/2020	3/4/2021	6/16/2021	9/10/2020	12/8/2020	3/4/2021	6/16/2021	9/11/2020	12/8/2020	3/3/2021	6/16/2021	Continuous Concentration (Chronic)	Maximum Concentration (Acute)		
Total Metals (mg/L)																				
Aluminum	0.12 J	< 0.053	0.088 J	0.1 J	0.065 J	< 0.053	0.073 J	< 0.053	0.099 J	0.056 J	0.18 J	< 0.053	0.065 J	< 0.053	0.11 J	0.069 J	nse	0.75	nse	nse
Calcium	**53**	**39**	**34**	**40**	**47**	**49**	**30**	**44**	**75**	**74**	**39**	**62**	**58**	**37**	**39**	**42**	nse	nse	nse	nse
Iron	**0.14**	< 0.031	< 0.089	**0.12**	0.08 J	0.042 J	< 0.089	< 0.089	**0.14**	0.067 J	**0.15**	< 0.089	**0.13**	0.048 J	**0.32**	**0.11**	nse	nse	nse	1.5
Magnesium	**14**	**11**	**10**	**12 B**	**12**	**12**	**8**	**11 B**	**15**	**17**	**8.3**	**14 B**	**16**	**11**	**11**	**12 B**	nse	nse	nse	nse
Manganese	0.0045 J	< 0.0021	< 0.0027	0.0033 J	0.0023 J	< 0.0021	< 0.0027	< 0.0027	**0.027**	0.0054 J	0.0035 J	0.0044 J	**0.041**	**0.017**	**0.14**	**0.034**	nse	nse	nse	1
Potassium	4.9 J	3 J	3 J	4.1 J	4 J	3 J	2.5 J	3.6 J	3.7 J	3.3 J	2.5 J	3.6 J	4.2 J	3.3 J	3.5 J	3.6 J	nse	nse	nse	nse
Sodium	**27**	**31**	**50**	**30**	**25**	**39**	**66**	**34**	**32**	**64**	**120**	**49**	**20**	**24**	**51**	**45**	nse	nse	nse	nse
Anions (mg/L)																				
Chloride	**73.8**	**65**	**86.1**	**71.9**	**54**	**91.1**	**99.6**	**71.2**	**71.1**	**144**	**158**	**88.9**	**46.8**	**57**	**102**	**87.9**	nse	nse	nse	250[7]
Nitrate as N	**1.99**	**2.21**	**2.29**	**1.8**	**1.43**	**1.37**	**1.8**	**1.24**	**0.244**	**0.427**	**0.955**	**0.393**	**0.407**	**0.454**	**1.24**	**0.442**	nse	nse	nse	10[7]
Sulfate	**51.2**	**48.1**	**39.2**	**42.6**	**43.5**	**45.8**	**37.5**	**40**	**50.1**	**49.1**	**40.4**	**55**	**22.8**	**30**	**31.7**	**25.9**	nse	nse	nse	250[7]
General Chemistry (mg/L unless otherwise noted)																				
Chemical Oxygen Demand	< 4.1	7.2 J	< 9.1	7.8 J	< 4.1	5.5 J	< 9.1	**10**	< 4.1	4.8 J	< 9.1	9.6 J	**13**	6.9 J	< 9.1	9.6 J	nse	nse	nse	nse
Methylene Blue Active Substances	**0.064**	**0.065**	< 0.049	**0.067**	**0.085**	< 0.049	**0.082**	**0.067**	< 0.049	< 0.049	**0.059**	< 0.049	< 0.049	< 0.049	**0.12**	< 0.049	nse	nse	nse	nse
Phosphate as PO_4	0.13 J	< 0.11	0.22 J	0.2 J	0.3 J	0.13 J	0.27 J	**0.37**	**0.46**	0.26 J	**0.36**	**0.45**	< 0.11	< 0.11	< 0.11	0.13 J	nse	nse	nse	nse
Specific Conductance (umhos/cm)	**560**	**470**	**520**	**470**	**490**	**580**	**570**	**490**	**660**	**840**	**870**	**670**	**530**	**440**	**580**	**530**	nse	nse	nse	nse
Total Dissolved Solids	**370**	**280**	**290**	**310**	**320**	**350**	**330**	**280**	**350**	**490**	**450**	**370**	**290**	**250**	**320**	**310**	nse	nse	nse	500/750[7,8]
Total Petroleum Hydrocarbons	< 1.5	< 0.59	< 0.58	< 1.4	< 1.5	< 0.57	< 0.56	< 1.5	< 1.5	< 0.59	< 0.55	< 1.5	< 1.5	< 0.57	4.2 J	< 1.5	nse	nse	nse	nse
Bacteriological (cfu/100 mL)																				
Fecal Coliform	**44**	**15**	**7**	**87**	**78**	**2**	**22**	**98**	**22**	**2**	**26**	**38**	**62**	**5**	**3**	**18**	nse	nse	nse	200
Field Data																				
Specific Conductance (umhos/cm)	**528.3**	**460**	**501.5**	**460.5**	**461.8**	**553**	**559.3**	**480.5**	**625.5**	**811**	**841**	**651.6**	**500.3**	**445**	**562**	**514.3**	nse	nse	nse	nse
pH (S.U.)	**7.1**	**7.63**	**7.33**	**7.86**	**7.14**	**7.46**	**7.67**	**7.52**	**7.14**	**7.42**	**7.5**	**7.64**	**8.12**	**8.22**	**8.08**	**7.74**	nse	nse	nse	6.0-9.0
Temperature (°C)	**18.6**	**3.39**	**4.3**	**14.9**	**18.8**	**3.48**	**4.1**	**15.1**	**18.6**	**4.97**	**4.5**	**14.9**	**18.7**	**4.45**	**4.72**	**17.7**	nse	nse	nse	nse

Notes:
1. Pennsylvania Surface Water Quality Standards (SWQS) from Pennsylvania Code, Title 25, Chapter 93.
2. Water Quality Criteria for toxic substances from Pennsylvania Code, Title 25, Chapter 93.
3. Based on ingestion from drinking water, fish consumption and other modes of exposure.
4. Specific water quality criteria applicable to all waters of the state unless noted. Standards from Table 3 of Pennsylvania Code, Title 25, Chapter 93.
7. PA SWQS only applicable at planned or existing Public Water Supply intakes. Data being presented without highlights.
8. The first value is a monthly average. The second value is a maximum.

"mg/L" denotes milligrams per liter
"umhos/cm" denotes micromhos/centimeter
"cfu" denotes colony forming unit
"nse" denotes no standard established

Qualifiers:
< - Analyte was not detected above the Laboratory Method Detection Limit.
J - Result is less than the RL but greater than the MDL and the concentration is an approximate value
B - Analyte was found in the blank.
FL - MS and/or MSD recovery above control limits.