pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Southeast Regional Office**
**CLEAN WATER PROGRAM**

# NPDES PERMIT FACT SHEET
# INDIVIDUAL SEWAGE

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0058271** |
| Facility Type | **Municipal** | APS ID | **1060256** |
| Major / Minor | **Minor** | Authorization ID | **1390846** |

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Hilltown Township Water & Sewer Authority** | Facility Name | **Highland Park STP** |
| Applicant Address | PO Box 365 | Facility Address | 326 Highland Park Road |
| | Sellersville, PA 18960-0365 | | Sellersville, PA 18960 |
| Applicant Contact | James Groff | Facility Contact | James Groff |
| Applicant Phone | (215) 453-6065 | Facility Phone | (215) 453-6065 |
| Client ID | 34885 | Site ID | 541484 |
| Ch 94 Load Status | Not Overloaded | Municipality | Hilltown Township |
| Connection Status | No Limitations | County | Bucks |
| Date Application Received | April 4, 2022 | EPA Waived? | Yes |
| Date Application Accepted | | If No, Reason | |

Purpose of Application: Permit Renewal

## Summary of Review

The applicant requests renewal of an NPDES permit to discharge 0.15 mgd of treated sewage from Highland Park STP.

The plant consists of an influent lakeside fine screen, bypass channel and manual bar screen, odor control unit, two separate SBRs, post equalization tank, fabric disc filter, UV disinfection system, effluent wet well, and aerobic digester. Influent and effluent flow meters are present.

The wastewater treatment chemicals reported in the application are Aluminum Sulfate (Phosphorus control) and Sodium Hydroxide (Odor Control).

There are no changes in the treatment units, quality of influent, stream designation. The discharge is in compliance with the effluent limitations. According to the Operations Section the facility is well operated.

There are no industrial dischargers. The proposed limits are similar to the existing limits. Monitoring requirement for E-Coli is included in the draft permit.

Influent monitoring for BOD5, CBOD5 and TSS are incorporated in the permit based on Chapter 94 requirement and to check compliance with the 85% removal requirement for secondary treatment. This requirement is consistent with the requirements of other similar dischargers in the area.

Sludge use and disposal description and location: Sludge is hauled away to Pennridge Wastewater Treatment Plant.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | *Sara Abraham*<br>Sara Reji Abraham, E.I.T. / Project Manager | May 31, 2022 |
| X | | *Pravin Patel*<br>Pravin C. Patel, P.E. / Environmental Engineer Manager | 05/31/2022 |

**Summary of Review**

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Act 14 Notifications:

Hilltown Township - March 31, 2022
Bucks County - March 31, 2022

Permit Conditions:

A. No Stormwater
B. Acquire Necessary Property Rights
C. Proper Sludge Disposal
D. Chlorine Optimization
E. Small Stream Discharge
F. Operator Notification
G. TMDL/WLA Analysis
H. Fecal Coliform Reporting
I. Operation and Maintenance Plan
J. Solids Management

| Discharge, Receiving Waters and Water Supply Information | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | .15 |
| Latitude | 40º 20' 38.46" | Longitude | -75º 17' 58.69" |
| Quad Name | Telford | Quad Code | |
| Wastewater Description: | Treated Sewage Effluent | | |
| Receiving Waters | Unnamed Tributary to Mill Creek (TSF) | Stream Code | 01236 |
| NHD Com ID | 25999220 | RMI | 0.2 |
| *Drainage Area | 0.13 $mi^2$ at Outfall 001 / 4.12 $mi^2$ at confluence of trib with Mill Creek | Yield ($cfs/mi^2$) | 0.008 |
| *$Q_{7-10}$ Flow (cfs) | 0 cfs at Outfall 001 (intermittent) and 0.04 cfs at confluence of trib at Mill Creek | $Q_{7-10}$ Basis | Usgs gage 01459500 (previous fact sheet) |
| Watershed No. | 3-E | Chapter 93 Class. | TSF |
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | flow regime modification, siltation, siltation | | |
| Source(s) of Impairment | site clearance (land development or redevelopment), urban runoff/storm sewers | | |
| TMDL Status | None | Name | |

*from previous fact sheet

**Treatment Facility Summary**

**Treatment Facility Name:** Highland Park STP

| WQM Permit No. | Issuance Date |
|---|---|
| 0901404 | 10/22/2001 |
| | |

| Waste Type | Degree of Treatment | Process Type | Disinfection | Avg Annual Flow (MGD) |
|---|---|---|---|---|
| Sewage | Tertiary | Sequencing Batch Reactor W/Sol Removal | Ultraviolet | 0.15 |

| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Biosolids Treatment | Biosolids Use/Disposal |
|---|---|---|---|---|
| 0.15 | 425 | Not Overloaded | Aerobic Digestion | Other WWTP |

## Compliance History

**DMR Data for Outfall 001 (from April 1, 2021 to March 31, 2022)**

| Parameter | MAR-22 | FEB-22 | JAN-22 | DEC-21 | NOV-21 | OCT-21 | SEP-21 | AUG-21 | JUL-21 | JUN-21 | MAY-21 | APR-21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Average Monthly | 0.095 | 0.111 | 0.112 | 0.102 | 0.1 | 0.102 | 0.103 | 0.099 | 0.099 | 0.105 | 0.105 | 0.098 |
| Flow (MGD) Daily Maximum | 0.121 | 0.184 | 0.157 | 0.120 | 0.106 | 0.155 | 0.224 | 0.163 | 0.127 | 0.151 | 0.161 | 0.145 |
| pH (S.U.) Instantaneous Minimum | 7.3 | 7.1 | 7.1 | 7.3 | 7.3 | 7.3 | 7.0 | 7.4 | 7.4 | 7.0 | 7.4 | 7.2 |
| pH (S.U.) Instantaneous Maximum | 7.9 | 7.9 | 7.9 | 8.1 | 8.2 | 8.0 | 8.0 | 7.8 | 8.0 | 7.9 | 8.0 | 7.9 |
| DO (mg/L) Instantaneous Minimum | 8.4 | 9.6 | 9.3 | 9.3 | 9.0 | 8.1 | 7.9 | 7.4 | 7.3 | 7.1 | 8.0 | 7.3 |
| CBOD5 (lbs/day) Average Monthly | < 1.6 | < 1.8 | < 1.8 | < 1.7 | < 1.7 | 1.7 | < 1.9 | < 1.6 | < 1.7 | < 1.8 | < 1.6 | < 1.5 |
| CBOD5 (lbs/day) Weekly Average | 1.7 | 2.0 | < 2.0 | < 1.9 | 2.0 | 2.2 | 2.6 | < 1.9 | < 2.0 | < 2.3 | < 1.9 | < 1.5 |
| CBOD5 (mg/L) Average Monthly | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | 2.3 | < 2.2 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| CBOD5 (mg/L) Weekly Average | 2.2 | 2.0 | < 2.0 | < 2.0 | 2.0 | 3.0 | 3.0 | < 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| BOD5 (lbs/day) Raw Sewage Influent <br/> Average Monthly | 193 | 234 | 207 | 428 | 212 | 196 | 261 | 164 | 272 | 226 | 250 | 256 |
| BOD5 (mg/L) Raw Sewage Influent <br/> Average Monthly | 253 | 257 | 227 | 317 | 251 | 132 | 306 | 217 | 314 | 245 | 315 | 357 |
| TSS (lbs/day) Average Monthly | < 1.5 | < 4.5 | < 0.9 | < 2.2 | < 2.8 | < 1.6 | < 4.3 | < 2.4 | < 1.8 | < 1.7 | < 1.2 | < 0.8 |
| TSS (lbs/day) Raw Sewage Influent <br/> Average Monthly | 134 | 145 | 178 | 262 | 244 | 259 | 204 | 125 | 331 | 185 | 198 | 183 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSS (lbs/day) Weekly Average | 2.4 | 8.6 | < 1.0 | 3.2 | 5.5 | 3.2 | 7.7 | 7.5 | 4.8 | 3.5 | 2.4 | < 0.7 |
| TSS (mg/L) Average Monthly | < 2.0 | < 5.0 | < 1.0 | < 2.6 | < 3.3 | < 2.0 | < 5.0 | < 2.8 | < 2.2 | < 1.8 | < 1.5 | < 1.0 |
| TSS (mg/L) Raw Sewage Influent <br/> Average Monthly | 178 | 158 | 192 | 302 | 264 | 177 | 238 | 167 | 384 | 204 | 254 | 256 |
| TSS (mg/L) Weekly Average | 3.0 | 10.0 | 1.0 | 4.0 | 7.0 | 4.0 | 9.0 | 8.0 | 6.0 | 3.0 | 3.0 | 1.0 |
| Total Dissolved Solids (mg/L) Daily Maximum | 506 | | | 566 | | | 606 | | | 592 | | |
| Fecal Coliform (No./100 ml) Geometric Mean | < 1 | < 1 | < 1 | < 1 | < 2 | < 2 | < 2 | < 1 | < 1 | < 1 | < 2 | < 1 |
| Fecal Coliform (No./100 ml) Instantaneous Maximum | 4 | 5 | < 1 | 6 | 12 | 9 | 23 | < 1 | < 1 | < 1 | 17 | 1 |
| UV Intensity (µw/cm²) Minimum | 7.8 | 8.9 | 8.1 | 7.7 | 9.3 | 10.1 | 10.7 | 7 | 7.4 | 3.5 | 6.8 | 3 |
| Nitrate-Nitrite (lbs/day) Average Monthly | 1.7 | < 1.4 | 2.5 | 1.6 | 3.9 | 2.1 | 1.2 | 0.9 | 0.8 | 1.3 | 1.2 | 1.3 |
| Nitrate-Nitrite (mg/L) Average Monthly | 2.2 | < 1.6 | 2.7 | 2.0 | 4.7 | 2.7 | 1.4 | 1.2 | 1.0 | 1.4 | 1.5 | 1.8 |
| Total Nitrogen (mg/L) Average Monthly | 2 | 2 | 3 | 2.54 | 4 | 3 | 1.96 | 1.0 | 2 | 2.2 | 2.14 | 2 |
| Ammonia (lbs/day) Average Monthly | 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.3 | < 0.1 | < 0.1 | < 0.1 |
| Ammonia (mg/L) Average Monthly | 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.2 | < 0.1 | < 0.1 | < 0.1 | < 0.3 | < 0.1 | < 0.1 | < 0.1 |
| Total Phosphorus (lbs/day) Average Monthly | 0.40 | 0.50 | 1.12 | 0.80 | 1.27 | 0.40 | 1.25 | 1.10 | 1.17 | 1.20 | 0.70 | 0.20 |
| Total Phosphorus (mg/L) Average Monthly | 0.5 | 0.6 | 1.2 | 1.0 | 1.5 | 0.6 | 1.5 | 1.4 | 1.4 | 1.3 | 0.9 | 0.3 |

## Compliance History

## Development of Effluent Limitations

**Outfall No.** 001 **Design Flow (MGD)** .15
**Latitude** 40º 20' 45.00" **Longitude** -75º 18' 0.00"
**Wastewater Description:** Treated Sewage Effluent

### Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

| Pollutant | Limit (mg/l) | SBC | Federal Regulation | State Regulation |
|---|---|---|---|---|
| $CBOD_5$ | 25 | Average Monthly | 133.102(a)(4)(i) | 92a.47(a)(1) |
| | 40 | Average Weekly | 133.102(a)(4)(ii) | 92a.47(a)(2) |
| Total Suspended Solids | 30 | Average Monthly | 133.102(b)(1) | 92a.47(a)(1) |
| | 45 | Average Weekly | 133.102(b)(2) | 92a.47(a)(2) |
| pH | 6.0 – 9.0 S.U. | Min – Max | 133.102(c) | 95.2(1) |
| Fecal Coliform (5/1 – 9/30) | 200 / 100 ml | Geo Mean | - | 92a.47(a)(4) |
| Fecal Coliform (5/1 – 9/30) | 1,000 / 100 ml | IMAX | - | 92a.47(a)(4) |
| Fecal Coliform (10/1 – 4/30) | 2,000 / 100 ml | Geo Mean | - | 92a.47(a)(5) |
| Fecal Coliform (10/1 – 4/30) | 10,000 / 100 ml | IMAX | - | 92a.47(a)(5) |
| *Total Residual Chlorine | 0.5 | Average Monthly | - | 92a.48(b)(2) |

*not needed since UV disinfection is used

### Water Quality-Based Limitations

The discharge of 0.15 mgd is to an unnamed tributary (01236) to an unnamed tributary (01235) to Mill Creek (01233). According to topographic maps both unnamed tributaries are intermittent and exit in Mill Creek approximately 2300 feet downstream of the discharge. Policy and Procedures for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, (391-2000-014), Section V.F. applies to this discharge.

The following limitations were determined based on BAT, WQBELs and BPJ:

| Parameter | Limit (mg/l) | SBC | Basis |
|---|---|---|---|
| CBOD5 | 10 | Average Monthly | Document # 391-2000-014 |
| Total Suspended Solids | 10 | Average Monthly | Document # 391-2000-014 |
| NO2-N and NO3-N | 10 | Average Monthly | BAT |
| Ammonia as N | 2.0 | Average Monthly | BAT |
| Dissolved Oxygen | 6.0 | Inst.Min. | Document # 391-2000-014 |
| Phosphorus as P | 1.5 | Average Monthly | Existing and BPJ – more stringent than Chapter 96.5 |
| pH | 6.0 to 9.0 std.units at all times | | Chapter 93.7 |
| Fecal Coliform | 200/1000 per 100 ml | Geo. Mean/Imax. | Chapter 92.47 (a) and DRBC |
| Total Nitrogen | Report | Average Monthly | SOP |
| Ultraviolet light intensity | Report | Daily Minimum | SOP |
| E-Coli* | Report | Imax | SOP |

*E-Coli monitoring is included in the draft permit according to the DEP SOP guidance (Chapter 92.a.61). This is a new requirement and is consistent with the requirements of other similar discharges in the area.

Review shows no other parameters of concern.

**Anti-Backsliding**

N/A

## Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

**Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Weekly Average | Daily Minimum | Average Monthly | Weekly Average | Instant. Maximum | | |
| Flow (MGD) | Report | Report Daily Max | XXX | XXX | XXX | XXX | Continuous | Recorded |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/day | Grab |
| DO | XXX | XXX | 6.0 Inst Min | XXX | XXX | XXX | 1/day | Grab |
| CBOD5 | 12.5 | 18.8 | XXX | 10.0 | 15.0 | 20 | 1/week | 24-Hr Composite |
| CBOD5 Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |
| BOD5 Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |
| TSS | 12.5 | 18.8 | XXX | 10.0 | 15.0 | 20 | 1/week | 24-Hr Composite |
| TSS Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |
| Total Dissolved Solids | XXX | Report Daily Max | XXX | Report Daily Max | XXX | XXX | 1/quarter | 24-Hr Composite |
| Fecal Coliform (No./100 ml) Oct 1 - Apr 30 | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 1/week | Grab |
| Fecal Coliform (No./100 ml) May 1 - Sep 30 | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 1/week | Grab |
| E. Coli (No./100 ml) | XXX | XXX | XXX | XXX | XXX | Report | 1/quarter | Grab |
| UV Intensity (µw/cm²) | XXX | XXX | Report | XXX | XXX | XXX | 1/day | Metered |

**Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)**

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Weekly Average | Daily Minimum | Average Monthly | Weekly Average | Instant. Maximum | | |
| Nitrate-Nitrite | 12.5 | XXX | XXX | 10.0 | XXX | 20 | 1/week | 24-Hr Composite |
| Total Nitrogen | Report | XXX | XXX | Report | XXX | XXX | 1/week | 24-Hr Composite |
| Ammonia | 2.5 | XXX | XXX | 2.0 | XXX | 4 | 1/week | 24-Hr Composite |
| Total Phosphorus | 1.88 | XXX | XXX | 1.5 | XXX | 3 | 1/week | 24-Hr Composite |