pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Northwest Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0037991** |
| Facility Type | **Non-Municipal** | APS ID | **1013072** |
| Major / Minor | **Minor** | Authorization ID | **1308489** |

# NPDES PERMIT FACT SHEET
# INDIVIDUAL SEWAGE

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Mainlines Manholes & Wastewater Treatment, Inc.** | Facility Name | **Imperial Point North MHP** |
| Applicant Address | 9208 Tannery Road | Facility Address | US Route 20 |
| | Girard, PA 16417 | | Girard, PA 16417 |
| Applicant Contact | Kyle Luciano, President | Facility Contact | Tammy Pazmino, STP Operator |
| Applicant Phone | (814) 434-4106 | Facility Phone | (814) 774-2184 |
| Client ID | 275993 | Site ID | 464249 |
| Ch 94 Load Status | Not Overloaded | Municipality | Girard Township |
| Connection Status | No Exceptions Allowed | County | Erie County |
| Date Application Received | March 9, 2020 | EPA Waived? | Yes |
| Date Application Accepted | March 11, 2020 | If No, Reason | - |
| Purpose of Application | Renewal of an existing NPDES Permit for an existing discharge of treated sanitary wastewater from a MHP and a shopping plaza. | | |

## Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to continue to meet the limits of this permit, which will continue to protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Stormwater into sewers
B. Right of way
C. Solids handling
D. Public Sewerage Availability
E. Effluent Chlorine Optimization and Minimization

SPECIAL CONDITIONS:

II. Solids Management

There are no open violations in efacts for Client ID 275993 as of 1/14/2021.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | Stephen A. McCauley<br>Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist | 1/14/2021 |
| X | | Justin C. Dickey<br>Justin C. Dickey, P.E. / Environmental Engineer Manager | 1/25/2021 |

**Discharge, Receiving Waters and Water Supply Information**

| | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 0.08 |
| Latitude | 42º 00' 33.00" | Longitude | -80º 18' 0.00" |
| Quad Name | - | Quad Code | - |
| Wastewater Description: | Sewage Effluent | | |
| Receiving Waters | Unnamed Tributary to Lake Erie (HQ-CWF, MF) | Stream Code | N/A |
| NHD Com ID | 134205214 | RMI | 3.25 |
| Drainage Area | 2.28 | Yield (cfs/mi$^2$) | 0.0079 |
| $Q_{7-10}$ Flow (cfs) | 0.018 | $Q_{7-10}$ Basis | calculated |
| Elevation (ft) | 776 | Slope (ft/ft) | 0.01171 |
| Watershed No. | 15-A | Chapter 93 Class. | HQ-CWF, MF * |
| Existing Use | - | Existing Use Qualifier | - |
| Exceptions to Use | - | Exceptions to Criteria | - |
| Assessment Status | Impaired | | |
| Cause(s) of Impairment | Siltation | | |
| Source(s) of Impairment | Agriculture | | |
| TMDL Status | pending | Name | - |

| Background/Ambient Data | | Data Source |
|---|---|---|
| pH (SU) | - | - |
| Temperature (°F) | - | - |
| Hardness (mg/L) | - | - |
| Other: | - | - |

| | | | |
|---|---|---|---|
| Nearest Downstream Public Water Supply Intake | Erie Water Works | | |
| PWS Waters | Lake Erie | Flow at Intake (cfs) | - |
| PWS RMI | - | Distance from Outfall (mi) | 27.0 |

* - The Unnamed tributary to Lake Erie was determined to not be designated “high quality” in a Use Determination, dated August 31, 2009. During the determination, this stream segment was found to no longer be part of Godfrey Run (62485), as it was diverted to tributary 62489 at the CSX Transportation, Chicago Line railroad tracks.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.008 MGD

of treated sewage from an existing non-municipal STP serving a MHP and a shopping plaza in Girard Township, Erie County.

Permitted treatment consists of:

| | |
|---|---|
| (WQM Permit no. 2571411) | A comminutor, an 80,000 gallon aeration tank, a 13,545 gallon settling tank, tablet chlorine disinfection with a 3,140 gallon contact tank, a tertiary tray settling section and a sand filtration section |
| (WQM Permit No. 2587414) | A 4,000 gallon sludge holding tank |
| (WQM Permit No. 2503424) | A sludge dewatering press |
| (WQM Permit No. 2592409) | A 33,215 gallon flow equalization basin with aeration and mixing |

**1. Streamflow:**

The yieldrate for the receiving stream at Outfall 001 was calculated from the nearest gage station details:

| | | | | |
|---|---|---|---|---|
| Raccoon Creek near West Springfield, PA: | $Q_{7-10}$: | 0.02 | cfsm | (from StreamStats) |
| (USGS Gage 04213040) | Drainage Area: | 2.53 | cfsm | (from StreamStats) |
| | Yieldrate: | 0.0079 | cfsm | calculated |
| Unnamed Tributary to Lake Erie at Outfall 001: | Yieldrate: | 0.0079 | cfsm | (calculated above) |
| | Drainage Area: | 2.28 | sq. mi. | (from StreamStats) |
| | $Q_{7-10}$: | 0.018 | cfs | calculated |

**2. Wasteflow: Outfall 001**

Maximum discharge: 0.08 MGD = 0.12 cfs

Runoff flow period: 24 hours Basis: Runoff flow with flow equalization

There is less than 3 parts stream flow (Q7-10) to 1 part effluent (design flow) at the discharge point. However, since this is an existing discharge, the more stringent treatment requirements cannot be achieved, and the receiving stream is not impaired by the discharge, the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, will not be implemented in this NPDES Permit.

**3. Parameters:**

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, Phosphorus, $NH_3$-N, $CBOD_5$, Dissolved Oxygen, and Total Residual Chlorine. $NH_3$-N, $CBOD_5$, and Dissolved Oxygen were evaluated using WQM 7.0 at the discharge point.

$NO_2$-$NO_3$, Fluoride, Phenolics, Sulfates, and Chlorides can be evaluated using PentoxSD at the nearest downstream potable water supply (PWS). Since there is significant dilution available, no modeling was performed for this facility.

a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits. The measurement frequency was increased from 4/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

b. Total Suspended Solids

Limits are 30 mg/l as a monthly average and 60 as a daily maximum.

Basis: Application of Chapter 92a47 technology-based limits

c. Fecal Coliform

05/01 - 09/30: 200/100ml (monthly average geometric mean)
1,000/100ml (instantaneous maximum)

10/01 - 04/30: 2,000/100ml (monthly average geometric mean)
10,000/100ml (instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits.

d. Phosphorus

☐ Limit not necessary

Basis: N/A

☒ Limit necessary due to:

☐ Discharge to a lake, pond, or impoundment
☒ Discharge to a stream
☐ Discharge to a dry stream

Basis: The previous limits for Total Phosphorus will be retained. The previous limits were based on the 1969 International Joint Committee (IJC) agreement for Lake Erie.

e. Total Nitrogen

☒ Limit not necessary

Basis: The previous monitoring for Total Nitrogen will be retained in accordance with the SOP, based on Chapter 92a.61.

☐ Limit necessary due to:

☐ Discharge to a lake, pond, or impoundment
☐ Discharge to a stream
☐ Discharge to a dry stream

Basis: N/A

f. $NO_2$-$NO_3$, Fluoride, Phenolics, Sulfates, and Chlorides

Nearest Downstream potable water supply (PWS): Erie Water Works

Distance downstream from the point of discharge: 27.0 miles (approximate)

☒ No limits necessary
☐ Limits needed

Basis: Significant dilution available.

g. Ammonia-Nitrogen ($NH_3$-N)

Median discharge pH to be used: 6.2 Standard Units (S.U.)

Basis: Average pH value from DMR summary

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default value used in the absence of data

Stream Temperature: 20˚C (default value used for CWF modeling)

Background $NH_3$-N concentration: 0.1 mg/l

Basis: Default value used in the absence of data

calculated summer $NH_3$-N limits: 2.5 mg/l (monthly average)
5.0 mg/l (instantaneous maximum)

calculated winter $NH_3$-N limits: 7.5 mg/l (monthly average)
15.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer limits above (see Attachment 1), which are less restrictive than in the previous NPDES Permit. The winter limits are calculated as three times the summer limits. However, since the previous NH3-N limits of 2.0 mg/l monthly average (summer) and 6.0 mg/l monthly average (winter) are attainable, they will be retained with this renewal.

h. $CBOD_5$

Median discharge pH to be used: 6.2 Standard Units (S.U.)

Basis: Average pH value from DMR summary

Discharge temperature: 25°C (default value used in the absence of data)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default value used in the absence of data

Stream Temperature: 20˚C (default value used for CWF modeling)

Background $CBOD_5$ concentration: 2.0 mg/l

Basis: Default value used in the absence of data

calculated summer $CBOD_5$ limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

calculated winter $CBOD_5$ limits: 25.0 mg/l (monthly average)
50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated summer limits above (see Attachment 1), which are the same as the previous NPDES Permit. The winter limits are calculated as three times the summer limits, but since the technology-based limits are more protective, they will be used. Since the summer limits and the winter limits are the same, the limits for $CBOD_5$ will be set year-round as in the previous NPDES Permit.

i. Dissolved Oxygen (DO)

☒ 4.0 mg/l - minimum desired in effluent to protect all aquatic life.
☐ 5.0 mg/l - desired in effluent for CWF, WWF, or TSF.
☐ 6.0 mg/l - minimum required due to discharge going to a drainage swale or ditch.
☐ 8.0 mg/l - required due to discharge going to a naturally reproducing salmonid stream

Discussion: The Dissolved Oxygen minimum of 4.0 mg/l will be retained with this renewal. The technology-based minimum of 4.0 mg/l is recommended by the WQ Model (see Attachment 1) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61. The measurement frequency was increased from 4/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

j. Total Residual Chlorine (TRC)

☐ No limit necessary
☒ TRC limits: 0.030 mg/l (monthly average)
0.098 mg/l (instantaneous maximum)

Basis: The TRC limits above are water quality-based using the TRC_Calc Spreadsheet (see Attachment 2). The calculated limits are the same as the previous permit and will be retained with this renewal. The measurement frequency was increased from 4/week to 1/day as recommended in the SOP, based on Table 6-3 in the "Technical Guidance for the Development and Specification of Effluent Limitations" (362-0400-001).

k. Anti-Backsliding

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

**4. Attachment List:**

Attachment 1 - WQ Modeling Printouts

Attachment 2 - TRC_Calc Spreadsheet

Adobe Acrobat Document

If viewing this electronically, please refer to the following PDF to view the above Attachments:

## Compliance History

**DMR Data for Outfall 001 (from December 1, 2019 to November 30, 2020)**

| Parameter | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 | JUN-20 | MAY-20 | APR-20 | MAR-20 | FEB-20 | JAN-20 | DEC-19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Average Monthly | 0.058 | 0.057 | 0.046 | 0.046 | 0.045 | 0.045 | 0.052 | 0.057 | 0.062 | 0.065 | 0.069 | 0.067 |
| Flow (MGD) Daily Maximum | 0.076 | 0.093 | 0.063 | 0.056 | 0.094 | 0.072 | 0.076 | 0.083 | 0.087 | 0.089 | 0.142 | 0.15 |
| pH (S.U.) Minimum | 6.1 | 6.0 | 6.0 | 5.9 | 6.0 | 5.8 | 6.0 | 6.0 | 6.3 | 4.9 | 6.2 | 6.0 |
| pH (S.U.) Maximum | 6.9 | 6.7 | 6.8 | 6.8 | 6.5 | 6.5 | 6.5 | 6.5 | 7.2 | 7.0 | 6.9 | 7.0 |
| DO (mg/L) Minimum | 8.6 | 7.4 | 4.0 | 4.0 | 4.0 | 4.6 | 4.3 | 5.7 | 5.7 | 4.0 | 4.4 | 4.4 |
| TRC (mg/L) Average Monthly | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.040 | 0.030 | 0.020 | 0.020 |
| TRC (mg/L) Instantaneous Maximum | 0.040 | 0.040 | 0.030 | 0.040 | 0.030 | 0.050 | 0.050 | 0.060 | 0.080 | 0.060 | 0.100 | 0.060 |
| CBOD5 (mg/L) Average Monthly | < 3 | < 4 | < 5 | < 4 | < 4 | < 4 | < 4 | < 4 | < 4 | < 4 | < 4 | < 4 |
| TSS (mg/L) Average Monthly | < 5 | < 6 | < 6 | < 5 | < 5 | < 5 | < 5 | < 5 | < 5 | < 8 | < 5 | < 5 |
| Fecal Coliform (CFU/100 ml) Geometric Mean | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 2 | < 2 | 101 | 385 | 20 | 27 |
| Fecal Coliform (CFU/100 ml) Instantaneous Maximum | < 1 | < 1 | 1 | < 1 | 1 | < 1 | 4 | 3 | 200 | 870 | 27 | 120 |
| Total Nitrogen (mg/L) Average Monthly | 27.73 | 32.13 | 16.76 | 26.63 | 12.57 | 27.93 | 30.97 | 21.68 | 20.53 | 21.6 | 15.08 | 23.68 |
| Ammonia (mg/L) Average Monthly | < 0.3 | < 0.3 | < 0.3 | < 0.3 | 1.6 | < 0.3 | < 0.3 | < 0.3 | 0.4 | < 0.3 | < 0.3 | < 0.3 |
| Total Phosphorus (mg/L) Average Monthly | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.3 | 0.1 | 0.3 | 0.2 | 0.1 |

## 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 | Average Weekly | Minimum | Average Monthly | Maximum | Instant. Maximum | | |
| Flow (MGD) | Report | Report Daily Max | XXX | XXX | XXX | XXX | 1/week | Measured |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/day | Grab |
| DO | XXX | XXX | 4.0 Inst Min | XXX | XXX | XXX | 1/day | Grab |
| TRC | XXX | XXX | XXX | 0.030 | XXX | 0.098 | 1/day | Grab |
| CBOD5 | XXX | XXX | XXX | 25.0 | XXX | 50 | 2/month | 8-Hr Composite |
| TSS | XXX | XXX | XXX | 30.0 | XXX | 60 | 2/month | 8-Hr Composite |
| Fecal Coliform (No./100 ml) Oct 1 - Apr 30 | XXX | XXX | XXX | 2000 Geo Mean | XXX | 10000 | 2/month | Grab |
| Fecal Coliform (No./100 ml) May 1 - Sep 30 | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 2/month | Grab |
| Total Nitrogen | XXX | XXX | XXX | Report | XXX | XXX | 2/month | 8-Hr Composite |
| Ammonia-Nitrogen Nov 1 - Apr 30 | XXX | XXX | XXX | 6.0 | XXX | 12 | 2/month | 8-Hr Composite |
| Ammonia-Nitrogen May 1 - Oct 31 | XXX | XXX | XXX | 2.0 | XXX | 4 | 2/month | 8-Hr Composite |
| Total Phosphorus | XXX | XXX | XXX | 1.0 | XXX | 2 | 2/month | 8-Hr Composite |

Compliance Sampling Location: at Outfall 001, after disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The limits for Total Residual Chlorine (TRC) are water quality-based on Chapter 92a.47. The limits for $CBOD_5$, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a.47. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. Monitoring for Total Nitrogen is based on Chapter 92a.61. The limits for Total Phosphorus are based on the 1969 International Joint Committee (IJC) agreement for Lake Erie.