

HRG

Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

AN EMPLOYEE-OWNED COMPANY

CHAPTER 94 WASTELOAD MANAGEMENT REPORT FOR CALENDAR YEAR 2020

Submitted to:
PENNSYLVANIA DEP
SOUTHCENRAL REGIONAL OFFICE
ATTN: Clean Water Program
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110

HRG Project No. 000598.0435

Submitted by:

HERBERT, ROWLAND & GRUBIC, INC.
369 East Park Drive
Harrisburg, PA 17111
717.564.1121

On Behalf of:

ELIZABETHTOWN BOROUGH
Lancaster County, Pennsylvania

Date:

March 2021

TABLE OF CONTENTS

INTRODUCTION

CHAPTER 94 REPORT TEMPLATE

APPENDICES:

1. Hydraulic and Organic Loading Spreadsheet
 Hydraulic Loading Discussion and Supporting Data
 Hydraulic Loading Graph
 Organic Loading Discussion and Supporting Data
 Organic Loading Graph
2. Sewer Extensions Discussion and Data
 Map of Borough of Elizabethtown
3. Program for Sewer System Monitoring, Maintenance, and Repair
 Condition of the Sewer System
 Corrective Action Plan
4. Sewage Pumping Stations
5. Wastewater Treatment Plant
6. Industrial Wastes
7. Flow Meter Calibration Reports
8. Elizabethtown Regional Sewer Authority (ERSA) Report
9. Sludge Production and Disposal

Introduction

This document was prepared pursuant to the Pennsylvania Chapter 94 Wasteload Management requirements for the Borough of Elizabethtown. As suggested by the Pennsylvania Department of Environmental Protection (PADEP), the document was developed utilizing the PADEP Chapter 94 Template and the PADEP spreadsheets and graphs found at the following address: www.depweb.state.pa.us/chapter94.

The Borough of Elizabethtown operates a 4.5 million gallon per day (MGD) wastewater treatment plant (WWTP) located at the intersection of Amosite Road and Bainbridge Road in West Donegal Township, just west of the Borough. The plant provides wastewater treatment services for the Borough of Elizabethtown, and the Elizabethtown Regional Sewer Authority (ERSA) which covers portions of Mount Joy Township and West Donegal Township. Information submitted by ERSA as required to facilitate the preparation of this report can be found in Attachment 8. The plant operates under NPDES Permit PA0023108 which took effect on July 1, 2016 and will expire on June 30, 2021.

The treatment process utilizes screening, grit removal, anaerobic selector with alum addition for phosphorus removal, phased oxidation ditch, secondary clarification, hypochlorite disinfection, bisulfite dechlorination, and cascade aeration. The WWTP discharges treated effluent primarily to the Susquehanna River, approximately five miles from the plant through a 20-inch diameter gravity outfall line. A portion of this treated effluent is utilized by the Lancaster County Resource Recovery Facility as a source of cooling water. A secondary outfall discharges treated effluent during higher wet weather periods to the Conoy Creek at the edge of the WWTP site. Waste sludge is mechanically thickened, aerobically digested, and dewatered with volute dewatering press prior to disposal at a landfill. A detailed inspection report for the wastewater treatment facility is included as Attachment 5 to this document. Sludge related information is shown in Attachment 9.



CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

- ☒ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	The Borough of Elizabethtown	Permit No.:	PA0023108
Mailing Address:	600 South Hanover Street	Effective Date:	07/01/2016
City, State, Zip:	Elizabethtown, PA 17022-2522	Expiration Date:	06/30/2021
Contact Person:	Rebecca Denlinger	Renewal Due Date:	01/01/2021
Title:	Borough Manager	Municipality:	Borough of Elizabethtown
Phone:	717-367-1700	County:	Lancaster
Email:	rdenlinger@etownonline.com	Consultant Name:	Herbert, Rowland and Grubic, Inc.

CHAPTER 94 REPORT COMPONENTS	
1.	<p>Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))</p> <p>Check the appropriate boxes:</p> <p><input checked="" type="checkbox"/> Line graph for flows attached (Attachment 1)</p> <p><input checked="" type="checkbox"/> DEP Chapter 94 Spreadsheet used (Attachment 1)</p> <p><input type="checkbox"/> Section 1 is not applicable (report is for a collection system).</p>
2.	<p>Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))</p> <p>Check the appropriate boxes:</p> <p><input checked="" type="checkbox"/> Line graph for organic loads attached (Attachment 1)</p> <p><input checked="" type="checkbox"/> DEP Chapter 94 Spreadsheet used (Attachment 1)</p> <p><input type="checkbox"/> Section 2 is not applicable (report is for a collection system).</p>

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

As is shown on the DEP Chapter 94 Report Spreadsheet, no hydraulic or organic overload conditions are projected for this WWTP.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

- ☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment 2**)
- ☒ List summarizing each extension or project attached (**Attachment 2**)
- ☒ Schedules describing how each project will be completed over time and effects attached (**Attachment 2**)

Comments:

There was one sewer extension within the Borough of Elizabethtown during 2020. All information is included in Attachment 2 for the Borough system and Attachment 8 for the ERSA system.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Information related to the Borough system is included as Attachment 3 and Attachment 8 for the ERSA system.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

- ☐ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.
- ☒ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

No capacity related bypassing, SSO's, or surcharging occurred in 2020.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

- ☐ The collection system does not contain pump stations
- ☒ The collection system does contain pump stations (Number – **16 (One (1) owned and operated by the Borough and 15 owned and operated by ERSA)**)
- ☒ Discussion of condition of each pump station attached (**Attachment 4 and Attachment 8 (ERSA)**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

- a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
- b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
- c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

- ☒ Industrial waste report as described in 8 a., b. and c. attached (**Attachment 6**)
- ☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☐ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

- ☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

- ☒ Sewage Sludge Management Inventory attached (**Attachment 9**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

- ☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

- ☒ Flow calibration report attached (**Attachment 7**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Rebecca Denlinger

Name of Responsible Official

Signature

717-367-1700

Telephone No.

Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Jeffrey J. Harman Jr., EIT



Name of Preparer

Signature

717-564-1121

3/15/2021

Telephone No.

Date

1

-
- > Hydraulic and Organic Loading Spreadsheet
 - > Hydraulic Loading Discussion and Supporting Data
 - > Hydraulic Loading Graph
 - > Organic Loading Discussion and Supporting Data
 - > Organic Loading Graph



PADEP Chapter 94 S
Sewage Treatr

Reporting Year: 2020

Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PLANT

Permit No.: PA0023108

Persons/EDU: 3.5

Existing Hydraulic Design Capacity: 7.2 MGD
Upgrade Planned in Next 5 Years? NO Year:
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: 8,650 lbs BOD5/day
Upgrade Planned in Next 5 Years? NO Year:
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2016	2017	2018	2019	2020
January	2.424	2.015	2.039	3.632	2.746
February	4.218	1.788	3.521	3.135	2.718
March	2.227	2.403	2.65	3.944	2.766
April	1.971	2.746	2.652	2.37	2.927
May	2.139	2.136	3.077	3.134	2.906
June	1.633	1.641	2.427	2.394	2.492
July	1.559	1.72	3.71	2.128	1.953
August	1.484	1.672	3.763	1.719	2.257
September	1.38	1.831	4.484	1.699	1.874
October	1.505	1.63	2.43	1.878	1.862
November	1.401	1.842	4.761	2.182	1.941
December	1.799	1.648	3.713	2.433	2.561
Annual Avg	1.978	1.923	3.269	2.554	2.417
Max 3-Mo Avg	2.956	2.428	3.986	4.035	2.866
Max : Avg Ratio	1.49	1.26	1.22	1.58	1.19
Existing EDUs	11,550.0	11,584.0	11,741.0	11,921.0	12,026.0
Flow/EDU (GPD)	171.3	166.0	278.4	214.2	201.0
Flow/Capita (GPD)	48.9	47.4	79.6	61.2	57.4
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2021	2022	2023	2024	2025
New EDUs	173.0	128.0	101.0	67.0	56.0
New EDU Flow	0.0357	0.0264	0.0208	0.0138	0.0115
Proj. Annual Avg	2.464	2.4904	2.5112	2.525	2.5365
Proj. Max 3-Mo Avg	3.322	3.358	3.386	3.405	3.42
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2016	2017	2018	2019	2020
January	4.1	2.57	2.56	3.01	3.08
February	4.08	1.54	5.56	2.42	2.52
March	1.4	4.29	3.01	5.28	3.97
April	3.21	3.57	4.78	2.78	5.47
May	5.09	4.76	5.37	6.71	1.89
June	4.25	3.17	4.12	5.33	3.81
July	5.35	5.66	13.0	5.52	1.35
August	2.92	4.57	8.29	2.01	4.48
September	3.43	3.48	7.82	2.66	1.82
October	1.64	3.46	2.34	6.59	3.05
November	2.46	2.04	8.38	2.06	2.42
December	2.48	1.08	5.21	4.12	4.15

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2016	2017	2018	2019	2020
January	3,153	3,298	3,573	3,667	3,540
February	3,505	3,045	3,183	3,693	3,656
March	2,925	3,110	3,056	3,565	3,669
April	2,982	3,261	3,148	3,286	3,408
May	2,930	3,041	2,968	4,103	3,812
June	2,619	3,109	3,470	3,007	2,972
July	2,495	2,835	3,699	3,382	2,948
August	2,689	3,117	3,358	3,229	3,110
September	2,495	3,211	3,566	3,744	2,945
October	2,791	3,068	3,528	3,340	3,119
November	2,890	3,318	3,633	2,908	3,222
December	3,105	3,569	3,627	3,143	3,347
Annual Avg	2,882	3,165	3,401	3,422	3,312
Max Mo Avg	3,505	3,569	3,699	4,103	3,812
Max : Avg Ratio	1.22	1.13	1.09	1.20	1.15
Existing EDUs	11,550	11,584	11,741	11,921	12,026
Load/EDU	0.249	0.273	0.290	0.287	0.275
Load/Capita	0.071	0.078	0.083	0.082	0.079
Exist. Overload?	NO	NO	NO	NO	NO

Projected BOD5 Loads for Next Five Years (lbs/day)

	2021	2022	2023	2024	2025
New EDUs	173	128	101	67	56
New EDU Load	47.571	35.197	27.773	18.423	15.399
Proj. Annual Avg	3,284	3,319	3,347	3,365	3,381
Proj. Max Avg	3,797	3,838	3,870	3,891	3,909
Proj. Overload?	NO	NO	NO	NO	NO

1.A. Hydraulic Loading Discussion and Supporting Data

The current design hydraulic loading for the Borough of Elizabethtown's Wastewater Treatment Plant is 4.5 MGD on an average daily basis and 7.2 MGD on a maximum monthly basis. The design of the WWTP was based on the maximum monthly loadings. The attached hydraulic loading graph was prepared from flow measurements continuously recorded at the WWTP. Figure 1.1 shows monthly average, annual average, and 3-month maximum flows for the past 5 years along with the design flow of the WWTP. Figure 1.1 also shows the projected annual average and projected 3-month maximum flows for the next five years.

The flows shown in Figure 1.1 represent the combined flows from all contributing municipalities. The recorded annual average flow for 2020 was 2.417 MGD. The hydraulic loading information is also shown in the PADEP Chapter 94 Spreadsheet in this section.

Flow projections were developed from anticipated sewer connection information obtained from all contributing municipalities. Attachment 2 contains the anticipated sewer connections over the next five years for each municipal entity in Table 2.1. The anticipated connections were multiplied by the average flow per EDU over the previous five years to obtain the annual increase in projected flows. The increase was then added to the average annual flow of the overall average from 2016, 2017, 2018, 2019 and 2020 within the PADEP Chapter 94 Spreadsheet to obtain projected flows beginning with year 2021. More detailed breakdowns of projected connections for ERSA are included in Attachment 8. Projected connections for each development in the Borough are summarized in Table 2.2.

The 3-month maximum flows were determined by selecting the period of three consecutive months with the highest average monthly flows. The projected 3-month maximum flows were determined by first finding the ratio of the 3-month maximum to annual average flow for each of the previous five years. The average of these ratios was then applied to the projected annual flows for years 2021 through 2025 to obtain the projected 3-month maximum flows.

The data presented indicate that there is not now, nor is there a projected hydraulic overload condition at the Elizabethtown WWTP through 2025.

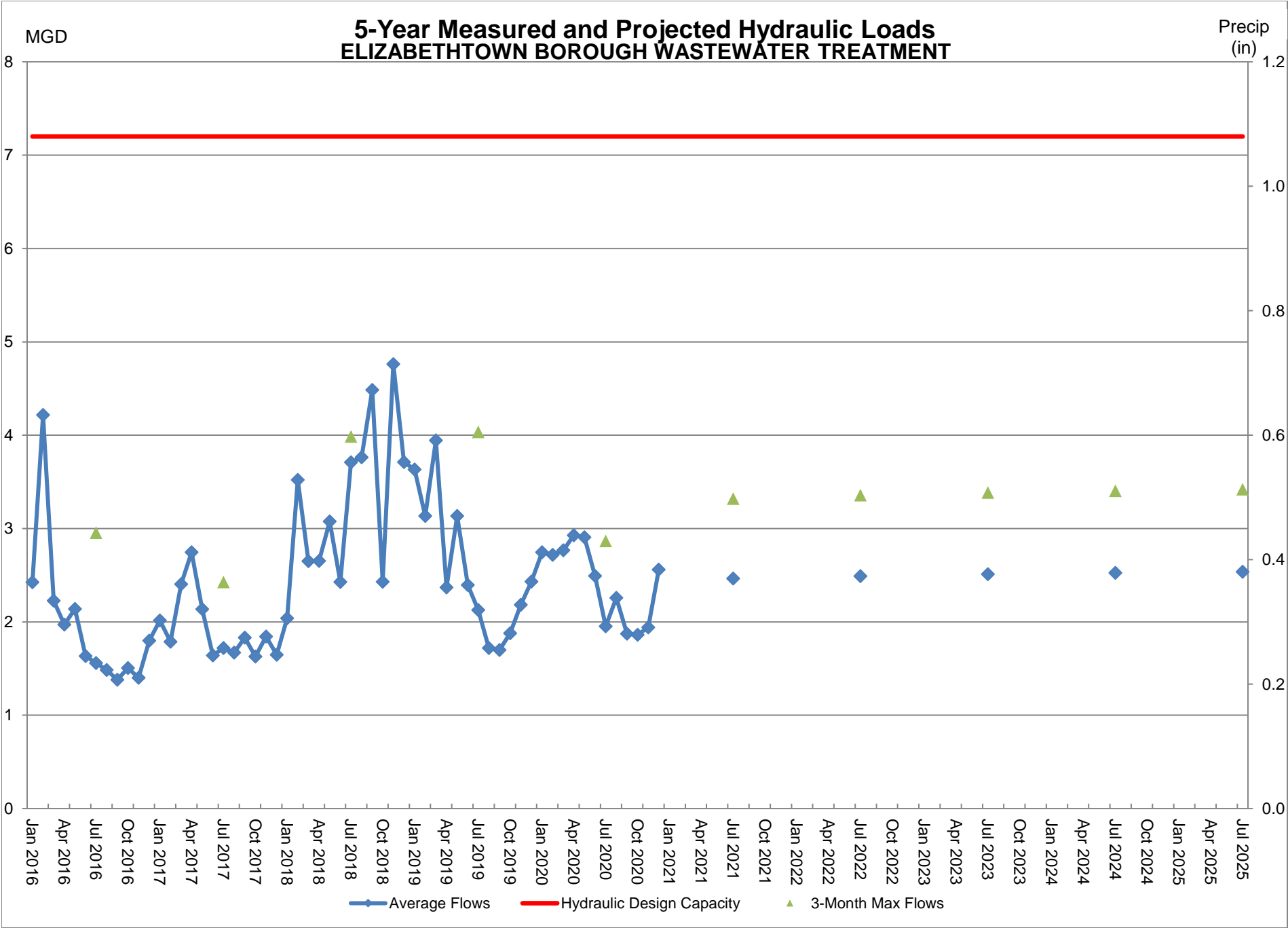
We do want to note that 2018 must be considered an extreme year for rainfall. As noted in Table 1.1, there was almost twice the average annual rainfall of the previous for years covered by the PADEP Chapter 94 Spreadsheet. Consequently, unless the excessive rainfall continues during future years, we do not believe the projections noted by the spreadsheet will be nearly as high as shown for hydraulic loading, organic loading or pumping station flows.

ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PLANT

TABLE 1.1: RAINFALL

MONTH	2016	2017	2018	2019	2020
JANUARY	4.1	2.57	2.56	3.01	3.08
FEBRUARY	4.08	1.54	5.56	2.42	2.52
MARCH	1.4	4.29	3.01	5.28	3.97
APRIL	3.21	3.57	4.78	2.78	5.47
MAY	5.09	4.76	5.37	6.71	1.89
JUNE	4.25	3.17	4.12	5.33	3.81
JULY	5.35	5.66	13.0	5.52	1.35
AUGUST	2.92	4.57	8.29	2.01	4.48
SEPTEMBER	3.43	3.48	7.82	2.66	1.82
OCTOBER	1.64	3.46	2.34	6.59	3.05
NOVEMBER	2.46	2.04	8.38	2.06	2.42
DECEMBER	2.48	1.08	5.21	4.12	4.15
TOTAL	40.41	40.19	70.44	48.49	38.01

5-Year Measured and Projected Hydraulic Loads
ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT



1.B. Organic Loading Discussion

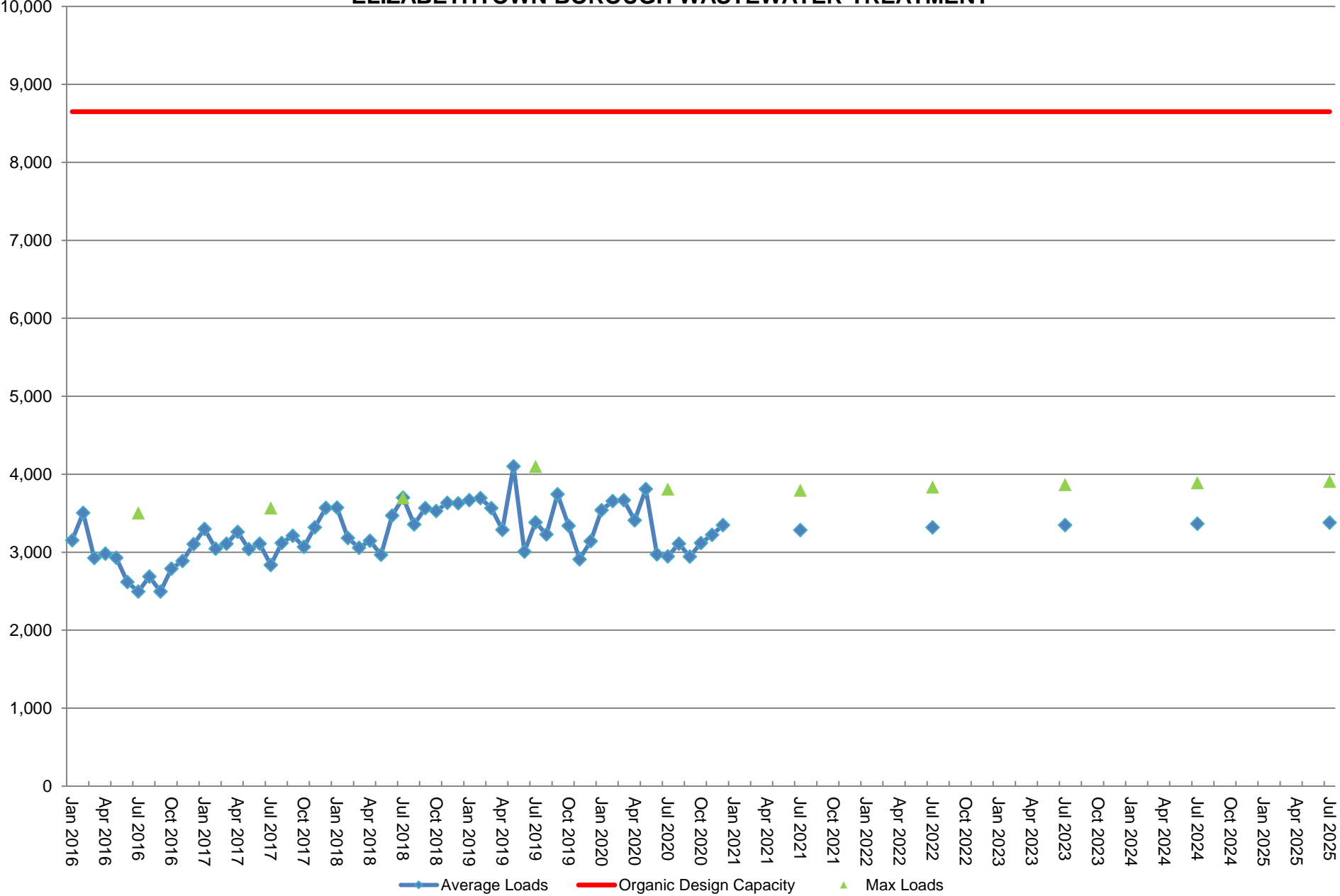
The current design organic loading for the Elizabethtown WWTP is 7,500 pounds of BOD-5 per day on an average daily basis and 8,650 pounds of BOD-5 per day on a maximum monthly basis. The organic loading graph shown as Figure 1.2 was prepared using influent BOD-5 samples collected and analyzed by the Borough's WWTP personnel. The monthly average organic loadings were calculated by multiplying the respective monthly average influent BOD-5 concentration in milligrams per liter (mg/L) times the corresponding monthly average flow in MGD times a conversion factor of 8.34 lbs/day/MG x mg/L. The organic loading data for the Elizabethtown WWTP for the past 5 years is summarized in the PADEP Chapter 94 Spreadsheet.

The organic loading projections were developed using the approach of multiplying the anticipated increase in connections for each future year times 3.5 persons per EDU times the average BOD-5 per person over the previous five years. The annual increase was then added to the average of the previous five year's loading to obtain projected loadings.

The projected maximum month organic loadings were determined by first finding the ratio of the maximum month to average month over the average annual organic loading for the past five years. This percentage increase was then applied to the projected annual organic loading for years 2021 through 2025 to obtain the respective projected maximum month organic loading. As shown in Figure 1.2, the projected maximum monthly organic loading is not expected to exceed the design organic loading of 8,650 pounds of BOD-5 per day during the next five years.

As noted in Section 1.A, the amount of rainfall during 2018 has to be considered abnormally high – almost twice as much as previous years. This has raised the projected organic loading significantly higher than what is actually anticipated at this facility.

5-Year Measured and Projected Organic Loads
ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT



2

-
- > ***Sewer Extensions Discussion and Data***
 - > ***Map of Borough of Elizabethtown***

2.A. Sewer Connections and Extensions

Table 2.1 summarizes the number of connections to the Elizabethtown service area for the Borough and ERSA over the past five years and those anticipated over the next five years. This information was used to determine anticipated future hydraulic and organic loadings to the WWTP. Figure 2.2 summarizes the projected future Borough connections by development. Similar information for the ERSA service area is contained in Attachment 8 of this report.

There was one sewer extension to the Borough's wastewater system in 2020, Conoy Crossing, Phase 4 & 5 totaling 848 linear feet of 8" SDR-35 pipe. This sewer extension is noted on the map contained in this section of the report.

A total of 20 EDUs were connected to the Borough's portion of the sewer system during 2020. No disconnections occurred in 2020, resulting in a net increase of 20 EDUs.

Also during 2020, 85 EDUs were connected to the ERSA service area. Other information regarding the ERSA sewer lines and connections is included in their portion of this report included as Attachment 8.

**BOROUGH OF ELIZABETHTOWN
2020 ANNUAL CHAPTER 94 REPORT**

TABLE 2.1: PAST AND FUTURE CONNECTIONS

						PROJECTED					
						2021	2022	2023	2024	2025	
		2016	2017	2018	2019	2020					
Elizabethtown Borough	Connections:	6	16	14	84	20	31	6	6	4	6
	Disconnections:	0	0	1	0	0	0	0	0	0	0
	NET GAIN:	6	16	13	84	20	31	6	6	4	6
Additional Connections for:											
Elizabethtown Regional Sewer Authority:		40	18	144	96	85	142	122	95	63	50
TOTAL ADDITIONAL EDUS:		46	34	157	180	105	173	128	101	67	56

NOTES:

1. Anticipated growth for the Borough is based on current economic trends.

**BOROUGH OF ELIZABETHTOWN
2020 ANNUAL CHAPTER 94 REPORT**

TABLE 2.2: PROJECTED FUTURE CONNECTIONS

Borough Development	Total Planned EDUs	EDUs In Service 1/1/2020	EDUs Connected 2020	EDUs Remaining 12/31/2020					
					2021	2022	2023	2024	2025
Elizabethtown School	20	17	0	3	1	1	1	0	0
Elizabethtown College	22	5	0	17	3	3	3	3	5
Village Green	64	64	0	0	0	0	0	0	0
Conoy Crossing	123	81	18	24	24	0	0	0	0
Sycamore Square	29	29	0	0	0	0	0	0	0
Miscellaneous	17	6	2	9	3	2	2	1	1
Total Borough EDU's	275	202	20	53	31	6	6	4	6

MOUNT JOY TOWNSHIP

ERSA 4" FORCE MAIN
CONN. PT. 1 (UNMETERED)

ERSA CONN. PT. 2
(UNMETERED)

6" FORCE MAIN FROM
CHILDREN'S HOME
(UNMETERED)

ERSA RADIO RD.
METER CHAMBER
CONN. PT. 3

VILLAGE GREEN
(64 EDUs)

MOUNT JOY TOWNSHIP

ERSA KIWANIS BLVD.
CONN. PT. 4
(METERED)

ERSA CONN. PT. 5
(UNMETERED)

ELIZABETHTOWN COLLEGE
(22 EDUs)

ERSA CONN. PT. 6
(UNMETERED)

ERSA CONN. PT. 7
(UNMETERED)

MASONIC VILLAGE
CONOY METER FLOW

MASONIC VILLAGE - METERED
(INCLUDES METERED FLOW FROM
ERSA'S TURNPIKE ROAD NO. 2
PUMPING STATION)

ERSA 6" FORCE MAIN FROM
BOSSLER RD. NO. 2 PUMPING
STATION (METERED)

BOROUGH OF ELIZABETHTOWN
WASTEWATER TREATMENT PLANT

ERSA 10" FORCE MAIN FROM
MILLER RD. PUMPING
STATION (METERED)

MASONIC VILLAGE
PATON METER FLOW

LIMITS OF 2020
SANITARY SEWER
EXTENSION

SUMMARY OF NEW DEVELOPMENTS				
DEVELOPMENT	TOTAL EDUs	EDUs IN SERVICE 1/1/2020	EDUs CONNECTED 2020	EDUs REMAINING 12/31/2020
ELIZABETHTOWN SCHOOL	20	17	0	3
ELIZABETHTOWN COLLEGE	22	5	0	17
VILLAGE GREEN	64	64	0	0
CONOY CROSSING	123	81	18	24
SYCAMORE SQUARE	29	29	0	0
MISCELLANEOUS	17	6	2	9

LEGEND

- SUBDRAINAGE AREA LIMITS
- SUBDRAINAGE AREA DESIGNATION
- PUMPING STATION
- SANITARY SEWER LINE AND MANHOLE
- ABANDONED SANITARY SEWER LINE AND MANHOLE
- FUTURE DEVELOPMENT
- COMPLETED DEVELOPMENT

NOTE: ALL PIPE DIAMETERS ARE 8" UNLESS OTHERWISE NOTED

1" = 400'

200 0 400

ELIZABETHTOWN BOROUGH
600 SOUTH HANOVER STREET
ELIZABETHTOWN, PA 17022

SEWER INDEX MAP
FOR
2020 CHAPTER 94 REPORT

ELIZABETHTOWN LANCASTER COUNTY PENNSYLVANIA

HRG
Herbert, Rowland & Grubic, Inc.
Engineering & Related Services
AN EMPLOYEE-OWNED COMPANY

369 East Park Drive
Harrisburg, PA 17111
(717) 564-1121
Fax (717) 564-1158
hrg@hrg-inc.com
www.hrg-inc.com

PROJ. MGR. - EAE
DESIGN- JWH
CADD- RSF
CHECKED-
SCALE- AS NOTED
DATE- MAR. 2020

REVISION			
NO.	REVISION	DATE	BY
1			

3

-
- > *Program for Sewer System Monitoring, Maintenance, and Repair*
 - > *Condition of the Sewer System*
 - > *Corrective Action Plan*

3.A. Sewer System Monitoring, Maintenance and Repairs

The Borough's sewer system is in good to fair condition with efforts made yearly to address Infiltration and Inflow (I/I) issues. During wet weather events, a large amount of I/I is experienced. The Borough continues to work on a sewer system monitoring, maintenance and repair program in an effort to address I/I problems since 1996. The Borough utilizes their vacuum truck and CCTV equipment to help maintain the collection system.

The work completed by the Borough during 2020 is summarized below:

• Sewer main lines televised by Borough	7,261 feet
• Sewer lines cleaned and roots cut	40 runs
• Sewer main line repaired	13 runs – 980 feet
• Sewer main line replaced	10 runs – 410 feet
• Sewer Laterals Televised	30
• New sewer lateral connections	4
• Sewer laterals replaced by Borough	14
• Sewer laterals repaired by Borough	9
• Sewer manholes replaced	3
• Sewer manholes added	2

The Borough recognizes that I/I is still an issue in its system. The Borough intends to continue an I/I reduction program which will include routine investigation and rehabilitation efforts. These efforts will continue to be coordinated with the Borough's street repaving program.

During 2021, the Borough plans to continue with work based on the recommendations provided for the Radio Road Interceptor Sewer System Capacity Study (SSCS) as discussed below in Section 3.B. of this document.

Discussions related to the condition and work on the ERSA sewer system are contained in their Chapter 94 Report included as Attachment 8 to this Report.

3.B. Radio Road Interceptor – Corrective Action Plan

The Borough identified surcharging in the Radio Road Interceptor during times of high groundwater and large storm events during wet weather investigations in 2014. Flow is completely contained within the sewer system and is designated as a projected hydraulic overload condition. Visual inspection previously completed by Borough staff identified the following:

1. Rainfall events greater than 5 inches typically result in surcharging
2. Rainfall events from 3 to 5 inches in high groundwater table typically cause surcharging
3. Rainfall events less than 3 inches typically do not cause surcharging

The surcharging is caused by infiltration and inflow (I/I) experienced in the Radio Road Interceptor drainage basin. In reviewing the flow projections for the Radio Road Interceptor, there is not much development anticipated in this basin.

A comprehensive Radio Road Interceptor Sewer System Capacity Study (SSCS) was completed by the Borough in 2016. The SSCS was completed in accordance with the Corrective Action Plan (CAP) for the Radio Road Interceptor identified in the Borough's 2014 Chapter 94 Report,

approved by the Pennsylvania Department of Environmental Protection (PADEP) on October 9, 2015. The major objectives of the SSCS included the following:

1. Identify available capacity and hydraulically overloaded sections throughout the Interceptor.
2. Prioritize areas for additional investigations and/or improvements.
3. Assess the condition of the Interceptor utilizing closed-circuit televisual (CCTV) sewer inspection data provided by Borough staff.
4. Identify available capacity for the Elizabethtown Crossing Development within the Interceptor based on the results of the SSCS and the existing Inter-municipal Agreement between the Borough and the Elizabethtown Regional Sewer Authority (ERSA).

Herbert, Rowland & Grubic, Inc. (HRG) partnered with Mr. Rehab, Inc. to provide the necessary personnel and equipment to install and maintain ten (10) flow meters for the duration of the 17-week flow monitoring program. All precipitation measurements taken during the flow monitoring period were recorded by one (1) Sigma rain gauge installed at the B&G Lumber site. One (1) groundwater data logger located near manhole H29 was installed and maintained by HRG for the duration of the 17-week flow monitoring program.

A major recommendation identified in the 2016 SSCS involved the need for additional flow metering and follow-up. Due to the average to below average rainfall observed during the flow monitoring period, it was recommended that an additional eight (8) to twelve (12) weeks of flow monitoring and groundwater monitoring be considered by the Borough in the future during a wet weather season in an attempt to capture more system stressing wet weather events.

The Borough completed the additional flow metering in the Spring of 2020. The flow metering data was used to prepare a Radio Road Interceptor Sewer System Capacity Study 2020 Update Report, which was finalized in November 2020. The following recommendations were provided in the Report.

RECOMMENDATION NO. 1 – It is recommended that the Borough plan for completion of Interceptor Rehabilitation Alternative A at a total estimated project cost of \$3,035,000 in order to address age and condition of the Interceptor, remove I/I within the Interceptor associated with noted defects in the mains requiring rehabilitation and provide additional capacity within the most hydraulically limited portions of the Interceptor. Alternative A is preferred over Alternatives 1 thru 3 at this time because it addresses capacity issues within the most hydraulically limited portions of the Interceptor in addition to addressing Interceptor condition as contemplated in Alternatives 1 thru 3. None of the identified repairs are considered emergencies. The condition of the Interceptor is generally indicative of the age and material of construction and Implementation of Alternative A is consistent with solid capital improvements planning for the future. It is recommended that the following items be considered prior to implementation of Alternative A:

- > All future flows from ERSA in order to determine the design flows.
- > Evaluation of improvements to the poor pipe slope areas of the Interceptor during preliminary design.
- > Evaluation of improvements to the alignment of the Interceptor during preliminary design.

RECOMMENDATION NO. 2 – It is recommended that the Borough focus future I/I investigation work in Sewersheds 4B, 4D, and 4C as these sewershed are the top contributors to direct inflow. These sewersheds are also small basin sizes with approximately 3,500 L.F., 2,100 L.F., and 1,600 L.F. of pipe, respectively, which will make any future I/I investigation work more manageable. I/I work may include the following:

- > CCTV inspections of sewer mains to identify the extent of the problems and identify repair/rehabilitation options within the Borough's system.
- > Manhole inspections to identify problems and repair/rehabilitation options within the Borough's system.
- > Smoke testing, dye testing, and home and private lateral inspections to identify problems and repair/rehabilitation options within the private portion of the system.

RECOMMENDATION NO. 3 – Installation of the data logger at the Radio Road Meter Chamber has been completed by ERSA as a follow-up to the recommendation identified in the 2016 Study. However, ERSA needs to provide the recorded flows to the Borough on a monthly basis in order to confirm that ERSA does not exceed their allocated average daily or peak hourly capacity in accordance with the existing inter-municipal agreement.

RECOMMENDATION NO. 4 – It is recommended that ERSA provide projected five (5) year and ultimate buildout average and peak flow projections tributary to the Interceptor to the Borough for planning purposes.

RECOMMENDATION NO. 5 – It is recommended that the Borough continue to evaluate new connections on a case by case basis utilizing the flow and hydraulic model data developed during the Study Update and additional information obtained during implementation of the other recommended alternatives identified in the Study Update. It is recommended that the Borough not process sewage facilities planning exemptions for any proposed developments with flow tributary to the Interceptor until construction of Alternative A is complete.

The following is a summary of the proposed Implementation Schedule for Recommendation Nos. 1 thru 5.

Recommendation Number	Completion Date
1	January 2021 – December 2024
2	Ongoing
3	Ongoing
4	January 2021
5	Ongoing

Drainage Area	Street Address	UH MH	DH MH	Length Televised	Length Repaired	Flushed	Wyes Replaced	Laterals Televised	Laterals No.	Replaced Length
A	Pump Station	A2	A1			yes				
		A25	A1			yes				
		A26	A25			yes				
B	Groff Avenue	B39	B38			yes				
		B40	B39			yes				
		B41	B40			yes				
		B42	B41			yes				
		B44	B43	311		yes				
	Cedar Street	B48	B47	232						
C	S. Market Street	C66	D1			yes				
D	College Avenue	D2	D1	180		yes				
		D54	D2	240	10	yes				
		D55	D54	236		yes				
		D56	D55	209		yes				
		D57	D56	246		yes				
		D59	D57	458		yes				
		D60	D59	448		yes				
		D61	D60	391		yes				
		D61A	D61	392		yes				
		D62	D61A	163		yes				
		D63	D62	185		yes				
		D63A	D63	114		yes				
		D64	D63A	73		yes				
		D65	D64	54		yes				
E	Willow Street	E14	E13	343	105	yes				
G	Radio Road Int.	G2	G1	3						
H	Willow Street	H3	H2	83		yes				
		H4	H3	131		yes				
		H7	H6	293		yes				
		H8	H7	142		yes				
		H9	H8	48		yes				
		H4	M18	157		yes				
		H12	H7	181		yes				
		H13	H12	103		yes				
		H14	H12	51		yes				
		H48	H47			yes				
	Radio Road Int.	H24	H23	22						
J	Radio Road Int.	J8	J7	60						
		J1	C44	372						
M	Willow Street	M18	M61	372		yes				
		M18	H4			yes				
		M19	M18	60		yes				
		M37	M36	243		yes				
		M50	M49		10					

	Spring Garden	M62	M61	109					1	20
	N. Mount Joy Street	M23	M22	24	20					
	Oak Street	M32	M31	296	296					
	Highlawn Avenue	M19	M18		19		1	2	1	27
		M20	M19		44			1	1	20
		M21	M20		42		1	3	2	39
		M22	M21		69		3	6	3	60
		M28	M22		84		4	3	3	60
		M29	M28		31		3	5	2	40
		M30	M29		14		2	6	4	72
		M33	M32	236	236		5	1	1	20
N	Spruce Street	N2	N1			yes		3	3	52
	School Lane	N23	N22			yes				
				7261	980					
	Total Footage						19	30	21	410

Private Lateral Repairs and Replacements 2020			
	Added	Replaced	Repaired
1 Broken Arrow Drive	x		
3 Broken Arrow Drive	x		
5 Broken Arrow Drive	x		
7 Broken Arrow Drive	x		
314 College Ave.		x	
411 E. Cherry St.		x	
251 E. Cedar St.		x	
255 E. Cedar St.		x	
127 N. Chestnut St.		x	
5 Foxfield Ln.			x
40 E. Hummelstown St.			x
512 N. Hanover St.			x
548 N. Holly St.		x	
420 N. Lime St.			x
480 N. Lime St.			x
520 N. Lime St.			x
570 N. Lime St.			x
639 N. Mount Joy St.		x	
348 N. Mount Joy St.		x	
531 N. Mount Joy St.		x	
531 S. Mount Joy St.		x	
122 N. Spruce St.		x	
601 Sunset Dr.		x	
201 Snyder Ave.		x	
537 Snyder Ave.		x	
100 E. Washington St.			x
25 Yorkshire Ct.			x

2020 Manhole Replacements or Additions

Location	Number	
Foxchase Drive	F57	Replaced
Foxchase Drive	F58	Replaced
Foxfield Ln.	F53	Replaced
Highlawn Ave.	M18-A	Added
Village Green Apt.	K17-A	Added

4

> *Sewage Pumping Stations*

4.A. Condition of the Wastewater Pumping Stations

There are a total of 16 wastewater pumping stations in the overall Elizabethtown service area. Fifteen of the pumping stations are owned and maintained by ERSA. Information regarding the ERSA stations is contained in their Chapter 94 Report provided in Attachment 8 of this report. Only one of the stations, Oak Manor Pumping Station is owned and maintained by the Borough.

The 2020 average daily flows for each month for the Oak Manor Pumping Station are shown in Table 4.1. Run time hour meter readings are used to monitor flows at the Oak Manor Pumping Station. When the 2-year projected maximum flows as shown in Table 4.2 are compared with the capacity of the station, it can be seen that the Oak Manor Pumping Station is within its design capacity.

This station is in relatively good condition and is currently operating within its design capacity. More information regarding the condition of this station is included in the annual report on the condition of the WWTP and Pumping Station included in Attachment 5 of this report. No overload condition is projected at this station over the next two years.

**BOROUGH OF ELIZABETHTOWN
2020 ANNUAL CHAPTER 94 REPORT**

TABLE 4.1: OAK MANOR PUMPING STATION FLOWS

Month	YEAR 2020	
	TOTAL MONTHLY FLOW (gpd)	AVERAGE DAILY FLOW (gpd)
January	2,140,560	69,050
February	1,854,360	63,943
March	2,135,160	68,876
April	2,168,640	72,288
May	2,463,048	79,453
June	2,041,632	68,054
July	1,647,000	53,129
August	1,734,264	55,944
September	1,450,656	48,355
October	1,467,936	47,353
November	1,575,288	52,510
December	2,357,424	76,046
2020 Total	23,035,968	
2020 Average		62,940
2019 Average		66,729
% Increase/Decrease from previous year		-5.7%
Maximum		79,453

Note:

Flows are based on hour meter readings recorded daily by Borough personnel

**BOROUGH OF ELIZABETHTOWN
2020 ANNUAL CHAPTER 94 REPORT**

TABLE 4.2: PUMPING STATION FLOWS

MUNICIPALITY	PUMPING STATION	PUMP CAPACITY (MGD)	AVERAGE DAILY FLOW (MGD)	PROJECTED 2-YEAR MAXIMUM FLOW (MGD)
Elizabethtown (1)	Oak Manor	0.396	0.0629	0.157

Notes:

- (1) The Oak Manor Pumping Station capacity is the design capacity. Projected flow is the average daily flow multiplied by a 2.5 peaking factor to estimate a maximum hourly flow.

000589.0435

ELIZABETHTOWN WASTEWATER TREATMENT PLANT
OAK MANOR PUMP STATION

2020

January	Int	Time	Pump #1	Pump #2
1			1.4	1.3
2			1.4	1.3
3			1.4	1.4
4			1.6	1.5
5			1.6	1.5
6			1.3	1.2
7			1.4	1.3
8			1.5	1.4
9			1.3	1.2
10			1.17	1.1
11			1.57	1.44
12			2	1.9
13			1.6	1.5
14			1.5	1.4
15			1.5	1.4
16			1.4	1.3
17			1.2	1.1
18			1.6	1.4
19			1.58	1.45
20			1.6	1.5
21			1.3	1.2
22			1.2	1.1
23			1.2	1.1
24			1.34	1.26
25			4.16	3.72
26			3.2	2.9
27			2.4	2.2
28			2	1.9
29			1.9	1.7
30			1.6	1.5
31			1.55	1.46
Total Hours			51.47	47.63

February	Int	Time	Pump #1	Pump #2
1			1.58	1.45
2			1.6	1.5
3			1.4	1.3
4			1.3	1.3
5			1.4	1.3
6			1.4	1.3
7			1.8	2
8			1.5	1.7
9			1.6	1.5
10			1.7	1.6
11			1.8	1.7
12			1.7	1.6
13			1.9	1.8
14			1.67	1.55
15			1.72	1.55
16			1.64	1.5
17			1.8	1.6
18			1.4	1.3
19			1.4	1.3
20			1.4	1.2
21			1.23	1.13
22			1.5	1.33
23			1.5	1.4
24			1.5	1.4
25			1.3	1.2
26			1.5	1.4
27			1.4	1.2
28			1.4	1.2
29			1.3	1.2
Total Hours			44.34	41.51

March	Int	Time	Pump #1	Pump #2
1			1.4	1.3
2			1.2	1.2
3			1.5	1.3
4			1.5	1.4
5			1.4	1.2
6			1.34	1.22
7			1.36	1.23
8			1.5	1.4
9			1.3	1.2
10			1.3	1.2
11			1.3	1.2
12			1.4	1.3
13			1.4	1.3
14			1.4	1.2
15			1.6	1.5
16			1.5	1.3
17			1.4	1.2
18			1.6	1.5
19			1.7	1.5
20			1.48	1.38
21			1.44	1.31
22			1.5	1.4
23			1.6	1.4
24			1.3	1.2
25			1.4	1.3
26			1.4	1.3
27			1.26	1.16
28			3.73	3.29
29			4.1	3.7
30			3	2.7
31			2.53	2.22
Total Hours			51.84	47.01

NOTES

ELIZABETHTOWN WASTEWATER TREATMENT PLANT
OAK MANOR PUMP STATION

2020

April	Int	Time	Pump #1	Pump #2
1			2.27	2.03
2			2.12	1.93
3			1.66	1.48
4			1.59	1.42
5			1.58	1.39
6			1.57	1.44
7			1.58	1.43
8			1.45	1.3
9			1.3	1.4
10			1.4	1.2
11			1.4	1.3
12			1.53	1.38
13			2.35	2.09
14			1.87	1.68
15			1.73	1.55
16			1.52	1.38
17			1.43	1.27
18			1.61	1.4
19			1.54	1.41
20			1.42	1.24
21			1.43	1.3
22			1.32	1.19
23			1.5	1.3
24			1.3	1.2
25			1.6	1.4
26			2.17	1.92
27			1.85	1.62
28			1.7	1.52
29			1.6	1.45
30			5.89	4.5
Total Hours			53.28	47.12

May	Int	Time	Pump #1	Pump #2
1			5.85	4.73
2			4.49	3.84
3			4.2	3.55
4			2.87	2.46
5			2.41	2.1
6			2.26	1.98
7			2.03	1.78
8			2.21	1.96
9			2.16	1.9
10			1.97	1.73
11			1.75	1.57
12			1.8	1.6
13			1.57	1.4
14			1.54	1.37
15			1.47	1.28
16			1.51	1.33
17			1.49	1.32
18			1.35	1.21
19			1.42	1.26
20			1.32	1.18
21			1.28	1.15
22			1.5	1.3
23			1.5	1.4
24			1.26	1.11
25			1.58	1.41
26			1.34	1.15
27			1.35	1.17
28			1.3	1.18
29			1.31	1.21
30			1.34	1.22
31			1.44	1.31
Total Hours			60.87	53.16

June	Int	Time	Pump #1	Pump #2
1			1.34	1.15
2			1.22	1.18
3			1.32	1.21
4			1.54	1.42
5			3.26	3.01
6			2.69	2.5
7			2.12	1.97
8			1.73	1.58
9			1.67	1.49
10			1.7	1.48
11			1.84	1.62
12			1.71	1.5
13			1.7	1.48
14			1.61	1.43
15			1.57	1.37
16			1.45	1.33
17			1.68	1.48
18			1.71	1.51
19			1.51	1.37
20			1.45	1.25
21			1.49	1.35
22			1.81	1.57
23			1.69	1.49
24			1.57	1.36
25			1.42	1.31
26			1.5	1.3
27			1.5	1.3
28			1.42	1.28
29			1.43	1.3
30			1.37	1.21
Total Hours			50.02	44.8

NOTES

ELIZABETHTOWN WASTEWATER TREATMENT PLANT
OAK MANOR PUMP STATION

2020

July	Int	Time	Pump #1	Pump #2
1			1.39	1.26
2			1.29	1.11
3			1.37	1.23
4			1.24	1.13
5			1.46	1.29
6			1.44	1.28
7			1.32	1.14
8			1.27	1.17
9			1.29	1.16
10			1.34	1.2
11			1.31	1.14
12			1.42	1.28
13			1.27	1.1
14			1.39	1.27
15			1.33	1.18
16			1.19	1.01
17			1.16	1.06
18			1.2	1.05
19			1.32	1.15
20			1.42	1.28
21			1.21	1.04
22			1.28	1.16
23			1.39	1.2
24			1.21	1.09
25			1.31	1.13
26			1.4	1.29
27			1.36	1.19
28			1.23	1.08
29			1.26	1.14
30			1.13	1.02
31			1.19	1.03
Total Hours			40.39	35.86

August	Int	Time	Pump #1	Pump #2
1			1.55	1.4
2			1.48	1.32
3			1.41	1.29
4			2.59	2.3
5			1.63	1.5
6			1.52	1.41
7			1.73	1.6
8			1.53	1.37
9			1.58	1.47
10			1.51	1.35
11			1.4	1.32
12			1.32	1.18
13			1.26	1.18
14			1.44	1.24
15			1.47	1.34
16			1.31	1.21
17			1.32	1.15
18			1.26	1.11
19			1.27	1.12
20			1.19	1.08
21			1.28	1.11
22			1.36	1.19
23			1.25	1.16
24			1.23	1.09
25			1.22	1.11
26			1.16	1.03
27			1.19	1.03
28				
29			1.26	1.13
30			1.32	1.21
31			1.18	1.07
Total Hours			42.22	38.07

September	Int	Time	Pump #1	Pump #2
1			1.23	1.11
2			1.37	1.21
3			1.37	1.22
4			1.33	1.15
5			1.21	1.11
6			1.04	0.94
7			1.38	1.26
8			1.28	1.1
9			1.19	1.08
10			1.33	1.14
11			1.05	0.94
12			1.15	1.02
13			1.38	1.25
14			1.15	1
15			1.07	0.95
16			1.08	0.99
17			1.09	0.97
18			1.03	0.92
19			1.02	0.97
20			1.24	1.08
21			1.11	1.02
22			1.19	1.04
23			1.15	1.04
24			1.04	0.96
25			0.97	0.88
26			1.2	1.09
27			1.25	1.11
28			1.11	1.03
29			1.22	1.17
30			1.16	1.02
Total Hours			35.39	31.77

NOTES

ELIZABETHTOWN WASTEWATER TREATMENT PLANT
OAK MANOR PUMP STATION

2020

October	Int	Time	Pump #1	Pump #2
1			1.11	1.03
2			1.06	0.95
3			1.1	0.99
4			1.22	1.11
5			1.28	1.18
6			1.07	0.98
7			1.06	0.96
8			1.1	1
9			1.1	1.02
10			1.04	0.96
11			1.34	1.24
12			1.43	1.29
13			1.22	1.14
14			1.08	0.97
15			1.16	1.01
16			1.04	0.93
17			1.08	1
18			1.29	1.12
19			1.12	1.01
20			1.09	0.97
21			1.1	1
22			1.07	0.97
23			0.94	0.81
24			1.08	0.99
25			1.27	1.13
26			1.18	1.05
27			1.03	0.92
28			1.1	0.92
29			1.72	1.56
30			1.12	0.98
31			1.13	1.04
Total Hours			35.73	32.23

November	Int	Time	Pump #1	Pump #2
1			1.46	1.3
2			1.17	1.06
3			1.09	1.01
4			1.08	0.96
5			2.01	1.87
6			1.22	1.07
7			1.09	0.95
8			1.32	1.22
9			1.16	1.04
10			1.1	1.01
11			1.61	1.44
12			1.39	1.29
13			1.2	1.06
14			1.25	1.13
15			1.43	1.29
16			1.36	1.22
17			1.19	1.12
18			1.2	1.09
19			1.27	1.14
20			1.14	1.02
21			1.22	1.11
22			1.35	1.22
23			1.29	1.17
24			1.3	1.18
25			1.15	1.03
26			1.17	1.05
27			1.17	1.04
28			1.05	0.96
29			1.32	1.19
30			1.5	1.43
Total Hours			38.26	34.67

December	Int	Time	Pump #1	Pump #2
1			1.39	1.22
2			1.3	1.16
3			1.26	1.1
4			1.42	1.25
5			1.72	1.54
6			1.72	1.5
7			1.39	1.26
8			1.33	1.2
9			1.31	1.13
10			1.29	1.13
11			1.22	1.13
12			1.34	1.16
13			1.39	1.26
14			1.71	1.47
15			1.3	1.12
16			1.34	1.21
17			1.12	0.94
18			1.3	1.16
19			1.4	1.23
20			1.42	1.25
21			1.6	1.39
22			2.11	1.79
23			1.9	1.63
24			6.35	4.45
25			5.52	4.3
26			3.62	2.98
27			2.72	2.31
28			2.24	1.91
29			1.97	1.62
30			1.79	1.56
31			1.75	1.54
Total Hours			59.24	49.9

NOTES



5

> ***Wastewater Treatment Plant***



5.A. Condition of the Wastewater Treatment Plant

The last upgrade and expansion of the Borough of Elizabethtown's Wastewater Treatment Plant was completed at the end of 2002. The project involved the removal or demolition of the majority of the old plant equipment and structures, as well as the construction and installation of new equipment and structures. The treatment plant was converted from trickling filter treatment process to a phased oxidation ditch treatment process. The treatment plant continues to perform quite well. Due to its age (about 19 years old), the Borough is beginning to evaluate whether portions of the plant may need to be upgraded since maintenance expenditures are beginning to increase.

A copy of the annual inspection report for the WWTP is included in this section.

No hydraulic or organic overload conditions exist or are projected to occur at the Elizabethtown WWTP over the next five years.

Sludge production and disposal information is included in Attachment 9. Please note that in 2018, a new volute dewatering press was installed to replace the old belt filter press for sludge dewatering.

HRG

Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

AN EMPLOYEE-OWNED COMPANY

SANITARY SEWER TREATMENT FACILITY 2021 ANNUAL INSPECTION REPORT



Submitted to:

BOROUGH OF ELIZABETHTOWN
LANCASTER COUNTY, PENNSYLVANIA

HRG PROJECT NO. 000598.0435

Submitted by:

HERBERT, ROWLAND & GRUBIC, INC.

369 East Park Drive
Harrisburg, PA 17111
717.564.1121

Date: March 2021

TABLE OF CONTENTS

SECTION 1	introduction
SECTION 2	Wastewater Treatment Plant (WWTP)
SECTION 3	Oak Manor Pumping Station
SECTION 4	Summary of Recommendations
APPENDIX A	WWTP Photographs – February 24, 2021 Inspection

2021 ANNUAL INSPECTION REPORT SANITARY SEWER TREATMENT FACILITY

BOROUGH OF ELIZABETHTOWN LANCASTER COUNTY, PENNSYLVANIA

1.0 INTRODUCTION

This report represents the findings of the 2021 Annual Inspection of the Borough of Elizabethtown's (Borough) wastewater treatment facilities. The condition and operation of the wastewater treatment plant (WWTP) was reviewed by Herbert, Rowland & Grubic, Inc. (HRG) and Borough Staff on February 24, 2021.

The purpose of the 2021 Annual Inspection was to review observations and recommendations noted in previous HRG Annual Inspection Reports with Borough Staff, provide assistance to the Borough Staff relative to operation and maintenance (O&M) issues experienced within the sanitary sewer facilities, review operating procedures with Borough Staff, and provide recommendations for future capital improvements for continued operation and regulatory compliance of the sanitary sewer facilities.

A summary of our findings based on this inspection is provided in the following sections of the report:

- > Wastewater Treatment Plant (WWTP)
- > Oak Manor Pumping Station
- > Summary of Recommendations

2.0 WASTEWATER TREATMENT PLANT (WWTP)

The Elizabethtown Borough WWTP is currently operating under NPDES Permit No. PA0023108, which is set to expire on June 30, 2021. Per the current NPDES Permit, the WWTP is permitted to treat an average daily flow of 4.5 million gallons per day (MGD) and a maximum month daily flow of 7.2 MGD. The design organic loading for this facility is 8,650 pounds/day.

During 2020, the average daily flow was 2.417 MGD and the maximum monthly flow recorded was 2.927 MGD during April. These flows are considered average when compared to the previous four years and is consistent with the lighter rainfall and increased number of EDUs seen in 2020. The treatment plant's influent and effluent flow meters are calibrated annually. The calibration reports for the various flow meters are attached as Attachment 7 to the Chapter 94 Report. The 2020 annual average organic loading was 3,312 pounds of BOD-5 per day with a maximum monthly loading of 3,812 pounds of BOD-5 per day during May. The organic loading to the WWTP in 2020 was marginally more than that observed in 2019. The WWTP is operating well below its hydraulic and organic loading capacities.

The Borough's staff has indicated that the WWTP achieves compliance with permitted annual mass load limits for TN and TP. Based on the results of the Borough's 2020 Chesapeake Bay Annual Nutrient Summary Report, the effluent monthly total mass load (lbs) for Total Nitrogen (TN) and Total Phosphorus (TP) were 21,683 lb and 2,146 lb respectively. A summary of these results is included in Table 2.1 below.

TABLE 2.1 COMPARISON OF EFFLUENT TN AND TP LIMITS

Parameter	2020 Annual Net Mass Load (lb)	NPDES Net Annual Permit Limit (lb)	% below permit limit
Total Nitrogen (TN)	21,683	109,500	80.2%
Total Phosphorus (TP)	2,146	13,688	84.3%

Based on the result of the annual TN and TP loads, the discharged mass loads were well below the effluent TN and TP mass load limits contained in the NPDES Permit for the WWTP. The Operators at the plant continue to feed aluminum sulfate solution to aid in solids settling and TP removal.

The WWTP consistently achieves compliance with all NPDES parameters. Due to concerns surrounding the COVID-19 pandemic, Elizabethtown Borough employees were instructed by management to delay or not perform any non-priority projects in 2020. A list of the various improvements/maintenance projects that have been completed since the last WWTP Inspection is included in Table 2.2 below.

TABLE 2.2 2020 OPERATIONS AND MAINTENANCE PROJECTS - WWTP

Item	Description of Work
1	Operators replaced a drive motor from one of the triton mixer aerators located in the oxidation ditches.
2	HOA switches within the secondary clarifiers were wired incorrectly during the initial installation and are in the process of being rewired.
3	Operators repaired the skimmer blade in clarifier no. 2 to more effectively collect scum within the scum trough.
4	NaOCl tanks were replaced and recertified located within the Chemical Building. NaOCl yard piping which froze during the winter months was removed and repiped. Operators are currently in the process of repiping the NaOCl metering pump suction/discharge lines to minimize leaking.
5	Alum storage tanks located within the Chemical Building were recertified to the correct volume.
6	The Penn Valley Pumps which transport sludge to the aerobic digester were rebuilt in 2020.
7	Operators removed the Wilo-EMU mixer from the aerobic digester, received a cost to rebuild which was comparable to a new unit, and decided to operate without.
8	Operators continue to receive support from PWTech to address performance issues

	with the volute sludge dewatering press installed in 2018.
--	--

Observations and recommendations for each of the WWTP unit processes from HRG's previous Annual Inspection Reports are provided below with updates to completed items or new maintenance activities under completion noted where appropriate. Photographs of select unit processes where maintenance activities were being performed during our inspection or where operational deficiencies were noted by the Staff are included as Appendix A. This information was included to assist the Borough with developing annual WWTP O&M budgets and for Capital Improvements planning.

ADMINISTRATIVE	
NPDES Permit:	1. The current NPDES permit for the Borough's WWTP is set to expire on June 30, 2021. The application for renewal of the permit was submitted to PADEP on December 23, 2020 and is currently undergoing technical review.
General:	1. Borough Staff continues to use O&M schedules and procedures for all equipment installed as part of the WWTP upgrade. 2. Borough shall continue to support Operator Training opportunities for all staff.

HEADWORKS			
Observations:	1. The mechanical fine screens, grit removal system, and grit classifier continue to operate well. 2. Staff reported that issues with ragging arise within the headworks when the upstream screening station owned by Masonic Homes is not operational. This occurs a few times a year.		
		Completed	Ongoing
Recommendations:	1. Continue to monitor the effectiveness of screening by Masonic Homes to aid in preventing ragging issues with the mechanical screens.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	2. Staff should continue performing routine maintenance and service on the existing equipment.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

INFLUENT PUMPING STATION			
Observations:	1. No reported issues at this time.		
		Completed	Ongoing
Recommendations:	1. Staff should continue performing routine maintenance and service on the existing equipment.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ANAEROBIC SELECTOR TANK & OXIDATION DITCH			
Observations:	<p>1. In 2018, the Operators reported issues with foam within the oxidation ditches. This has not been as great of an issue in 2020.</p> <p>2. The Operators have budgeted for the removal of the existing rotors from the oxidation ditches, as they are not in use and have been abandoned in place.</p> <p>3. The Operators have reported issues with dissolved oxygen management, grease, and scum buildup within the oxidation ditches during summer months that are believed to be linked to inadequate number and type of mixing and aeration devices within the tanks.</p>		
		Completed	Ongoing
Recommendations:	1. The Operators should move forward with the removal of the oxidation ditch rotors in 2021.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	2. Continue to maintain required O&M schedule for existing equipment.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	3. The Operators and the Borough should consider performing a cost-benefit analysis to determine if providing supplemental mixing and aeration equipment within the oxidation ditches will provide enough performance and financial benefit to warrant the cost for implementation. HRG would be willing to assist the Borough and the Operators in assessing this issue.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CHEMICAL FEED SYSTEMS			
Observations:	<ol style="list-style-type: none"> The new neat polymer feed system for the sludge thickening system is reported to be working well. The paint on the walls and ceilings of the various rooms in the Chemical Building continues to degrade and peel, exposing the subsurface below. One of the sodium hypochlorite tanks has developed pin holing and has begun leaking. The Operators intend to replace both tanks in 2020. The Operators have reported issues with the performance of the sludge dewatering system that are believed to be linked to ineffective makedown of the neat polymer and inadequate blending of the polymer solution with the waste sludge. 		
		Completed	Ongoing
Recommendations:	<ol style="list-style-type: none"> The Operators should continue to perform routine maintenance and monitor the performance of the neat polymer feed system for the sludge thickening system. The Borough should consider repainting the interior of the Chemical Building as part of the chemical tank replacement job. The Borough should move forward with replacement of the two sodium hypochlorite storage tanks. Note: Demolition and Installation of registered tanks must be supervised by a tank inspector certified by PA DEP. The Operators should continue with their plan to set-up a temporary polymer solution mix tank for trial use in the dewatering building. If more though pre-mixing of the neat polymer improves the performance of the dewatering system, the Operators should develop a plan for installing a permanent system in the Dewatering Building. The Operators should also consider alternate methods of injecting the polymer solution into the sludae feed line, such as an in-line 	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>

	polymer injection ring. Additionally, the Operators should continue to work with PWTech and Velodyne to troubleshoot the issues and determine if any operational changes could resolve them.		
--	--	--	--

SLUDGE PRODUCTION AND DEWATERING			
Observations:	<ol style="list-style-type: none"> 1. The Operators have reported that the existing sludge feed pumps for both the sludge thickening system and sludge dewatering system have been receiving routine maintenance and continue to operate well. There are no issues with these pumping systems at this time. 2. The Operators have reported that the sludge thickening system is receiving routine maintenance and is continuing to operate well. There are no issues with this system at this time. 3. The Operators have reported that the re-built dewatered cake screw conveyor is operating without issue. 4. The Operators have reported that as of January 2019, the Lancaster County Solids Waste Management Authority (LCSWMA) stopped accepting dewatered cake at the incinerator. Dewatered cake solids must now be landfilled. This has increased the cost of disposing dewatered cake solids by approximately 250%. 5. In 2019, the dewatering screw and one of the dewatering volute cartridge on one of the drums of the PWTech volute dewatering press were replaced due to shearing within the drum. According to information provided by PWTech, these components should typically last approx. 20,000 operating hours. The Operators reported that the cause of the premature wear was likely due to the volute plates binding during operation preventing them from oscillating as the dewatering screw rotate past. Binding of the volute plates would create shear points and lead to damage within the unit. Jammed volute plates and metal shavings were observed on both dewatering drums while on-site, suggesting continuing issues. The Operators anticipate the need to replace the dewatering screw and dewatering volute cartridges on the second dewatering drum in the near future. 		
		Completed	Ongoing
Recommendations:	<ol style="list-style-type: none"> 1. The Operators should continue to perform routine maintenance and monitor the performance of the sludge 	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	pumping systems.		
	2. The Operators should continue to perform routine maintenance and monitor the performance of the sludge thickening system.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	3. The Operators and the Borough should consider performing an analysis to determine if a means of reducing the costs of solids cake disposal exists. Achieving the appropriate balance of polymer feed and dewatered cake solids concentration will help minimize disposal costs. Optimizing the effectiveness of the dewatering polymer feed system as discussed under the "Chemical Feed Systems" section will contribute directly to the ability to reduce disposal costs. HRG would be willing to assist the Borough and the Operators in assessing this issue.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	4. The Operators should continue to troubleshoot the issues with the PWTech volute press and should continue to engage PWTech in communication on resolving the issues. The PWTech volute press was installed in 2018 and has been operated well below its rated loading capacity since it was put in operation. The aerobically digested sludge being fed to the press would be expected to have a moderate to moderately-low fiber and grit content. The short lifespan of the wearable components coupled with the relatively low abrasive nature of aerobically digested municipal sludge make the issues with the press unexpected. It is possible that larger grit particles are passing through the WWTP system and entering the volute press causing binding of the volute plates, or that the sludge generated at the WWTP is exceptionally abrasive. It is also possible that there are issues with the manufacture or installation of the	<input type="checkbox"/>	<input checked="" type="checkbox"/>

[illegible]

Observations:	<ol style="list-style-type: none"> 1. The backup emergency generator is serviced on a routine basis and is cycled per recommendations of the manufacturer. 2. No reported issues at this time. 		
		Completed	Ongoing
Recommendations:	<ol style="list-style-type: none"> 1. The Operators should continue to schedule routine maintenance of the generator and cycle the generator according to the recommendations of the manufacturer. 	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.0 Oak Manor Pumping Station

The Oak Manor Pumping Station is a wet well/dry well type station that includes two Gorman-Rupp Series T-4 pumps. This station has a design flow capacity of 275 gallons per minute (gpm) or 396,000 gallons per day (gpd). Based on pump run times, the 2020 average daily flows at this pumping station was 62,940 gpd with a maximum monthly flow rate of 79,453 gpd. Both of the pumps were serviced during 2016 and are still reported to be operating well.

TABLE 3.1 2020 OPERATIONS AND MAINTENANCE PROJECTS COMPLETED – OAK MANOR PUMPING STATION

Item	Description of Work
1	Only routine operation and maintenance was performed in 2020.

Observations and recommendations for the Oak Manor Pumping Station based on HRG's previous Annual Inspection Reports are provided below with updates to completed items or new maintenance activities under completion noted where appropriate. This information was included to assist the Borough with developing annual O&M budgets and for Capital Improvements planning.

OAK MANOR PUMPING STATION			
Observations:	<ol style="list-style-type: none"> The Operators reported the planned rebuilding of Pump #2 during 2019. Note: this project was not yet completed. No reported issues at this time. 		
		Completed	Ongoing
Recommendations:	<ol style="list-style-type: none"> The Operators should continue performing routine maintenance and service on the existing equipment. The Operators should move forward with rebuilding Pump #2 in 2021. 	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

4.0 SUMMARY OF RECOMMENDATIONS

In summary, the WWTP consistently achieves compliance with current NPDES Permit discharge limits including the annual nutrient mass loads for TN and TP. The Oak Manor Pumping Station is operating well and within its rated hydraulic capacity. Additionally, both the WWTP and the Oak Manor Pumping Station possess adequate hydraulic and organic capacity for new connections within the Borough and surrounding municipalities.

Miscellaneous WWTP improvements which are planned to be performed by the Borough or study efforts/improvements recommended by HRG include the following (based on level of high or moderate priority):

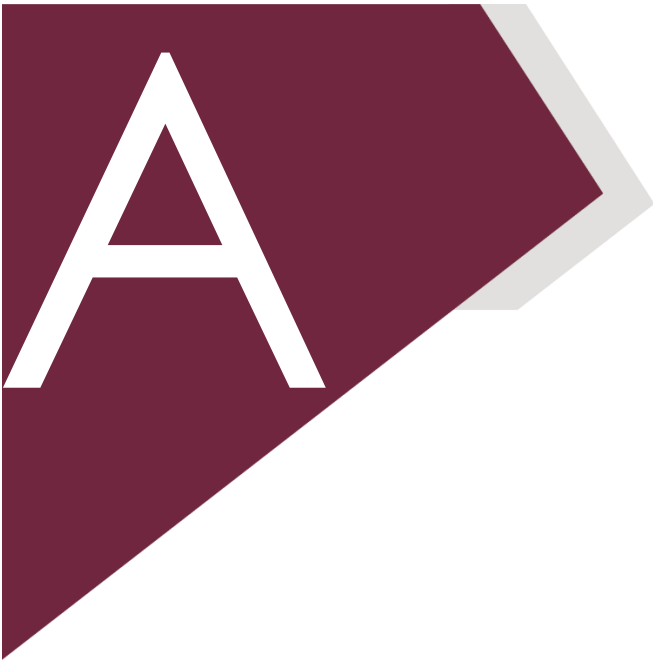
HIGH PRIORITY

- > Completion of an evaluation into the rapid deterioration of the PWTech Volute Dewatering Press wearable components
- > Completion of an evaluation into possible improvements to the polymer feed system in the Dewatering Building
- > Completion of a cost-benefit analysis on the costs of dewatered cake disposal
- > Completion of a cost-benefit analysis for the addition of supplemental mixing and aeration devices within the oxidation ditches.

MODERATE PRIORITY

- > Removal of the oxidation ditch rotors
- > Repainting of the interior Chemical Building
- > Replacement of the utility water system backflow preventer and pressure regulator
- > Replacement of the clarifier drive torque overload devices
- > Troubleshooting of the clarifier auto-mode issues with the electrician/manufacturer
- > Troubleshooting of the clarifier HOA wiring issues with the electrician
- > Re-build Pump #2 at the Oak Manor Pumping Station as time allows

In order for the Borough to adequately project future expenditures relative to the replacement or rehabilitation of aged WWTP components, it is recommended that the Borough initiate the study efforts recommended in this Report for the identification of likely construction costs for such projects. This information can then be used to aid in the development of a yearly priority listing for future implementations.



WWTP PHOTOGRAPHS

FEBRUARY 24, 2021 INSPECTION

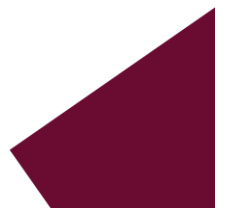




PHOTO 1 – Oxidation Ditch



PHOTO 2 – Triton Mixer/Aerator with New Drive



PHOTO 3 – Oxidation Ditch Rotor Drive and Assembly



PHOTO 4 – Repaired Skimmer Blade on Clarifier No. 2



PHOTO 5 – Clarifier Drive Torque Overload Device



PHOTO 6 – Re-Built Penn Valley Pumps



PHOTO 7 – Polymer Feed System in Dewatering Building



PHOTO 8 – PWTech Volute Dewatering Press



6

> *Industrial Wastes*



6.A. Industrial Wastes

Permitted industrial and commercial establishments are monitored on a regular basis under the Borough's Industrial Waste Ordinance to regulate loadings. The Borough plans to continue inspections of commercial and industrial establishments in the service area. If deemed appropriate by the Borough, a permitting and monitoring program will be instituted for those establishments whose discharges might impact the collection, conveyance or treatment plant.

The Borough has identified a total of six establishments that have been issued Industrial Waste Permits. Where appropriate, sampling is being required on a regular basis to assure compliance with the Borough's Industrial Waste Ordinance.

The primary contributor of industrial wastes to the Elizabethtown WWTP is Mars Chocolate North America (M&M Mars Wrigley Confectionery). The Mars Chocolate North America facility has a pretreatment plant which discharges to the Borough's collection system. A summary of the laboratory analyses of the Mars pre-treated discharge samples for 2020 is summarized in Table 6.1.

ERSA is responsible for monitoring and administering commercial and industrial dischargers in their sewer system area. Refer to the ERSA Chapter 94 Report found in Attachment 8 of this report for additional information related to their industrial waste program.

**BOROUGH OF ELIZABETHTOWN
2020 ANNUAL CHAPTER 94 REPORT**

TABLE 6.1: INDUSTRIAL WASTE MONITORING

MARS CHOCOLATE NORTH AMERICA

Month	Effluent COD (mg/l)	Effluent BOD (mg/l)	pH RANGE	TSS (mg/l)	Flow (gpd)
January	84	21	7.12 - 7.87	51	70,278
February	96	17	7.09 - 7.82	42	76,603
March	89	19	7.04 - 7.65	32	76,645
April	90	18	7.07 - 7.66	37	71,374
May	83	14	7.20 - 7.75	27	69,651
June	126	13	6.82 - 7.69	29	80,491
July	97	12	6.99 - 7.52	23	86,090
August	93	8	7.15 - 7.73	28	86,407
September	83	6	7.37 - 7.95	22	75,914
October	88	8	7.30 - 7.81	31	83,889
November	99	10	7.52 - 7.92	37	75,996
December	100	17	7.29 - 7.80	35	66,442
2020 Average	94	14	7.13 - 8.11	33	76,648
2019 Average	102	15	7.13 - 8.11	41	65,871
% Increase/Decrease from previous year	-8.96%	-9.18%		-25.88%	14.06%
2020 Maximum	126	21		51	86,407
2019 Maximum	136	29		67	78,801

Note:

-The data for this table is taken from The Monthly Operation Summary Reports which are submitted by Mars Chocolate North America to The Borough of Elizabethtown.

000598.0435



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: JANUARY 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,108,329	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	70,278	250,000	GAL
EFFLUENT PH (MIN.)	7.12	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.87	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	51	250	MG/L
EFFLUENT COD (AVERAGE)	84	-----	MG/L
EFFLUENT BOD (AVERAGE)	21	250	MG/L
EFFLUENT TEMP (AVERAGE)	48	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	12.29	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	7.45	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	16.34	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	<3.80	80	MG/L

FOR APPROVALS:

PLANT DIRECTOR

C. FREEMAN

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: FEBRUARY 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,068,273	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	76,603	250,000	GAL
EFFLUENT PH (MIN.)	7.09	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.82	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	42	250	MG/L
EFFLUENT COD (AVERAGE)	96	-----	MG/L
EFFLUENT BOD (AVERAGE)	17	250	MG/L
EFFLUENT TEMP (AVERAGE)	45	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	11.17	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	7.15	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	14.01	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	<4.10	80	MG/L

FOR APPROVALS:

PLANT DIRECTOR

C. FREEMAN

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: MARCH 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,376,007	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	76,645	250,000	GAL
EFFLUENT PH (MIN.)	7.04	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.65	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	32	250	MG/L
EFFLUENT COD (AVERAGE)	89	-----	MG/L
EFFLUENT BOD (AVERAGE)	19	250	MG/L
EFFLUENT TEMP (AVERAGE)	52	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	11.78	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	9.52	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	14.21	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	<3.70	80	MG/L

FOR APPROVALS:

PLANT DIRECTOR

C. FREEMAN

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: APRIL 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,141,207	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	71,374	250,000	GAL
EFFLUENT PH (MIN.)	7.07	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.66	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	37	250	MG/L
EFFLUENT COD (AVERAGE)	90	-----	MG/L
EFFLUENT BOD (AVERAGE)	18	250	MG/L
EFFLUENT TEMP (AVERAGE)	53	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	12.07	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	10.12	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	15.15	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	<3.90	80	MG/L

FOR APPROVALS:

PLANT DIRECTOR

C. FREEMAN

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: MAY 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,089,518	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	69,651	250,000	GAL
EFFLUENT PH (MIN.)	7.20	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.75	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	27	250	MG/L
EFFLUENT COD (AVERAGE)	83	-----	MG/L
EFFLUENT BOD (AVERAGE)	14	250	MG/L
EFFLUENT TEMP (AVERAGE)	60	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	12.06	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	9.18	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	15.10	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	<3.70	80	MG/L

FOR APPROVALS:

PLANT DIRECTOR

C. FREEMAN

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: JUNE 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,414,716	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	80,491	250,000	GAL
EFFLUENT PH (MIN.)	6.82	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.69	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	29	250	MG/L
EFFLUENT COD (AVERAGE)	126	-----	MG/L
EFFLUENT BOD (AVERAGE)	13	250	MG/L
EFFLUENT TEMP (AVERAGE)	70	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	9.65	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	6.96	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	12.47	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	<3.80	80	MG/L

FOR APPROVALS:

PLANT DIRECTOR
HSE SPECIALIST

C. FREEMAN

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR
SITE FILE COPY
CHIEF OPERATOR-BOROUGH

C. SOWERS
F. DISORI
D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: JULY 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,668,787	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	86,090	250,000	GAL
EFFLUENT PH (MIN.)	6.99	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.52	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	23	250	MG/L
EFFLUENT COD (AVERAGE)	97	-----	MG/L
EFFLUENT BOD (AVERAGE)	12	250	MG/L
EFFLUENT TEMP (AVERAGE)	75	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	10.84	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	8.34	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	12.87	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	<3.80	80	MG/L

FOR APPROVALS:

ACTING PLANT DIRECTOR
HSE SPECIALIST

P. JOLIN
A. KING *AJK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR
SITE FILE COPY
CHIEF OPERATOR-BOROUGH

C. SOWERS
F. DISORI
D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: AUGUST 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,678,626	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	86,407	250,000	GAL
EFFLUENT PH (MIN.)	7.15	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.73	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	28	250	MG/L
EFFLUENT COD (AVERAGE)	93	-----	MG/L
EFFLUENT BOD (AVERAGE)	8	250	MG/L
EFFLUENT TEMP (AVERAGE)	74	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	8.33	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	6.02	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	13.76	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	<3.80	80	MG/L

FOR APPROVALS:

ACTING PLANT DIRECTOR

P. JOLIN

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

**PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH**

MONTH OF: SEPTEMBER 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,277,413	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	75,914	250,000	GAL
EFFLUENT PH (MIN.)	7.37	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.95	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	22	250	MG/L
EFFLUENT COD (AVERAGE)	83	-----	MG/L
EFFLUENT BOD (AVERAGE)	6	250	MG/L
EFFLUENT TEMP (AVERAGE)	67	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	8.11	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	6.92	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	9.12	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	4.70	80	MG/L

FOR APPROVALS:

ACTING PLANT DIRECTOR
HSE SPECIALIST

P. JOLIN
A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR
SITE FILE COPY
CHIEF OPERATOR-BOROUGH

C. SOWERS
F. DISORI
D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH

MONTH OF: OCTOBER 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,600,550	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	83,889	250,000	GAL
EFFLUENT PH (MIN.)	7.30	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.81	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	31	250	MG/L
EFFLUENT COD (AVERAGE)	88	-----	MG/L
EFFLUENT BOD (AVERAGE)	8	250	MG/L
EFFLUENT TEMP (AVERAGE)	58	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	8.44	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	6.74	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	9.82	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	< 3.90	80	MG/L

FOR APPROVAL:

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH

MONTH OF: NOVEMBER 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	2,279,890	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	75,996	250,000	GAL
EFFLUENT PH (MIN.)	7.52	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.92	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	37	250	MG/L
EFFLUENT COD (AVERAGE)	99	-----	MG/L
EFFLUENT BOD (AVERAGE)	10	250	MG/L
EFFLUENT TEMP (AVERAGE)	51	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	9.18	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	7.49	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	11.48	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	< 3.80	80	MG/L

FOR APPROVAL:

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



295 Brown Street
Elizabethtown, PA 17022
(717) 367-1500 Phone
(717) 367-0311 Fax

PROCESS EFFLUENT PRETREATMENT FACILITY
MONTHLY OPERATION SUMMARY REPORT
SUBMITTED TO THE ELIZABETHTOWN BOROUGH

MONTH OF: DECEMBER 2020

	<u>Result</u>	<u>Limit</u>	
EFFLUENT TOTAL GALLONS	1,993,259	7,750,000	GAL
DAILY EFFLUENT AVERAGE FLOW	66,442	250,000	GAL
EFFLUENT PH (MIN.)	7.29	6.5 - 8.5	PH
EFFLUENT PH (MAX.)	7.80	6.5 - 8.5	PH
EFFLUENT SUSPENDED SOLIDS (AVERAGE)	35	250	MG/L
EFFLUENT COD (AVERAGE)	100	-----	MG/L
EFFLUENT BOD (AVERAGE)	17	250	MG/L
EFFLUENT TEMP (AVERAGE)	45	< 150	DEG. F.
EFFLUENT DISSOLVED OXYGEN (AVERAGE)	8.76	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MIN.)	7.65	-----	MG/L
EFFLUENT DISSOLVED OXYGEN (MAX.)	11.71	-----	MG/L
EFFLUENT OIL AND GREASE (MAX.)	< 3.70	80	MG/L

FOR APPROVAL:

HSE SPECIALIST

A. KING *AK*

COPIES:

EFFLUENT TREATMENT PLANT COORDINATOR

C. SOWERS

SITE FILE COPY

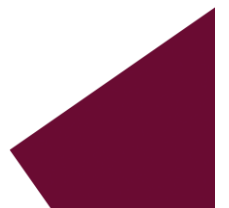
F. DISORI

CHIEF OPERATOR-BOROUGH

D. BAIR



> ***Flow Meter Calibration Reports***





LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
03/18/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

ENDRESS & HAUSER
FMU90

Instrument S/N:

L2007A150E6

Instrument Loop:

Canoy Influent Flow Meter

Input Type:

ULTRASONIC

Primary Signal Producer:

18" PARSHALL FLUME

Calibrated Range:

0-11.26 MGD

Instrument Settings:

Found

Zero	Span
37.1875 in	11.26 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	5.63 MGD	12.00 ma	0.0000
100 %	11.26 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Channel Flow Handbook

Adjustments / Actions Taken:

Comments:

Service Representative: Tony Grbas

Date: 03/18/2020

WO #: 1199



LRM, Inc

Instrumentation & Disinfection Systems

Calibration Date
03/18/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

ENDRESS & HAUSER
FMU90

Instrument S/N:

E90065150E6

Instrument Loop:

Miller Influent Flow Meter

Input Type:

ULTRASONIC

Primary Signal Producer:

9" PARSHALL FLUME

Calibrated Range:

0-4.385 MGD

Instrument Settings:

Found

Zero	Span
31.9375 in	4.385 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	2.1925 MGD	12.00 ma	0.0000
100 %	4.385 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Channel Flow Handbook

Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 03/18/2020

WO #: 1200



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
03/18/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

ENDRESS & HAUSER
FMU90

Instrument S/N:

K30043150E6

Instrument Loop:

Total Influent Flow Meter

Input Type:

ULTRASONIC

Primary Signal Producer:

3' PARSHALL FLUME

Calibrated Range:

0-14.63 MGD

Instrument Settings:

Found

Zero	Span
3.64 ft	14.64 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	7.32 MGD	12.00 ma	0.0000
100 %	14.64 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Channel Flow Handbook

Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 03/18/2020

WO #: 1201



LRM, Inc

Instrumentation & Disinfection Systems

Calibration Date
03/18/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

Endress + Hauser
FMU90

Instrument S/N:

R2007B150E6

Instrument Loop:

Bossler Influent

Input Type:

ULTRASONIC

Primary Signal Producer:

10" PALMER-BOWLUS FLUME

Calibrated Range:

0-0.7234 MGD

Instrument Settings:

Found

Zero	Span
30.0625 in	0.7234 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	0.3617 MGD	12.00 ma	0.0000
100 %	0.7234 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Channel Flow Handbook

Adjustments / Actions Taken:

Comments: New meter install

Service Representative: Tony Grbas

Date: 03/18/2020

WO #: 1198



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
03/18/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

Instrument Manufacturer/Model No:

MILLTRONICS
MULTIRANGER OCM3

Instrument S/N:

020501101PB

Instrument Loop:

Canoy Creek Flow Meter

Input Type:

ULTRASONIC

Primary Signal Producer:

120" RECTANGULAR WEIR

Calibrated Range:

0-38.35 MGD

Instrument Settings:

Found

Zero	Span

Changed To

Zero	Span

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %			-100.0000
50 %			-100.0000
100 %			-100.0000

Equipment Used:

Adjustments / Actions Taken:

Comments:

Service Representative: Tony Grbas

Date: 03/18/2020

WO #: 1204



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
03/18/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

Instrument Manufacturer/Model No:

MILLTRONICS
MULTIRANGER OCM3

Instrument S/N:

020501101PB

Instrument Loop:

Canoy Creek Flow Meter

Input Type:

ULTRASONIC

Primary Signal Producer:

120" RECTANGULAR WEIR

Calibrated Range:

0-38.35 MGD

Instrument Settings:

Found

Zero	Span

Changed To

Zero	Span

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %			-100.0000
50 %			-100.0000
100 %			-100.0000

Equipment Used:

Adjustments / Actions Taken:

Comments:

Service Representative: Tony Grbas

Date: 03/18/2020

WO #: 1204



LRM, Inc

Instrumentation & Disinfection Systems

Calibration Date
03/18/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

MILLTRONICS
MULTIRANGER PLUS

Instrument S/N:

12031170VQ

Instrument Loop:

Plant Overflow Meter

Input Type:

ULTRASONIC

Primary Signal Producer:

RECTANGULAR WEIR

Calibrated Range:

0-20 MGD

Instrument Settings:

Found

Zero	Span
29.62 in	20.00 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	10.00 MGD	12.00 ma	0.0000
100 %	20.00 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Channel Flow Handbook

Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 03/18/2020

WO #: 1203



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
03/18/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

ENDRESS & HAUSER
FMU90

Instrument S/N:

N200C6150E6

Instrument Loop:

Plant Effluent Flow Meter

Input Type:

ULTRASONIC

Primary Signal Producer:

60" CONSTRICTED RECTANGULAR WEIR

Calibrated Range:

0-18.57 MGD

Instrument Settings:

Found

Zero	Span
45.072 in	18.57 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	9.285 MGD	12.00 ma	0.0000
100 %	18.57 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Channel Flow Handbook

Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 03/18/2020

WO #: 1202



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
12/03/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

MILLTRONICS
MULTIRANGER PLUS

Instrument S/N:

12031170VQ

Instrument Loop:

PLANT OVERFLOW METER

Input Type:

ULTRASONIC

Primary Signal Producer:

RECTANGULAR WEIR

Calibrated Range:

0-20 MGD

Instrument Settings:

Found

Zero	Span
29.62 in	20.00 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	10.00 MGD	12.00 ma	0.0000
100 %	20.00 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco open channel handbook, Multimeter

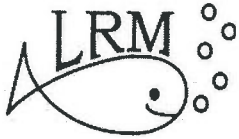
Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 12/03/2020

WO #: 2563



LRM, Inc

Instrumentation & Disinfection Systems

Calibration Date
12/03/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

ENDRESS & HAUSER
FMU90

Instrument S/N:

L2007A150E6

Instrument Loop:

CANOE INFLUENT FLOW METER

Input Type:

ULTRASONIC

Primary Signal Producer:

18" PARSHALL FLUME

Calibrated Range:

0-11.26 MGD

Instrument Settings:

Found

Zero	Span
37.1875 in	11.26 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	5.63 MGD	12.00 ma	0.0000
100 %	11.26 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Chanel Flow Handbook

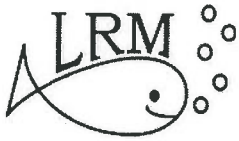
Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 12/03/2020

WO #: 2559



LRM, Inc

Instrumentation & Disinfection Systems

Calibration Date
12/03/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

ENDRESS & HAUSER
FMU90

Instrument S/N:

E90065150E6

Instrument Loop:

MILLER INFLUENT FLOW METER

Input Type:

ULTRASONIC

Primary Signal Producer:

9" PARSHALL FLUME

Calibrated Range:

0-4.385 MGD

Instrument Settings:

Found

Zero	Span
31.9375 in	4.385 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	2.1925 MGD	12.00 ma	0.0000
100 %	4.385 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Chanel Flow Handbook

Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 12/03/2020

WO #: 2560



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
12/03/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

ENDRESS & HAUSER
FMU90

Instrument S/N:

N200C6150E6

Instrument Loop:

PLANT EFFLUENT FLOW METER

Input Type:

ULTRASONIC

Primary Signal Producer:

60" CONSTRICTED RECTANGULAR WEIR

Calibrated Range:

0-18.57 MGD

Instrument Settings:

Found

Zero	Span
45.072 in	18.57 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	9.285 MGD	12.00 ma	0.0000
100 %	18.57 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Chanel Flow Handbook,

Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 12/03/2020

WO #: 2562



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
12/03/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

ENDRESS & HAUSER
FMU90

Instrument S/N:

K30043150E6

Instrument Loop:

TOTAL INFLUENT FLOW METER

Input Type:

ULTRASONIC

Primary Signal Producer:

3' PARSHALL FLUME

Calibrated Range:

0-14.63 MGD

Instrument Settings:

Found

Zero	Span
3.64 ft	14.64 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	7.32 MGD	12.00 ma	0.0000
100 %	14.64 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Chanel Flow Handbook

Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 12/03/2020

WO #: 2561



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
12/03/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

Instrument Manufacturer/Model No:

MILLTRONICS
MULTIRANGER OCM3

Instrument S/N:

020501101PB

Instrument Loop:

Input Type:

ULTRASONIC

Primary Signal Producer:

120" RECTANGULAR WEIR

Calibrated Range:

0-38.35 MGD

Instrument Settings:

Found

Zero	Span
84.10 in	38.35 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	19.175 MGD	12.00 ma	0.0000
100 %	38.35 MGD	20.00 ma	0.0000

Equipment Used: Stick rule, Multimeter

Adjustments / Actions Taken: None

Comments:

Service Representative: Tony Grbas

Date: 12/03/2020

WO #: 2564



LRM, Inc
Instrumentation & Disinfection Systems

Calibration Date
12/03/2020

User

ELIZABETHTOWN BOROUGH
600 South Hanover Street
Elizabethtown
PA 17022

Job Site

600 HANOVER ST.
, ELIZABETHTOWN, PA

Instrument Manufacturer/Model No:

Endress + Hauser
FMU90

Instrument S/N:

R2007B150E6

Instrument Loop:

Bossler Influent

Input Type:

ULTRASONIC

Primary Signal Producer:

10" PALMER-BOWLUS FLUME

Calibrated Range:

0-0.7234 MGD

Instrument Settings:

Found

Zero	Span
30.0625 in	0.7234 MGD

Changed To

Zero	Span
N/A	N/A

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0 MGD	4.00 ma	0.0000
50 %	0.3617 MGD	12.00 ma	0.0000
100 %	0.7234 MGD	20.00 ma	0.0000

Equipment Used: Stick Rule, Isco Open Channel Flow Handbook

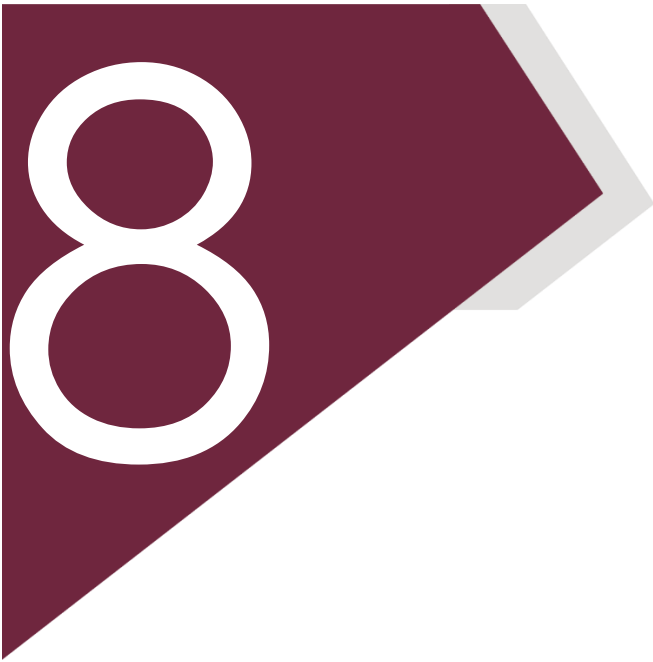
Adjustments / Actions Taken: None

Comments:

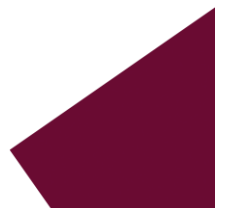
Service Representative: Tony Grbas

Date: 12/03/2020

WO #: 2558



> ***Elizabethtown Regional Sewer
Authority (ERSA) Report***



2020 ANNUAL CHAPTER 94 REPORT

ELIZABETHTOWN REGIONAL
SEWER AUTHORITY

Lancaster County, Pennsylvania

March 2021



CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2020

- ☐ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☒ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION	
Permittee Name: Elizabethtown Regional Sewer Authority	Permit No.: PA
Mailing Address: 235 ERSA Drive	Effective Date:
City, State, Zip: Elizabethtown, PA 17022	Expiration Date:
Contact Person: Nick Viscome	Renewal Due Date:
Title: Authority Manager	Municipality: Elizabethtown
Phone: 717-367-5947	County: Lancaster
Email: nick@ersapa.com	Consultant Name: CDM Smith
CHAPTER 94 REPORT COMPONENTS	
<p>1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))</p> <p>Check the appropriate boxes:</p> <p><input type="checkbox"/> Line graph for flows attached (Attachment)</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (Attachment)</p> <p><input checked="" type="checkbox"/> Section 1 is not applicable (report is for a collection system).</p>	
<p>2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))</p> <p>Check the appropriate boxes:</p> <p><input type="checkbox"/> Line graph for organic loads attached (Attachment)</p> <p><input type="checkbox"/> DEP Chapter 94 Spreadsheet used (Attachment)</p> <p><input checked="" type="checkbox"/> Section 2 is not applicable (report is for a collection system).</p>	

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Refer to Attachment 1 for the sections, figures, and tables titled "Hydraulic Loading" found on pages 1 through 3.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

- ☒ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment 3**)
- ☒ List summarizing each extension or project attached (**Attachment 1**)
- ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

Refer to the sections titled "Extensions to the Sewer System During 2020" & "New Connections" on page 9 of Attachment 1, Tables 2 & 3 on pages 4 and 5 of Attachment 1 and to the Index Map in Attachment 3.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

Refer to the section titled "Sewer System Monitoring" & "Maintenance, Repair and Rehabilitation" on pages 10 and 13 of Attachment 1.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

- ☒ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.
- ☐ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

Refer to sections "Conditions of the Wastewater Collection System", "Condition of the Pumping Stations" and "Plan to Reduce Projected Overloads" on pages 6 and 14 of Attachment 1. Attachment 2 should be referred to for the "I/I Identification and Removal Program". Attachment 4 should be referenced for the "Annual Report on the Condition of Sewerage Facilities".

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

- ☐ The collection system does not contain pump stations
- ☒ The collection system does contain pump stations (Number – **15**)
- ☒ Discussion of condition of each pump station attached (**Attachment 4**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

- a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
- b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
- c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

- ☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)
- ☐ Industrial pretreatment report as required in an NPDES permit attached (**Attachment**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
☐ This report demonstrates a projected hydraulic overload condition.
☐ This report demonstrates an existing organic overload condition.
☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

- ☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

- ☐ Sewage Sludge Management Inventory attached (**Attachment**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

- ☐ Annual CSO Report attached (**Attachment**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

- ☐ Flow calibration report attached (**Attachment**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Nick Viscome, Authority Manager

Name of Responsible Official

717-367-5947

Telephone No.



Signature

3/15/2021

Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Byrne E. Remphrey, P.E., BCEE



Name of Preparer

Signature

717-560-7500

3/15/2021

Telephone No.

Date

Table of Contents

Annual Chapter 94 Report 1.1 GENERAL	1
1.2 HYDRAULIC LOADING.....	1
1.3 FUTURE CONNECTIONS.....	1
1.4 PLAN TO REDUCE PROJECTED OVERLOAD CONDITIONS	6
1.4.1 Sewage Treatment Capacity Allocation.....	6
1.4.2 Infiltration and Inflow Program Status Report	6
1.4.3 Future Planning Needs.....	7
1.5 INDUSTRIAL WASTE REPORT	9
1.6 EXTENSIONS TO THE SEWER SYSTEM DURING 2020	9
1.7 NEW CONNECTIONS.....	9
1.8 SEWER SYSTEM MONITORING.....	10
1.9 SANITARY SEWAGE OVERFLOWS.....	13
1.10 MAINTENANCE, REPAIR AND REHABILITATION	13
1.11 CONDITION OF THE WASTEWATER COLLECTION SYSTEM	14
1.12 CONDITION OF THE PUMPING STATIONS.....	14

List of Tables

FIGURE 1 HYDRAULIC LOADING	2
TABLE 1 HYDRAULIC LOADING	3
TABLE 2 DEVELOPMENT STATUS REPORT	4
TABLE 3 PROJECTED FUTURE CONNECTIONS	5
TABLE 4 RECORDED PUMPING STATION FLOWS	12

Attachments

ATTACHMENT A I/I IDENTIFICATION AND REMOVAL PROGRAM	15
ATTACHMENT B MASTER SEWER INDEX MAP	18
ATTACHMENT C CONDITION OF SEWERAGE FACILITIES	20

This page intentionally left blank.

Annual Chapter 94 Report

1.1 GENERAL

In January of 2012 West Donegal Township Authority (WDTA) and Mount Joy Township Authority (MJTA) combined their respective sanitary sewer systems to form the Elizabethtown Regional Sewer Authority (ERSA). ERSA provides wastewater conveyance services to portions of West Donegal Township, Mount Joy Township and a small portion of Conoy Township. The Authority's facilities consist of gravity sewers ranging in size from 8-in through 15-in, low pressure sewer mains ranging in size from 2-in through 3-in, force mains ranging in size from 4-in through 10-in, three metering chambers and fifteen sewage pumping stations originally designed for average daily flows of 20 to 980 gallons per minute (GPM). Wastewater from the ERSA service area is treated at the Borough of Elizabethtown Wastewater Treatment Plant (WWTP) located near the intersection of Amosite and Bainbridge Roads in West Donegal Township.

1.2 HYDRAULIC LOADING

The hydraulic loading graph was prepared from flow measurements that were continuously recorded at the Turnpike Road No. 2, Miller Road, Bossler Road No. 2 pumping stations and the Mill Road, Kiwanis and Radio Road metering chambers. Figure 1 shows the average daily flows and annual average flows for the past five years, annual average projected flows for the next five years and the ERSA allocated flow at the Elizabethtown Borough WWTP. These flows are also summarized in Table 1. The annual average daily ERSA flow for 2020 was 1.063 million gallons per day (MGD). The base flow used in the future flow projections is an average of the average daily flows over the last five years. This approach was taken to limit the fluctuation in flows based on wet or dry weather and provide the most accurate representation of future flows.

1.3 FUTURE CONNECTIONS

Table 2 lists all of the current or proposed developments that currently have plans on file with ERSA and the status of each development that has been granted capacity by ERSA as of the end of 2017. Table 3 presents projected future connections for the Authority.

Table 3 summarizes the projected connections for the ERSA system over the next five years. The projected annual growth rate as shown in Table 1 was obtained from the projections indicated on Table 3. The ERSA EDU has been calculated as 235 gpd, in accordance with Act 57 regulations. For planning purposes, the Authority is using 275 gpd/EDU, which is slightly conservative when compared with actual flows (170-200 gpd/EDU). This annual increase was then added to the previous year's flow to obtain projected flows beginning with the year 2020.

Figure 1

Elizabethtown Regional Sewer Authority
Hydraulic Loading

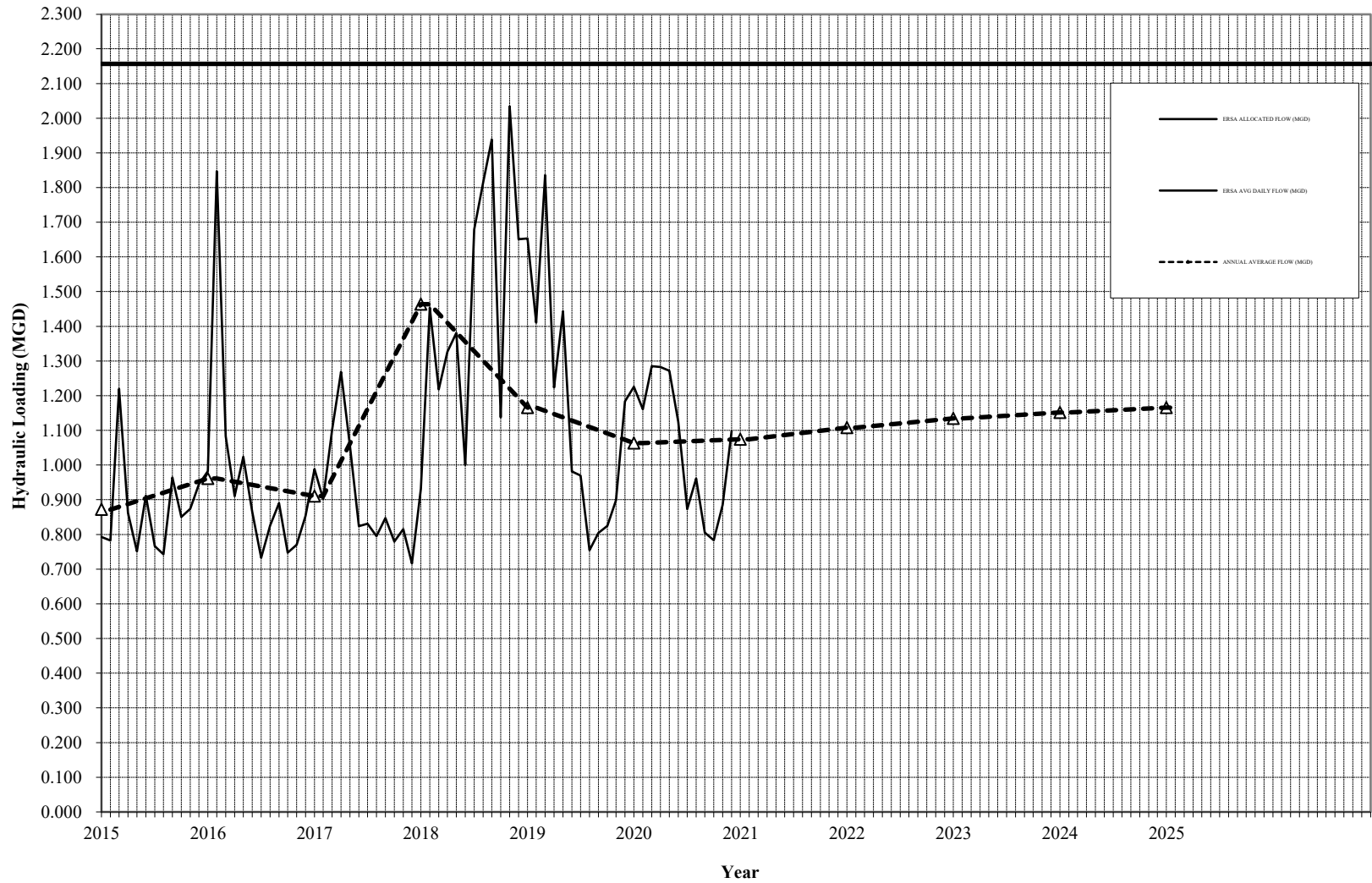


Table 1

Elizabethtown Regional Sewer Authority
Hydraulic Loading

Month	YEAR	TURNPIKE ROAD NO. 2 FLOW (MG)	MILLER ROAD FLOW (MG)	BOSSLER ROAD NO. 2 FLOW (MG)	MILL RD. METER FLOW (MG)	2019 ESTIMATED MAX	KIWANIS METER FLOW (MG)	RADIO RD. METER FLOW (MG)	UNMETERED CUSTOMERS (MG)	TOTAL ERS MONTHLY FLOW (MG)	DAYS/ MONTH	ERSA AVG DAILY FLOW (MGD)	ANNUAL AVERAGE FLOW (MGD)	ERSA ALLOCATED FLOW (MGD)	ANNUAL GROWTH RATE (EDUs/YEAR)	PROJECTED GROWTH RATE (EDUs/YEAR)
January		2.254	9.819	3.201	2.039		6.463	5.745	0.933	30.454	31.000	0.982	0.961	2.157		
February		4.841	16.134	6.593	3.497		10.935	10.686	0.873	53.560	29.000	1.847		2.157		
March		2.411	11.083	4.431	2.239		6.172	6.309	0.933	33.577	31.000	1.083		2.157		
April		1.970	9.053	3.578	2.088		4.724	4.972	0.940	27.324	30.000	0.911		2.157		
May	2	2.714	10.555	4.474	2.138		5.934	4.950	0.971	31.735	31.000	1.024		2.157		
June	0	1.397	8.969	3.096	2.142		4.462	4.961	0.940	25.968	30.000	0.866		2.157		
July	1	1.335	8.335	2.819	1.639		3.741	3.846	0.987	22.702	31.000	0.732		2.157		
August	6	1.592	9.289	3.172	1.910		4.014	4.618	0.987	25.581	31.000	0.825		2.157		
September		1.164	8.392	2.546	1.554		3.602	8.500	0.956	26.713	30.000	0.890		2.157		
October		1.197	8.492	2.671	1.658		3.870	4.356	0.939	23.182	31.000	0.748		2.157		
November		0.977	8.393	2.688	1.569		3.736	4.841	0.908	23.112	30.000	0.770		2.157		
December		1.437	8.992	3.231	1.917		4.320	5.636	0.939	26.470	31.000	0.854		2.157		
January		2.159	10.089	3.661	2.143		5.291	6.379	0.922	30.643	31.000	0.988	0.910	2.157		18
February		1.692	8.577	2.887	1.736		4.383	5.154	0.833	25.260	28.000	0.902		2.157		
March		3.055	10.632	4.242	2.295		6.175	6.814	0.922	34.135	31.000	1.101		2.157		
April		3.265	10.938	4.730	2.397		8.070	7.749	0.903	38.052	30.000	1.268		2.157		
May	2	2.574	9.812	4.010	2.351		6.246	6.785	0.933	32.711	31.000	1.055		2.157		
June	0	1.430	8.213	2.892	1.717		4.443	5.130	0.903	24.728	30.000	0.824		2.157		
July	1	1.623	8.681	2.927	1.836		4.546	5.206	0.933	25.752	31.000	0.831		2.157		
August	7	1.442	8.391	2.754	1.750		4.426	4.944	0.933	24.641	31.000	0.795		2.157		
September		1.637	8.427	2.670	1.762		5.033	4.996	0.903	25.427	30.000	0.848		2.157		
October		1.223	8.419	2.695	1.787		4.753	4.298	0.977	24.151	31.000	0.779		2.157		
November		1.449	8.651	2.739	1.743		4.967	3.956	0.945	24.449	30.000	0.815		2.157		
December		1.122	8.183	2.490	1.566		4.218	3.668	0.977	22.223	31.000	0.717		2.157		
January		1.865	10.280	3.285	2.137		5.526	4.838	0.939	28.870	31.000	0.931	1.464	2.157		144
February		4.375	11.837	4.941	2.614		9.158	6.940	0.848	40.711	28.000	1.454		2.157		
March		4.827	11.065	4.677	2.491		7.876	5.886	0.939	37.760	31.000	1.218		2.157		
April		4.411	11.313	5.167	2.836		8.406	6.741	0.908	39.781	30.000	1.326		2.157		
May	2	4.115	11.855	5.982	2.987		9.285	7.645	0.939	42.807	31.000	1.381		2.157		
June	0	2.419	9.218	4.003	2.100		6.220	5.134	0.908	30.002	30.000	1.000		2.157		
July	1	3.236	17.055	5.372	2.915		11.060	11.471	0.949	52.058	31.000	1.679		2.157		
August	8	3.732	20.941	5.358	2.824		13.200	9.221	0.949	56.225	31.000	1.814		2.157		
September		4.699	19.841	5.613	2.906		13.335	10.847	0.919	58.160	30.000	1.939		2.157		
October		2.904	10.759	4.483	2.372		7.685	5.812	1.251	35.265	31.000	1.138		2.157		
November		6.124	18.189	7.870	3.562		14.060	10.025	1.210	61.039	30.000	2.035		2.157		
December		4.892	14.916	7.299	3.222		11.380	8.220	1.251	51.179	31.000	1.651		2.157		
January		4.668	14.998	7.596	3.449		11.176	8.099	1.273	51.259	31.000	1.654	1.165	2.157		96
February		3.928	10.371	6.209	2.688		8.842	6.307	1.149	39.494	28.000	1.411		2.157		
March		4.922	14.791	7.632	3.188		12.266	8.846	1.273	56.916	31.000	1.836		2.157		
April		3.059	10.074	6.164	2.534		7.997	5.636	1.246	36.710	30.000	1.224		2.157		
May	2	4.047	11.927	6.888	3.093		10.377	7.123	1.287	44.742	31.000	1.443		2.157		
June	0	2.619	7.599	4.398	2.176		6.367	5.040	1.246	29.444	30.000	0.981		2.157		
July	1	2.003	9.222	4.137	2.161		6.099	5.216	1.236	30.074	31.000	0.970		2.157		
August	9	1.159	7.435	3.049	1.712		4.722	4.087	1.236	23.400	31.000	0.755		2.157		
September		1.145	8.120	3.032	1.741		4.616	4.288	1.196	24.139	30.000	0.805		2.157		
October		1.247	8.545	3.073	1.897		4.982	4.533	1.280	25.556	31.000	0.824		2.157		
November		1.883	8.290	3.430	1.948		5.599	4.584	1.239	26.972	30.000	0.899		2.157		
December		2.698	11.730	4.288	2.842		7.665	6.184	1.280	36.686	31.000	1.183		2.157		
January		3.267	11.845	4.331	3.011		8.015	6.176	1.353	37.997	31.000	1.226	1.063	2.157		85
February		2.769	10.056	4.236	2.748		7.189	5.395	1.265	33.658	29.000	1.161		2.157		
March		3.817	11.449	5.664	3.351		7.516	6.696	1.353	39.846	31.000	1.285		2.157		
April		3.328	10.779	5.241	3.089		8.253	6.724	1.069	38.483	30.000	1.283		2.157		
May	2	3.269	11.039	5.334	2.930		8.944	6.814	1.105	39.434	31.000	1.272		2.157		
June	0	2.292	10.530	4.802	2.640		6.433	5.973	1.069	33.739	30.000	1.125		2.157		
July	2	1.328	9.109	3.478	2.107		5.228	4.681	1.141	27.072	31.000	0.873		2.157		
August	0	1.767	9.367	3.897	2.532		5.576	5.516	1.141	29.797	31.000	0.961		2.157		
September		1.057	7.963	3.124	1.654		4.886	4.433	1.046	24.163	30.000	0.805		2.157		
October		1.065	8.250	3.015	1.672		4.778	4.435	1.076	24.291	31.000	0.784		2.157		
November		1.111	9.081	3.383	1.848		5.260	4.835	1.041	26.560	30.000	0.885		2.157		
December		2.205	11.115	4.022	2.254		7.385	5.963	1.076	34.021	31.000	1.097		2.157		
2021													1.075	2.157		142
2022													1.108	2.157		122
2023													1.134	2.157		95
2024													1.152	2.157		63
2025													1.165	2.157		50

1 EDU = 275 gpd

Notes: (1) The projected annual average flow for 2020 was calculated based on annual flow averaged from 2015, 2016, 2017, 2018 and 2019.

Table 2

Elizabethtown Regional Sewer Authority
Development Status Report

Development	Total EDUs	Permits Issued Prior to 2020	Permits Issued In 2020	EDUs In Service	Estimated Capacity (GPD)	Unused Capacity (GPD)	Pumping Station/ Connection Point
Raffensberger	88	0	--	0	24,200	24,200	Schwanger
Timber Villa - ALP	30	0	--	0	8,250	8,250	Boss. 2
M. Wenger Trust - Rheems Fire Co.	3	0	--	0	825	825	Miller
M. Wenger Trust - Marlin Winters	3	0	--	0	825	825	Miller
Ketterline-ERSA Drive	13	0	5	5	3,575	2,200	Colebrook
Koser Subdivision	7	0	--	0	1,925	1,925	Turnpike 2
Hickory Run	12	0	12	12	3,300	0	
Radio Road Subdivision	45	0	--	0	12,375	12,375	Conn. Pt 3
Donegal Meadows	84	82	--	82	23,100	550	Nolt
Ed Hixon Subdivision	6	4	--	3	1,650	825	Nolt
Maple Glen	70	70	--	65	19,250	1,375	Boss. 1
Conoy Crossing	24	11	7	18	6,600	1,650	Connoy Interceptor
David Good Property	7	6	--	6	1,925	275	
West Ridge Estates Lot #111	2	1	--	1	550	275	Miller
Woods Edge	58	52	--	50	15,950	2,200	Miller
Bishop Woods (formerly Donegal Woods)	114	69	5	67	31,350	12,925	Boss.1/Wilkens
Summitt at Stone Mill	23	14	2	23	6,325	0	Miller
Sylvester Walters	4	0	--	0	1,100	1,100	Pioneer Hills
Dave Abel Property	4	3	--	3	1,100	275	Conn. Pt 4
Shellenberger Property	3	0	--	1	825	550	Colebrook
Stoney Brook	317	80	19	88	87,175	62,975	Miller
Featherston Crossing	361	265	19	282	99,275	21,725	Schwanger
Westbrooke IV	213	50	--	20	58,575	53,075	SchwangerColebrook
Hoffer Tract	55	0	--	27	15,125	7,700	Schwanger
Sheaffer Ridge Condos	18	4	--	17	4,950	275	Schwanger
Miscellaneous Bossler #1	5	4	--	6	1,375	(275)	Boss. 1
Miscellaneous Bossler #2	1	1	--	1	275	0	Boss. 2
Miscellaneous Cameron	2	0	--	2	550	0	Cameron
Miscellaneous Colebrook	5	5	2	5	1,375	0	Colebrook
Miscellaneous Conewago	1	1	--	0	275	275	Conewago
Miscellaneous Hershey	3	3	--	3	825	0	Hershey
Miscellaneous Miller Residential	60	60	--	52	16,500	2,200	Miller
Additional Miller Nonresidential (1)	11 (1)	11	--	7	3,025	1,100	Miller
Miscellaneous Nolt	1	1	--	0	275	275	Nolt
Miscellaneous Turnpike #2	1	1	1	1	275	0	Turnpike 2
Miscellaneous Wilkens	1	12	--	1	275	0	Wilkens
Miscellaneous Connection Points	20	10	(2)	18	5,500	550	
	1,587	820	73	866	436,425	198,275	

Notes:

- (1) EDUs represent 3 EDUs from Longenecker's Hatchery; 1 EDU from Risser Automotive; 1 EDU from Nitrate Removal System added to Lot 15 of Timber Villa; 1 EDU from home salon; 1 EDU for Waste Management office; 1 EDU for Kettering Medical office; 1 EDU for Companion Animal Hospital; 1 EDU for Member's 1st FCU.
- (2) Permit #4046 for Ironstone Ranch represents 4 EDUs
- (3) Flow is based upon 275 gpd/EDU.

TABLE 3

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
PROJECTED FUTURE CONNECTIONS

Development	Total Planned EDUs	EDUs In Service 1/1/2020	EDUs Remaining 1/1/2020	EDUs Connected 2020	EDUs Remaining 12/31/2020	Projected EDU connections				
						2021	2022	2023	2024	2025
Raffensberger	88	0	88	0	88	10	20	20	20	18
Timber Villa - ALP	30	0	30	0	30	--	15	15	--	--
M. Wenger Trust - Rheems Fire Co.	3	0	3	0	3	--	--	--	--	--
M. Wenger Trust - Marlin Winters	3	0	3	0	3	3	--	--	--	--
Ketterline-ERSA Drive	13	2	11	3	8	4	4	--	--	--
Koser Subdivision	7	0	7	0	7	7	--	--	--	--
Hickory Run	12	0	12	12	0	--	--	--	--	--
Radio Road Subdivision	45	0	45	0	45	15	15	15	--	--
Donegal Meadows	84	82	2	0	2	2	--	--	--	--
Ed Hixon Subdivision	6	3	3	0	3	3	--	--	--	--
Maple Glen	70	65	5	0	5	5	--	--	--	--
Conoy Crossing	24	8	16	10	6	2	4	--	--	--
David Good Property	7	6	1	0	1	1	--	--	--	--
West Ridge Estates Lot #111	2	1	1	0	1	1	--	--	--	--
Woods Edge	58	50	8	0	8	5	3	--	--	--
Bishop Woods (formerly Donegal Woods)	114	60	54	7	47	10	10	10	10	5
Summitt at Stone Mill	23	21	2	2	0	--	--	--	--	--
Sylvester Walters	4	0	4	0	4	4	--	--	--	--
Dave Abel Property	4	3	1	0	1	1	--	--	--	--
Shellenberger Property	3	1	2	0	2	1	1	--	--	--
Stoney Brook	317	67	250	21	229	25	25	25	25	25
Featherton Crossing	361	259	102	23	79	20	20	15	15	10
Westbrooke IV	213	20	193	0	193	10	10	10	10	10
Hoffer Tract	55	27	28	0	28	10	10	5	3	--
Sheaffer Ridge Condos	18	15	3	2	1	1	--	--	--	--
Miscellaneous Bossler #1	5	5	0	1	-1	--	--	--	--	--
Miscellaneous Bossler #2	1	1	0	0	0	--	--	--	--	--
Miscellaneous Cameron	2	2	0	0	0	--	--	--	--	--
Miscellaneous Colebrook	5	3	2	2	0	1	--	--	--	--
Miscellaneous Conewago	1	0	1	0	1	1	--	--	--	--
Miscellaneous Hershey	3	3	0	0	0	--	--	--	--	--
Miscellaneous Miller Residential	60	52	8	0	8	5	3	--	--	--
Additional Miller Nonresidential (1)	11	7	4	0	4	2	2	--	--	--
Miscellaneous Nolt	1	0	1	0	1	1	--	--	--	--
Miscellaneous Turnpike #2	1	0	1	1	0	--	--	--	--	--
Miscellaneous Wilkens	1	1	0	0	0	--	--	--	--	--
Miscellaneous Connection Points	20	17	3	1	2	2	--	--	--	--
Total EDUs	1587	781	806	85	721	142	122	95	63	50

Notes:

- (1) EDUs represent 3 EDUs from Longenecker's Hatchery; 1 EDU from Risser Automotive; 1 EDU from Nitrate Removal System added to Lot 15 of Timber Villa; 1 EDU from home salon; 1 EDU for Waste Management office; 1 EDU for Kettering Medical office; 1 EDU for Companion Animal Hospital; 1 EDU for Member's 1st FCU.
- (2) Flow is based upon 275 gpd/EDU.

1.4 PLAN TO REDUCE PROJECTED OVERLOAD CONDITIONS

1.4.1 Sewage Treatment Capacity Allocation

The Authority participated in the upgrade and expansion of the Elizabethtown Borough WWTP from 3.0 MGD to 4.5 MGD. The expansion project provided for an increase in the reserved capacity for ERSA to its current 2.157 MGD (0.811MGD from the former WDTA and 1.346 MGD from the former MJTA). The plant expansion eliminated the projected overload condition and allowed the Authority to grant capacity for future requests. Figure 1 shows that projected annual average ERSA flows will not exceed the 2.157 MGD hydraulic capacity allocation during the next five years.

WDTA and MJTA both negotiated an amendment to their respective Intermunicipal Agreements with Elizabethtown Borough. The intent of this amendment was to incorporate provisions related to new nitrogen and phosphorous nutrient loading requirements associated with the Borough's NPDES permit. Elizabethtown Borough and ERSA met in 2018 to discuss ERSA's allocation agreement and ensure their capacity would not exceed compliance. The Borough and ERSA determined that their capacity would not exceed its allocation at the treatment plant or its conveyance allocations with the Elizabethtown Borough system during the next five years. The agreement was finalized in Fall 2018 and includes procedures for capital project funding for the shared facilities.

In recent years, the Borough of Elizabethtown identified a projected hydraulic overload within its Radio Road Interceptor. It is worth noting that ERSA has a conveyance allocation within this Interceptor (noted as Connection Point #3). Recent flow records, including a flow monitoring study performed by the Borough in 2016, indicate that the Authority is well within its average daily flow conveyance allocation. ERSA has been made aware of several hundred EDUs worth of potential development tributary to this Interceptor. ERSA understands that the Borough has investigated the Interceptor and identified multiple defects that will require a combination of repair and replacement to address, and that an improvement project would be performed as needed to accommodate development and conveyance needs. It is anticipated that the Borough and ERSA will determine in the near future what repairs and improvements are required to meet long-term development needs.

1.4.2 Infiltration and Inflow Program Status Report

ERSA continues to perform I/I investigation and elimination work. Attachment 1 contains a report on the I/I removal activities in progress.

As a result of significant and persistent wet weather during 2018, the Authority televised the Nolt Avenue Pumping Station drainage basin in December 2018. The televising identified multiple broken laterals and leaking manholes, which were promptly repaired. In 2019, the Authority focused its investigative efforts in the Bossler Road No. 1, Turnpike Road No. 1 and 2 and Wilkens Street basins, repairing approximately 200 LF of 8" main and repairing several broken laterals. In 2020, the Authority focused its investigation efforts in the Turnpike Road No. 2 basin, repairing four laterals, five manholes and performing one point repair.

1.4.3 Future Planning Needs

ERSA participated with the Borough of Elizabethtown to expand the Elizabethtown WWTP. There is an Intermunicipal Agreement amongst the parties that established the various contributions to be made by each of the parties for the upgrade and expansion of the treatment plant. Additional treatment capacity secured by ERSA in the Elizabethtown WWTP will provide sufficient hydraulic capacity for projected growth within West Donegal and Mount Joy Townships. ERSA also continues to work toward the identification and reduction of excessive I/I.

During Fall 2004, the Authority completed construction of a force main project that diverted flow from the Bossler Road No. 1 pumping station away from the Turnpike Road No. 1 and No. 2 pumping stations. Approximately 1,380 feet of force main were installed to convey the diverted flow to the Bossler Road No. 2 drainage basin. As a result of this project, overflow conditions previously experienced at the Turnpike Road No. 2 pumping station have been eliminated. In addition, the pumping capacity of the Bossler Road No. 1 pumping station was increased as a result of a reduction in headloss from pipe friction. This increase in pumping capacity has improved the ability of the Bossler Road No. 1 pumping station to convey wet weather flows. The original force main from the Bossler Road No. 1 pumping station to the Turnpike Road No. 1 drainage basin can still be utilized to provide flexibility in operations and maintenance.

The Authority has also initiated the development of a capital improvement plan to address the need for upgrading sewage conveyance facilities. The Authority performed an initial evaluation of the impact of projected sewage flows identified in the Township's draft Act 537 Plan. As a result of this evaluation, the Authority identified three pumping stations that require expansion: Bossler Road No. 1, Bossler Road No. 2, and Miller Road. In addition, the Authority recognizes that the age of many of the Authority's other pumping stations warrants a more complete review of the condition of those facilities to determine if upgrades are necessary. Therefore, the Authority continually evaluates potential upgrades to extend the useful life of these pumping stations. Following the merger and formation of ERSA, the Authority updated its capital improvements plan in 2012 to reflect the future needs for the combined service area. The Authority continues to reevaluate the capital improvement plan on a regular basis as development dictates.

During 2005, the Authority executed a developer's agreement for the proposed Bishop Woods (formerly Donegal Woods) development and is in the beginning stages of construction. The agreement includes provisions for significant upgrades and expansions of the Bossler Road No. 1 and No. 2 pumping stations and respective force mains, as well as the expansion of a section of gravity sewer interceptor. However, the concept of the Bishop Woods development was revised during 2009 to a significantly smaller project (460 units reduced to 114 units). As a result, it was not financially viable to proceed with the same concept for the expansion of Authority facilities. Therefore, the Authority negotiated revised developer's agreements for the Bishop Woods and Timber Villa -ALP projects, which included provisions for smaller scale, phased upgrades and expansions to the Bossler Road No. 1, Bossler Road No. 2 and Turnpike Road No. 2 pumping stations. Improvements to the Bossler Road No. 2 pumping station, which were required prior to the construction of the Timber Villa-ALP project and the

completion of the first phase of Bishop Woods (approximately 31 EDUs), were completed in 2015. In conjunction with the construction of the third phase of Bishop Woods (approximately 28 EDUs), the Authority is planning to make improvements to the Bossler Road No. 1 Pumping Station. Construction of the Bossler Road No. 1 improvements is currently underway, and the new pumps were started up in early 2021. Finally, prior to the construction of the remaining EDUs of Bishop Woods, the Authority will make improvements to the Turnpike Road No. 2 Pumping Station, the design for which is anticipated to commence in 2020.

In 2006 the Authority constructed a new 10-inch force main for the Schwanger Road Pumping Station, which was put into service in 2007 and discharges to the Kiwanis metering chamber. Additionally, due to the increased pressure to develop the area within the Schwanger Road Pump Station drainage basin, the Schwanger Road Pump Station expansion project was completed in late 2007. The upgraded pump station facility is currently operational with an expanded capacity of 1.4 MGD. This expansion will address the growth in the Schwanger Road Drainage basin in the next 20 years.

In 2010 the 6-inch ductile iron pipe (DIP) force main from Hershey Road Pumping Station failed at two (2) locations along S.R. 743 near Route 283. Both failures were repaired, but an investigation found DIP corrosion on the pipe exterior which led to ERSA's decision to contract for replacement of approximately 900 feet of force main and 1,200 feet of 8-inch gravity sewer primarily within PennDOT right-of-way of Route 283. Construction began in 2010 and was completed in 2011.

The Authority has also identified that its Miller Road PS will need to be expanded to accommodate all tributary development located in West Donegal and Mount Joy Townships. Based upon current development trends in the ERSA system, the Authority began survey and planning of the improvements to the Miller Road PS and force main in 2017. Design will be complete in 2021 with bidding and construction anticipated to commence before the end of the year. The expansion and upgrade of the Miller Road Pumping Station was approved during the update of the Intermunicipal Agreement between ERSA and Elizabethtown Borough.

As noted above, the Authority has been informed of potential development that would be tributary to the Borough of Elizabethtown's Radio Road Interceptor, a facility presently under Corrective Action Plan by the Borough. The Borough performed a flow monitoring study in 2016 to confirm actual peak hour flow contributions to the Interceptor from the ERSA and Borough systems, respectively. The Borough's preliminary report indicated that ERSA can accommodate some projected development within its conveyance allocation in the Radio Road Interceptor, but it also noted the need for a combination of rehabilitation and replacement to address known defects in the Interceptor. It is anticipated that ERSA and the Borough will agree upon the scope of an improvement project as potential development and the benefits of I/I reduction efforts are better understood.

In addition, depending on how projected development connects to the existing ERSA system, it is also possible that the Hershey Road Pumping Station would be impacted and require

upgrades. ERSA will continue to monitor the projected development and the Borough's evaluation of the Radio Road Interceptor as part of its own planning efforts.

1.5 INDUSTRIAL WASTE REPORT

WDTA was requested by the Borough of Elizabethtown to provide a status report on the Authority's Industrial Waste Program and a list of current industrial waste permittees. During its formation, the Authority originally adopted an Industrial Waste Resolution, modeled after the Borough's Industrial Waste Ordinance in place at that time. WDTA also agreed to adopt a revised Industrial Waste Permit/ Application Program similar to the latest version currently used in the Borough. WDTA identified and met with potential industrial waste dischargers. The industrial facilities did not contribute wastes that the Authority found to be harmful or have any deleterious effect upon the wastewater conveyance or treatment system. MJTA incorporated the Borough of Elizabethtown Industrial Ordinance by resolution in 2006.

Currently under the jurisdiction of ERSA, new non-residential customers with the potential to discharge industrial waste are required to provide information relative to the nature of their business and characteristics of the waste. Following a review of the application, the Authority will determine whether an Industrial Waste Permit is required. In the event a permit is issued, it will specify the nature and frequency of sampling required to insure compliance with the industrial waste program. The permitted user will then submit quarterly reports to the Authority, who in turn will provide the Borough with an annual summary of industrial waste reports. Should the Borough revise their current industrial waste ordinance, the Authority will review and update their resolution to be consistent with the Borough's prior to implementation.

In 2020 ERSA did not renew any industrial wastewater permits from non-residential customers. In 2021, Advanced Disposal's permit is set to expire, and they have started the process of renewing the permit for another 10 years.

1.6 EXTENSIONS TO THE SEWER SYSTEM DURING 2020

Extensions to the Authority's system for the Bishop Woods Phase 4, Conoy Crossing, Hickory Run Subdivision and Ketterline ERSA Drive developments were performed in 2020 but none of these extensions have been dedicated to date. The other following developments which have not begun construction or are awaiting dedication include Westbrooke IV, Woods Edge developments, Radio Road Subdivision, Koser Subdivision, Raffensberger property, Stoney Brook Phases 2 and 3, Sylvester Walters, and Hoffer Tract. All of the above referenced developments are identified on the Index Map attached to this report.

1.7 NEW CONNECTIONS

During calendar year 2020, 85 EDUs were connected to the ERSA service area. The number of EDUs now being serviced is approximately 5,330 EDUs as of the end of 2020.

Table 2 includes a listing of all of the developments which currently have preliminary or final development plans on file with ERSA and proposed developments that have requested capacity. This table is updated on a regular basis and is provided as part of this report.

1.8 SEWER SYSTEM MONITORING

The ERSA wastewater conveyance system includes fifteen sewage pumping stations and four-meter pits. All sewage flows from the Nolt Road, Colebrook Road, Cameron Street, and Pioneer Hills pumping stations are discharged to the Miller Road pumping station. All flows from the Turnpike Road No. 1 and Wilkens Street pumping stations are discharged to Turnpike Road No. 2 pumping station. The majority of the flow from the Bossler Road No. 1 pumping station is discharged to the Bossler Road No. 2 pumping station, but a portion of the flow is conveyed to the Turnpike Road No. 1 pumping station. Wastewater from the Miller Road and Bossler Road No. 2 pumping stations are pumped directly to the Elizabethtown WWTP. Flow from Conewago Pumping Station goes to Aberdeen Pumping Station, which goes to Hershey Road Pumping Station, which goes to the Radio Road metering chamber. Wastewater from Turnpike Road No. 2 pumping station is pumped to the Masonic Village interceptor for conveyance to the Elizabethtown WWTP. The total flow from ERSA service area is determined by combining flow meter readings from the Miller Road, Turnpike Road No. 2, Bossler Road No. 2, Mill Road, Radio Road and Kiwanis meter readings; and unmetered connections. Flows are also metered at the Schwanger Road and Hershey Road Pumping Stations. The Authority's system operators record these flow meter readings on a daily basis.

Flows at 10 of the pumping stations are not metered. Estimates of flows from these stations were made using pump run hour meter readings and the pumping capacities of the pumps at the various stations. Table 4 summarizes the average daily, estimated max hourly flow and maximum monthly average pumping station flows for 2020, the pumping capacities, and the projected 2-year maximum hourly flow for each of the pumping stations. A peaking factor had to be established before the estimated max hourly flow and 2-year maximum hourly flow could be calculated. For the Bossler Road No. 1, Bossler Road No. 2, Turnpike Road No. 1, Turnpike Road No. 2, Wilkens Street, Nolt Road, and Miller Road pumping stations, a peaking factor was estimated based on historical flows records. A peaking factor of 2.5 was assumed for the remaining stations.

The estimated max hourly flow for each station was obtained by multiplying the average daily flow by peaking factor to obtain the estimated max hourly flow.

The projected 2-year maximum hourly flow for each station was obtained in the following manner. First, the number of EDUs projected to be connected over the next two years was determined for each development in Table 3. The total number of EDUs over the next two years entering a particular pumping station was multiplied by 275 GPD per EDU to obtain the projected two-year increase in flow at each pumping station. The 2-year increase was then added to the average daily flows to obtain a 2-year average daily flow. Next, the 2-year average daily flow was multiplied by the peaking factor to obtain the projected 2-year maximum hourly flow.

As can be seen on Table 4, the projected 2-year peak hourly flow at the Bossler Road No. 1, Hershey Road, Turnpike Road No. 2, Nolt Road and Miller Road pumping stations are approaching the respective tested capacities of the stations. In the Nolt Road drainage basin the Authority conducted an I/I investigation in 2013 and concluded the major source of excessive flow is due to homeowner sump pumps. It should be noted that the Nolt Road drainage basin has effectively been “built” out. In addition, the Authority is nearly complete with design for the Miller Road and Bossler No. 1 pumping stations is currently under construction. For 2020, the Authority worked on finalizing improvement designs for Miller Road Pumping Station and completed conceptual designs for Turnpike Road No. 2 Pumping Station improvements. Design for Turnpike Road No. 2 Pumping Station improvements is set to begin in 2021. Lastly, the Authority will continue to monitor the Hershey Road pumping station and coordinate its expansions with proposed development in West Donegal and Mount Joy Townships.

As stated previously, the Authority recognizes that additional I/I removal efforts are necessary. During 2004, the Authority initiated a sewer inspection program whereby a portion of the system is visually inspected each year. This program includes the televising of sewer mains and laterals and wet-weather manhole inspections. The Authority also coordinated the areas to be televised with the Township’s road paving program so that sewers located within identified roads are inspected prior to repaving. In 2018 I/I investigations took place in the Nolt Avenue drainage area, as well as manhole inspections throughout the system. The Authority continued I/I investigations in 2020 with the Turnpike Road No. 2 drainage area, including the repair of four laterals and five manholes and a point repair on a section of main. In 2021, additional I/I investigations are scheduled to take place in Turnpike Road, Bossler Road and Hershey Road basins.

Table 4

Elizabethtown Regional Sewer Authority
Recorded Pumping Station Flows

PUMPING STATION	DESIGN PUMP CAPACITY		TESTED PUMP CAPACITY			2020 AVERAGE DAILY FLOW (MGD)	2020 MAX. MONTHLY AVERAGE (MGD)	2020 ESTIMATED MAX HOURLY FLOW (MGD)	PROJECTED 2-YEAR MAX. HOURLY FLOW (MGD)
	(MGD)	(GPM)	(MGD)	(GPM)					
Mill Road	0.288	200	0.624	433	(1)	0.080	0.134	0.201	0.201
Aberdeen	0.130	90	-	-	(4)	0.011	0.012	0.028	0.029
Conewago	0.029	20	-	-	(4)	0.002	0.003	0.006	0.007
Hershey Road	0.259	180	0.215	149	(1)	0.088	0.103	0.219	0.220
Schwanger Road	1.411	980	-	-	(3)	0.133	0.155	0.332	0.409
Bossler Road No. 1	0.331	230	-	-	(4)	0.050	0.084	0.200	0.206
Turnpike Road No. 1	0.158	110	0.199	138	(4)	0.025	0.043	0.074	0.074
Wilkens Street	0.144	100	0.258	179	(4)	0.017	0.023	0.067	0.089
Turnpike Road No. 2	0.243	169	0.305	212	(1)	0.074	0.123	0.297	0.327
Bossler Road No. 2	0.576	400	-	-	(2)	0.138	0.183	0.414	0.432
Pioneer Hills	0.288	200	-	-	(4)	0.011	0.015	0.027	0.030
Nolt Road	0.144	100	0.240	167	(1)	0.063	0.074	0.136	0.140
Colebrook Road	0.576	400	0.812	564	(1)	0.094	0.105	0.236	0.248
Cameron Street	0.742	515	0.971	674	(1)	0.130	0.137	0.325	0.338
Miller Road	1.022	710	-	-	(1)	0.329	0.382	0.857	0.925

Notes:

(1) Tested pump capacity performed on January 10, 2019.

(2) Pump capacity test not performed since pumping station upgrade in December, 2015.

(3) Schwanger Rd pump capacity test not completed because of the low amount of capacity being used and this station monitors flow via a totalizer instead of pump hours.

(4) Tested pump capacity performed on January 20-21 and February 27, 2015.

1.9 SANITARY SEWAGE OVERFLOWS

In 2020 the authority's system experienced one system overflow that was a direct result of a blockage. On December 10, the authority was notified of water coming out of a manhole. After attempts to jet the line failed, a temporary bypass pump was installed. After installation of the bypass pump, it was determined that a small deer carcass was lodged in the sewer. It is estimated that approximately 200 gallons of wastewater were released. The Authority appropriately cleaned the site following removal of the blockage. Furthermore, the Authority inspected the sewer facilities along the easement and found no apparent access point for an animal to fall in.

1.10 MAINTENANCE, REPAIR AND REHABILITATION

The ERSA system operators perform normal operation and maintenance of all pumping stations and a summary of recent repair efforts can be found in Attachment 3. It should be noted that several of the Authority's pumping stations are at or near their predicted design life. Though maintenance and major repair items have been limited to date, the frequency of repairs has been increasing, and there is the potential for major repair and rehabilitation items as the pumping stations continue to age. The Authority should expect to spend more time and money to maintain the aging pumping stations and collection system. As stated previously, the Authority has evaluated the pumping stations to identify the need for upgrade and expansion of facilities and is continuing its I/I identification and removal program. Continued maintenance beyond this program is critical to the overall effectiveness of the system.

In 2015, ERSA completed construction of and relocated to a new office and maintenance facility that centralizes day-to-day operation of the system near the geographic center of its service area.

In 2018, ERSA continued to address day to day issues in the system. The more notable repairs included the installation of manhole inserts, manhole liners in two locations, and the repair of four broken laterals.

In 2019, the more notable repairs included the installation of manhole inserts, manhole liners in two locations, manhole grout repair, the repair of several broken laterals and the replacement of 200 LF of crushed sewer main. These repairs help to address the excessive I/I of the system and achieve the Authority's long-term plan to reduce the I/I of the system and lower treatment costs.

In 2020, ERSA continued to address day to day issues in the system. The more notable repairs included the repair of five manholes via grouting, repair of four broken laterals and a point repair on a section of main.

1.11 CONDITION OF THE WASTEWATER COLLECTION SYSTEM

The majority of the ERSA wastewater collection system was constructed from the late 1970's to the late 1980's and is generally in fair to good condition. Certain parts of the sewer system have experienced infiltration and inflow problems during excessive wet weather periods. The Authority's I/I program is discussed in a previous section of this report.

1.12 CONDITION OF THE PUMPING STATIONS

All of the pumping stations in the ERSA service area are in fair to good condition. Extreme weather events in recent years have raised the average daily flows at the pumping stations, and without adjusting peaking factors a few of the pumping stations are nearing their tested pump capacity in the next two years. The Authority has plans to upgrade and expand several stations (Bossler Road No. 1, Turnpike Road No. 2 and Miller Road) in conjunction with ongoing development, as outlined above, and all stations will continue to be monitored. It appears that the Bossler Road No. 1 force main relocation project and the CIPP lining project in the Turnpike Road No. 2 drainage have helped to address earlier overload condition at the Turnpike Road No. 2 Pumping Station, but the Authority will continue to pursue manhole rehabilitation and potentially service line inspections to further improve the condition of the facilities. An Annual Report on Condition of Sewerage Facilities is included in Attachment 3 of this report.

Attachment A

I/I Identification and Removal Program

(Immediately following this page)

Elizabethtown Regional Sewer Authority

I/I IDENTIFICATION AND REMOVAL PROGRAM

I/I Removal Plan Update – March 2021

Manhole Inspections and Repairs

The Authority has installed manhole inserts at key locations that were witnessed to have substantial inflow during rain events. The Authority's long-term goal is to install inserts in all manholes located in paved areas.

The Authority performed a post-rehabilitation flow monitoring program in 2003 in conjunction with the CAP. The results of the post-rehabilitation flow monitoring indicated that certain parts of the sewer system require further I/I investigation and rehabilitation. Therefore, the Authority performed additional wet weather manhole inspections to identify areas of excessive I/I. During 2003, the Authority identified and repaired seven leaking manholes discovered in the Bossler Road No. 1 and Turnpike Road No. 2 basins. During 2004, the Authority repaired six leaking manholes identified in the Nolt Road drainage basin. The Authority monitored I/I in the Bossler Road No. 1 drainage basin during 2009 by visually inspecting the manholes. The Authority continued to identify manhole leaks grouting manholes as needed and installing manhole inserts where missing throughout the system during 2020.

The Authority intends to continue to inspect manholes for defects and incorporate repairs into a rehabilitation project during 2021.

House Inflow Inspections

Authority personnel plan to perform house inspections to confirm that illegal connections have been disconnected. In order to enforce sump pump removal, the Authority adopted a resolution that prohibits discharge of any source other than permitted sanitary sewer to the Authority conveyance system and imposes financial penalties that increase with each quarter that an illegal discharge is not properly terminated. In 2020, the Authority focused on the Turnpike Road No. 2 drainage basin. In 2021, the authority intends to focus on the Turnpike Road No. 1, Bossler Road No. 1, Bossler Road No. 2 and Hershey Road drainage basins.

Sewer Televising and Repair

The Authority has a sewer televising program in which they annually televise a section of the sewer system so that every 5 to 10 years, the entire sewer system is televised. As a result of this televising, the Authority identifies areas where sewer line remedial activities are required.

In 2010 the Authority televised approximately 4,700 linear feet of truss pipe in the Bossler No. 1 drainage basin. Based upon the results of the televising, the Authority rehabilitated approximately 4,350 linear feet of pipe with cured-in-place pipe (CIPP) which has shown to have significantly reduced I/I within the drainage basin.

In 2011 the Authority purchased a portable flow monitoring device, a “flow poke,” to monitor I/I in the entire Turnpike Road No. 2 drainage basin. Based on this I/I investigation the Authority rehabilitated approximately 6,642 LF of truss pipe and 85 laterals utilizing CIPP technology which has shown reduction in I/I throughout the basin.

In late 2013 and early 2014, the Authority investigated the flow in the sewers along Mt. Gretna Road and within the Nolt Ave. Pumping Station drainage basin to develop a sense of the I/I present in the area and make repair decisions based on the findings of the investigation. Preliminary indications are that there are likely sources of I/I in the sewers in and around Mt. Gretna Road.

In late 2018, the Authority again investigated the Nolt Ave. drainage basin and located two broken laterals and two leaking manholes. The Authority promptly repaired the defects, and wet weather flows have since improved at the station.

In 2019, the authority investigated the Bossler Road No. 1, Turnpike Road No. 1, and Wilkens Street drainage basins. The authority located three leaking manholes, one broken lateral and a crushed section of mainline. The Authority repaired the leaks and noticed a reduction of wet weather flows at the stations.

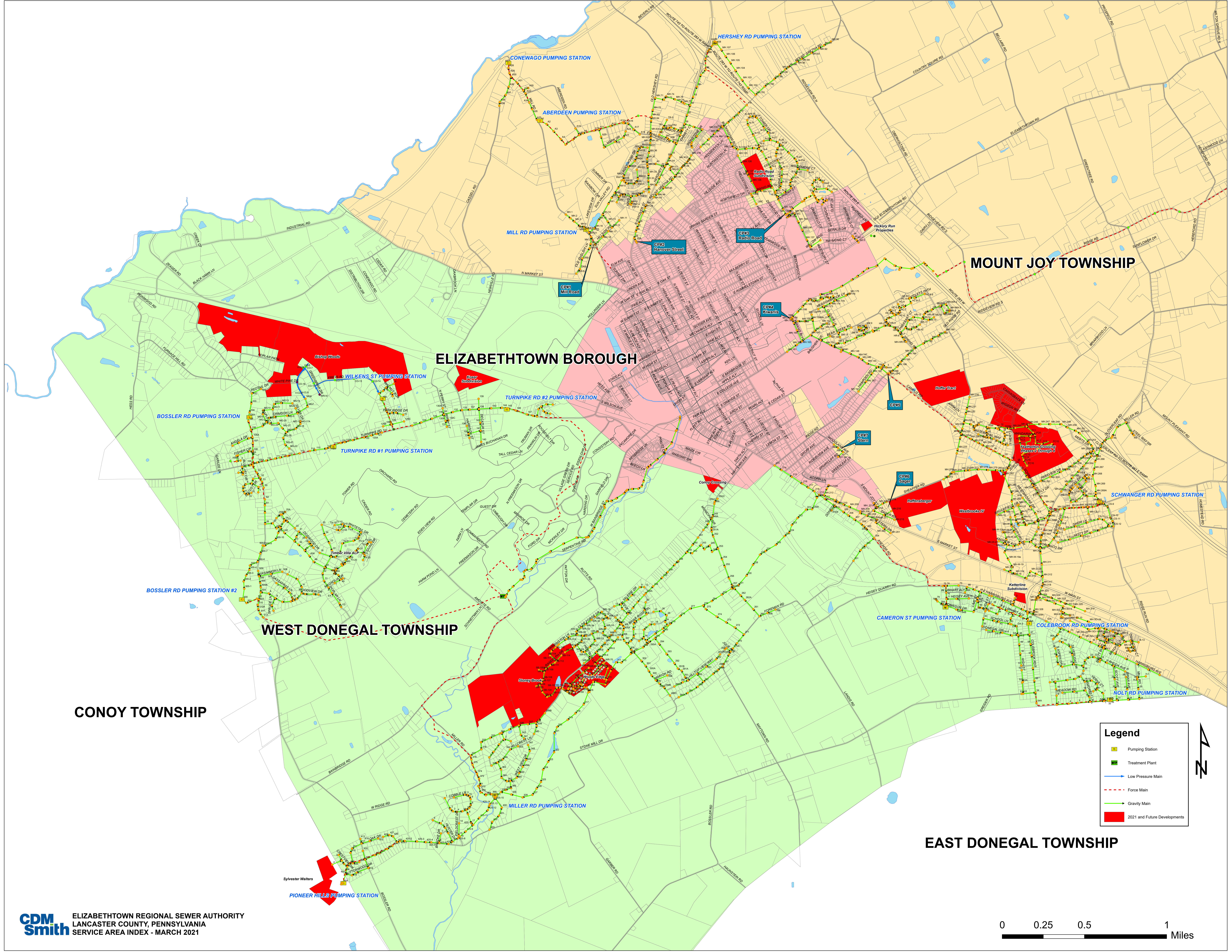
In 2020, the authority investigated the Turnpike Road No. 2 drainage basin. The authority located five leaking manholes, four broken laterals and one damaged section of main. The Authority repaired the leaks and performed a point repair.

In 2021, additional I/I investigations are scheduled to take place in Turnpike Road No. 1, Bossler Road and Hershey Road drainage basins.

Attachment B

Master Sewer Index Map

(Immediately following this page)



Attachment C

Annual Report on the Condition of Sewerage Facilities
(Immediately following this page)

ELIZABETHTOWN REGIONAL AUTHORITY

Lancaster County, Pennsylvania

Annual Report on the Condition of Sewerage Facilities

March 2021

GENERAL

On February 17, 2021, Alex Criswell and Abraham King of CDM Smith Inc. reviewed the condition of the Elizabethtown Regional Sewer Authority's pumping stations and sewer system. The following report summarizes the review.

PUMPING STATIONS

Mill Road

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.080 MGD and the maximum monthly average flow was 0.134 MGD. The tested capacity at this station is 0.624 MGD.

The Authority completed the following items during 2020:

1. New Cummins generator installed (completed early 2021).
2. New check valve flap on pump 2 installed.
3. New dual runtime hour meter installed.
4. New pump impellers and wear plates installed on pumps 1 and 2.
5. New pump control panel installed.

Aberdeen

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.011 MGD and the maximum monthly average flow was 0.012 MGD. The design capacity of this station is 0.130 MGD.

The Authority completed the following items during 2020:

1. Pump 2 removed and sent for repair.
2. Pump 1 rebuilt.
3. New hour meter installed.
4. Generator battery replaced.
5. New Omni-Site battery installed.

The valves at this station should be repainted.

Conewago

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.002 MGD and the maximum monthly average flow was 0.003 MGD. The design flow for this station is 0.029 MGD.

The Authority completed the following items during 2020:

1. New electronic governor and throttle installed.
2. Dual run time hour meter replaced.
3. 3 PPL bus fuses replaced.
4. Fuel lines on generator replaced and new ticker pump installed.
5. Water pump on generator replaced.

The roof at this station is sagging and should be repaired.

Hershey Road

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.088 MGD and the maximum monthly average flow was 0.103 MGD. The tested capacity at this station is 0.215 MGD.

The Authority completed the following items during 2020:

1. T-connection on generator fuel line replaced.
2. Generator battery replaced.
3. Fuel lines and belts on generator replaced.
4. New pump control panel installed.
5. Cut and removed a dead ash tree around PP&L lines.

Line insulation on the generator fuel tank is deteriorating and should be replaced.

Schwanger Road

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.133 MGD and the maximum monthly average flow was 0.155 MGD. The design capacity for this station is 1.411 MGD.

The Authority completed the following items during 2020:

1. New motor control contactors installed.
2. New check valves installed on pumps 1 - 4.
3. Generator battery replaced.
4. New 8-inch plug valve on pumps 3 and 4 installed.
5. All submerged GFI outlets in pump room replaced.

6. New dehumidifier installed.
7. Coolant flushed and new coolant added.

Valves should be repainted.

Bossler Road No. 1

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.050 MGD and the maximum monthly average flow was 0.084 MGD. The design capacity of this station has been 0.295 MGD. An upgrade is currently underway for the Bossler Road No. 1 pumping station to address projected capacity needs, and the design capacity of the ongoing improvements is 0.331 MGD.

The Authority completed the following items during 2020:

1. Replace new linkage on louvers.
2. Generator building cleaned and painted.
3. Roll pins on pump 1 replaced.
4. Replaced a broken bubbler line.
5. New indicator lights installed on transfer switch.

Construction is still in progress, with an anticipated completion in Spring 2021.

Turnpike Road No. 1

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.025 MGD and the maximum monthly average flow was 0.043 MGD. The tested capacity at this station is 0.199 MGD.

The Authority completed the following items during 2020:

1. Generator building cleaned and painted.
2. Broken block heater replaced.
3. Blown bus fuses and relay for louver controls replaced.
4. New indicator lights on transfer switch installed.

Some rear fence posts are exposed due to erosion.

Valve 2 has a small leak which should be addressed.

Wilkens Street

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.017 MGD and the maximum average monthly flow was 0.023 MGD. The tested capacity for this station is 0.258 MGD.

The Authority completed the following items during 2020:

1. Installation of a new generator.
2. Louver motor replaced and new linkage kits installed.
3. Propane tank pumped and removed from ground.
4. Check valves on pumps 1 and 2 cleaned.
5. Generator building cleaned and painted.

Turnpike Road No. 2

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.074 MGD and the maximum average monthly flow was 0.123 MGD. The design capacity for this station is 0.243 MGD. The tested capacity of this station exceeds the present maximum flows but does not surpass the projected 2-year max flow of 0.329 MGD. The projected 2-year max includes projected developments. The Authority will also continue its efforts to reduce I/I in the system. Design for a pump station upgrade is set to begin in 2021.

The Authority completed the following items during 2020:

1. Pumped propane tank and removed it from the ground.
2. New generator installed.
3. Generator building cleaned and painted.
4. Roll pins in pump 2 replaced.
5. New indicator lights on transfer switch installed.
6. Installed new unit heater in generator building.

There is erosion around some fence posts.

Pump 2's support is starting to rust and could be painted in advance of the planned upgrade.

Bossler Road No. 2

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.138 MGD and the maximum monthly average flow was 0.183 MGD. The design capacity of this station is 0.576 MGD.

The Authority completed the following items during 2020:

1. Burned up relays on louvers replaced.
2. Generator building cleaned and painted.
3. Generator spark plugs replaced.

4. Two broken fence supports replaced.

Valves should be repainted.

The transfer switch is an older model, and plans should be made to replace it.

Pioneer Hills

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.011 MGD and the maximum monthly average flow was 0.015 MGD. The design capacity for this station is 0.288 MGD.

The Authority completed the following items in 2020:

1. Generator building cleaned and painted.
2. New omni site battery installed.
3. Water pump on generator replaced.

Nolt Road

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.063 MGD and the maximum monthly average flow was 0.074 MGD. The tested capacity at this station is 0.240 MGD.

The Authority completed the following items in 2020:

1. Generator building cleaned and painted.
2. New check valve installed on pump 1.
3. Impellers on pumps 1 and 2 replaced.
4. New mechanical quad seal installed on pump 1.
5. Water pump, thermostat, belts and coolant replaced on generator.

The dry well floor is showing signs of corrosion and should be painted.

Colebrook Road

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.094 MGD and the maximum monthly average flow was 0.105 MGD. The tested capacity at this station is 0.812 MGD.

The Authority completed the following items during 2020:

1. Generator building cleaned and painted.
2. Blown fuses and relay replaced for louver controls.
3. New indicator lights on transfer switch installed.
4. Replaced water pump, belts and coolant on generator.

Cameron Street

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.130 MGD and the maximum monthly average flow was 0.137 MGD. The tested capacity of this station is 0.971 MGD.

The Authority completed the following items during 2020:

1. Generator building cleaned and painted.
2. T-connections on generator fuel supply lines fixed.
3. Blown fuse on generator fuel solenoid replaced.
4. Cleaned both check valves.
5. Check valve gasket on pump 2 replaced.
6. Two grease fittings on pump 2 replaced.
7. Volute gasket on pump 2 replaced.
8. New C1 control relay installed.

Miller Road

This station is in good condition and operating satisfactorily. The 2020 average daily flow at this station was 0.329 MGD and the maximum monthly average flow was 0.382 MGD. The design capacity for this station is 1.022 MGD.

The Authority completed the following items during 2020:

1. New block heater installed.
2. Generator battery replaced.
3. New indicator lights on transfer switch installed.
4. New wall thermostat for louvers installed.
5. Syphon lines in field cleaned.
6. New thermostat on unit heater in generator building installed.
7. The wet well was cleaned three times.

Several cracks in the generator building wall should be repaired.

The floor under pump 1's supports appears to be deteriorating.

The dry well lid has a small crack and the hinge is wobbly.

This station is in the process of being upgraded with construction beginning in 2021.

All Pumping Stations

Overall, the pumping stations are fairly well maintained. The stations are checked on a regular basis. The pump station dry wells and the generator buildings are clean. All of the flow meters

were calibrated twice within the year. The Authority has a contract with an outside firm to perform generator maintenance and service, including changing generator oil and antifreeze. The Authority replaces generator fuel hoses, oil pans, etc. as needed and installed screening over all fuel vent lines in 2008 to prevent problems with insects. In order to provide better security, the Authority replaced many of the locks in 2009 and cleared brush and vines from the fencing at each pump station as needed; most recently in 2011. In 2013 the Authority added “No Trespassing” signs to all Mount Joy Township Authority pumping stations. In 2016, the Authority moved all pump hour meters at the West Donegal Township stations into the generator buildings to reduce the need for confined space entries.

At all the steel tank dry well pumping stations the Authority intends on performing reconditioning work on the dry well floors because of corrosion concerns. Cathodic protection was originally provided when the pumping stations began operation but is likely no longer present. In 2017, The Authority had the steel floors at Bossler Rd #1, Cameron and Colebrook pumping stations coated with Sprayroq, a polyurethane-based protective coating. The authority is also moving forward with upgrading several of their dry well pumping stations with submersible stations for safety reasons. Bossler Road No. 1, Turnpike Road No. 1 and Miller Road pumping stations are all in the process of being upgraded.

The Authority completed the following items at all pumping stations during 2020:

1. All wet wells cleaned at least twice.
2. All pumps greased four times.
3. All check valves cleaned regularly.
4. All generators serviced.
5. Broken transfer switch lights replaced as needed.
6. Degreaser treatment on all stations.

It is recommended that the following be performed on a regular basis:

1. Vacuum cleaning of the wet wells to remove grease, grit, and other deposits. The operators use a degreaser regularly to minimize grease buildup. All wet wells were vacuum cleaned at least twice during 2020. Certain wet wells may require more frequent cleaning to minimize buildup of grease and debris.
2. Pumping station capacity tests. These tests will confirm pumping capacities, evaluate the efficiency of each pump, and provide a basis of comparison for maintenance purposes. A drop-in pumping capacity often signals a problem in the pump or elsewhere in that system. Pump capacity tests were performed at 7 of the 15 pumping stations during February 2021. Drawdown capacity tests should be performed again in 2022/2023.
3. It is important that the measuring flumes at the metered pumping stations be kept clean of debris. The buildup of debris will result in recording artificially high flows.
4. The following items are not critical but can be completed on a time available basis:

5. Portions of the older pumping stations such as the concrete meter pits and wet wells are showing signs of decay. It is recommended that a concrete sealer be applied, or the concrete be rehabilitated, as appropriate.
6. The original pumping station dry wells have, on occasion, shown signs of leaking at the seams in the metal. These seams should be resealed if water seepage into the dry wells becomes a problem.
7. Several of the stations do not have mesh covering the generator exhaust pipe. Mesh covering should be installed to prevent animals and debris from entering.

In addition, some of the emergency generators at the pumping stations are showing signs of their age. In some cases, the availability of spare parts to maintain the generators and their associated switchgear is decreasing over time. The Authority has implemented a generator replacement program and should continue replacing 1-2 generators per year.

It should also be noted that the Authority is currently in the process of evaluating potential upgrades to pumping stations not slated for expansion or abandonment. The intent of these upgrades would be to significantly extend the useful life of the stations. Anticipated improvements would include upgrade of existing controls and replacement of cathodic protection for the buried steel dry wells. Once the upgrades have been identified, the Authority plans to incorporate that work into its long-term capital improvement plan.

METER PITS

The Authority has four-meter pits throughout the system: Radio Road, Foxbury, Kiwanis, and Bradfield meter pits. These pits consist of a measuring flume and an ultrasonic level sensor. All meter pits are operating satisfactorily. The Foxbury meter pit was affected by a lightning strike in 2012 and was replaced. A new data logger was installed at the Radio Road meter pit in 2017. The control box at Radio Road is rusted along the corners and showing signs of moisture within. Replacement of this control box should be considered. A new transducer was installed at the Bradfield meter pits in 2019.

SEWER SYSTEM REVIEW

Upon reviewing the sewer system with the operators, the following items were noted:

- The Authority has an I/I program that is discussed in the Chapter 94 report. It is very important that this program continues and that the appropriate repairs are made to the system. Defects in a sewer system will only get worse with time if not repaired.
- In 2004, the Authority began a televising inspection program whereby a portion of the system is inspected each year. The Authority is urged to continue with the physical inspection of at least 10%-20% of the sewer system every year. This inspection should include televising, walking the length of every sewer in a particular area, and noting the condition of the manholes, manhole lids, sinkholes or

stream banks near the line, etc. Manhole inserts should be installed in manholes that might be exposed to large volumes of stormwater. If not already installed, watertight manhole lids should be installed in manholes that are subject to inundation from streams.

- The Authority collection system includes two inverted siphons within the Miller Road drainage basin. These sections of sewer have periodically clogged. Therefore, they should be inspected on a regular basis and flushed as needed to remove grease buildup.
- In 2013 and 2014, the Authority investigated the flow in sewers along Mt. Gretna Road and within the Nolt Ave. Pumping Station drainage basin using visual inspection of manholes, flow analysis with ISCO flow meter, and CCTV inspection to develop a sense of the I/I present in the area.
- In 2018, the Authority again investigated the Nolt Ave. drainage basin and located multiple broken laterals and leaking manholes. The Authority promptly repaired the defects, and wet weather flows have since improved at the station.
- In 2019, the Authority again investigated manholes and service connections in the collection system (predominantly in the Bossler Road No. 1, Turnpike Road No. 1 and 2, and Wilkens Street drainage basins) to identify sources of I/I for removal.
- In 2020, the Authority further investigated manholes and service connections in the collection system (predominantly in the Turnpike Road No. 2 drainage basin) to identify and repair sources of I/I. The Authority repaired 5 manholes, four service lines and a point repair in this basin during the year.
- In 2021, the Authority intends to further investigate manholes and service connections in the collection system (predominantly in the Turnpike Road, Bossler Road and Hershey Road drainage basins) to identify sources of I/I for removal.

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: OCTOBER 27, 2020 **SERVICE CONTRACT:** SEMI-ANNUAL (S4)
LOCATION: FOXBURY
METER #: C3064 AC

PRIMARY: FLUME PARSHALL 3
MAXIMUM CAPACITY: 850 GPM
METER: SIEMENS
RECORDER:

MODEL #: HYDRO RANGER 200
MODEL #: N/A

SERIAL #: PBD/C6130649
SERIAL #: N/A

*** WORK PERFORMED ***

METER CALIBRATION METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS	ERROR: -0.03 INCHES	TOLERANCE: ± 0.125 INCHES
RECORDER CALIBRATION CHECKED AT: N/A	ERROR: N/A	TOLERANCE: N/A
TOTALIZER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%	TOLERANCE: ± 1.000 %

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE - FLOWS HIGH
CALIBRATED EQUIPMENT
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
INSTALLED 4-20MA DATA LOGGER
TESTED 4-20MA LOOP
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: APRIL 09, 2020 **SERVICE CONTRACT:** QUARTERLY (Q4)
LOCATION: TURNPIKE 2
METER #: C3064 AA

PRIMARY: FLUME LEOPOLD LAGCO 8
MAXIMUM CAPACITY: 350,000 GPD

METER: BADGER	MODEL #: 2100	SERIAL #: 3825
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: R103FD23428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: 0.03 INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

PERFORMED QUARTERLY CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
DOWNLOADED DATA
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER, JACOB BROWN

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: APRIL 09, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: MILLER ROAD
METER #: C3064 AB

PRIMARY: FLUME LEOPOLD LAGCO 15
MAXIMUM CAPACITY: 1.5 MGD

METER: BADGER	MODEL #: 2100	SERIAL #: 2379
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: N703F223426

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: 0.20 INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

PERFORMED QUARTERLY CALIBRATION
CLEANED PRIMARY
ADJUSTED EQUIPMENT
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
DOWNLOADED DATA
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER, JACOB BROWN

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: APRIL 09, 2020 **SERVICE CONTRACT:** SEMI-ANNUAL (S4)
LOCATION: FOXBURY
METER #: C3064 AC

PRIMARY: FLUME PARSHALL 3
MAXIMUM CAPACITY: 850 GPM
METER: SIEMENS
RECORDER:

MODEL #: HYDRO RANGER 200
MODEL #: N/A

SERIAL #: PBD/C6130649
SERIAL #: N/A

*** WORK PERFORMED ***

METER CALIBRATION METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS	ERROR: 0.00 INCHES	TOLERANCE: ± 0.125 INCHES
RECORDER CALIBRATION CHECKED AT: N/A	ERROR: N/A	TOLERANCE: N/A
TOTALIZER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%	TOLERANCE: ± 1.000 %

*** TECHNICIAN COMMENTS ***

PERFORMED SEMI-ANNUAL CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER, JACOB BROWN

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: APRIL 09, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: BOSSLER ROAD
METER #: C3064 AD

PRIMARY: FLUME LEOPOLD LAGCO 10
MAXIMUM CAPACITY: 200 GPM

METER: BADGER	MODEL #: 2100	SERIAL #: 946005
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: N703F023428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: 0.00 INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

PERFORMED QUARTERLY CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
NO ADJUSTMENT NEEDED
DOWNLOADED DATA
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): JACOB BROWN, DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: APRIL 09, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: RADIO ROAD
METER #: C3064 AE

PRIMARY: FLUME PARSHALL 6
MAXIMUM CAPACITY: 1800 GPM

METER: BADGER
RECORDER: ENDRESS+HAUSER

MODEL #: 2100
MODEL #: RSG-35

SERIAL #: 421522
SERIAL #: M503F623428

*** WORK PERFORMED ***

METER CALIBRATION METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS	ERROR: 0.00 INCHES	TOLERANCE: ± 0.125 INCHES
RECORDER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
TOTALIZER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%	TOLERANCE: ± 1.000 %

*** TECHNICIAN COMMENTS ***

PERFORMED QUARTERLY CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
DOWNLOADED DATA
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER, JACOB BROWN

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: APRIL 09, 2020 **SERVICE CONTRACT:** SEMI-ANNUAL (S4)

LOCATION: KIWANIS

METER #: C3064 AG

PRIMARY: FLUME PARSHALL 6

MAXIMUM CAPACITY: 1754 GPM

METER: MILLTRONICS

RECORDER:

MODEL #: ENVIORANGER ERS500 **SERIAL #:** PBD/T0110062

MODEL #: N/A

SERIAL #: N/A

*** WORK PERFORMED ***

METER CALIBRATION

ERROR: 0.00 INCHES

TOLERANCE: ± 0.125 INCHES

METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS

RECORDER CALIBRATION

ERROR: N/A

TOLERANCE: N/A

CHECKED AT: N/A

TOTALIZER CALIBRATION

ERROR: 0

TOLERANCE: ± 1.000 %

CHECKED AT: OPERATING VALUE

*** TECHNICIAN COMMENTS ***

PERFORMED SEMI-ANNUAL CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER, JACOB BROWN

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: APRIL 09, 2020 **SERVICE CONTRACT:** SEMI-ANNUAL (S4)
LOCATION: BRADFIELD
METER #: C3064 AH

PRIMARY: FLUME PARSHALL 3
MAXIMUM CAPACITY: 850 GPM
METER: MILLTRONICS
RECORDER:

MODEL #: ENVIORANGER ERS 500 **SERIAL #:** PBD/U3130433
MODEL #: N/A **SERIAL #:** N/A

*** WORK PERFORMED ***

METER CALIBRATION METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS	ERROR: -0.10 INCHES	TOLERANCE: ± 0.125 INCHES
RECORDER CALIBRATION CHECKED AT: N/A	ERROR: N/A	TOLERANCE: N/A
TOTALIZER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%	TOLERANCE: ± 1.000 %

*** TECHNICIAN COMMENTS ***

PERFORMED SEMI-ANNUAL CALIBRATION
CLEANED PRIMARY
ADJUSTED EQUIPMENT
VERIFIED TOTALIZER (PASSED)
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER, JACOB BROWN

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: OCTOBER 07, 2020 **SERVICE CONTRACT:** QUARTERLY (Q4)
LOCATION: TURNPIKE 2
METER #: C3064 AA

PRIMARY: FLUME LEOPOLD LAGCO 8
MAXIMUM CAPACITY: 350,000 GPD

METER: BADGER	MODEL #: 2100	SERIAL #: 3825
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: R103FD23428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: 0.00 INCHES	TOLERANCE: ±0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ±1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ±1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

PERFORMED QUARTERLY CALIBRATION
CLEANED PRIMARY
NO ADJUSTMENT NEEDED
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
DOWNLOADED DATA
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): PATRICK MCNALLY, DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: OCTOBER 07, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: MILLER ROAD
METER #: C3064 AB

PRIMARY: FLUME LEOPOLD LAGCO 15
MAXIMUM CAPACITY: 1.5 MGD

METER: BADGER	MODEL #: 2100	SERIAL #: 2379
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: N703F223426

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: 0.01 INCHES	TOLERANCE: ±0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ±1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ±1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

PERFORMED QUARTERLY CALIBRATION
CLEANED PRIMARY
NO ADJUSTMENT NEEDED
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
DOWNLOADED DATA
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): PATRICK MCNALLY, DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: OCTOBER 07, 2020 **SERVICE CONTRACT:** SEMI-ANNUAL (S4)
LOCATION: FOXBURY
METER #: C3064 AC

PRIMARY: FLUME PARSHALL 3
MAXIMUM CAPACITY: 850 GPM
METER: SIEMENS
RECORDER:

MODEL #: HYDRO RANGER 200
MODEL #: N/A

SERIAL #: PBD/C6130649
SERIAL #: N/A

*** WORK PERFORMED ***

METER CALIBRATION METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS	ERROR: 0.02 INCHES	TOLERANCE: ± 0.125 INCHES
RECORDER CALIBRATION CHECKED AT: N/A	ERROR: N/A	TOLERANCE: N/A
TOTALIZER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%	TOLERANCE: ± 1.000 %

*** TECHNICIAN COMMENTS ***

PERFORMED SEMI-ANNUAL CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): PATRICK MCNALLY, DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: OCTOBER 07, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: BOSSLER ROAD
METER #: C3064 AD

PRIMARY: FLUME LEOPOLD LAGCO 10
MAXIMUM CAPACITY: 200 GPM

METER: BADGER	MODEL #: 2100	SERIAL #: 946005
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: N703F023428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: 0.05 INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

PERFORMED QUARTERLY CALIBRATION
CLEANED PRIMARY
NO ADJUSTMENT NEEDED
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
DOWNLOADED DATA
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): PATRICK MCNALLY, DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: OCTOBER 07, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: RADIO ROAD
METER #: C3064 AE

PRIMARY: FLUME PARSHALL 6
MAXIMUM CAPACITY: 1800 GPM

METER: BADGER
RECORDER: ENDRESS+HAUSER

MODEL #: 2100
MODEL #: RSG-35

SERIAL #: 421522
SERIAL #: M503F623428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: 0.06 INCHES	TOLERANCE: ±0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ±1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ±1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

PERFORMED QUARTERLY CALIBRATION
CLEANED PRIMARY
CORRECTED 4-20 AT UPPER END
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
DOWNLOADED DATA
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): PATRICK MCNALLY, DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: OCTOBER 07, 2020 **SERVICE CONTRACT:** SEMI-ANNUAL (S4)
LOCATION: KIWANIS
METER #: C3064 AG

PRIMARY: FLUME PARSHALL 6
MAXIMUM CAPACITY: 1754 GPM
METER: MILLTRONICS
RECORDER:

MODEL #: ENVIORANGER ERS500 **SERIAL #:** PBD/T0110062
MODEL #: N/A **SERIAL #:** N/A

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: 0.03 INCHES	TOLERANCE: ±0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: N/A	TOLERANCE: N/A
CHECKED AT: N/A		
TOTALIZER CALIBRATION	ERROR: 0	TOLERANCE: ±1.000 %
CHECKED AT: OPERATING VALUE		

*** TECHNICIAN COMMENTS ***

PERFORMED SEMI-ANNUAL CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): PATRICK MCNALLY, DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: OCTOBER 07, 2020 **SERVICE CONTRACT:** SEMI-ANNUAL (S4)
LOCATION: BRADFIELD
METER #: C3064 AH

PRIMARY: FLUME PARSHALL 3
MAXIMUM CAPACITY: 850 GPM
METER: MILLTRONICS
RECORDER:

MODEL #: ENVIORANGER ERS 500 **SERIAL #:** PBD/U3130433
MODEL #: N/A **SERIAL #:** N/A

*** WORK PERFORMED ***

METER CALIBRATION METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS	ERROR: -0.06 INCHES	TOLERANCE: ± 0.125 INCHES
RECORDER CALIBRATION CHECKED AT: N/A	ERROR: N/A	TOLERANCE: N/A
TOTALIZER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%	TOLERANCE: ± 1.000 %

*** TECHNICIAN COMMENTS ***

PERFORMED SEMI-ANNUAL CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): PATRICK MCNALLY, DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: JANUARY 17, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: MILLER ROAD
METER #: C3064 AB

PRIMARY: FLUME LEOPOLD LAGCO 15
MAXIMUM CAPACITY: 1.5 MGD

METER: BADGER	MODEL #: 2100	SERIAL #: 2379
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: N703F223426

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE
DOWNLOADED DATA
GENERATED REPORT
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: JANUARY 17, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: BOSSLER ROAD
METER #: C3064 AD

PRIMARY: FLUME LEOPOLD LAGCO 10
MAXIMUM CAPACITY: 200 GPM

METER: BADGER	MODEL #: 2100	SERIAL #: 946005
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: N703F023428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE
DOWNLOADED DATA
GENERATED REPORT
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: JANUARY 17, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: RADIO ROAD
METER #: C3064 AE

PRIMARY: FLUME PARSHALL 6
MAXIMUM CAPACITY: 1800 GPM

METER: BADGER	MODEL #: 2100	SERIAL #: 421522
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: M503F623428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE
DOWNLOADED DATA
GENERATED REPORT
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: FEBRUARY 07, 2020 **SERVICE CONTRACT:** QUARTERLY (Q4)
LOCATION: TURNPIKE 2
METER #: C3064 AA

PRIMARY: FLUME LEOPOLD LAGCO 8
MAXIMUM CAPACITY: 350,000 GPD

METER: BADGER	MODEL #: 2100	SERIAL #: 3825
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: R103FD23428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE
REMOVED OLD CHART RECORDER AND INSTALLED NEW DIGITAL RECORDER PER QUOTE
CALIBRATED EQUIPMENT
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
LEFT EQUIPMENT OPERATING PROPERLY
TOTALIZER OFF OLD RECORDER @ 8:15 AM 3056670X100

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: JULY 10, 2020 **SERVICE CONTRACT:** QUARTERLY (Q4)
LOCATION: TURNPIKE 2
METER #: C3064 AA

PRIMARY: FLUME LEOPOLD LAGCO 8
MAXIMUM CAPACITY: 350,000 GPD

METER: BADGER	MODEL #: 2100	SERIAL #: 3825
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: R103FD23428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE
DOWNLOADED DATA
GENERATED REPORT
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: JULY 10, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: MILLER ROAD
METER #: C3064 AB

PRIMARY: FLUME LEOPOLD LAGCO 15
MAXIMUM CAPACITY: 1.5 MGD

METER: BADGER	MODEL #: 2100	SERIAL #: 2379
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: N703F223426

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE
DOWNLOADED DATA
GENERATED REPORT
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: JULY 10, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: BOSSLER ROAD
METER #: C3064 AD

PRIMARY: FLUME LEOPOLD LAGCO 10
MAXIMUM CAPACITY: 200 GPM

METER: BADGER	MODEL #: 2100	SERIAL #: 946005
RECORDER: ENDRESS+HAUSER	MODEL #: RSG-35	SERIAL #: N703F023428

*** WORK PERFORMED ***

METER CALIBRATION	ERROR: INCHES	TOLERANCE: ± 0.125 INCHES
METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS		
RECORDER CALIBRATION	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		
TOTALIZER CALIBRATION	ERROR: 0%	TOLERANCE: ± 1.000 %
CHECKED AT: 0%, 50%, 100%		

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE
DOWNLOADED DATA
GENERATED REPORT
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

WG Malden

P.O. BOX 196, EAST EARL, PA 17519
PHONE: (717) 768-0800 FAX: (717) 768-0802

*** SERVICE REPORT ***

ELIZABETHTOWN REGIONAL SEWER AUTHORITY
235 ERSA DRIVE
ELIZABETHTOWN, PA 17022

SERVICE DATE: JULY 10, 2020 **SERVICE CONTRACT:** QUARTERLY (Q1)
LOCATION: RADIO ROAD
METER #: C3064 AE

PRIMARY: FLUME PARSHALL 6
MAXIMUM CAPACITY: 1800 GPM

METER: BADGER
RECORDER: ENDRESS+HAUSER

MODEL #: 2100
MODEL #: RSG-35

SERIAL #: 421522
SERIAL #: M503F623428

*** WORK PERFORMED ***

METER CALIBRATION METHOD: LEVEL MEASUREMENTS AND FLOW CHECKS	ERROR: INCHES	TOLERANCE: ± 0.125 INCHES
RECORDER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%, 0%, 0%	TOLERANCE: ± 1.000 %
TOTALIZER CALIBRATION CHECKED AT: 0%, 50%, 100%	ERROR: 0%	TOLERANCE: ± 1.000 %

*** TECHNICIAN COMMENTS ***

REQUESTED SERVICE
DOWNLOADED DATA
GENERATED REPORT
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): DENNIS WEIDNER

9

> *Sludge Production and Disposal*

SLUDGE GENERATION CALCULATION

Facility Name: Elizabethtown Borough Wastewater Treatment Plant

Permit Number: PA0023108

Date of Calculation: 3/14/2021

Required Information For Calculation

Average Daily Flow (mgd): 2.417

Digester Capacity (gal): 440000

Influent BOD (mg/l): 176

%Solids of Outgoing Sludge: 15.2

Effluent BOD (mg/l): 2.2

Monitoring Period (days): 366

Wastewater Treatment Processes

Place an "X" in the box beside the corresponding treatment process. Select a maximum of Primary Clarification and one other treatment process.

Primary Clarification ☐

Contact Stabilization ☐

RBC ☐

Conventional Activated Sludge ☒

SBR ☐

ABF ☐

Extended Aeration ☐

Trickling Filter ☐

Small Plant with low SOR ☐
(<500 gpd/sq ft)

Operational Information

BOD Removed (lbs/day): 3507

TSS Removed (lbs/day): 2981

Digester Information

Type of Digester

Place an "X" in the box beside the corresponding treatment process.

Aerobic Digestion ☒

Anaerobic Digestion ☐

None ☐

Sludge Feed Rate to Digesters (gpd): 59567.6364

Digester Hydraulic Detention Time (days): 7

Estimated Total Solids Reduction (%): 0.2

Sludge Generation

dry lbs/day 2385

wet lbs/day 15688

dry tons/monitoring period 436

wet tons/monitoring period 2871

gal/day 1881

gal/monitoring period 688476

Amount of Sludge Reported as Being Generated by the Facility

wet tons/monitoring period 0

OR

dry tons/monitoring period 506.1

Enter only one of the above values. The remaining value should be "0".

Is the amount reported by the generator within 15% of the calculated value? NO

NO explanation: GREATER THAN 15% RANGE

What type of information was used to calculate the above information: In House and Comercial Laboratory test results

Dates used: 1.1.2020 TO 12.31.2020

Name of person performing the calculation: Jeffrey J. Harman Jr., EIT


**SUPPLEMENTAL REPORT
 SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL**

 Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PLA
 Municipality: ELIZABETHTOWN County: LANCASTER
 Watershed: 7-G

 Month: January Year: 2020
 NPDES Permit No.: PA0023108
 Renewal application due 180 days prior to expiration
 This permit will expire on: June 30, 2021
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)
☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
1/2/20				17.65	14.00	2.47			
1/3/20				16.86	14.00	2.36			
1/6/20				16.57	14.00	2.32			
1/7/20				16.03	14.00	2.24			
1/8/20				17.43	14.00	2.44			
1/9/20				16.41	14.00	2.30			
1/13/20				17.19	14.00	2.41			
1/14/20				15.69	14.00	2.20			
1/15/20				17.32	14.00	2.42			
1/16/20				16.74	14.00	2.34			
1/21/20				16.19	14.00	2.27			
1/22/20				17.04	14.00	2.39			
1/23/20				16.71	14.00	2.34			
1/24/20				16.26	14.00	2.28			
1/27/20				16.62	14.00	2.33			

TOTAL:

TOTAL:

35.099

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		35.1		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

 Prepared By: David E. Hudzick
 Title: Assistant WWTP Supervisor

 License No.: T2963
 Date: February 16, 2020

Month: January Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

☐ Check here if there were no off-site removal events during the month

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION
(Identify all sites where biosolids or ash were disposed or land applied)

* See Instructions for explanation.

Prepared By: **David E. Hudzick**
Title: **Assistant WWTP Supervisor**

License No.: **T2963**
Date: **February 16, 2020**


**SUPPLEMENTAL REPORT
 SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL**

 Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PLA
 Municipality: ELIZABETHTOWN County: LANCASTER
 Watershed: 7-G

 Month: February Year: 2020
 NPDES Permit No.: PA0023108
 Renewal application due 180 days prior to expiration
 This permit will expire on: June 30, 2021
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)
☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
2/3/20				17.27	15.40	2.66			
2/4/20				16.39	15.40	2.52			
2/5/20				15.54	15.40	2.39			
2/6/20				17.86	15.40	2.75			
2/7/20				17.36	15.40	2.67			
2/10/20				15.94	15.40	2.45			
2/11/20				16.37	15.40	2.52			
2/12/20				15.22	15.40	2.34			
2/13/20				16.15	15.40	2.49			
2/14/20				16.63	15.40	2.56			
2/17/20				16.76	15.40	2.58			
2/19/20				17.97	15.40	2.77			
2/20/20				17.32	15.40	2.67			
2/21/20				17.45	15.40	2.69			
2/24/20				16.84	15.40	2.59			

TOTAL:

TOTAL:

38.665

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		38.7		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

 Prepared By: David E. Hudzick
 Title: Assistant WWTP Supervisor

 License No.: T2963
 Date: March 11, 2020

Month: **February** Year: **2020**
NPDES Permit No.: **PA0023108**
Renewal application due **180 days** prior to expiration
This permit will expire on: **June 30, 2021**

☐ Check here if there were no off-site removal events during the month[illegible]

TOTAL:

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		10.2		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

License No.: **T2963**
Date: **March 11, 2020**


SUPPLEMENTAL REPORT
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

 Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PLA
 Municipality: ELIZABETHTOWN County: LANCASTER
 Watershed: 7-G

 Month: March Year: 2020
 NPDES Permit No.: PA0023108
 Renewal application due 180 days prior to expiration
 This permit will expire on: June 30, 2021
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)
☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
3/2/20				16.68	14.00	2.34			
3/3/20				16.72	14.00	2.34			
3/4/20				15.76	14.00	2.21			
3/5/20				16.11	14.00	2.26			
3/6/20				16.38	14.00	2.29			
3/9/20				17.56	14.00	2.46			
3/10/20				17.85	14.00	2.50			
3/11/20				17.13	14.00	2.40			
3/12/20				16.43	14.00	2.30			
3/16/20				17.73	14.00	2.48			
3/17/20				17.75	14.00	2.49			
3/18/20				16.82	14.00	2.35			
3/19/20				16.49	14.00	2.31			
3/20/20				16.69	14.00	2.34			

TOTAL:

TOTAL:

33.054

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		33.1		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

 Prepared By: David E. Hudzick
 Title: Assistant WWTP Supervisor

 License No.: T2963
 Date: April 13, 2020

Month: March Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

☐ Check here if there were no off-site removal events during the month[illegible]

TOTAL:

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		12.0		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

License No.: **T2963**
Date: **April 13, 2020**



SUPPLEMENTAL REPORT SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PL
Municipality: ELIZABETHTOWN County: LANCASTER
Watershed: 7-G

Month: April Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
4/1/20				18.12	15.30	2.77			
4/2/20				17.98	15.30	2.75			
4/3/20				17.54	15.30	2.68			
4/6/20				17.25	15.30	2.64			
4/7/20				17.47	15.30	2.67			
4/9/20				17.31	15.30	2.65			
4/13/20				17.70	15.30	2.71			
4/14/20				16.00	15.30	2.45			
4/15/20				16.74	15.30	2.56			
4/16/20				16.04	15.30	2.45			
4/17/20				16.20	15.30	2.48			
4/20/20				16.36	15.30	2.50			
4/21/20				15.01	15.30	2.30			
4/22/20				15.95	15.30	2.44			
4/23/20				15.99	15.30	2.45			

TOTAL:

TOTAL:

38.504

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		38.5		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: David E. Hudzick
Title: Assistant WWTP Supervisor

License No.: T2963
Date: May 11, 2020

Month: April Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

☐ Check here if there were no off-site removal events during the month.[illegible]

TOTAL:

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		12.7		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

License No.: **T2963**
Date: **May 11, 2020**



SUPPLEMENTAL REPORT SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PL
Municipality: ELIZABETHTOWN County: LANCASTER
Watershed: 7-G

Month: May Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
5/1/20				16.78	16.60	2.79			
5/5/20				16.52	16.60	2.74			
5/7/20				16.92	16.60	2.81			
5/8/20				16.91	16.60	2.81			
5/11/20				16.58	16.60	2.75			
5/12/20				16.92	16.60	2.81			
5/14/20				16.78	16.60	2.79			
5/15/20				16.18	16.60	2.69			
5/18/20				16.43	16.60	2.73			
5/19/20				16.65	16.60	2.76			
5/22/20				16.16	16.60	2.68			
5/26/20				16.89	16.60	2.80			
5/27/20				18.29	16.60	3.04			
5/28/20				16.34	16.60	2.71			
5/29/20				16.64	16.60	2.76			

TOTAL:

TOTAL:

41.664

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		41.7		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: David E. Hudzick
Title: Assistant WWTP Supervisor

License No.: T2963
Date: June 9, 2020



**SUPPLEMENTAL REPORT
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL**

Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PL
Municipality: ELIZABETHTOWN County: LANCASTER
Watershed: 7-G

Month: June Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
6/1/20				16.86	15.60	2.63			
6/2/20				17.59	15.60	2.74			
6/3/20				18.01	15.60	2.81			
6/4/20				17.43	15.60	2.72			
6/5/20				16.06	15.60	2.51			
6/8/20				16.30	15.60	2.54			
6/9/20				17.84	15.60	2.78			
6/11/20				16.25	15.60	2.54			
6/12/20				17.44	15.60	2.72			
6/15/20				15.79	15.60	2.46			
6/16/20				16.78	15.60	2.62			
6/17/20				16.58	15.60	2.59			
6/19/20				15.94	15.60	2.49			
6/22/20				15.93	15.60	2.49			
6/23/20				18.44	15.60	2.88			

TOTAL:

TOTAL:

39.505

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		39.5		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: David E. Hudzick
Title: Assistant WWTP Supervisor

License No.: T2963
Date: July 15, 2020

Month: June Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

☐ Check here if there were no off-site removal events during the month[illegible]

TOTAL:

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		10.1		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

License No.: **T2963**
Date: **July 15, 2020**



SUPPLEMENTAL REPORT SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PL
Municipality: ELIZABETHTOWN County: LANCASTER
Watershed: 7-G

Month: July Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
7/2/20				15.43	15.40	2.38			
7/6/20				16.04	15.40	2.47			
7/7/20				17.03	15.40	2.62			
7/8/20				16.24	15.40	2.50			
7/10/20				16.23	15.40	2.50			
7/13/20				16.47	15.40	2.54			
7/14/20				16.52	15.40	2.54			
7/15/20				15.98	15.40	2.46			
7/17/20				15.66	15.40	2.41			
7/20/20				15.84	15.40	2.44			
7/22/20				14.89	15.40	2.29			
7/23/20				15.99	15.40	2.46			
7/24/20				16.67	15.40	2.57			
7/27/20				17.07	15.40	2.63			
7/31/20				18.22	15.40	2.81			

TOTAL:

TOTAL:

37.619

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		37.6		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: David Hershey
Title: Operator

License No.: 205661
Date: August 25, 2020


SUPPLEMENTAL REPORT
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

 Facility Name: **ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PL**
 Municipality: **ELIZABETHTOWN** County: **LANCASTER**
 Watershed: **7-G**

 Month: **August** Year: **2020**
 NPDES Permit No.: **PA0023108**
 Renewal application due **180 days** prior to expiration
 This permit will expire on: **June 30, 2021**
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)
☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
8/3/20				17.55	15.30	2.69			
8/4/20				16.46	15.30	2.52			
8/11/20				15.10	15.30	2.31			
8/12/20				16.66	15.30	2.55			
8/13/20				17.00	15.30	2.60			
8/14/20				17.41	15.30	2.66			
8/17/20				16.96	15.30	2.59			
8/18/20				16.18	15.30	2.48			
8/20/20				16.60	15.30	2.54			
8/21/20				17.33	15.30	2.65			
8/25/20				16.90	15.30	2.59			
8/26/20				17.07	15.30	2.61			
8/27/20				15.21	15.30	2.33			
8/28/20				17.25	15.30	2.64			
8/31/20				14.99	15.30	2.29			

TOTAL:

TOTAL:

38.047

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		38.0		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

 Prepared By: **David E. Hudzick**
 Title: **Assistant WWTP Supervisor**

 License No.: **T2963**
 Date: **September 18, 2020**



SUPPLEMENTAL REPORT SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PL
Municipality: ELIZABETHTOWN County: LANCASTER
Watershed: 7-G

Month: September Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
9/1/20				16.62	15.50	2.58			
9/3/20				15.80	15.50	2.45			
9/4/20				16.77	15.50	2.60			
9/8/20				15.38	15.50	2.38			
9/10/20				15.38	15.50	2.38			
9/15/20				16.57	15.50	2.57			
9/15/20				16.96	15.50	2.63			
9/16/20				16.99	15.50	2.63			
9/17/20				16.54	15.50	2.56			
9/18/20				15.87	15.50	2.46			
9/21/20				17.43	15.50	2.70			
9/24/20				16.06	15.50	2.49			
9/25/20				17.09	15.50	2.65			
9/28/20				15.62	15.50	2.42			
9/29/20				17.35	15.50	2.69			

TOTAL:

TOTAL:

38.197

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		38.2		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: David E. Hudzick
Title: Assistant WWTP Supervisor

License No.: T2963
Date: October 15, 2020


SUPPLEMENTAL REPORT
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

 Facility Name: **ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PLA**
 Municipality: **ELIZABETHTOWN** County: **LANCASTER**
 Watershed: **7-G**

 Month: **October** Year: **2020**
 NPDES Permit No.: **PA0023108**
 Renewal application due **180 days** prior to expiration
 This permit will expire on: **June 30, 2021**
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)
☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
10/1/20				16.30	15.00	2.45			
10/2/20				15.50	15.00	2.33			
10/5/20				15.94	15.00	2.39			
10/8/20				16.63	15.00	2.49			
10/9/20				16.71	15.00	2.51			
10/12/20				15.34	15.00	2.30			
10/13/20				15.14	15.00	2.27			
10/15/20				16.79	15.00	2.52			
10/16/20				16.75	15.00	2.51			
10/19/20				16.20	15.00	2.43			
10/21/20				16.36	15.00	2.45			
10/22/20				17.11	15.00	2.57			
10/23/20				15.57	15.00	2.34			
10/26/20				15.95	15.00	2.39			
10/29/20				17.12	15.00	2.57			

TOTAL:

TOTAL:

36.512

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		36.5		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

 Prepared By: **David Hershey**
 Title: **Plant Operator**

 License No.: **S12009**
 Date: **November 15, 2020**

Month: October Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

☐ Check here if there were no off-site removal events during the month[illegible]

TOTAL:

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		2.3		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

License No.: **S12009**
Date: **November 15, 2020**

SUPPLEMENTAL REPORT
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Month: November Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

☐ Check here if there were no off-site removal events during the month[illegible]

TOTAL:

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

(Identify all sites where biosolids or ash were disposed or land applied)				
Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		33.5		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

License No.: T2963
Date: December 18, 2020



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL REPORT SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Facility Name: ELIZABETHTOWN BOROUGH WASTEWATER TREATMENT PLAN
Municipality: ELIZABETHTOWN County: LANCASTER
Watershed: 7-G

Month: December Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

SEWAGE SLUDGE / BIOSOLIDS PRODUCTION INFORMATION (Identify each off-site removal event and incineration event)

☐ Check here if there were no off-site removal events during the month

Date	Liquid Sewage Sludge/Biosolids Hauled Off-site			Dewatered Sewage Sludge/Biosolids Hauled Off-site			Sewage Sludge/Biosolids Dewatered and Incinerated On-site		
	Gallons	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons	Tons Dewatered	% Solids	Dry Tons
12/1/20				17.23	15.10	2.60			
12/2/20				15.49	15.10	2.34			
12/3/20				14.95	15.10	2.26			
12/4/20				16.08	15.10	2.43			
12/7/20				16.40	15.10	2.48			
12/8/20				16.02	15.10	2.42			
12/10/20				15.90	15.10	2.40			
12/11/20				15.50	15.10	2.34			
12/14/20				17.38	15.10	2.62			
12/15/20				17.59	15.10	2.66			
12/21/20				15.25	15.10	2.30			
12/22/20				15.61	15.10	2.36			
12/23/20				17.17	15.10	2.59			
12/28/20				16.98	15.10	2.56			
12/29/20				16.76	15.10	2.53			
TOTAL:				TOTAL: 36.891			TOTAL:		

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION

(Identify all sites where biosolids or ash were disposed or land applied)

Site Name	Modern Landfill	Frey Farm Landfill	LCSWMA Incinerator	ACC Composting
Municipality				
County	York	Lancaster	Lancaster	Lancaster
DEP Permit No.		PA101389	PA400592	
Type of Material*		biosolids	biosolids	
Dry Tons Applied/Disposed		37.0		
Type of Disposal/Use*		landfill	Incinerator	
Hauler Name		Republic Services	LCSWA	

* See Instructions for explanation.

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Prepared By: David E. Hudzick
Title: Assistant WWTP Supervisor

License No.: T2963
Date: January 8, 2021

SUPPLEMENTAL REPORT
SEWAGE SLUDGE / BIOSOLIDS PRODUCTION AND DISPOSAL

Month: December Year: 2020
NPDES Permit No.: PA0023108
Renewal application due 180 days prior to expiration
This permit will expire on: June 30, 2021

☐ Check here if there were no off-site removal events during the month

SEWAGE SLUDGE / BIOSOLIDS AND INCINERATOR ASH DISPOSAL AND BENEFICIAL USE INFORMATION
(Identify all sites where biosolids or ash were disposed or land applied)

* See Instructions for explanation.

Prepared By: David E. Hudzick
Title: Assistant WWTP Supervisor

License No.: T2963
Date: January 8, 2021