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

CHAPTER 94

WASTELOAD MANAGEMENT REPORT

FOR

CALENDAR YEAR 2021

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

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

On Behalf of:
HALIFAX AREA WATER AND SEWER AUTHORITY
Dauphin County, Pennsylvania

Date:
March 2022

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2021

☒ 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:	**Halifax Area Water and Sewer Authority**	Permit No.:	**PA0024457**
Mailing Address:	**PO Box 443**	Effective Date:	**May 1, 2017**
City, State, Zip:	**Halifax, PA 17032**	Expiration Date:	**April 30, 2022**
Contact Person:	**Jeffrey Grosser**	Renewal Due Date:	**November 1, 2021**
Title:	**Operator**	Municipality:	**Halifax Borough, Halifax Twp**
Phone:	**(717) 896-3886**	County:	**Dauphin**
Email:	**jgrosser@hawasaonline.com**	Consultant Name:	**Herbert, Rowland & Grubic, Inc.**

CHAPTER 94 REPORT COMPONENTS

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))

   Check the appropriate boxes:

   ☒ Line graph for flows attached (**Attachment A**)
   ☒ DEP Chapter 94 Spreadsheet used (**Attachment A**)
   ☐ Section 1 is not applicable (report is for a collection system).

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))

   Check the appropriate boxes:

   ☒ Line graph for organic loads attached (**Attachment A**)
   ☒ DEP Chapter 94 Spreadsheet used (**Attachment A**)
   ☐ Section 2 is not applicable (report is for a collection system).

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))

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 B**)

☐ List summarizing each extension or project attached (**Attachment**)

☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

No new connections to the Authority's collection system were made in 2021.

The proposed extension of sanitary sewer along Peters Mountain Road will consist of low pressure sewer systems, gravity collectors, three (3) pump stations and associated force mains. This project will initially add approximately 300 EDUs (existing homes) to the WWTP with an ultimate buildout to 407 EDUs. The construction of the proposed sanitary sewer extension is expected to be completed within the current 5 year planning period. The expansion of the HAWASA wastewater treatment facility is anticipated to be completed in August 2022. The expansion will increase the current hydraulic and organic design capacities of the WWTP to accommodate the projected flows from the sewer extension. Construction of the extension is anticipated to begin in the next year and the first connection of the new EDU's from sewer extension are not anticipated until 2023. Lenker Estates is anticipated to be the first connection from the extension and accounts for approximately 50 EDUs in 2023. An additional 100 EDUs are assumed in 2023 with the remaining EDUs in the extension is expected to be completed in 2024.

Another development, the Sycamore Ridge community, is expected to connect to the Authority's system in the 5-year planning period. The development will be constructed east of Pennsylvania Route 147. Sewer facilities will consist of a gravity sewer that will tie into the existing gravity system main and ultimately drain into the Main Pumping Station. The aforementioned WWTP expansion project also includes upgrades to the currently hydraulically overloaded Main Pumping Station. The upgrades to the Main PS will increase its capacity and the upgrades will be completed prior to connection of the Sycamore Ridge community to the Authority's sewer system. The Sycamore Ridge development will add 124 new EDUs to the WWTP. However, no planning progress has occurred in this project within the past two years. Beacue of this, no EDUs from the Sycamore Ridge development have been included in the attached projections. Land development plans for Sycamore Ridge have not yet been submitted but the location of the development is outlined in Attachment B.

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))

Repairs to the Authority's collection system are conducted on an as-needed basis. There are two full-time operators of the sewer system, shared with the water system. The collection system maintenance program consists of daily checks of the Authority's pump stations and routine checks of manholes throughout the collection system. Manhole inserts have been placed in manholes that appear to be affected by inflow. No serious problems have been observed in the collection system. The system is not a combined sewer system and no regulators are present.

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 sanitary sewer overflows (SSOs) were observed in the Authority's system in the 2021 calendar year.

PA DEP has identified a hydraulic overload condition at the HAWASA WWTP Main Pumping Station and occurrences of permit violations at the WWTP itself. In response to these issues, HAWASA entered into a Consent Order and Agreement (COA) with PA DEP for the upgrade of the main pump station and WWTP.

In accordance with the schedule contained in the COA, HAWASA submitted a Wastewater Treatment Plant Alternatives Review and Design Engineers Report, prepared by Herbert, Rowland & Grubic, Inc. (HRG), to PA DEP. HRG determined that the Authority's WWTP will require comprehensive upgrades to nearly all unit processes in order to eliminate the hydraulic overload condition at the Main Pumping station and the occurrence of permit violations at the WWTP. Improvements to the Main Pumping Station at the WWTP and the WWTP itself will be completed as part of the WWTP Upgrade project. The Water Quality Management Permit for construction of the WWTP Upgrade project was issued by PA DEP on March 12, 2020.

HAWSA is moving forward with the Wastewater Treatment Plant Upgrade Project. The project includes the construction of new headworks, two (2) new sequencing batch reactors (SBRs), construction of a new post-equalization tank, upgraded disinfection system, new chemical equipment and improvements to existing biological tanks and digester tanks. The project will increase the capacity of the existing WWTP to 0.28 MGD. In addition to treatment plant upgrades, the project also entails upgrades to the hydraulically overloaded Main Pumping Station. Bids for the HAWSA Wastewater Treatment Plant Upgrade Project were received on August 11, 2020. All three contracts under the project were awarded on November 25, 2020. This project started construction in 2021 and will complete construction in 2022.

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 – **2**)
☒ Discussion of condition of each pump station attached (**Attachment C**)

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. **At the WWTP Main Pumping Station only**
☐ 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 F**)

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 D**)

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 E**)

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).

Jeffrey Grosser, Lead Operator
Name of Responsible Official

Signature

(717) 896-3886
Telephone No.

March 15, 2022
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).

Justin Mendinsky, P.E.
Name of Preparer

Signature

(717) 564-1121
Telephone No.

3/15/2022
Date

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT INSTRUCTIONS

This form has been developed to promote consistency in the development of annual municipal wasteload management reports ("Chapter 94 reports") required by 25 Pa. Code § 94.12. At least two copies of the complete report must be submitted to the appropriate regional office of the Department of Environmental Protection (DEP) by March 31.

Enter the calendar year that the report covers at the top of the form. Check the appropriate box to indicate whether the permittee is the owner/operator of a publicly owned treatment works (POTW) or other sewage treatment facility, or is the owner/operator of a sewage collection system that is tributary to a POTW owned/operated by a different entity.

General Information

Record the name of the permittee, the permittee's full mailing address, the permittee's contact person and this person's title, phone number and email address. Also record the permit number (NPDES or WQM), the effective date of permit coverage, the expiration date of permit coverage (if applicable), the date by which an application or NOI is due for reissuance (renewal) (if applicable), the municipality and county where the sewage treatment facility or collection system is located, and the name of the consultant (company name), if any, who assisted in the preparation of the form.

Chapter 94 Report Components

This section requests responses to 12 questions that, if applicable, must be addressed for a complete Chapter 94 report. Questions 1 – 9 and 12 come directly from the Chapter 94 regulations, i.e., 25 Pa. Code §§ 94.12(a)(1) – 94.12(a)(9) and 94.13(b). Some questions request that you check an appropriate box, attach the information requested, and specify the attachment number, while responses to other questions may be entered directly on the form.

For Questions 1 and 2, permittees may use DEP's Chapter 94 Spreadsheet to satisfy 25 Pa. Code §§ 94.12(a)(1) and 94.12(a)(2), respectively. DEP encourages use of the Chapter 94 Spreadsheet to provide consistency in the format and calculations associated with hydraulic and organic load evaluations (see www.depweb.state.pa.us/chapter94). If the Chapter 94 Spreadsheet was used, check the appropriate box(es) and attach printouts of the data and graphs to the Chapter 94 report. If this report is being used for a collection system only, these graphs are not needed.

For Question 6, if the permittee checks the box that there were capacity-related bypasses or SSOs during the report year, in general the box for existing hydraulic overload in Question 9 should be checked. If the permittee checks the box in Question 6 because surcharging occurred during the report year, in general the box for projected hydraulic overload in Question 9 should be checked.

For Question 8, if the permittee has an EPA-approved pretreatment program, attachment of an annual pretreatment report as required in an NPDES permit will satisfy the requirement for an industrial waste report.

For Question 10, if a permit requires a "Sewage Sludge Management" inventory, check the appropriate box if the inventory is attached to the Chapter 94 report.

For Question 11, if an NPDES permit (individual permit or, for satellite collection systems, PAG-06 General NPDES permit coverage) requires an Annual CSO (Status) report, attach the CSO report to the Chapter 94 report and check the appropriate box.

Certification

In accordance with 25 Pa. Code § 94.12(a), both the individual who prepared the report and (a responsible official of) the permittee must sign the report. The term "responsible official" for a municipality is a principal executive officer or ranking elected official.

Questions on the completion of Chapter 94 reports may be directed to DEP's Bureau of Point and Non-Point Source Management at (717) 787-8184 or to the appropriate DEP regional office (contact information available by visiting DEP's website, www.depweb.state.pa.us, and selecting Regional Resources).

A

ATTACHMENT A

HYDRAULIC AND ORGANIC LOADING DATA AND LINE GRAPHS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Sprea
Sewage Treatment

Reporting Year: 2021

Facility Name: Halifax Wastewater Treatment Plant | **Permit No.:** 24457 | **Persons/EDU:** 3.5

Existing Hydraulic Design Capacity:	0.21	MGD		**Existing Organic Design Capacity:**	527	lbs BOD5/day	
Upgrade Planned in Next 5 Years?	YES	**Year:**	2022	**Upgrade Planned in Next 5 Years?**	YES	**Year:**	2022
Future Hydraulic Design Capacity:	0.28	MGD		**Future Organic Design Capacity:**	636	lbs BOD5/day	

Monthly Average Flows for Past Five Years (MGD)

Month	2017	2018	2019	2020	2021
January	0.0787	0.0726	0.1445	0.103	0.0952
February	0.0819	0.1175	0.1352	0.1137	0.0918
March	0.0906	0.1157	0.1429	0.1255	0.1298
April	0.122	0.1258	0.1603	0.1398	0.1405
May	0.1128	0.1484	0.1933	0.1714	0.1344
June	0.1168	0.1418	0.1586	0.1586	0.1382
July	0.1444	0.167	0.1451	0.1561	0.221
August	0.1456	0.174	0.1233	0.1523	0.1892
September	0.122	0.1599	0.111	0.127	0.2177
October	0.1047	0.1299	0.1018	0.105	0.1417
November	0.0914	0.1583	0.0966	0.0933	0.1017
December	0.0748	0.1457	0.0955	0.0947	0.0842
Annual Avg	0.1071	0.1381	0.134	0.1284	0.1405
Max 3-Mo Avg	0.1373	0.167	0.1707	0.162	0.2093
Max : Avg Ratio	1.28	1.21	1.27	1.26	1.49
Existing EDUs	751.0	753.0	753.0	753.0	753.0
Flow/EDU (GPD)	142.6	183.4	178.0	170.5	186.6
Flow/Capita (GPD)	40.7	52.4	50.8	48.7	53.3
Exist. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

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

Month	2017	2018	2019	2020	2021
January	99	151	102	125	126
February	86	127	114	181	147
March	105	114	108	86	155
April	297	53	133	89	176
May	197	42	71	73	193
June	197	39	103	156	230
July	106	66	177	232	149
August	220	101	146	332	214
September	257	165	169	423	132
October	193	149	131	157	252
November	221	137	157	175	115
December	110	139	136	148	149
Annual Avg	174	107	129	181	170
Max Mo Avg	297	165	177	423	252
Max : Avg Ratio	1.71	1.54	1.37	2.33	1.48
Existing EDUs	751	753	753	753	753
Load/EDU	0.232	0.142	0.171	0.241	0.226
Load/Capita	0.066	0.041	0.049	0.069	0.064
Exist. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Projected Flows for Next Five Years (MGD)

	2022	2023	2024	2025	2026
New EDUs	2.0	150.0	150.0	2.0	2.0
New EDU Flow	0.0003	0.0258	0.0258	0.0003	0.0003
Proj. Annual Avg	0.1299	0.1557	0.1815	0.1818	0.1821
Proj. Max 3-Mo Avg	0.1693	0.2029	0.2365	0.2369	0.2373
Proj. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

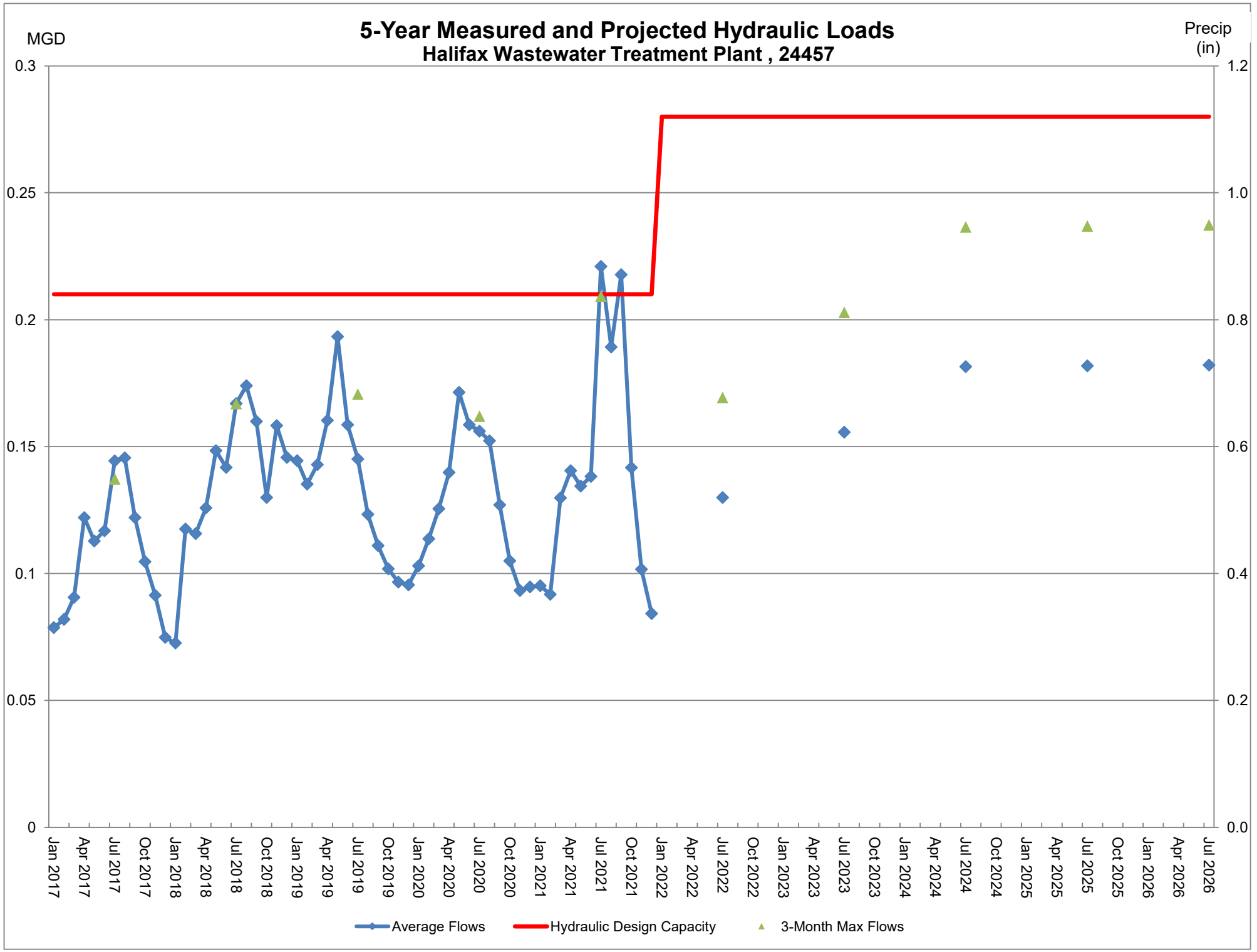
Projected BOD5 Loads for Next Five Years (lbs/day)

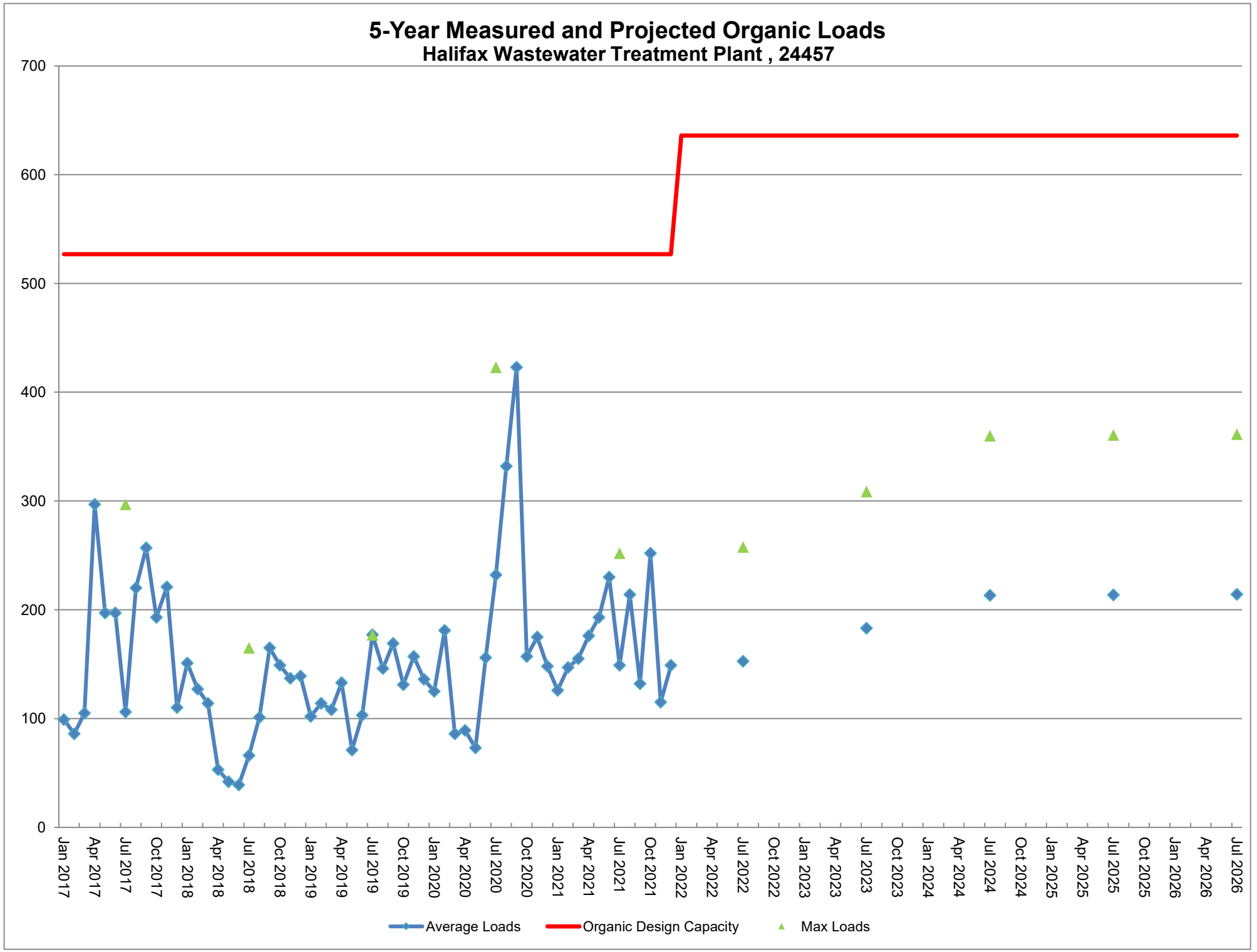
	2022	2023	2024	2025	2026
New EDUs	2	150	150	2	2
New EDU Load	0.405	30.341	30.341	0.405	0.405
Proj. Annual Avg	153	183	213	214	214
Proj. Max Avg	258	309	360	361	361
Proj. Overload?	**NO**	**NO**	**NO**	**NO**	**NO**

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2017	2018	2019	2020	2021
January			2.46	2.77	2.9
February			2.83	2.53	2.9
March			2.22	3.46	5.3
April			4.31	3.5	3.9
May			5.05	4.3	5.25
June			2.47	2.86	2.4
July			5.44	0.92	10.0
August			3.94	3.96	11.5
September			2.29	1.71	14.55
October			5.0	3.69	3.9
November			2.11	2.12	2.6
December			3.81	5.11	1.25


5-Year Measured and Projected Hydraulic Loads
Halifax Wastewater Treatment Plant , 24457
MGD
Precip (in)
0.3
0.25
0.2
0.15
0.1
0.05
0
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan 2017
Apr 2017
Jul 2017
Oct 2017
Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Oct 2025
Jan 2026
Apr 2026
Jul 2026
Average Flows
Hydraulic Design Capacity
3-Month Max Flows


5-Year Measured and Projected Organic Loads
Halifax Wastewater Treatment Plant , 24457
700
600
500
400
300
200
100
0
Jan 2017
Apr 2017
Jul 2017
Oct 2017
Jan 2018
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Oct 2025
Jan 2026
Apr 2026
Jul 2026
Average Loads
Organic Design Capacity
Max Loads

B

ATTACHMENT B

GENERAL PLAN/SEWER EXTENSIONS

LIMIT OF CONNECTION RESTRICTION PER
JUNE 20, 2017 CORRECTIVE ACTION PLAN

SYCAMORE RIDGE
DEVELOPMENT AREA

MOUNTAINVIEW DR
RIVERVIEW DRIVE
HALIFAX TOWNSHIP
HALIFAX BOROUGH
SIXTH ST.
FIFTH ST.
FOURTH ST.
THIRD ST.
SECOND ST.
FRONT ST.
MARKET ST.
RISE ST.
ARMSTRONG ST.
MAPLE ST.
GILBERT ST.
BOYERS ST.
GREEN ST.
LOCUST ST.
HILL CIRCLE
RAILROAD ALLEY
R/W "A"
R/W "B"
HOFFMAN ROAD
PETERS MOUNTAIN ROAD
HALIFAX PLAZA
S.R. 0147 L.R.1
S.R. 4013 POWELLS VALLEY ROAD
GEORGE STREET
PARMER DRIVE
NORFOLK SOUTHERN RAILWAY
BOYER STREET PUMPING STATION AND FORCE MAIN WITH AIR RELEASE VALVE
SEWAGE TREATMENT PLANT
MAIN PUMPING STATION
SUSQUEHANNA RIVER
HALIFAX TOWNSHIP
HALIFAX BOROUGH
NORFOLK SOUTHERN RAILWAY

GRAPHIC SCALE
800 0 400 800 1600 3200
(IN FEET)
1 inch = 800 ft.
(APPROXIMATE)

Refer to Halifax Township Sewer Extension Map for location of new proposed collection and conveyance facilities to be constructed as part of future sewer extension project.

COMPUTER DRAWING FILE NAME:
S-GENPLAN - CAP.DWG

HALIFAX AREA WATER AND SEWER AUTHORITY
DAUPHIN COUNTY, PENNSYLVANIA

GENERAL PLAN OF
SANITARY SEWERAGE FACILITIES
FOR CORRECTIVE ACTION PLAN

SCALE	DATE	FILE CODE	PLAN NO.
1"=800'	OCT., 2015	6071502	3

GLACE ASSOCIATES, INC., CAMP HILL, PA.

O:\CAD DRAWINGS\607\6071502\S-GENPLAN - CAP.DWG, 10/2/2015 9:23 AM

Powells Valley Road

Hoffman Road

Powells Valley Road

Parmer Drive

South River Road (S.R. 0147)

Pine Mountain Road (S.R. 2029)

Sycamore Avenue

Oak Avenue

Sycamore Avenue

Elm Ave

Sycamore Avenue

Maple Avenue

Maple Avenue

Dwight Drive

Michele Court

Dwight Drive

LENKER PUMP STATION

Hoffman Road (T-542)

Williams Street

Williams Street

Millers Gap Road (S.R. 4017)

ROADCAP LANE PUMP STATION

Roadcap Lane

Leaman Road (T-2)

Creek Rd-1 (T-353)

Fish Drive (T-333)

Creek Road (T-353)

Camp Hebron Road (T-551)

CREEK ROAD PUMP STATION

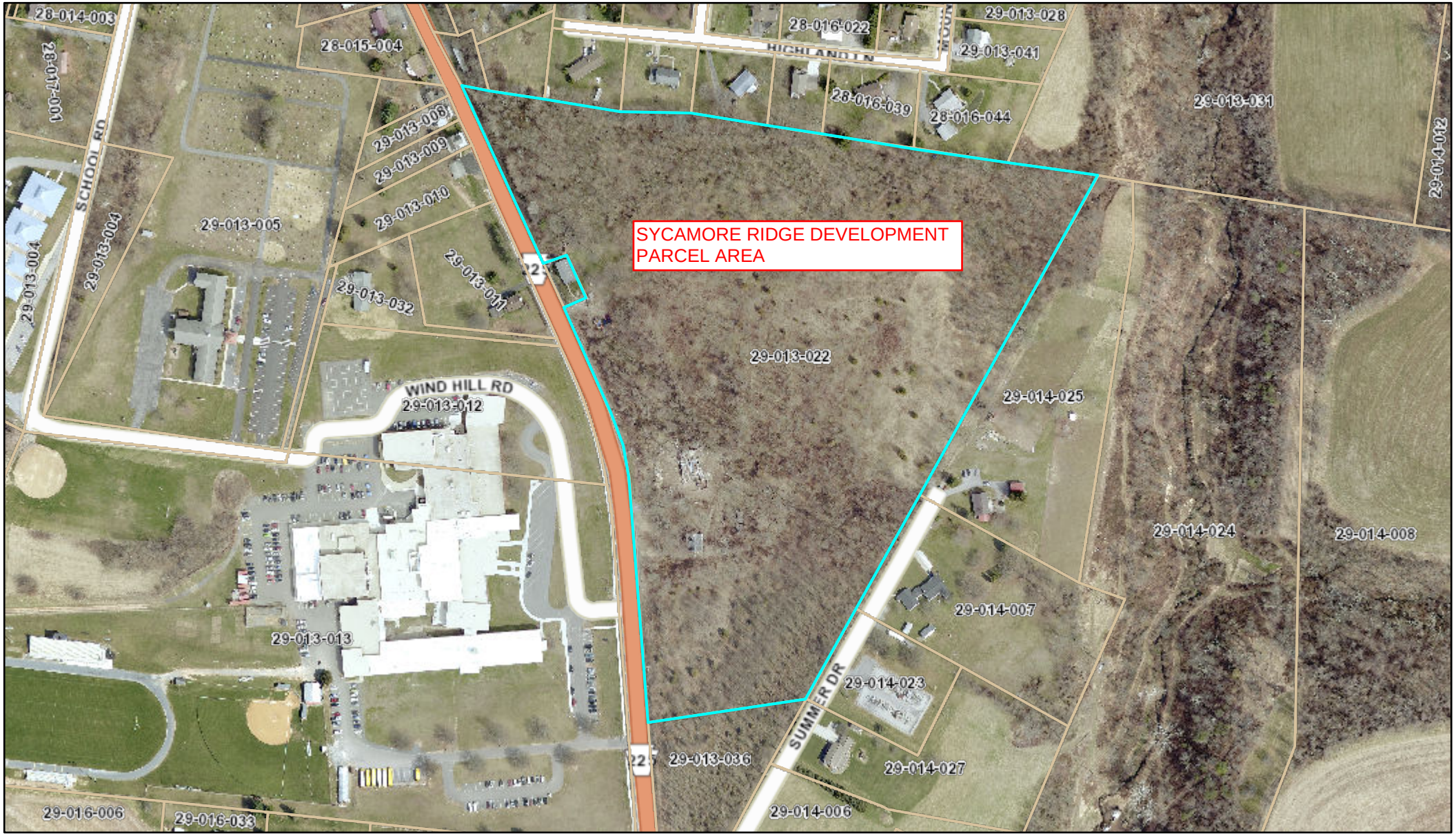
HALIFAX TOWNSHIP SANITARY SEWER EXTENSION
PRELIMINARY DESIGN
01/16/2020

S — GRAVITY SEWER

FM — FORCE MAIN SEWER

LP — LOW PRESSURE SEWER

Tax Parcel Map



2/3/2021, 1:22:10 PM

Parcels

1:4,514

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Dauphin County, PA Web Map

C

ATTACHMENT C

CONDITION OF PUMP STATIONS

CONDITION OF THE PUMP STATIONS

HAWSA utilizes two (2) pump stations throughout the sanitary sewer system. The pump stations are maintained and inspected by the operators on a regular basis. Cleaning, repairs, and routine maintenance items are performed as needed.

Boyer Street Pumping Station - Location: Boyer Street, Halifax Township

Design Capacity:	50 gpm (1 pump basis)
Present Flows:	Average: 3.9 gpm Maximum (Peak Hourly Flow estimated): 50 gpm Projected two-year maximum peak hourly flow estimated: 50 gpm (Design basis of new Boyer Street Pump Station for maintaining velocity in 4-inch force main)

The Boyer Street Pump Station was upgraded to submersible pumps at the end of 2014 and began operations in 2015. The single phase pumps run full speed. Attached runtime records indicate total runtime for the station averages to approximately 13.1 hours per week, usually divided equally between the pumps.

There are no known future connections to the pump station in the next 2-year planning period. Therefore, a hydraulic overload condition is not expected to occur at the pump station in the next 2 years.

Main Pumping Station - Location: At the Treatment Plant, conveying all flow from the Borough and the northern Halifax Township service area (including flows from Boyer Street Pumping Station).
There are two (2) suction lift pumps with separate 4-inch suction lines, discharging into a single 4-inch force main. The pumps are variable speed based on use of variable frequency drives, so only maximum flows can be estimated based on runtime. Due to the small size of the force main, 2 pumps on represents a much lower flow rate than twice one-pump flow.

Design Capacity:	175 gpm (1 pump basis)
Present Flows:	Average: 198 gpm (estimated based on plant flow) Maximum (Peak Hourly Flow estimated): 240 gpm Projected two-year maximum peak hourly flow estimated: 240 gpm (based on effective capacity of 2 pumps together into small 4-inch force main) *As noted plant return flows are included.*

The recorded pump hours attached indicate an overloaded pump station condition with Pump 2 (or lag pump) typically operating between 4-20 hours each day. In accordance with the Consent Order and Agreement (COA) developed for the WWTP, improvements to the Main Pumping Station are being addressed as part of the Wastewater Treatment Plant Upgrades Project. See Attachment F for information regarding the COA status.

Wastewater from the Halifax School and southern Halifax Township service area flows directly to the headworks. The Peak Hourly Flow at the WWTP is determined to be 360 gpm based on analysis of effluent WWTP flow meter charts for this flow-through treatment plant.

As part of the ongoing Wastewater Treatment Plant Upgrades project, the Main Pumping Station will receive improvements. The existing pump station is being replaced with a suction lift station designed for 300 gpm capacity. The upgraded pump station will have an effective wet well volume of approximately 788 gallons, based on the design pump rate of 300 gpm and a minimum allowable cycle time of 10 minutes per pump. A 6-inch diameter ductile iron force main will convey all flow from the Main Pumping Station approximately 175 feet to the proposed distribution box upstream of the proposed WWTP headworks.

Future Sanitary Extension – As previously indicated, a sanitary sewer extension to the HAWSA system was approved during the 2020 calendar year. A Water Quality Management Permit for the extension was issued on November 2, 2020. The extension will include the construction of three new pump stations. These stations are currently identified as the Lenker Estates Pump Station, the Creek Road Pump Station, and the Road Cap Lane Pump Station. Construction of the extension is expected to begin during the 2023 calendar year and all three pump stations are anticipated to be connected to the existing HAWSA system by February, 2024, pending funding.

PUMP HOURS

BOYER STREET PUMPING STATION

COPY

BOYER STREET PUMP STATION

DATE	TIME	HOURS #1	HOURS RAN	HOURS #2	HOURS RAN	TOTAL
1-1-21	1050	1658.8	3.4	1320.3	3.2	6.8
1-8-21	1000	1661.8	3.0	1308.9	2.6	5.6
1-15-21	0910	1664.4	2.6	1311.2	2.3	4.9
1-22-21	1020	1667.1	2.7	1313.6	2.4	5.1
1-29-21	1100	1669.4	2.3	1315.9	2.3	4.6
2-5-21	1015	1671.8	2.4	1318.1	2.2	4.6
2-12-21	0940	1674.4	2.6	1320.4	2.3	4.9
2-19-21	1040	1677	2.6	1322.8	2.4	5.0
2-26-21	1000	1679.9	2.9	1325.5	2.7	5.6
3-5-21	1050	1684	4.1	1329.5	4.0	8.1
3-12-21	1050	1686.7	2.7	1332.2	2.7	5.4
3-19-21	1045	1689.6	2.9	1334.9	2.7	5.6
3-26-21	0945	1693.3	3.7	1338.4	3.5	7.2
4-2-21	1030	1698.2	4.9	1342.9	4.6	9.4
4-9-21	1055	1702.5	4.3	1347.1	4.2	8.5
4-16-21	1050	1708.8	6.3	1352.4	5.3	11.6
4-23-21	1000	1714.3	5.5	1357.0	4.6	10.1
4-30-21	1045	1719.6	5.3	1360.7	3.7	9
5-7-21	1030	1724.7	5.1	1364.5	3.8	8.9
5-14-21	1035	1730.0	5.3	1368.4	3.9	9.2
5-21-21	1020	1734.3	4.3	1371.5	3.1	7.4
5-28-21	1045	1737.8	3.5	1374.0	2.5	6.0
6-4-21	1045	1740.9	3.1	1376.5	2.5	5.6
6-11-21	1055	1743.3	2.4	1378.6	2.1	4.5
6-18-21	1040	1746	2.7	1380.9	2.3	4.9
6-25-21	1015	1748.5	2.5	1382.7	1.9	4.4
7-2-21	1040	1750.5	2	1384.4	1.7	3.7
7-9-21	1040	1752.4	1.9	1386.3	1.9	3.8
7-16-21	1020	1754.6	2.2	1388.8	2.5	4.7
7-23-21	0915	1757.9	3.3	1391.9	3.1	6.4

BOYER STREET PUMP STATION

DATE	TIME	HOURS #1 (1757.9)	HOURS RAN	HOURS #2 (1391.9)	HOURS RAN	TOTAL
7-30-21	1050	1760.9	3.0	1394.9	3.0	6.0
8-6-21	1030	1763.6	2.7	1397.6	2.7	5.4
8-13-21	1045	1766.5	2.9	1400.1	2.5	5.4
8-20-21	1215	1771.1	4.6	1406.0	5.9	10.5
8-27-21	1020	1774.6	3.5	1410.4	4.4	7.9
9-3-21	1030	1781.5	6.9	1418.7	8.3	15.2
9-10-21	0930	1788.9	7.3	1428.5	9.8	17.1
9-17-21	1020	1793.8	5	1434.5	6	11
9-24-21	1105	1802.6	8.8	1445.6	11.1	19.9
10-8-21	1050	1822.5	19.9	1466.5	20.9	40.8
10-15-21	1030	1829.2	6.7	1473.7	7.2	13.9
10-22-21	1025	1835.1	5.9	1479.6	5.9	11.6
10-29-21	0950	1839.9	4.8	1484.3	4.7	9.5
11-12-21	1215	1851.4	11.5	1493.9	9.6	21.1
11-19-21	1040	1854.4	3.0	1496.9	3.0	6.0
11-26-21	0910	1854.5	.1	1497.0	.1	.2
11-29-21	0855	1856.8	2.3	1500	3.0	5.3
12-6-21	1045	1859.8	3	1506.8	6.8	9.8
12-10-21	1035	1861.4	1.6	1509.3	2.4	4.0
12-13-21	1045	1863.0	1.6	1510.9	1.7	3.3
12-17-21	1100	1865.8	2.8	1513.1	2.2	5.0
12-21-21	1000	1867.8	2.0	1515.3	2.2	4.2
12-24-21	1020	1868.9	1.1	1517.5	2.2	3.3
12-27-21	1100	1870	1.1	1520.3	2.8	3.9
12-31-21	1100	1871.4	1.4	1524.1	3.8	5.2

WELL OFF →

HEATER

HEATER OFF →

PUMP HOURS

MAIN PUMPING STATION

COPY

JANUARY 2021
PUMP RUN TIMES

DATE:	#1. PUMP	RUN TIME	#2. PUMP	RUN TIME	INCHES
JAN. 1.	24848.1	8.4	18540.3	16.5	46.6
2.	24869.8	21.7	18550.5	10.2	45.2
3.	24882.1	12.3	18572.5	20	39.1
4.	24894.4	12.3	18594.4	21.9	39.9
5.	24899.8	5.4	18614.2	19.8	56
6.	24908.7	8.9	18632.1	17.9	55.2
DECANT 7.	24922.9	14.2	18646.3	14.2	62.7
8.	24936.4	13.5	18660.3	14.0	40.7
9.	24934.6	3.2	18682.8	22.5	50.1
10.	24953.5	13.9	18697.4	14.6	46.5
CLEAN-OUT DEEP WELL 11.	24965.1	11.6	18712.1	14.7	44.3
12.	24973.7	8.6	18727.5	15.4	40.1
13.	24995.9	22.2	18729.9	1.4	41.6
14.	25015.7	19.8	18732.6	3.7	37.4
15.	25020.3	4.6	18751.1	18.5	38.9
16.	25027.7	7.4	18766.4	14.3	39.1
17.	25049.0	21.3	18768.9	2.5	40.8
18.	25056.0	7.0	18787.4	18.5	39.4
19.	25061.1	5.1	18806.1	18.7	39.7
20.	25065.3	4.2	18824.9	18.8	40.5
21.	25085.2	19.9	18828.1	3.2	48.3
22.	25104.5	19.3	18832.1	4	39.5
23.	25128.0	23.5	18834.8	2.7	54.0
24.	25134.3	6.3	18854.8	20	51.4
25.	25142.5	8.2	18870	15.2	54.8
26.	25145.1	2.6	18891.6	21.6	39.9
27.	25145.1	0	18915.6	24	39.2
28.	25149.4	4.3	18934.5	18.9	42.6
29.	25169.8	20.4	18936.8	2.3	37.8
30.	25172.0	2.2	18961.0	24.2	42.7
31.	25186.2	14.2	18962.7	1.7	39.8

FEBRUARY 2021
PUMP STATION RUN TIMES

DATE:		#1 PUMP	RUN TIME	#2 PUMP	RUN TIME	INCHES
FEBRUARY	1.	25196.1	9.9	18980	17.3	40.2
	2.	25216	19.9	18983.2	3.2	39.9
	3.	25233.7	17.7	18988.4	5.2	39.3
DECANT	4.	25236.3	2.6	19010	21.6	39.9
DECANT	5.	25242.6	6.3	19028.4	18.4	53.5
	6.	25259.7	17.1	19044.4	13.0	52.0
	7.	25270.6	10.9	19052.3	10.9	37.4
	8.	25275.3	4.7	19073.9	21.6	43.5
	9.	25284.7	9.4	19088.7	14.8	56.2
	10.	25293.5	8.8	19103.8	15.1	54
	11.	25300.1	6.6	19121.3	17.5	39.8
	12.	25303.1	3	19143	21.7	39.6
	13.	25322.7	14.6	19146.3	3.3	39.0
	14.	25348.1	25.4	19149.3	3.0	52.1
	15.	25349.	0	19169.7	20.4	40.4
	16.	25349	0	19193.6	23.9	40.2
	17.	25349	0	19217.6	24	40.9
	18.	25349	0	19241.6	24	38.6
	19.	25355.4	6.4	19259.6	18	40.5
	20.	25376.4	21.0	19262.1	2.5	41.7
	21.	25396.1	19.7	19266.1	4.0	42.3
	22.	25400	3.9	19284.6	18.5	42.2
DECANT →	23.	25416.5	16.5	19291.7	7.1	42.2
" →	24.	25418.8	2.3	19313.4	21.7	54.3
	25.	25423.5	4.7	19332.6	19.2	40.4
	26.	25441.4	17.9	19338.2	5.6	47.6
	27	25447.5	6.1	19360.6	22.4	56.1
	28	25456	4.1	~~19358.0~~ 19378.0	18.6	54.4

MARCH 2021

PUMP STATION RUN TIMES

DATE:		#1. PUMP	RUN TIME	#2. PUMP	RUN TIME	INCHES
MARCH	1.	25479.7	23.1	19398.5	20.5	74.3
	2.	25497.8	23.1	19410	11.5	52.3
	3.	25521.8	24	19415.8	5.8	64.2
	4.	25539.5	17.7	19426.3	10.5	40.8
	5.	25557.6	18.1	19435.4	9.1	41.7
	6.	25577.3	19.7	19440.8	5.4	40.9
	7.	25583.8	6.5	19456.5	15.7	37.1
	8.	25605.7	21.9	19456.7	.2	39.2
	9.	25624.2	18.5	19461.7	5	39.1
	10.	25625.4	1.2	19484.1	22.4	38.9
DECAM	11.	25632.1	6.7	19507.6	23.5	50.2
"	12.	25651.5	19.4	19523	15.4	55.3
	13.	25657.0	5.5	19547.2	24.2	57.1
	14.	25662.4	5.4	19571.8	24.6	49.5
	15.	25665.7	3.3	19593.4	21.6	47.4
	16.	25669.4	3.7	19617.4	24	51.3
	17.	25673.3	3.9	19641.5	24.1	52.2
	18.	25674.1	.8	19665.5	24	52.4
	19.	25686.3	12.2	19689.4	23.9	56.1
	20.	25691.5	5.2	19712.9	23.5	57.0
	21.	25700.6	9.1	19738.4	25.5	53.7
	22.	25711.1	10.5	19761.4	23	54.3
	23.	25715.9	4.8	19785.5	24.1	55.7
	24.	25720.2	4.3	19809.4	23.9	52
	25.	25738.4	18.2	19833.5	24.1	54.1
	26.	25756.5	18.1	19857.4	23.9	56.5
	27.	25769.3	12.8	19880.2	22.8	51.2
	28.	25785.9	16.6	19906.9	26.7	43.7
	29.	25808.5	23.6	19929.4	23	79.4
	30.	25830.2	21.7	19953.4	24.0	66.5
	31.	25852.4	22.2	19977.4	24	66.1

APRIL 2021

PUMP STATION RUN TIMES

DATE:		#1 PUMP	RUN TIME	#2 PUMP	RUN TIME	INCHES
APRIL	1.	25876.3	23.9	20001.5	24.1	83.1
	2.	25899.7	23.4	20025.4	23.9	69.8
	3.	25923.0	23.3	20049.8	24.4	72.0
	4.	25946.4	23.4	20074.4	26.1	87.7
	5.	25966.1	22.2	20097.4	22.5	56.1
	6.	25984.9	18.8	20121.4	24	55.8
	7.	25996.7	11.8	20145.4	24	52.3
	8.	26004.7	8.0	20169.4	24	51.7
	9.	26012.8	8.1	20193.3	23.9	55.0
	10.	26022.3	9.5	20217.8	24.5	54.1
	11.	26035.5	13.2	20242.5	24.7	91.7
RAIN	12.	26058.2	22.7	20265.3	22.8	122.4
DECANT	13.	26082	23.8	20289.3	24	112
	14.	26104.7	22.7	20313.2	23.9	59.8
	15.	26121.3	16.6	20337.2	24	57.6
	16.	26136.5	15.2	20361.4	24.2	56.2
	17.	26150.6	14.1	20385.6	24.2	55.6
	18.	26168.3	17.7	20410.9	25.3	79.1
	19.	26186.4	18.1	20433.3	22.4	60.5
	20.	26204.4	18	20457.2	23.9	61.8
	21.	26221	17.7	20481.2	24	55.2
	22.	26236.3	15.3	20505.3	24.1	57.7
	23.	26254.7	18.4	20529.3	24	[illegible]
	24.	26272.7	18	20554.1	24.8	69.6
	25.	26292.2	19.5	20579.2	25.1	79.7
	26.	26309.3	17.1	20601.3	22.1	63.2
	27.	26326.5	17.2	20625.3	24	58.8
	28.	26342.2	15.7	20649.2	23.9	53.7
	29.	26353.6	11.4	20673.2	24	51.6
CLEAN Cl2 CONTACT	30.	26366.2	12.6	20697.2	24	106

MAY 2021

PUMP STATION RUN TIMES

DATE:		#1 PUMP	RUN TIME	#2 PUMP	RUN TIME	INCHES
MAY	1.	26377.2	11	20721.5	24.3	55.1
	2.	26387.3	10.1	20746.3	24.8	61.9
	3.	26400.2	12.9	20769.2	22.9	57.6
	4.	26414	13.8	20793.3	24.1	53.5
	5.	26426.1	12.1	20816.9	23.6	58.1
	6.	26445.4	18.7	20841.2	24.3	54.8
	7.	26455.9	10.5	20865.2	24	57.8
	8.	26472.9	17	20891.3	26.1	69.0
	9.	26489.0	16.1	20914.9	23.6	72.0
	10.	26507.7	18.7	20937.2	22.3	81.3
	11.	26525.5	17.8	20961.2	24	56.6
	12.	26534.9	9.4	20985.2	24	52.5
	13.	26547.4	12.5	21009.2	24	60.6
	14.	26565.7	18.3	21033.3	24.1	70.3
	15.	26584.3	18.6	21056.4	23.1	56.4
	16.	26605.0	20.7	21087.3	26.9	69.0
	17.	26622.3	17.3	21105.2	21.9	61.6
	18.	26638.6	16.3	21129.2	24	59.3
	19.	26652.4	13.8	21153.2	24	55.8
DECANT	20.	26667.4	15	21177.2	24	55.6
DECANT	21.	26683.3	15.9	21201.2	24	58.5
	22.	26697.9	14.6	21226.5	25.3	76.1
	23.	26714.7	16.8	21250.9	24.4	66.4
	24.	26731.6	16.9	21273.2	22.3	62.8
	25.	26750.6	19	21297.2	24	62.2
	26.	26770.8	20.2	21321.2	24	68.4
	27.	26792.2	21.4	21345.2	24	61.3
	28.	26809.1	16.9	21369.2	24	50.7
	29.	26830.7	21.6	21395.6	26.4	94.1
	30.	26848.0	17.3	21417.5	21.9	54.9
	31.	26869.5	21.5	21440.9	23.4	57.2

JUNE 2021

PUMP RUN TIME, PUMP STATION

DATE:		#1. PUMP	RUN TIME	#2. PUMP	RUN TIME	INCHES
JUNE	1.	26890.0	20.5	21465.3	24.4	54.2
	2.	26890.9	.9	21489.3	24	53.6
	3.	26892.9	2	21513.3	24	52.2
	4.	26893.7	.8	21537.2	23.9	53.1
	5.	26894.0	.3	21561.6	24.4	41.3
	6.	26894.3	.3	21587.3	25.7	45.1
	7.	26894.3	Ø	21609.3	22	38.7
	8.	26894.3	Ø	21633.3	24	39.5
	9.	26894.3	Ø	21657.3	24	39.2
	10.	26894.3	Ø	21681.2	23.9	40.3
	11.	26894.3	Ø	21705.2	24	42.1
	12.	26894.3	Ø	21729.3	24.1	43.7
	13.	26894.3	Ø	21754.3	25	40.4
	14.	26894.3	Ø	21777.2	23.9	44.2
	15.	26894.3	Ø	21801.1	23.9	40.8
	16.	26894.3	Ø	21825.2	24.1	39.8
CLEAN - Cl_2 - CONTACT TANK	17.	26894.9	.6	21849.2	24	96.2
	18.	26914.6	19.7	21873.1	23.9	62.2
	19.	26927.1	12.5	21898.8	25.7	56.0
	20.	26938.0	10.9	21923.3	24.5	71.4
	21.	26959.5	21.5	21926	2.7	50.8
	22.	26983.2	23.7	21927.6	1.6	39.2
	23.	27007	23.8	21927.6	Ø	41.1
	24.	27031.2	24.2	21927.6	0	39.5
	25.	27055.2	24.0	21927.8	.2	39.7
	26.	27079.5	24.3	21927.8	0	41.6
	27.	27104.5	25	21928.0	.2	42.3
	28.	27127.1	22.6	21928.2	.2	40.4
	29.	27151.1	24	21928.2	Ø	39.8
	30.	27175.2	24.1	21928.2	Ø	43.8

JULY 2021

PUMP RUN TIMES, PUMP STATION

DATE:		#1. PUMP	RUN TIME	#2. PUMP	RUN TIME	INCHES
JULY	1.	27199.1	23.9	21928.2	0	38.8
	2.	27203.2	24.1	21928.2	0	42.4
	3.	27246.5	23.3	21928.2	0	45.1
	4.	27273.2	26.7	21928.2	0	52.4
	5.	27294.2	21.0	21929.0	.8	39.2
CLEAN-OUT Clg → TANK	6.	27319.2	25	21931.1	2.1	66.7
	7.	27343	23.8	21931.6	.5	39.8
	8.	27367.4	24.4	21933.2	1.6	40.1
	9.	27391.3	23.9	21935.2	2	40.5
	10.	27416.1	24.8	21938.1	2.9	53.5
2.5" RAIN	11.	27441.1	25	21938.4	.3	55.4
DECANT	12.	27463.1	22	21945.3	6.9	53.2
DECANT	13.	27469.6	6.5	21965.8	20.5	40.5
HAVE PUMPS OFF	14.	27476	6.4	21988	22.2	84
	15.	27477.6	1.6	22009	21	40.1
	16.	27477.6	0	22032.9	23.9	39.8
	17.	27479.6	2.0	22058.8	26.3	46.5
	18.	27495.1	15.5	22082.1	23.2	86.7
	19.	27511.1	16	22105	22.6	46.6
	20.	27511.1	0	22128.9	23.9	46.1
	21.	27517.3	6.2	22152.8	23.9	42.6
	22	27518.6	1.3	22176.9	24.1	48.6
	23.	27518.6	0	22201.0	24.1	47.5
	24.	27519.6	0	22224.9	23.9	42.7
	25.	27520.1	1.5	22249.1	24.2	47.6
	26.	27526	5.9	22273	23.9	47.5
	27.	27526	0	22297.1	24.1	38.6
	28.	27526	0	22321	23.9	40.8
CLEAN-Clg-	29.	27530.7	4.7	22345	24	40.3
	30.	27530.7	0	22369	24	46.4
	31.	27530.7	0	22385.8	26.8	40.0

AUGUST 2021

PUMP RUN TIMES, PUMP STATION

DATE:		#1 PUMP	RUN TIME	#2 PUMP	RUN TIME	INCHES
AUGUST	1.	27530.7	Ø	22418.8	23	39.4
	2.	27535	4.3	22440.9	22.1	39.5
	3.	27535	Ø	22464.9	24	39.7
	4.	27535	Ø	22488.8	23.9	40.6
	5.	27535	Ø	22513	24.2	43.1
	6.	27535	0	22533.7	20.7	109
	7.	27538.4	4.4	22 542.4	13.7	39.7
	8.	27538.4	0	22572.0	24.6	43.1
	9.	27539.4	Ø	22595.0	23	39.8
	10.	27541.4	2	22618.9	23.9	57.4
	11.	27541.5	.1	22643.0	24.1	42.0
	12.	27555.7	14.2	22655.0	12	42.2
	13.	27556.3	.6	22676.8	21.8	41.2
	14.	27556.3	Ø	22702.1	25.3	46.4
	15.	27556.3	Ø	22726.6	24.5	41.7
	16.	27556.3	Ø	22748.6	22	38.4
	17.	27556.3	Ø	22772.6	24	41.6
2.7"s RAIN →	18.	27563.5	7.2	22796	23.4	82.8
→ LAST NIGHT	19.	27587.5	24	22820	24	85.5
3.8" RAIN	20.	27611.5	24	22844.0	24	73.2
	21.	27614.1	2.6	22860.5	24.5	-0.3
	22.	27614.1	Ø	22887.7	27.2	-0.5
Klines clean deepwell	23.	27614.1	0	22910.7	23.0	-4.0
FIX BAD WIRES →	24.	27615	.9	22932.4	21.7	72
	25.	27615	Ø	22956.1	23.7	58.2
	26.	27615	Ø	22980.1	24	60.8
	27.	27615	Ø	23003.9	23.8	57.6
	28.	27615	Ø	23027.4	23.5	42.4
	29.	27615	Ø	23053.8	26.4	52.4
	30.	27615	Ø	23076	22.2	54.8
	31.	27615	Ø	23000	24	59.1

SEPTEMBER 2021

PUMP RUN TIMES, PUMP STATION

DATE:		#1 PUMP	RUN TIME	#2. PUMP	RUN TIME	INCHES
SEPT.	1.	27615	0	23123.7	23.7	67.9
6.7" RAIN ↗	2.	27615	0	23148	24.3	137.9
	3.	27633.4	18.4	23169.8	21.8	68.2
	4.	27656.7	23.3	23192.5	22.7	76.6
	5.	27683.7	27	23217.9	25.4	76.1
	6.	27705.1	21.4	23237.8	19.9	63.4
	7.	27729.5	24.4	23260.2	22.4	39.6
	8.	27752.3	22.8	23275.1	14.9	40.7
	9.	27776.3	24	23291.4	16.3	57.1
	10.	27800.4	24.1	23305.4	14	56.2
	11.	27823.7	23.3	23312.7	7.3	53.2
	12.	27848.9	25.2	23327.0	14.3	55.7
	13.	27872.3	23.4	23342.4	15.4	57
	14.	27896.3	24	23356.2	13.8	54.2
	15.	27920.3	24	23366.6	10.4	54.1
	16.	27944.3	24	23373.6	7	53.9
	17.	27968.3	24	23381.6	8	53.7
	18.	27988.4	20.1	23393.2	11.6	38.4
	19.	28002.2	13.8	23419.2	26	64.7
DECANT	20.	28014.8	12.6	23440.9	21.7	74.2
	21.	28039.1	24.3	23458.0	17.1	52.3
	22.	28062.9	23.8	23469.2	11.2	54.1
	23.	28086.9	24	23486.8	17.6	144.2
	24.	28110.9	24	23510.8	24	98.1
	25.	28134.8	23.9	23534.7	23.9	151.4
	26.	28157.0	22.2	23544.1	9.4	88
	27.	28182.6	25.6	23561.2	17.1	52.2
	28.	28206.6	24	23576.8	15.6	54.1
	29.	28230.5	23.9	23581.5	4.7	39.2
	30.	28254.6	24.1	23581.5	0	45.2

OCTOBER 2021

PUMP RUN TIMES / PUMP STATION

DATE:		#1 PUMP	RUN TIME	#2 PUMP	RUN TIME	INCHES
OCTOBER	1.	28278.6	24	23581.6	.1	46.1
	2.	28303.0	24.6	23581.6	0	43.9
	3.	28326.7	23.7	23581.6	0	42.2
	4.	28350.5	23.8	23581.6	0	40.6
	5.	28374.5	24	23582.2	.6	49.2
	6.	28398.6	24.1	23582.6	.4	41.6
	7.	28422.6	24.0	23582.6	0	39.9
	8.	28446.8	24.2	23582.6	0	40.6
	9.	28471.0	24.2	23582.6	0	41.3
	10.	28496.0	25.0	23582.6	0	42.9
	11.	28518.4	22.4	23582.6	0	41.9
	12.	28541.9	23.5	23582.6	0	39.9
	13.	28566.7	24.8	23582.6	0	37.8
	14.	28590.4	23.7	23582.6	0	41.3
	15.	28614.6	24.2	23582.6	0	40.6
	16.	28638.8	24.2	23582.6	0	39.4
	17.	28663.7	24,9	2358.2	0	40.0
	18.	28686.4	22.7	23582.6	0	39.7
	19.	28710.5	24.1	23582.6	0	40.2
	20	28734.7	24.2	23582.6	0	40.0
	21.	29758.7	24	23582.6	0	41.1
	22.	28782.3	23.6	23593.2	10.6	39.6
	23.	28807.0	24.7	23600.2	7.0	72.9
	24.	28831.1	24.1	23607.6	7.4	55.1
	25.	28854.3	23.2	23615.2	7.6	56.5
	26	28878.2	23.9	23620.6	5.4	53.6
	27	28902.2	24	23625.7	5.1	54.2
	28	28925.9	23.7	23628.3	2.6	43.2
	29.	28950.2	24.3	23628.3	0	48.1
	30.	28976.1	25.9	23640.9	12.4	55.6
	31.	29002.2	26.1	23649.8	8.9	62.8

NOVEMBER 2021

PUMP RUN TIME / PUMP STATION

DATE:		#1. PUMP	RUN TIME	#2. PUMP	RUN TIME	INCHES
NOV.	1.	29022.2	20	23652.7	2.9	47.8
	2.	29046.1	23.9	23653.2	.5	51.2
	3.	29069.8	23.7	23661.0	7.8	54.8
	4.	29094.2	24.4	23673.1	12.1	59.8
	5.	29118.3	24.1	23683.1	10	74.5
	6.	29142.7	24.4	23690.5	7.4	57.4
	7.	29166.2	25.5	23699.5	9.0	59.1
DECANT	8.	29191.2	23.0	23712.8	3.3	52.6
DECANT	9.	29215.2	24	23726	13	74.9
	10.	29239.2	24	23731.2	5.2	51.6
	11.	29263.1	23.9	23732.1	0.9	53.6
	12.	29288.3	25.2	23738.9	6.8	110.3
	13.	29313.2	24.9	23758.2	19.3	64.2
	14.	29336.6	20.4	23773.4	15.7	72.5
	15.	29359.3	22.7	23793.1	20.2	60.2
	16.	29383.1	23.8	23810	16.9	61.7
	17.	29407.3	24.2	23823.5	13.5	77.9
	18.	29431.2	23.9	23838.4	14.9	43.9
	19.	29455.2	24	23845.7	7.3	52.1
	20.	29476.1	20.9	23849.2	3.5	40.5
	21.	29503.7	27.6	23856.1	6.9	52.8
	22.	29527.3	23.6	23868.9	12.8	54.5
	23.	29551.2	23.9	23870.9	2.0	50.1
	24.	29575.2	24	23873.9	3.0	54.1
	25.	29599.1	23.9	23874.5	.6	48.2
	26.	29623.2	24.1	23878.0	3.5	88.1
	27.	29647.2	24	23882.0	4.0	57
	28.	29671.2	24	23885.5	3.5	51.2
	29.	29695.2	24	23889.5	4.0	49.9
	30.	29719.1	23.9	23896.7	7.2	52.7

DECEMBER 2021

PUMP RUN TIME / PUMP STATION

DATE:		#1 PUMP	RUN TIME	#2 PUMP	RUN TIME	INCHES
DECEMBER	1.	29742.9	23.8	23901.6	4.9	54.1
	2.	29767.2	24.3	23906.6	5	52.1
	3.	29791.3	24.1	23912.1	5.5	54.8
	4.	29816.7	25.4	23924.4	12.3	53.0
	5.	29841.9	25.2	23927.2	2.8	55.0
	6.	29863.1	21.2	23930.5	3.3	52.3
	7.	29887.3	24.2	23934	3.5	52.2
	8.	29911.1	23.8	23935.2	1.2	47.2
	9.	29935.2	24.1	23936.1	.9	48.1
	10.	29959.3	24.1	23937.0	.9	50.6
	11.	29984.1	24.8	23937.1	.1	57.1
	12.	30008.6	24.5	23940.4	3.3	52.1
	13.	30031.2	22.6	23942.6	2.2	46.4
	14.	30055.1	23.9	23943.0	.4	42.4
DECANT	15.	30079.1	24	23943.0	0	51.9
DECANT	16.	30103.1	24	23943.7	.7	61.1
	17.	30127.1	24	23954.4	10.7	52.2
	18.	30152.7	25.6	23954.5	.1	54.8
	19.	30174.1	21.4	23955.3	.8	39.8
	20.	30198.6	24.5	23956.5	1.2	43.1
	21.	30223.1	24.5	23957.4	.9	51.1
	22.	30247	23.9	23957.9	.5	50.5
	23.	30271.1	24.1	23957.9	0	51.1
	24.	30295.1	24	23961.6	3.9	54.2
	25.	30320.6	25.5	23968.7	7.1	52.1
	26.	30344.1	23.5	23971.7	3.0	53.8
	27.	30368.1	24	23973.7	2	51.9
	28.	30391.1	23	23980.9	7.2	42.1
DECANT	29.	30415.1	24	23982.4	1.5	39.2
DECANT	30.	30439.1	24	23984.3	1.9	62.2
	31.	30463.1	24	23995.2	10.9	42.3

D

ATTACHMENT D

SEWAGE SLUDGE MANAGEMENT INVENTORY

	Influent BOD (mg/L)	Effluent CBOD (mg/L)	Liquid Sludge Disposed Off-Site (dry ton)	Liquid Sludge Disposed Off-Site (gal)	% Solids
Jan	159	6.6	0.917	10,000	2.2
Feb	182	6.1	0.000	0	0.0
Mar	135	11.4	0.803	16,500	1.2
Apr	154	13.1	0.000	0	0.0
May	155	10.3	0.000	0	0.0
Jun	188	8.2	0.521	5,000	2.5
Jul	126	13.0	0.000	0	0.0
Aug	128	7.1	0.000	0	0.0
Sep	69	11.4	0.000	0	0.0
Oct	223	17.2	0.000	0	0.0
Nov	139	9.6	0.000	0	0.0
Dec	222	16.9	0.000	0	0.0
Tot	1880	130.9	2.241	31500	5.9
Avg	**157**	**10.9**	**0.2**	**2625**	**2.0**

SLUDGE GENERATION CALCULATION

Facility Name: Halifax Wastewater Treatment Plant
Permit Number: PA0024457
Date of Calculation: 1/18/2022

Required Information For Calculation

Average Daily Flow (mgd):	0.1405	Digester Capacity (gal):	42000
Influent BOD (mg/l):	157	%Solids of Outgoing Sludge:	2
Effluent BOD (mg/l):	10.9	Monitoring Period (days):	365

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	X	Trickling Filter		Small Plant with low SOR (<500 gpd/sq ft)	

Operational Information

BOD Removed (lbs/day):	171	TSS Removed (lbs/day):	111

Digester Information

Type of Digester

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

Aerobic Digestion	X	Anaerobic Digestion		None	

Sludge Feed Rate to Digesters (gpd):	1779.011
Digester Hydraulic Detention Time (days):	24
Estimated Total Solids Reduction (%):	0.35

Sludge Generation

dry lbs/day	72	wet lbs/day	3617
dry tons/monitoring period	13	wet tons/monitoring period	660
gal/day	434	gal/monitoring period	158276

Amount of Sludge Reported as Being Generated by the Facility

wet tons/monitoring period: 0

OR

dry tons/monitoring period: 2.241

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: **LESS THAN 15% RANGE**

What type of information was used to calculate the above information: 2021 DMR Supplemental Reports

Dates used: 1.1.2021 TO 12.31.2021

Name of person performing the calculation: Erica Luongo

E

ATTACHMENT E

FLOW METER CALIBRATION REPORT

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

*** SERVICE REPORT ***

HALIFAX MUNICIPAL AUTHORITY
SOUTH FRONT STREET
HALIFAX, PA 17032

SERVICE DATE: DECEMBER 15, 2021 **SERVICE CONTRACT:** ANNUAL (A12)
LOCATION: WASTEWATER - EFFLUENT
METER #: C8201 AA

PRIMARY: WEIR V-NOTCH 90°
MAXIMUM CAPACITY: 347.2 GPM

METER: BADGER	**MODEL #:** 2210	**SERIAL #:** 12286
RECORDER: CHESSELL	**MODEL #:** 392	**SERIAL #:** 9404-31238-B02

*** 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 ANNUAL CALIBRATION
CLEANED PRIMARY
VERIFIED TOTALIZER (PASSED)
TESTED 4-20MA LOOP
NO ADJUSTMENT NEEDED
LEFT EQUIPMENT OPERATING PROPERLY

SERVICE REPRESENTATIVE(S): PATRICK MCNALLY

ATTACHMENT F

CONSENT ORDER AND AGREEMENT PROGRESS REPORT

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

369 East Park Drive
Harrisburg, PA 17111
717.564.1121
www.hrg-inc.com

VIA ELECTRONIC DELIVERY

December 30, 2021

Mr. Erick Ammon
Clean Water Program
PA Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110-8200

Re: NPDES Permit No. PA0024457
Consent Order & Agreement: Quarterly Progress Report
Main Pumping Station and Wastewater Treatment Plant
Halifax Area Water and Sewer Authority

Dear Mr. Ammon:

On behalf of the Halifax Area Water and Sewer Authority (HAWASA), Herbert, Rowland & Grubic, Inc. (HRG) hereby submits this Consent Order and Agreement (COA) Quarterly Progress Report in accordance with the requirements outlined in the April 20, 2018 COA executed by the Department and HAWASA.

The Main Pumping Station located at the HAWASA Wastewater Treatment Plant (WWTP) is considered to be hydraulically overloaded in accordance with 25 Pa. Code § 94.12. HAWASA and the Department executed the above referenced COA to eliminate the overload condition at the Main Pumping Station. Modifications to the Main Pumping Station will be undertaken as part of the WWTP Upgrade Project currently underway.

For ease in reporting HAWASA progress in meeting the Corrective Action schedule contained in the COA, this Progress Report provides the status of the Tasks which were identified in the Implementation Schedule contained in the HAWASA Corrective Action Plan (CAP) and has been updated to reflect the required compliance dates identified within the COA. This Progress Report also summarizes any new connections to the portion of the HAWASA system which is tributary to the overloaded sewerage facilities.

Implementation Schedule – Update

WWTP UPGRADE PROJECT CONSTRUCTION STATUS:

- The Contract Times (Notice to Proceed) for the project began on November 30, 2020. Substantial Completion, per the Contract Times, must be achieved on or before February 23, 2022; Final Completion must be achieved on or before April 9, 2022.

- Construction activities at the WWTP continue to progress. The new SBR process tankage has been installed and passed leak testing. Masonry construction continues on the new Headworks Building, Blower/SBR Pump Building, and UV Building. Yard piping and duct bank installation is occurring throughout the site.
- Anticipated work in January 2022 includes work on the Main Pumping Station, which is being upgraded per the COA, and installation of process equipment within the three buildings.
- As previously reported, the General Contractor for the project continues to face issues in procuring and receiving shipment of construction materials. Delays in materials have been observed as a result of ongoing supply chain disruptions pursuant to the COVID pandemic and recent natural disasters including steel angles necessary for forming the concrete floor in the Headworks Building, pipe coupling materials and various materials associated with the SBR process. Fiberglass components to the SBR treatment system are expected to be received in early January 2022 which represents a four (4) month delay in their original expected shipping date.
- It is anticipated that the Substantial Completion date for the project will now occur in June 2022, at earliest, pending the receipt of the aforementioned SBR materials in early January 2022. No formal Contract Time adjustments have been made at this time.
- Construction status updates will continue to be provided in future Progress Reports submitted by HAWASA.

HALIFAX TOWNSHIP SEWER EXTENSION STATUS (NOT REQUIRED UNDER COA):

In conjunction with the design of the WWTP Upgrade Project, HRG has completed the Preliminary Design Phase for the Halifax Township Sewer Extension Project. This Project is not mandated by the COA. However, the Part II Permit Application for the WWTP Upgrade Project includes capacity for the additional flows which will be generated by the construction of this sewer extension.

HAWASA submitted an application to PENNVEST for funding assistance for the project prior to the November 3, 2021 PENNVEST cutoff and for consideration at the January 19, 2022 PENNVEST Board meeting. A Second Opinion Project Review was submitted to PENNVEST and PA DEP on November 24, 2022 in support of the funding application. HAWASA intends to proceed with completing the final design and bidding of the project assuming a favorable response to the PENNVEST funding request. HAWASA will continue to provide status updates for this project in future COA Updates until the WWTP is completed.

The Implementation Schedule below is included in the HAWASA CAP; the required completion dates have been updated to reflect those contained in the COA. For the purpose of this Report, the "Status/Update" column has been updated to demonstrate HAWASA's compliance with the Implementation Schedule. Items in red text are updates since the last COA quarterly report submission.

IMPLEMENTATION SCHEDULE FOR HAWASA WWTP UPGRADE [Taken from approved CAP and modified per the Corrective Action schedule included in the COA]		
TASK DESCRIPTION	*COMPLETION / SUBMISSION DATE*	***STATUS/ UPDATE***
HAWASA and PA DEP Execution of Consent Order and Agreement	April 20, 2018	***[Task Completed]***
Submit a Wastewater Treatment Plant Alternatives Review, Design Engineer's Report and an administratively and technically complete Uniform Environmental Report for the upgrade of the Plant and main pumping station Design Engineer's Report will include the following key components: • Review previous HAWASA evaluation of WWTP improvement alternatives • Prepare existing and future flow and loading projections including flow metering study as required • Request and receive preliminary effluent discharge limits for WWTP Upgrade from PA DEP • WWTP Improvements alternatives review • Identification and selection of recommended improvements • User rates analysis for recommended improvements	December 31, 2018	***[Task Completed; Wastewater Treatment Plant Alternatives Review & Design Engineer's Report was submitted to PA DEP on December 28, 2018; Categorical Exclusion request for WWTP Upgrade Project approved by PA DEP on December 31, 2019; Task Completed]***
Submission of administratively and technically complete Water Quality Management Part II Permit Application for the upgrade of the Plant and main pumping station	Within 180 Days of PA DEP approval of UER	***[Task Completed; WQM Part II Permit Application, review fee and supporting documents were submitted to PA DEP on September 13, 2019; WQM Permit issued by PA DEP on March 12, 2020]***
Begin construction of the Plant upgrade in accordance with the Part II Permit	Within 205 Days of PA DEP issuance of Water Quality Management Part II Permit	***[Task Completed – Contract Awards were issued by HAWASA on November 25, 2020. The Contract Times commenced on November 30, 2020. Substantial Completion to be achieved by February 23, 2022; Final Completion to be achieved by April 9, 2022.]***
Complete Construction	Within 705 Days of PA DEP issuance of Water Quality Management Part II Permit	
Verify completion of construction by submission of the Sewage and Industrial Wastewater Facilities Construction Certification	Within 30 days of completed construction operations	
Submission of quarterly Progress Reports until termination of COA		***Quarterly Progress Report submitted December 29, 2021***. Previous Quarterly Progress Report Submitted September 28, 2021

Restriction on Connections Tributary to Overloaded Sewerage Facilities

Per the terms of the approved CAP, HAWASA will limit new connections within the area tributary to the Main Pumping Station to a total of twenty-five (25) new EDUs (not otherwise meeting the definitions of 25 Pa Code §§ 94.55, 94.56 and 94.57) until the hydraulic overload condition is eliminated. There have not been any new connections made within the area tributary to the Main Pumping Station as of the date of this Progress Report. There is no restriction on connections in the southern portion of the HAWASA collection system located in Halifax Township as this area is not tributary to the Main Pumping Station.

As noted in our September 30, 2020 Progress Report, a new residential development along S.R. 147 across from the Halifax Area School District is being proposed for construction in Halifax Township. This parcel is identified in the Dauphin County GIS Parcel Viewer as 29-013-022 with an approximate size of 23.9 acres. This project is now known as Sycamore Ridge and proposes the construction of 124 residential townhome units based on information provided by the Developer at the October 20, 2020 HAWASA Board meeting.

Sanitary sewer service to Sycamore Ridge is proposed by the Developer via connection to the existing HAWASA collection system located in S.R. 147 at Manhole 172. This portion of the collection system is tributary to the overloaded Main Pump Station. However, there has been no formal Land Development Plan received by HAWASA as of the date of our Progress Report. The exact timeframe for the construction of the new residential units within this development is currently unknown. We will continue to provide information pertaining to the schedule for new connections within this development in future Progress Reports as additional information is received from the developer.

If you have any questions or comments regarding this COA Progress Report, please do not hesitate to contact me at 717-564-1121. Thank you.

Sincerely,

HERBERT, ROWLAND & GRUBIC, INC.

Justin J. Mendinsky
Water & Wastewater Group Manager

JJM/rb
001650.0426

Enclosures

cc: HAWASA Board
Jeffrey Grosser, Operator
Joseph D. Kerwin, Esq., Solicitor
HRG File