

May 2, 2019

Attention: Adam Yagelski, Director of Planning and Zoning
The Town of East Greenbush
225 Columbia Turnpike
Rensselaer, NY 12144

Project Name: Regeneron Tempel Lane
Project Number: 63FJBS01

Subject: Regeneron Pharmaceuticals, Inc – Tempel Lane Campus, Summary of Waste Water Flow Letter of Intent

This letter of intent will replace the previous letter of intent dated April 3, 2019.

Regeneron Pharmaceuticals, Inc. (Regeneron) is proposing to construct a new facility to support their pharmaceuticals manufacturing business. The proposed Tempel Lane Campus will be located on a 130.71-acre property (combined area) in the northwestern portion of the Town of East Greenbush with site access from Tempel Lane. The purpose of this letter is to describe the existing sanitary sewer system and the intent for the proposed Sanitary Sewer Service from proposed buildings 17, 27 and the Guard House. A full Engineering report for the proposed sanitary sewer for the Tempel Lane campus will follow and will be based on this letter of intent. This letter will also conclude that the downstream sanitary sewer pipelines and hydraulic capacities of the Third Avenue Sewer District and the Third Avenue Pump Station can accept the proposed flows.

Existing Conditions

The existing sewer system on site for the warehouse (Building 7) consists of approximately 600 LF of gravity line to a grinder pump that is designed to receive and convey the sanitary flows.

Design Average Daily Flow:

Regeneron Pharmaceuticals, Inc. - Tempel Lane Campus (From data supplied by Stantec): (Warehouse Building):
average flow during day shift = 3.75 GPM
(Total waste water: 150 X 15 GPD per person = 2,250 GPD = 94 GPH)

Total Estimated Average Daily Flows = 94 gallons per hour (GPH), 1.6 GPM.

Design Peak hourly Flow: (From data supplied by Stantec)

(Warehouse): 80% day shift 3.75 GPM average for that shift with peak of 12 GPM

A grinder pump is connected using approximately 4000 LF of 2.0-inch LPSS force main connected to an existing 12-inch diameter gravity sewer located on the north side of Third Avenue Extension at an existing manhole T-52 located in Woodlawn Ave. The grinder pump is capable of delivering 11.6GPM at a minimum velocity of 2.0 Ft per second at a total dynamic head of 80 feet (35 psig).

This letter of intent does not change the sanitary sewer profile for the existing building 7 (Warehouse Building). Reference Regeneron Site Sanitary Diagram 17-G-1501-D-50, located in the appendix.

Proposed Buildings

The Proposed Manufacturing Building (Building 17) will consist of a Lift Station that will be designed to received and convey the average hourly sanitary flow as follows:

187.5 GPH (300 people at 15 GPD/person)¹
1,335 GPH for manufacturing systems¹
2,420 GPH for mechanical systems¹
750 GPH from Building 27 pump @ 50 GPM
4,673 GPH Design Average hourly Flow¹
78 GPM Design Average hourly Flow¹

Building 17 will have a 2,000 gal. surge tank and two 175 GPM (10,500 GPH) pumps.

Sewer mains from Building 17 will flow to a 2,000 Gal. surge tank by gravity flow. Two pump (s) (175 gpm) each will connect Building 17 surge tank to the public sewer in Third Ave. using the existing 4000 LF of 6.0-inch LPSS force main that presently terminates at the Regeneron property line at Third Ave. The 6.0" diameter pressure main will be extended approximately 1,200 feet and connected into an existing manhole, T-50, that is located just outside the Third Ave. Pump Station. Each 175 GPM pump is capable of providing a velocity of 2.0 feet per second in the 6.0" dia. LPSS force main. Reference Third Ave. Sewer Plan sheet 1 and sheet 2. The Building 17 grinder pump will provide 175 GPM flow at a total designed head of 50 feet. The Building 17 pump station is designed to operate for 15 minutes every 30 minutes.

Flow monitoring at the Third Ave Pump station performed by FLOW Assessment Services in November 2018 through 7 January 2019 concludes that peak flow into the Third Ave. Pump Station is 422 GPM. Adding the Regeneron flow of 175 GPM provides a total peak flow into the Third Ave. Pump Station of 597 GPM. The current pump capacity at the Third Ave Pump Station is 575 GPM.

The Third Ave. Pump station will be upgraded as required by conditional approval of Building 17. Feasibility design will be completed by the Town of East Greenbush. Detail design and construction of the upgrades will be completed by Regeneron Pharmaceuticals Inc. The design of the Third Ave pump station will be coordinated with the design of waste system of the whole Regeneron site at Tempel lane. This will ensure that the Third Ave. Station does NOT operate at a surcharge during the Peak flow. If the upgrade to the Third Ave. Station is not complete by the time Regeneron has started operations, a temporary surge tank

Flow monitoring was also performed at the Barrack Road Pump Station indicating a Average inflow of 192 GPM and a peak inflow of 580 GPM. The Barrack Road Pump Station has two pumps at 980 GPM each. Reference Table 1 for a capacity analysis of the Third Ave. and Barrack Road pump station and the piping network from the Regeneron property at Tempel Lane to the Barrack Road Pump Station³.

The Proposed Science building (Building 27) including the guard house will consist of a surge tank and Lift Station that will be designed to received and convey the daily sanitary flows

Design Average Daily Flow Building 27:

17,500 GPD Design Average Daily Flow
750 GPH Design Average Flow
12.5 GPM Design Average Flow

Proposed surge tank 1,200 gal
50 gpm peak flow (pump flow)

The building 27 pump shall be connected to the Building 17 surge tank using a new 1,200 LF of 2.0-inch LPSS force main. The 3000 GPH grinder pump will provide a velocity of 5.0 feet per second in the 2.0" dia. LPSS force main. The Building 27 grinder pump will provide 50 GPM at a total designed head of 100 feet. The Building 27 pump station is designed to operate for 30 minutes every 120 minutes.

Proposed Design

	GPD	GPM INFLOW	TANK SIZE (Gal)	MAX PUMP RATE (GPM)
B07 (Warehouse)	2,250 ²	1.6 ²	196 ²	2@12 ²
B17	94,500	67	2,000	2 @175
B27/47/Guard House	17,600	12.5	1,200	2@50

SCHEDULE

- Building 17
 - connection 4Q 2019
 - first Flow 2Q 2020
 - COO 2Q2021
- Building 27 & Guard House
 - Connection 1Q 2020
 - First flow 3Q 2020
 - COO 4Q2021

All on-site sanitary sewers, holding tanks and pump stations will be privately owned and maintained by Regeneron. The sanitary sewer system shall be designed in meet the requirements of the *NEW YORK STATE DESIGN STANDARDS FOR INTERMEDIATE SIZED WASTEWATER TREATMENT SYSTEMS*, latest edition.

Notes:

¹Reference Summary of Wastewater Flow project note found in appendix A

²SANITARY SEWER FOR REGENERON TEMPELL LANE CAMPUS, By Stantec Dated: February 1, 2017 found in Appendix D

³Town or East Greenbush Sewer district maps and Barracks Road Manning's flow, found in Appendix C



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APPENDIX A

Summary of Waste Water Flows Project Note Dated: October 17, 2018

APPENDIX B

*Table 1 - THIRD AVE. SEWER DISTRICT HYDRAULIC CAPACITY ANALYSIS WITH REGENERON TEMPEL; LANE CAMPUS
PLAN OF THIRD AVE. SEWER DISTRICT AND REGENERON TEMPEL LANE CAMPUS SHEETS 1 AND 2;
REGENERON TEMPEL LANE CAMPUS SANITARY SEWER DIAGRAM*



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APPENDIX C

Town or East Greenbush Sewer district maps and Barracks Road Manning's flow



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APPENDIX D

SANITARY SEWER FOR REGENERON TEMPEL LANE CAMPUS, By Stantec Dated: February 1, 2017