

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2, ECAD-WCB**

290 Broadway, 21st Floor, New York, NY 10007

Program: Sanitary Sewer System	Inspection Type: Compliance Evaluation Inspection	
Permittee Name: East Windsor MUA	NPDES/ICIS No.: NJ0023787, PID NO. 95449	
Inspection Entry Date: September 20, 2022 Inspection Entry Time: 8:00 AM	Inspection Exit Date: September 20, 2022 Inspection Exit Time: 5:30 PM	
Facility Information: East Windsor Municipal Utilities Authority 147 Millstone Road, East Windsor NJ Lat, Long: 40.294641°, -74.563824° NAICS / SIC Code: SIC Code 4952, sewer systems		
EPA Representative(s): Murray Lantner, P.E. Environmental Engineer, EPA Region 2, ECAD-WCB. (212) 637-3976		
State Representative(s):		
On-Site Facility Representative Angel Perez, Collections Operator Bryan Laurendeau, Collections Operator Nick Pietrefesa, Supervisor EWMUA, npietrefesa@eastwindsormua.com, 908-797-2532		
Responsible Official: Richard Brand, Executive Director, Licensed Collection System Operator, (609) 443-6000 ext. 7600, Rbrand@eastwindsormua.com, 7 Wiltshire Drive, East Windsor, NJ 08520-1297		
Name and Signature of Inspector  MURRAY LANTNER Murray Lantner, P.E. Env. Eng.	Agency/Office/Phone Number Digitally signed by MURRAY LANTNER Date: 2023.02.25 08:45:36 -05'00' ECAD-WCB (212) 637-3976	Date
Name and Signature of Management QA Reviewer  LARRY GAUGLER Larry Gaugler, Team Leader, EPA Region 2-SCWCPT	Agency/Office/Phone Number Digitally signed by LARRY GAUGLER Date: 2023.02.27 14:09:31 -05'00' ECAD-WCB (212) 637-3950	Date

A. Background and Findings and Opening Conference

1. On September 20, 2022, a representative of the United States Environmental Protection Agency (EPA) Region 2 conducted a Sanitary Sewer System (SSS) Compliance Evaluation Inspection (“CEI”) of the East Windsor Municipal Utilities Authority sanitary sewer system. The purpose of the CEI was to assess the adequacy of the Operation and Maintenance of Collection System. The inspection began with a review of the EPA Sanitary Sewer System checklist, East Windsor documents and an opening conference.
2. The Wastewater Treatment Plant (“WWTP”) has a design flow of 4.5 MGD. The flow was said to range from 2.3 to 2.7 MGD. There are plans to upgrade the WWTP to 8 MGD. Representatives said that they can get 10 MGD through the plant.

B. Collection System and Pump Stations:

Collection System

3. The East Windsor MUA (“EWMUA”) has a 100% separate sanitary sewer system. It has a shared service agreement with Cranberry NJ to maintain its collection system. Cranberry’s collection system was said to discharge to the Middlesex County Utilities Authority (“MCUA”) and not the East Windsor MUA WWTP.
4. The collection system consists of 170 miles of pipe and 2 miles of force main. Pipe diameters range from 6” – 36”, mainly 8” – 36”. The system age ranges from 7 years to 40 years old. Pipe types are asbestos cement (“AC”) pipe, PVC/ SDR35, and ductile iron. The 2 miles of force mains are ductile iron and HDPE. East Windsor only owns the sewer main. The homeowner is responsible for their lateral from the house all the way to the main including the connection. Manholes in the gravity sewer were said to be spaced about 400 feet (350 to 450 feet) apart.
5. East Windsor MUA has a paper map of the collection system. They have also started entering collection system asset data into a Geographic Information System (“GIS”) system.
6. East Windsor reported that they have a Capacity Management Operation and Maintenance (“CMOM”) system. The system is used for asset management and work orders.

Pump Stations

7. There are 10 pump stations in the system, some were visited and described in Table 2.

C. Flow Metering and Billing

8. Flow is monitored at the WWTP and at pump stations. There is a logbook for each pump station to record pump station visits, pump run times, maintenance, etc.. There is a SCADA

system in place for the pump stations. During the inspection, a photo taken of the SCADA system flow monitoring for December 2021 identified that the SCADA system is not accurate and the flow numbers are off by several orders of magnitude. For example as shown below on December 1, 2021 the flow to the WWTP, Rocky Brook PS (1), Big Bear PS(2), Little Bear PS (3), and White Station PS (4) was recorded as 6115, 5019, 687, 165, and 409 MGD, respectively for this plant that typically treats about 2.3 to 2.7 MGD. EWMUA said that they would work to get the SCADA system operating properly.

9. Billing for sewer usage is based on water usage (based on water meters).

D. SSO Discharges / Spills:

10. The municipality has written procedures for responding to and reporting emergencies in its 2004 Emergency Response Plan (See Photo 1946). Please verify that this has a Sanitary Sewer Overflow Response Plan.
11. The municipality has experienced sanitary sewer overflows (SSOs) or spills in the past 5 years Based upon review of the NJDEP data miner web site in East Windsor, review of complaint forms, log book entries, incident reports to NJDEP, and discussions with EWMUA personnel, the following sewage or sewer related incidents, in the EWMUA main or discharged from an East Windsor Storm Sewer, during the period December 2018 to September 19, 2022 were identified. The EWMUA WWTP Alarm Report form is used for complaints that come in after 3:30 PM. On the day shift prior to 3:30 PM will use the Plant log book to record complaints. EWMUA does not have a spreadsheet of backup locations.

Table 1 – Sewer Backup incidents – and Areas of Concern

Date	Incident Description	PNC/AOC/Question
12/24/18	Windsor Castle, A-10 Building, customers lateral was clogged sewage running down parking lot into storm drain	PNC – Unauthorized Discharge from storm drain – verify that the sewage discharge from a private lateral into the municipal

Date	Incident Description	PNC/AOC/Question
		separate storm sewer system was called in to NJDEP as an unauthorized discharge.
4/26/2019	Sewage Overflow of approximately 10 gpm at a manhole due to a grease blockage. Expected to be resolved within 10 minutes. Storm drain has been impacted. Incident/ Hotline Case No. 712297, 19-04-26-1407-05. EWMUA report to NJDEP indicated that EWMUA Collection Staff responded to a blockage of the sewer main on Route 130 in front of the Americana Diner. The manhole (No. 3506) was overflowing and discharged to a storm drain which leads to Rocky Brook. The blockage was caused by a heavy build-up of grease and plastic utensils in the line. This line is identified as a hot spot and said to be cleaned every 6 months. An EWMUA complaint form was also available on site.	PNC – unauthorized discharge to storm sewer/blocked main – verify that this line is programmatically cleaned and that grease traps at the diner are routinely inspected and cleaned.
12/18/19	91 Bennington Drive East Windsor, basement backup due to blockage in the East Windsor Main	
4/3/21	Approx. 500 gallons of raw sewage release due to a broken air release valve. Small amount entered a storm drain that leads to the Millstone River. 785560	
7/27/21	Data Miner had a 7/27/21 record that reported the failure of the pump control system which caused an overflow. Sewage reached Oak Creek (Big Bear Brook). A letter from EWMUA indicated that this incident took place on 7/29/21 where a sewer crew responded to a sewer backup into a resident's basement at Hickory Corner Road. And also into an apartment complex basement on Dorchester Road, and into the parking lot next to the pump station. The pump control system lost power and pumps in the pump station were not running and the wet well was overflowing. The pumps were reactivated manually. Sewage also flowed into a storm drain in the parking lot and into Big Bear Brook (formerly reported as Oak Brook). 798242, 21-07-27-2308-42	PNC – Unauthorized Discharge
2/5/22, 2/6/22, 2/9/22, 4/10/22, and 5/29/22	268 Dutch Neck Road backed up into one person's basement – It was called in by homeowner 2/5/22 and again on 2/6/22. (There is an EWMUA complaint form in the system) The line was jetted on 2/5 and 2/6/22. On 2/9/22 – checked Dutch Neck Road and One Mile Road (intersection of which close to 268 Dutch neck Road) due to previous week overflow and 2 manholes starting to surcharge. One Mile Road at Manhole 3199 and downstream were said to be loaded with heavy grease and a broken clay pot was also found in the sewer. The pot and other debris were vacuumed out of the line. There was also a complaint on 4/10/22 grease in line flushed line.	PNC – basement backup – verify that this location is on the hot spot list and the frequency that this location is being routinely jetted; Describe the actions taken to identify and eliminate the source(s) of grease to

Date	Incident Description	PNC/AOC/Question
	5/29/22, there was another manhole overflow onto the street on Dutch Neck Road from MH No. 2677 (have an EWMUA collection system complaint form). Jetted line with blockage 4 times. There was heavy grease. Continued jetting additional manholes down stream to intersection with One Mile Road and then down One Mile Road to tie in with trunk line.	this line. Has CCTV work been conducted to verify that the pipe has no defects?
4/1/22	Sewage Leak, 821129	
4/15/22	City Streets – McDonalds, Royal Plaza. East Windsor checks the grease trap now. Had a an overflow from private lateral April 15, 2022 to catch basin and stream.	PNC – unauthorized discharge from storm sewer- verify that this was reported to the NJDEP Spills
4/17/22	Town Center Shopping Center the EWMUA main was surcharged sewer due to heavy amount of grease – 3 manholes were surcharged. Based on the log book and collection system complaint form, there were drains backing up in the Shop Rite Shopping Center. The sewer main was jetted at intersection of Town Center Drive – and Route 130. This sewer was added to the hot spot list.	PNC – backup into customer – verify the adequacy of the jetting frequency for this line.
6/2/22	Log book identified that a camera inspection of the line on Bennington Drive in Twin Rivers at the request of residents and found a moderate to severe sag in the line approximately 160 LF from terminal upstream manhole. East Windsor said that they keep an eye on this manhole. Enfield Drive/Twin Rivers sewer chemical root control said to be added every 2 years.	AOC – what is the status of this line and if it has not been repaired has it been added to a hot spot routine inspection/cleaning program to avoid blockages?

12. As described above, backup locations are either kept in the Collection System Complaint form, the WWTP Alarm Report or in the plant log book. EPA recommends maintaining a spreadsheet and/or GIS Map of backup records. This will help EWMUA identify new hot spots in the system. Maintaining a database will allow for updating hot spot lists and programmatic inspection and cleaning of certain sewers. It will also allow for quick and easy searching of historic backup complaints in the East Windsor Main as well as private laterals.
13. EWMUA does maintain a sewer system hot spot list that it jets on a routine basis as shown below. However, based on the entries its unclear if the jetting schedule is being maintained. EPA recommends keeping a database or work order system with the hot spot cleaning records.

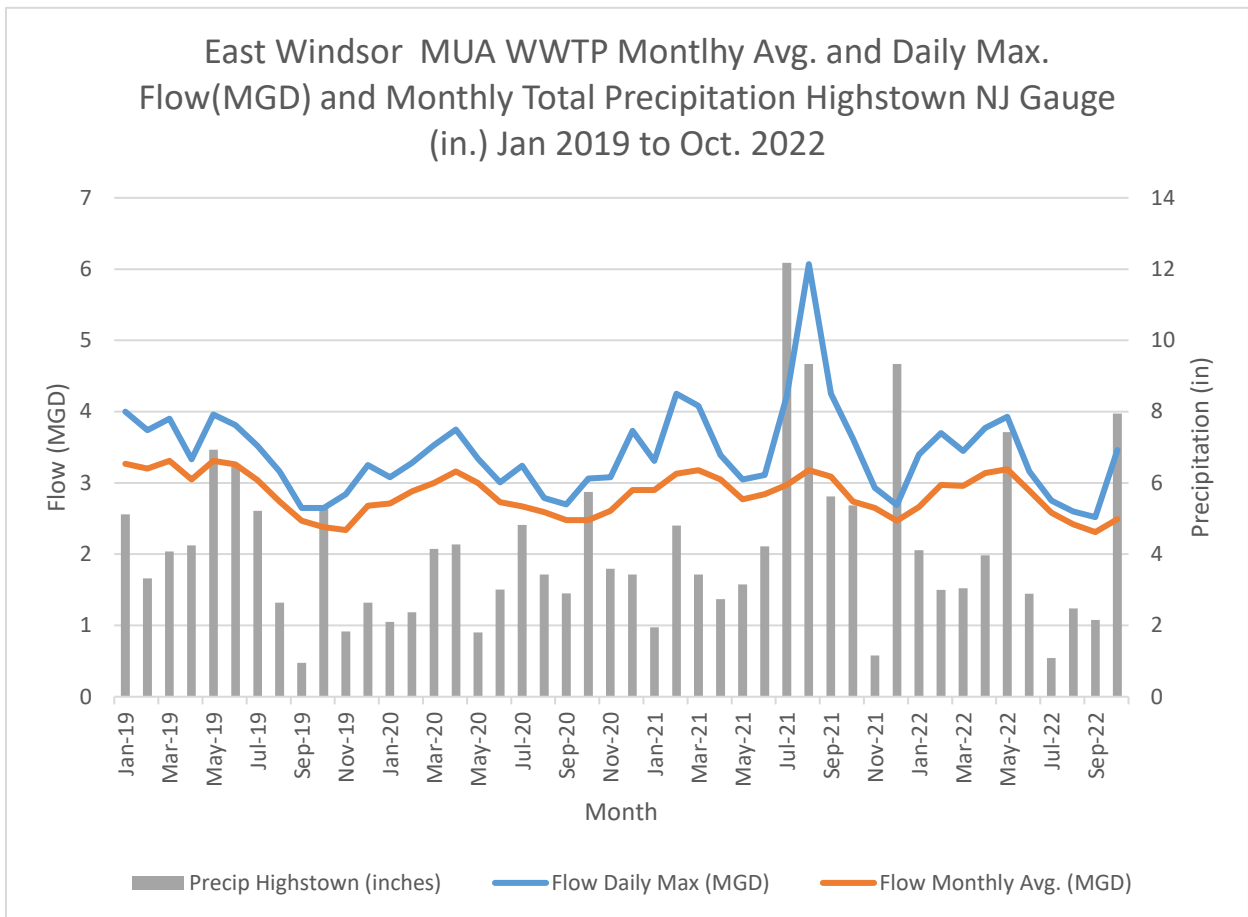
HOTSPOTS						
STREET NAME	MH#	MH#2	SCHEDULE	LAST FLUSHED	CONDITION	INITIALS
BOLTON	✓	1848	1849 3 MONTH		ROOTS/GREASE	RL/CP/MS
CYPRESS DR	✓	2620	2623 3 MONTH	2/23/2017	GREASY	RL/CP/MS
WALMART MH	✓	2509	3609 1 MONTH	3/1/2017	RAGS/GREASE	RL/CP/MS
WOODSIDE AVE	✓	2313	2307 3 MONTH	11/3/2017	GREASE/A LOT OF BOTTLES	RL/CP/MS/SG
WENDYS MH	✓	1716	1719 3 MONTH	10/25/2017	GREASY	RL/CP/MS
BROOKTREE RD	✓	2836	2840 3 MONTH	3/1/2017	GREASY	RL/CP/MS
BERKLEY PLACE	✓	2136	2138 3 MONTH		GREASY	RL/CP/MS
JAMESTOWN RD	✓	2038	2026 3 MONTH		ROOTS/GREASE	RL/CP/MS
FAIRFIELD RD	✓	1857	1859 3 MONTH		GREASY	RL/CP/MS
HICKORY CORNER	✓	2738	2736 3 MONTH		GRIT	RL/CP/MS
TWIN RIVERS DR NORTH	✓	1915	1916 2 MONTH	9/18/2017	ROOTS	RL/CP/MS

Collection System Insurance

- EWMUA is covered through a Joint Insurance Fund (“JIF”). In EWMUA’s experience the JIF does not pay out claims for basement backups caused by grease blockages of the sanitary sewer. EWMUA’s representatives indicated that if they are conducting routine maintenance of the collection system then the JIF won’t pay out for a sudden grease blockage. For repeat grease blockages in the same location then the JIF may pay out. They were not aware of any claims in the past 5 years. EWMUA may recommend to the customer to install check valves in certain locations.

Capacity Issues / Collection System Maintenance:

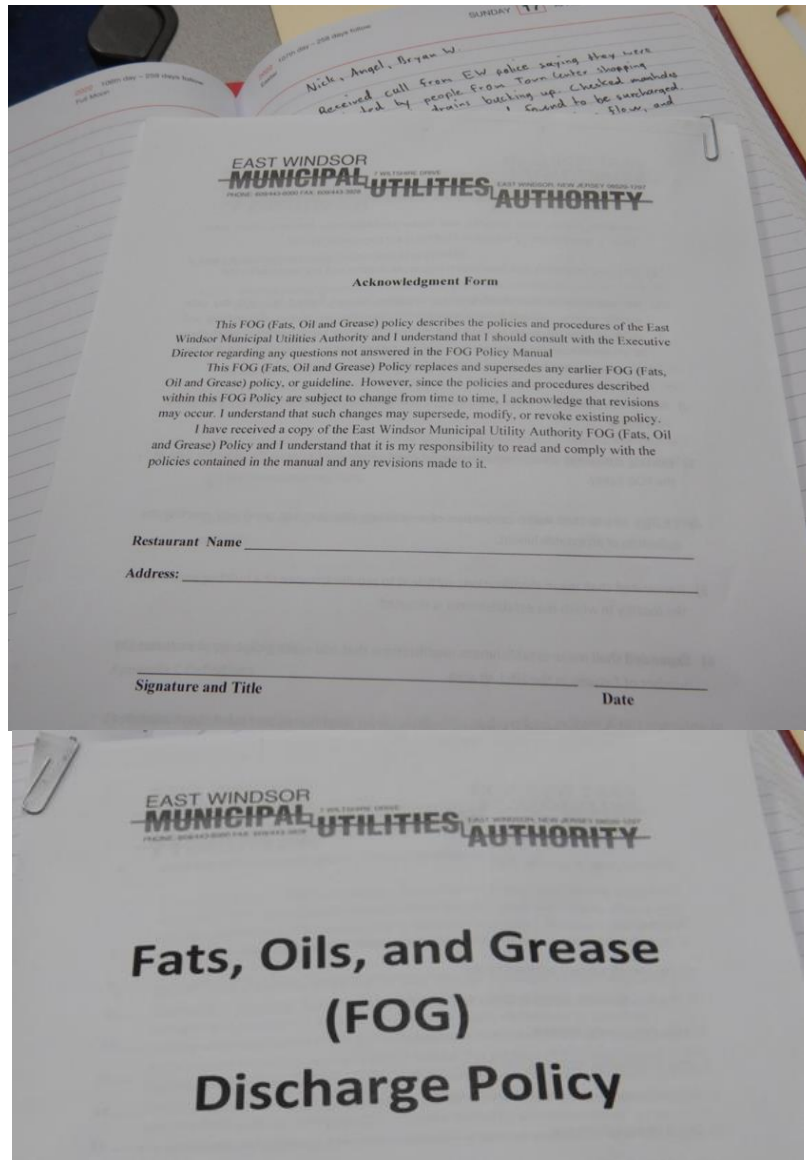
- Facility reported that there are some grease issues in certain parts of the collection system. They are also working on a capacity issue at Pump Station No. 1 where they are replacing a 10” force main with a 16” force main. EWMUA noticed that there were high frictional head losses in the 10” pipe due to flow velocities at or exceeding 10 feet per second. The larger pipe will or has corrected this issue. Identify when the new force main has been or will be installed?
- On-site pump station inspections are conducted by EWMUA twice per week on Mondays and Fridays.
- Flow data at the EWMUA WWTP from EPA’s Enforcement and Compliance History Online (“ECHO”) database and precipitation data at the Highstown NJ gauge from the Northeast Regional Climate Center shown below, depict daily maximum and monthly average flows and the monthly total precipitation data. As shown in the graph below there are some monthly maximum flow spikes associated with high precipitation events that appear to be indicative of Inflow and Infiltration (“I&I”) issues in the collection system.



EWMUA explained that an Inflow and Infiltration study was done in 2020. EWMUA conducted lining of pipes and the major areas identified in the study were corrected and a pipe break was fixed. A contractor (Mott MacDonald) was doing the relining, grouting some connections and now working on minor areas. EWMUA conducted flow studies at some pump stations to get a sense of of I&I into the pump stations. EWMUA said that they do have a 10-year capital plan.

18. Smoke testing was done approximately 15 years ago. Smoke testing is no longer conducted in East Windsor. When the line is CCTV'd and see a lot of clear water can do an inspections can to identify illicit sump pump connections. When water meters are changed EWMUA also looks for sump pumps. EWMUA does Time of Sale inspections and when a final water meter reading will also check for sump pumps.
19. EWMUA said that it does have rules and regulations that prohibit inflow (e.g. sump pump connections)
20. For preventative maintenance EWMUA explained that there is a work order system to conduct
 - a. There is Hot Spot cleaning program
 - b. Root Cutting in problem areas.

- c. EWMUA explained that there is a goal of cleaning the collection system 100% annually. However, there were only records thru 2016 on the computer, but only the supervisor had kept spreadsheet in the past. It is possible that sewer system cleaning is logged through work orders and not through the spreadsheet. In further discussions with EWMUA they said that they are behind on jetting, and have only gotten a relatively small portion of the collection system done this year probably, less than 20% to date. There were some issues in having enough collection system staff/collection system staff with Commercial Drivers Licenses needed to drive the jet/vac truck. The jet/vac truck was not working from June to August 2022. Prior to that the jet/vac truck was not running due to the inability to obtain a specific hose clamp. At the time of the inspection there were only 2 people on the sewer crew which was down from the 4 person crew that they had previously. It was said to be difficult to control traffic and operate the truck with a 2 person crew. A new hire was expected to start in approximately 2 weeks.
21. EWMUA has a monthly operating report that describes maintenance activities during the month (e.g. at the pump stations and the WWTP). A copy of the August 2022 operating report was given to EPA during the inspection and contained in the Attachment 2.
22. EWMUA maintains logs of testing and maintenance of emergency generators at its pump stations. (Att. 1 Photo 933)
23. There is a backup diesel pump at the WWTP
24. Fats, Oils and Grease (“FOG”)
EWMUA said that it conducts annual inspections of grease traps. This program was started about 2 years ago, EWMUA inspector checks grease traps, installations of piping, markouts, had problems with restaurants during Covid. Currently they inspect about 75% of restaurants per year, and looking to hire another person to do inspections and markouts. Seeing more grease in pump stations. Started a \$200 per year grease trap inspections and records fee for commercial establishments. Pump stations are cleaned with a vacuum truck which brings pump station grease cleaning to the pit at the WWTP. The wastewater goes to the plant, grease is backhoed shoveled out to and taken to incineration. As shown below new restaurants are required to sign to the EWMUA FOG Policy. EWMUA will check new restaurants to make sure that they are tied into a grease interceptor. Existing restaurants not in the signed system yet. If grease trap inspection show that grease trap is more than 70% full for existing restaurants will require restaurants to sign on to grease policy. If they don't comply will get the local township health department involved.



25. Industrial Users

There were said to be 6 significant industrial users (“SIUs”). Including cosmetic industry. East Windsor is not a control authority and NJDEP does oversight of the SIUs in East Windsor.

WWTP

26. The EPA did not inspect the WWTP or the effluent as part of this inspection.

27. Review of the EPA Enforcement and Compliance History Online (“ECHO”) Database indicated that there was no Permit Exceedances for the period January 2019 to October 2022.

II. Potential Non Compliance Items and Areas of Concern

A. POTENTIAL NON-COMPLIANCE ITEMS

1. The General Conditions of the NJPDES Permit require Proper Operation and Maintenance of the treatment works per N.J.A.C. 7:14A-6.12. As described in Table 1, Paragraph 11 above, there were sanitary sewer overflows in the collection system that lead to discharges to storm sewers or basement backups.

B. AREAS OF CONCERN

1. As described in paragraph in paragraph 8 above the SCADA system was reporting inaccurate flows from the WWTP and the pump stations. EWMUA said that they would work to get the SCADA system working properly.
2. As documented in paragraph 12 above, EPA recommends maintaining a spreadsheet or database and/or GIS Map of backup and sanitary sewer overflow locations to identify additional potential hot spots in need of preventative maintenance or capital projects.
3. As described in paragraph 13 above, provide a list of the current hot spots and cleaning frequencies and indicate whether this frequency is being maintained. EPA recommends keeping a database or work order system with the hot spot cleaning records.
4. As described in paragraph 15 above Facility reported that they are replacing a 10" force main with a 16" force main at Pump Station No. 1. Please provide the status of the project.
5. As identified in paragraph 17 there appears to be fairly large increases in flow associated with wet weather. EWMUA has worked to reduce I&I from the system and identified that there is a 10 year capital plan. Please provide plans/schedules to reduce I&I into the collection system.
6. As describe in paragraph 20.c. EWMUA needs to ensure that:
 - a. the is adequate staffing to maintain the collection system,
 - b. the collection system cleaning goals are achieved,
 - c. the jet/vac truck is in operation and
 - d. there is a work order system or tracking system for collection system maintenance (sewer cleaning, CCTV, etc.).
 - e. that it has an up to date SSO Response Plan
7. Verify that there is a sanitary sewer overflow response plan.

Field Work (Area of Concern)

8. The EPA representatives, along with the facility representatives conducted an inspection of the pump stations and known hot spots/past backup locations in the collection system and noted Areas of Concern (“AOC”) below:

Table 2– Fieldwork locations/comments/Additional Areas of Concern

	Manhole or Pump Station Location	Comments	AOC
a.	Pump Station 1 -	3 Pumps, diesel generator, grinder, diesel generator with VFD, operational	Yes - Status of force main upgrade.
b.	Manhole - Dutch Neck Road near One Mile Road	Upstream of a 90° turn. Flow in sanitary sewer, down and running, wipe on top rung of ladder.	
c.	Dutch Neck Road/Route 130	Sewer flowing, down and running, sanitary sewer was cleaned recently. Said that this location is inspected every 2 weeks.	
d.	Royal Plaza	Open grease dumpsters outside and grease seen on the ground around the grease dumpster (Photos 1935-1943, Att. 1)	Yes - East Windsor needs to contact MS4 (DPW) and/or health dept. to ensure properly managed grease. Provide Status
e.	Pump Station 3	The 2 pumps were operational. The emergency generator is tested once per month under load. A spare comminutor motor was on-hand. Alarm was checked and dialed out.	
f.	Pump Station 2 - Dorchester	2 pumps, diesel generator, station is operational	
g.	Walmart Manholes	2 manholes checked - sanitary sewer down and running	
h.	Pump Station 7	3 pumps, diesel generator, pump station looked ok.	
i.	Bennington Manhole	Will study the upper pipe in the manhole and pipe belly	
j.	294 Bolton Road – Manhole	Sanitary sewer – down and running	
k.	Pump Station 8	Station has an emergency generator, pump station operational. There was a lot of grease on the wet well. Flow meter read 0.27 MGD, wet well level 3.5 to 3.6’	Yes – grease on wet well. Provide cleaning frequency for pump station 8.
l.	Wyckoff Mills Road	Concrete spalling in manhole and cable crossing through manhole. Plan on replacing manhole in one year.	Yes Status of Wyckoff Mills manhole replacement

Closing Conference

A closing conference was held and the following issues were discussed:

- grease at Pump Station 8
- log Backups in a database to easily see problem areas
- Work Order System use
- No. of Personnel/Staffing
- Tracking of Cleaning Collection system (to hit 100% target per year)
- SSO Response Plan
- Grease at Royal Plaza

ATTACHMENTS

Attachment 1 – Photos

Attachment 2 – August 2022 Operating Report