



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO ATTENTION OF
ECW-15J

VIA ELECTRONIC MAIL

Mr. Richard Fancher, Executive Director
1800 Edison Avenue
P.O. Box 1366
Granite City, IL 62040-1366
Email: rfancher@mesdonline.org

Subject: April 22, 2021 CSO Reconnaissance Inspection Report

Dear Mr. Fancher:

On April 22, 2021, the U.S. Environmental Protection Agency conducted a reconnaissance inspection of the Metro East Sanitary District's East St. Louis Pumping Station.

The enclosed report summarizes observations made by EPA during the inspection.

If you have any questions or concerns regarding this letter, or the inspection report, please contact Joan Rogers of my staff at (312) 886-2785 or at rogers.joan@epa.gov.

Sincerely,

RYAN
BAHR

Digitally signed by
RYAN BAHR
Date: 2021.06.23
08:20:10 -05'00'

Ryan J. Bahr Chief, Section 2
Water Enforcement and Compliance Assurance Branch

Enclosure

cc: Scott Hillman, scott@mesdonline.org
Joe Stitely, IEPA, joe.stitely@illinois.gov
Sanjay Sofat, IEPA, sanjay.sofat@illinois.gov
Todd Bennett, IEPA, todd.bennett@illinois.gov

On April 22, 2021, EPA inspectors, Ms. Joan Rogers and Mr. Ted Flatebo, traveled to the East St. Louis Pumping Station (ESLPS) that is owned by Metro East Sanitary District (MESD). The goal of the reconnaissance inspection was to better understand the operations of the pumping station and the management of flow through the station to the Mississippi River. EPA met with Mr. Scott Hillman, the Stormwater Maintenance and Operation Superintendent for the Metro East Sanitary District and Mr. Richard Fancher, the Executive Director of the Metro East Sanitary District.

See Attachment A, Metro East Sanitary District – East St. Louis Pumping Station, for photos of the site visit.

While standing outside the pumping station, Mr. Hillman pointed out the nearby gate structures for the two sewer pipes from East St. Louis (ESL). One of the two sewer pipes is 10 ½ feet wide, and the other is a 12 ½ foot box sewer. The two sewer pipes from East St. Louis carry combined sewage and the weirs in the pipes are designed so that normal flow goes to the American Bottoms Regional Wastewater Treatment Facility (ABRWTF). The weir for the two pipes is set at 12 ½ feet and below that level, all the flow will be directed to the ABRWTF. Above that level, the two pipes will discharge over the weir and flow via gravity to the Mississippi River as Combined Sewer Overflows (CSOs). East St. Louis has two permitted CSO locations on the Mississippi River, CSO Outfall 001 and CSO Outfall 002. Both pipes go through the wall of the levee that protects the surrounding area from flood waters from the Mississippi River before they outlet in the Mississippi River.

ABRWTF pays MESD to close the gates at 11 feet. When the gates are closed, the overflow water from the 10 ½ foot sewer pipe is diverted to the north through a box sewer and flows to the East St. Louis Pumping Station. On the north side of the ESLPS, the overflow from the 10 ½ foot sewer joins the overflow of the 12 ½ foot box sewer and the CSO gravity flows to the Mississippi River.

When the Mississippi River level reaches 19 ½ feet, the river water flows from the river back up into the ESL sewer pipes. The gates on the two sewer pipes prevents the river water from backing up into the system. When the gates are closed and the level in the Mississippi River reaches 19 ½ feet, the overflow from the two combined sewers cannot gravity flow to the Mississippi River. Instead, the overflows from ESL flow into the wet well at the ESLPS. Two gates on the west wall of the wet well would be opened to move the flow to the pumps inside the ESLPS. MESD would then pump the water to the Mississippi River from the ESLPS.

Inside the ESLPS, there are three 140,000 GPM pumps. All the pumps are from the 1970s and they are rarely run. The most run time for any of the three pumps is 270 hours. An MESD operator would have to add air to the water to get the pumps to overcome the pressure of the Mississippi River water when these pumps are turned on. The station has the capacity to run all three pumps at the same time. Three submersible pumps in the wet well are utilized for smaller volumes of water. The station does not have any backup power.

In 2019, MESD determined that the 10 ½ foot sewer pipe from ESL was becoming porous and MESD was concerned about the integrity of the levee. Even though ESL owns the pipe, MESD paid for, and slip-lined, approximately 300 feet of pipe through the levee.

Around the grounds near the ESLPS, are groundwater relief wells. There are approximately 350 groundwater relief wells in the 139 square miles of the MESD. The groundwater relief wells relieve high groundwater from approximately 266 square miles of drainage. The groundwater comes up through the wells and then flows over the ground to surface water. Near the ESLPS, the flow from the groundwater relief wells flows to the wet well of the pumping station. There are screens at the top of the wet well that filter out the major debris from the water. If the wet well is only receiving water from the groundwater relief wells, the three submersible pumps will move the water from the wet well to the 12 ½ foot box pipe where it will gravity flow with the water from ESL.

Since MESD manages the gate structures for the pipes from ESL, they know when ESL is having a CSO event. They also can calculate the CSO volume. Mr. Hillman stated that he would share this information with the City of East St. Louis if they requested it from him. He also stated that ABRWTF has sensors for the flow from ESL and knows the volume of any CSO event.

MESD also owns and manages more than 20 miles of sanitary sewer trunk line for sanitary flow from other communities to the Granite City WWTP. Because some of their satellite communities are CSO communities, they have an NPDES CSO Permit, Number IL0028592, for CSO discharges from that system. MESD recently passed a \$12 Million bond issue for engineering design, planning, and lining the trunkline over the next five years.

After the discussion, EPA observed the screening for the top of the wet well for the flow from the groundwater relief wells. EPA observed the wet well and the gates on the west wall of the wet well. EPA went inside the pumping station and observed the three 140 GPM pumps. EPA and MESD representatives then climbed to the top of the pumping station and observed the flow from the 12 ½ foot box pipe which was gravity flowing to the Mississippi River.

EPA then walked to the top of the levee and to the two East St. Louis CSO Outfalls on the bank of the Mississippi River. The first outfall, CSO Outfall 001, was located at 38.61170N, 90.181846W, and was a concrete box culvert, 12 ½ feet wide. EPA observed the water in the Mississippi River at the outfall and did not observe any sanitary debris.

The second outfall, CSO Outfall 002, was located further south along the bank of the Mississippi River at 38.610463N, 90.182033W. The outfall was either below the water level or buried in the bank and EPA could not observe it. Approximately 40 feet east of the bank, there was a washed-out area and a hole where it appears that there had been previous flooding.

Mr. Hillman stated that he would send EPA a link to the MESD area maps, which he did on April 22, 2021 at 11:37 A.M. Mr. Hillman also stated that he would provide data on the level condition of the ESLPS to determine whether there were CSOs from the ESL CSO Outfalls. On May 18, 2021, Mr. Hillman provided a spreadsheet containing data from 2/5/2020 until

5/18/2021 in one-hour increments showing that there were approximately 394 times when the level in the station indicated that a CSO was likely to occur.

EPA left the ESLPS at 11:30 A.M. and observed a groundwater relief well along the driveway from the pumping station.

Attachments

Attachment A: Reconnaissance Inspection Photolog

Attachment A
Metro East Sanitary District – East St. Louis Pumping Station
EPA Inspection April 22, 2021
All photos taken by Joan Rogers, Environmental Scientist, U.S. EPA
Camera: Olympus Tough TG-4



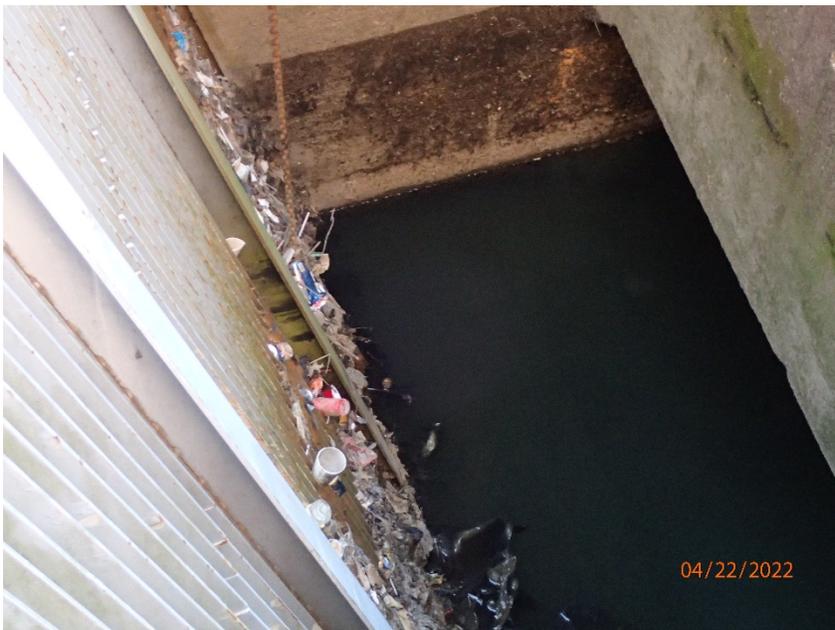
1: P4220001

Description: The gate structure for the 10 ½ foot sewer pipe from East St. Louis.

Location: East St. Louis Pumping Station.

Camera Direction: South

Date/Time: April 22, 2021 / 9:12 A.M.



2: P4220002

Description: Bar screen for the 10 ½ foot pipe from East St. Louis.

Location: East St. Louis Pumping Station.

Camera Direction: Down

Date/Time: April 22, 2021 / 9:17 A.M.



3: P4220003

Description: Inlet fence screens the groundwater flow from groundwater relief wells before it flows into the wet well.

Location: East St. Louis Pumping Station.

Camera Direction: Northeast

Date/Time: April 22, 2021 / 9:20 A.M.



4: P4220004

Description: Gates to the pump station on right hand side of the photo. If the gates close on the 10 ½ foot and 12 ½ foot pipes, the wet well fills up and the gates will allow the flow to be pumped to the Mississippi River.

Location: East St. Louis Pumping Station.

Camera Direction: Down

Date/Time: April 22, 2021 / 9:23 A.M.



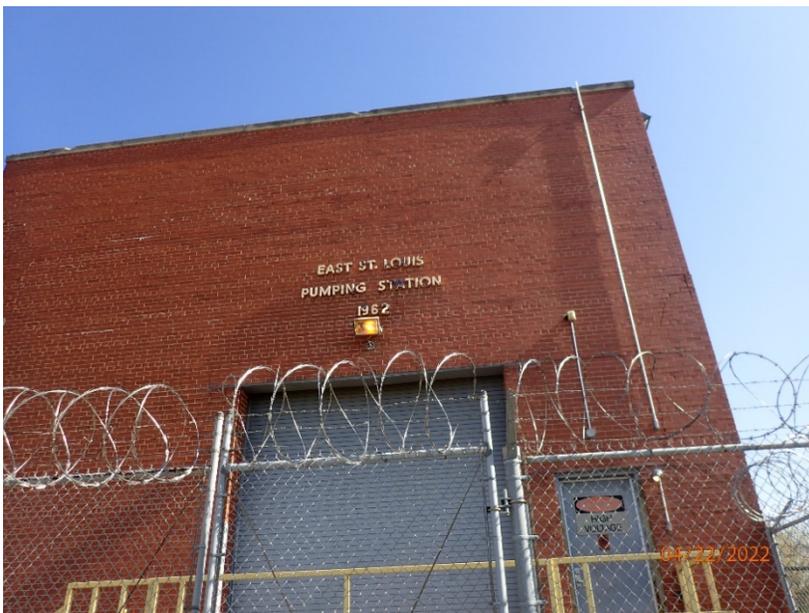
5: P4220005

Description: One of the three 140,000 GPM pumps in the pump station.

Location: East St. Louis Pumping Station.

Camera Direction: Inside

Date/Time: April 22, 2021 / 9:31 A.M.



6: P4220006

Description: The East St. Louis Pumping Station was built in 1962.

Location: East St. Louis Pumping Station.

Camera Direction: Northeast

Date/Time: April 22, 2021 / 9:32 A.M.



7: P4220007

Description: Control panel for the pumps and gates at the East St. Louis Pumping Station.

Location: East St. Louis Pumping Station.

Camera Direction: Inside

Date/Time: April 22, 2021 / 9:38 A.M.



8: P4220008

Description: Looking down into the concrete well where the flow would go once the gates open. That is one of the gates on the wall in the center of the photo.

Location: East St. Louis Pumping Station.

Camera Direction: Down

Date/Time: April 22, 2021 / 10:07 A.M.



9: P4220009

Description: Three outlets for the submersible pumps that are used to pump lower volumes of water to the well.

Location: East St. Louis Pumping Station.

Camera Direction: Down

Date/Time: April 22, 2021 / 10:09 A.M.



10: P4220010

Description: Looking down into the flow from the 12 ½ foot pipe to the Mississippi River.

Location: East St. Louis Pumping Station.

Camera Direction: Down

Date/Time: April 22, 2021 / 10:10 A.M.



11: P4220011

Description: One of the gate structures for the 12 ½ foot sewer pipe from East St. Louis is on the west side of the levee.

Location: East St. Louis Pumping Station.

Camera Direction: Northwest

Date/Time: April 22, 2021 / 10:11 A.M.



12: P4220012

Description: The gate structure for the 10 ½ foot sewer pipe from East St. Louis on the west side of the levee.

Location: On top of the levee near the East St. Louis Pumping Station.

Camera Direction: Southwest

Date/Time: April 22, 2021 / 10:26 A.M.



13: P4220013

Description: East St. Louis' CSO Outfall 001 is a 12 ½ foot box culvert outlet.

Location: 38.61170N, 90.181846W

Camera Direction: Southwest

Date/Time: April 22, 2021 / 10:41 A.M.



14: P4220014

Description: East St. Louis' CSO Outfall 001. EPA did not observe any CSO debris in the Mississippi River on the day of the inspection.

Location: 38.61170N, 90.181846W

Camera Direction: South

Date/Time: April 22, 2021 / 10:42 A.M.



15: P4220015

Description: East St. Louis' CSO Outfall 001 is the outfall for the 12 ½ foot sewer pipe.

Location: 38.61170N, 90.181846W

Camera Direction: Southwest

Date/Time: April 22, 2021 / 10:42 A.M.



16: P4220016

Description: Upstream of CSO Outfall 002 location, EPA observed that there has been previous flooding and a hole in the ground. The outfall outlet is not visible because it is either below the water level or buried in the embankment.

Location: 38.610463N, 90.182033W

Camera Direction: Down

Date/Time: April 22, 2021 / 10:58 A.M.



17: P4220017

Description: Upstream of CSO Outfall 002 location, EPA observed that there has been previous flooding and a hole in the ground. The outfall outlet is not visible because it is either below the water level or buried in the embankment.

Location: 38.610463N, 90.182033W

Camera Direction: North

Date/Time: April 22, 2021 / 10:59 A.M.



18: P4220018

Description: A groundwater relief well allows water from below the ground to exit the well and flow to the East St. Louis Pumping Station and then into the wet well and eventually back out to the Mississippi River.

Location: South of the East St. Louis Pumping Station.

Camera Direction: Southeast

Date/Time: April 22, 2021 / 11:30 A.M.