



**Maryland Department of Environment**  
**Water and Science Administration**  
**Compliance Program**  
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**Baltimore, MD 21230-1719**  
**410- 537-3510, 1-800-633-6101**

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**Inspector:** Ronald Wicks  
**AI ID:** 3076

**Site Name:** Patapsco WWTP  
**Facility Address:** 3501 Asiatic Ave, Curtis Bay, MD 21226  
**County:** Baltimore City County

**Start Date/Time:** January 31, 2022 12:34PM  
**End Date /Time:** February 10, 2022 2:35AM

**Media Type(s):** NPDES Municipal Major Surface Water

**Contact(s):**  
**Neal Jackson, Plant Manager**  
**Eric Johnson, Wastewater Operations Supervisor**

## **NPDES Municipal Major Surface Water**

**Permit / Approval Numbers:** 15DP0580  
**NPDES Numbers:** MD0021601  
**Inspection Reason:** Complaint  
**Site Status:** Active  
**Compliance Status:** Noncompliance  
**Site Condition:** Noncompliance  
**Recommended Action:** Additional Investigation Required  
**Evidence Collected:** Photos or Videos Taken, Record Review, Visual Observation  
**Delivery Method:** Email  
**Weather:** ClearAverage

### **Inspection Findings:**

The Patapsco WWTP is a 73 MGD capacity activated sludge with a pure oxygen fed reactor biological treatment with ferric chloride for removal of phosphorus. The treatment system has been recently upgraded to ENR standards. There is chlorination, dechlorination and post aeration prior to final discharge to the surface water of the State.

The average flow is approximately 45-55 MGD; however, during heavy rainfall flows can reach 213 MGD from infiltration from sewer lines. The receiving water is the Patapsco River, protected for Use II, water contact recreation and the protection of aquatic life.

Today I performed a follow up inspection at the Patapsco WWTP for complaint of a black discharge at the final Outfall 001A. The facility's NPDES Discharge Permit number is MD0021601 and State number 15-DP-0580, the Patapsco WWTP. The permit effective date is

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10/1/2017, expiration date 09/30/2022 and a reapplication date of 03/31/2021. The renewal application has been received. The facility's activity code or standard industrial classification (SIC) is 4952 and the North American Industry Classification System (NAICS) is 22132.

On this date, I met Mr. Neal Jackson and Mr. Eric Johnson, representing the facility on-site for this inspection. During a preliminary meeting with the above individuals, I discussed my plans and the reason for this inspection. The reason and focus of the inspection were to address concerns of a black effluent discharging from Outfall 001 and discuss the potential cause(s) and corrections taken. I reviewed the submitted data for November and December 2021 before this site visit and found no issues with the facility meeting the TSS limits of the permit. I asked Mr. Jackson if he could provide me with copies of the total suspended solids (TSS) sampling results for January 2022. He stated that the contract laboratory has not provided the results for January 2022 to date.

According to Mr. Jackson and Mr. Johnson, there has been a problem with the solids processing company. Patapsco WWTP's biosolids are processed by Synagro, Inc., a private firm, located on site that draws the undigested biosolids from the WWTP tanks and then processes and pelletizes the biosolids. The biosolids are dewatered by heat-drying.

Mr. Jackson stated that Synagro is no longer processing solids at the rate specified by their contract causing excess solids in the final effluent. Mr. Jackson stated that for the past 3 months, Synagro has not been processing sludge at the contracted rate and it has come to a point where it is affecting plant operations and the final effluent.

Mr. Jackson stated that the reason that Synagro gave for not being able to process the solids is because recent analysis of the sludge revealed high hydrocarbon concentration in the sludge. Synagro reported that there is a fire hazard concern and the potential for an explosion associated with the levels of hydrocarbons detected in the sludge. I asked Mr. Jackson if Baltimore DPW had any recent sludge analysis data that I could review. According to Mr. Jackson, the Baltimore City DPW does not routinely have sludge analysis performed. However, they have recently sent sludge samples out for analysis, but they have not received the analytical results.

According to Mr. Johnson, currently Synagro is no longer pelletizing the sludge but is processing solids to cake and at a much slower rate. Therefore, Synagro is not processing sludge at the rate necessary to keep up with the amount of solids being produced by the wastewater treatment system.

According to Mr., Jackson, Baltimore City DPW has scheduled a meeting with Synagro representatives for this afternoon to discuss how to resolve the problem. In the interim, DPW is proposing to collect excess untreated solids from the system and transport and store at the transfer station located adjacent to the screening building.

Next, I traveled to the Tailings Transfer Station accompanied by Mr. Jackson and Mr. Johnson to evaluate the utilization of this area for untreated sludge storage. Currently the transfer station is used to hold tailings from the screening area until dry. The tailings are dried before they are taken off site by trash haulers. Today I found that the transfer station has been cleared and ready for solids storage (see picture below).

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Transfer station 1/31/22 note clogged grates at the front of the entrance

The area is partially covered, and the concrete pad of the transfer station is sloped slightly to the rear. There are drains at the front of the pad that are connected back to the WWTP. The pad drains were designed to collect any drainage from the pad and preventing drainage from going into the roadway. The grates of the drains were clogged with solid material and therefore not able to function as designed. Therefore, any drainage from the pad can flow over these grates into the roadway where there are two storm drains approximately 25 feet from the transfer station. Drainage from the area has the potential to reach the storm drains and ultimately waters of the State. Before this area is used for temporary sludge storage, the necessary provision should be made to ensure that the drainage from the site does not enter the paved roadway adjacent to the transfer station. Note: I was informed by Mr. Jackson that on 2/9/2022, the transfer station is being used to store the unprocessed sludge. Mr. Jackson does not know at this time how long the transfer station will be used for the storage of the sludge. Sludge storage at the Transfer Station should be a temporary solution. After speaking with Mr. Jackson, as it stands as of 2/10/2022, the permittee does not appear to have a long-term solution to the solids processing problem.

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Close up of clogged drain 1/31/22



View from inside the pad. Note one of the storm drains in the roadway 25' from clogged drain.  
1/31/22

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Next, we traveled to the chlorine contact chambers (CCC). There I observed the final effluent, which was an opaque grey color indicating higher-than-normal solids concentration in the effluent.



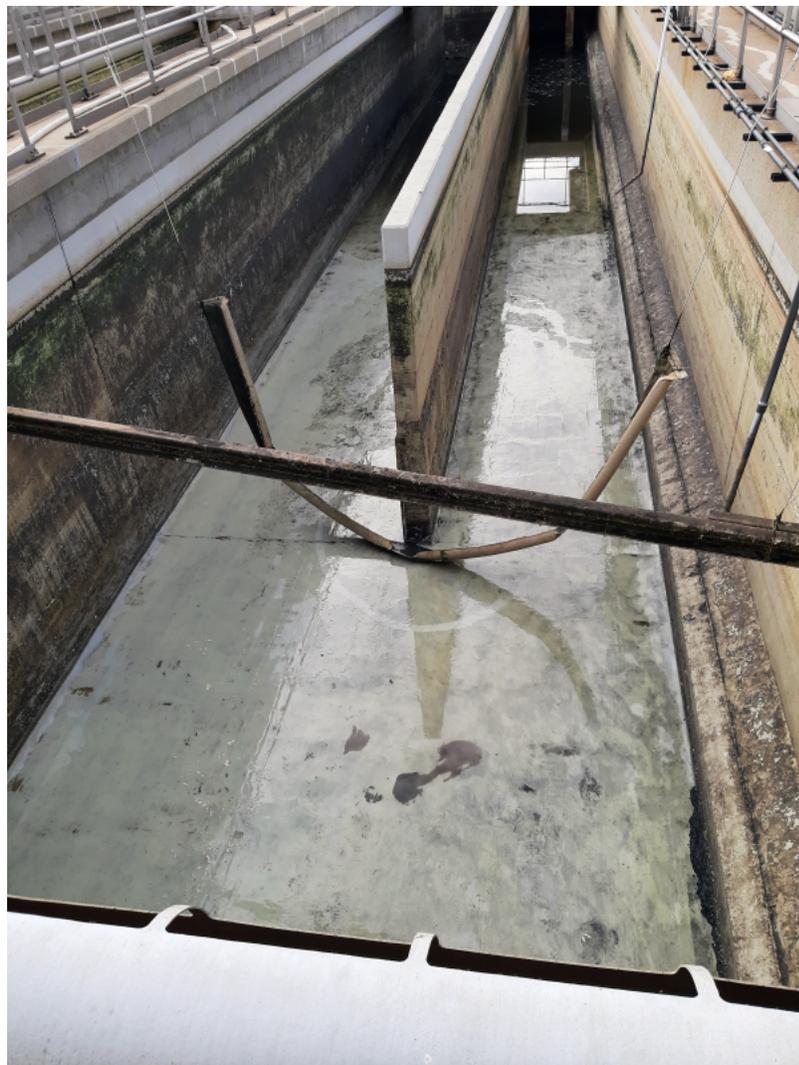
The effluent in the CCC was an opaque dark grey color 1/31/2022

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Final effluent overflow point- grey effluent with slight foaming due to turbulence. 1/31/22

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CCC #4 drained and taken out of service for cleaning 1/31/2022

I observed that the #4 CCC had been drained. According to Mr. Johnson, they are in the process of cleaning the #4 CCC. He further stated that they plan to clean all CCC regularly.

During my assessment of the area, I noticed that there was no one skimming the floating solids at the CCC before the overflow channel. According to Mr. Johnson, the shift just changed, and someone would be at the CCC skimming soon. I was in the area for approximately 20 minutes, so I am not sure how long it took for someone from the next shift to arrive and begin skimming.

I questioned Mr. Johnson on the status of the progress made to correct the problem associated with the scum logs collection system. Mr. Johnson reported that the original pump was repaired and now functioning satisfactorily, and a second pump was also installed, and the two pumps work in tandem. According to Mr. Johnson, the two pumps are capable of keeping up with the scum in the scum pit

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During this inspection, I found that the active scum log was in the correct alignment to collect the floating scum. However, I observed that some of the scum was able to pass through the scum log. This scum should be manually skimmed to remove the floating material.



CCC – Dark grey turbid effluent with floating solids/ FOG traveling to scum log 1/31/22

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Scum was able to pass through the scum log 1/31/22

Before departing I discussed my finding with Mr. Jackson and Mr. Johnson.

On 2/10/2022, I was given the results of the TSS sample at Outfall 001 for January 2022 (see Table 1 below). The results show a monthly average concentration of 30.3548 mg/L rounded to 30 mg/L which does not exceed the permitted monthly average concentration of 30 mg/L. The highest weekly average concentration occurred during the third week of January. The calculated result is 44.5714 mg/L rounded to 45 mg/L. This calculated average does not exceed the weekly average concentration permit limit of 45 mg/L.

Table 1

Total Suspended Solids in mg/L at Outfall 001	
DATE	Results
1/1/22	15
1/2/22	15
1/3/22	17
1/4/22	44
1/5/22	19
1/6/22	21

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1/7/22	21
1/8/22	34
1/9/22	37
1/10/22	67
1/11/22	52
1/12/22	21
1/13/22	17
1/14/22	32
1/15/22	28
1/16/22	24
1/17/22	48
1/18/22	86
1/19/22	40
1/20/22	38
1/21/22	48
1/22/22	18
1/23/22	15
1/24/22	21
1/25/22	19
1/26/22	11
1/27/22	16
1/28/22	22
1/29/22	30
1/30/22	25
1/31/22	40
2/1/22	No results received to date
2/2/22	13

Solids management at Patapsco WWTP has become increasingly problematic because the solids processing facility, Synagro Inc. has not been able to successfully keep up with the processing of the solids that are being generated by the treatment system on a daily basis. This has led to a backlog of untreated solids and higher than optimal TSS concentrations of the final effluent. Patapsco WWTP is storing the unprocessed solids at an on-site transfer station.

The TSS results noted above for the month of January show 5 days where the concentrations were high. High concentrations of TSS can damage process equipment and make it more difficult to treat and remove phosphorous and a reduction in TSS will also reduce BOD loads as well. Although for the month of January 2022, the high TSS concentrations were not continuous these levels can cause acute conditions during the days of these discharges such as:

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1. Lower than normal dissolved oxygen at the point of discharge for the period of the discharge.
2. Clog the gills of fish swimming in the area of the discharge
3. Increased turbidity in the mixing zone

**With respect to the above MDE authorization the following violations of Environmental Article 9 by the Patapsco WWTP were observed on this date:**

1. The grated drains at the front of the Transfer Station were clogged with solid material, trash and other debris preventing the drains from functioning as designed. Because of the clogged drains, there is reasonable potential that drainage or runoff from the storage area will travel over the drains enter the nearby storm drains and ultimately enter waters of the State.
2. Along with the management of the scum logs, Patapsco WWTP staff perform manually skimming at the CCC. My evaluation of the CCC area occurred during a shift change, and no one was at any of the skimming stations. All manual skimming and management of the scum log cease for a period of time during shift changes.
3. The Patapsco WWTP has failed to submit to the Department a formal written description of measures taken for the entire year 2021 to comply with the FOG mitigation plan as specified in Special Condition M of the permit.
4. In the May 6, 2021, Compliance Evaluation Report, one of the corrective actions was to develop and submit a site-specific BMP to address the problem caused by poorly functioning and inoperable equipment. This BMP should include procedures, preventive maintenance, spare parts inventory, and other appropriate measures for solving specific problems with the management and processing of FOG. On 10/5/2021, the Patapsco WWTP submitted an Outline for the BMP but not the complete plan.
5. The final effluent was an opaque dark grey color indicating high solids concentration and turbidity. This problem is because the solids processing facility, Synagro Inc. has not been able to successfully keep up with the processing of the solids that are being generated by the treatment system. This has caused an increase of solids in the final effluent. To correct this problem, Patapsco WWTP is now storing the excess solids at an on-site transfer station for disposal or treatment at a later date.

**To bring this site into compliance with Environment Article Title 9, the Patapsco WWTP should make the following corrections:**

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- A. With respect to item 1 above, the grated drains at the front of the Transfer Station should be cleaned of solids, trash and other debris so that the drains are capable of collecting any drainage from the Transfer Station pad.
- B. With respect to item 2 above, the Patapsco WWTP must conduct FOG mitigation activities and make every effort to comply with Special Condition A2 footnote 2 of the permit which states, "There shall be no discharge of floating solids...". The Patapsco WWTP should comply with Special Condition M. should be available to raise or lower the scum logs as necessary for optimum FOG removal to prevent floating FOG from entering the Patapsco River.
- C. With respect to item 3 above, within 30 days of the receipt of this report, the permittee should submit to the Department a report detailing all specific measures and actions taken to ensure compliance with the FOG Mitigation Plan for the year 2021 as required by Special Condition Then, the permittee shall begin submitting on an annual basis at the end of each calendar year all measures taken during the year to comply with the FOG Mitigation Plan.
- D. With respect to item 4 above, within 90 days of the receipt of this report, the permittee should submit a site-specific BMP to address the problem caused by poorly functioning and inoperable equipment. This BMP should include procedures, preventive maintenance, spare parts inventory, and other appropriate measures for solving specific problems with the management and processing of FOG. The Department recognizes that as malfunctioning equipment is replaced and repaired the operational and maintenance procedures may change therefore the BMP will go through various revision before a final plan can be adopted.
- E. With respect to item 5 above, the Patapsco WWTP should devise a permanent solution for the management of solids produced by the treatment process. Within 30 days of the receipt of the report the Patapsco WWTP must submit a plan addressing a permanent solution for the proper management, treatment and disposal of solids produced by the treatment process.

*State law provides for penalties for violations of Maryland Environment Article Title 9 for each day the violation continues. The Maryland Department of the Environment may seek penalties for the aforementioned violations of Title 9 on this site for each day the violation continues.*

Any questions regarding this report can be referred to Ronald Wicks at 410-537-3510 or at [ron.wicks@maryland.gov](mailto:ron.wicks@maryland.gov). A copy of this report was emailed to the facility contacts above.

NPDES Municipal Major Surface Water - Inspection Checklist

<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
Does the facility have a discharge permit?	No Violations Observed	

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<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
Is the discharge permit current?	No Violations Observed	
If the permit is not current, has facility applied for renewal?	No Violations Observed	
Does the facility operate as authorized by their current permit?	Out of Compliance	See Narrative Section
Has the Permittee exceeded the permitted capacity of the WWTP?	No Violations Observed	
Is the number and location of discharge points as described in the discharge permit?	No Violations Observed	
Has permittee submitted correct name and address of receiving waters?	No Violations Observed	
Is the permittee meeting the compliance schedule per permit requirements?	No Violations Observed	
Has the operator or superintendent been certified by the Board in the appropriate classification for the facility?	No Violations Observed	
Are adequate records being maintained for the sampling date, time, and exact location; analysis dates and times; individual performing analysis; and analytical results?	4 - Not Evaluated	
Are adequate records being maintained for the analytical methods/techniques used?	4 - Not Evaluated	
Does the permittee retained a minimum of 3 years worth of monitoring records including raw data and original strip chart recordings; calibration and maintenance records; and reports?	4 - Not Evaluated	
Do lab records reflect that lab and monitoring equipment are being properly calibrated and maintained?	4 - Not Evaluated	
Does the permittee/laboratory use suitable QA/QC procedures and operate a formal quality assurance (QA) program using appropriate controls?	4 - Not Evaluated	
Has the permittee submitted the monitoring results on the proper Discharge Monitoring Report form?	No Violations Observed	
Do the Discharge Monitoring Reports reflect permit conditions?	No Violations Observed	
Has the permittee submitted these results within the allotted time electronically?	4 - Not Evaluated	
Is the facility being properly operated and maintained including: (a) stand-by power or equivalent provisions available, (b) adequate	Corrective Actions Required	See Narrative Section

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alarm system for power or equipment failure available, (c) all treatments units are in service, .		
Is sewage sludge managed correctly per permit requirements?	Corrective Actions Required	See Narrative Section
If a by-pass occurred since last inspection, has the permittee submitted notice of the by-pass within the allotted time?	4 - Not Evaluated	
If a non-complying discharge occurred since the last inspection, was the regulatory agency notified within the allotted time?	4 - Not Evaluated	
If applicable, has the permittee complied with all special conditions of their permit?	Out of Compliance	See Narrative Section
Have overflows occurred since the last inspection?	4 - Not Evaluated	
Have records of overflows been maintained at the facility for at least five years?	4 - Not Evaluated	
Are flow measuring devices properly installed and operated, calibration frequency of flow meter adequate, flow measurement equipment adequate to handle expected ranges of flow?	4 - Not Evaluated	
Are discharge monitoring points adequate for representative sampling?	No Violations Observed	
Do parameters and sampling frequency meet the minimum requirements?	No Violations Observed	
Does the permittee use the method of sample collection required by the permit?	No Violations Observed	
Are analytical testing procedures used approved by EPA?	4 - Not Evaluated	
If alternate analytical procedures are being used, has proper approval been obtained?	4 - Not Evaluated	
Has the permittee notified the Department of the name and address of the commercial laboratory?	No Violations Observed	
Were discharges observed at the authorized outfalls?	No Violations Observed	
If discharges were observed, do the discharges or receiving waters have any visible pollutants observed?	Out of Compliance	See Narrative Section
Were discharge samples collected?	4 - Not Evaluated	
Does this facility have coverage under a a NPDES stormwater discharge permit?	4 - Not Evaluated	
If the permittee has coverage under a NPDES	4 - Not	

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<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
storm water permit, has a storm water pollution prevention plan been developed and implemented as required?	Evaluated	
Are the permit conditions being met?	Out of Compliance	See Narrative Section

Inspector: Ronald Wicks 2/14/2022  
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Received by: \_\_\_\_\_  
 Signature/Date  
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 Print Name