



Maryland Department of Environment
Water Management Administration
Compliance Program - Western Division
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301-665-2850

AI ID: 5034 **Inspector:** Renato Cuizon

Site Name: Western Branch WWTP
Facility Address: 6600 Crain Hwy, Upper Marlboro, MD 20772
County: Prince George's County

Inspection Date: April 19, 2017 **Start Date/Time:** April 19, 2017, 10:00 AM
End Date /Time: April 19, 2017, 01:05 PM

Media Type(s): NPDES Industrial Stormwater, NPDES Municipal Major Surface Water

Contact(s): **Brian Mosby, Plant Superintendent** **Phone #: 301-206-7565**
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David Kramer, Chief Plant Operator **Phone #: 301-206-7551**
Email: dKramer@wsscwater.com

NPDES Industrial Stormwater

Permit / Approval Numbers: 12-SR-0121

Site Status: Active

Site Condition: Additional Investigation Required

Recommended Action: Continue Routine Investigation

Inspection Reason: Initial Yearly

Evidence Collected: Photos/Videos Taken, Visual Observation

Inspection Findings:

Today's inspection was in conjunction with the NPDES Major Surface Water annual inspection. I met Mr. Nigel Duncan, Plant Operator and accompanied me to the site. There are no more construction activities going on at the site. ENR upgrade was substantially completed on December 21, 2016. I reviewed the Facility's Stormwater Management Pollution Prevention Plan which was updated on October 2014 and found that the Facility does not have the required quarterly visual monitoring and annual inspection comprehensive reports completed. The Facility however has completed monthly inspection reports. Please be advised that in addition to the monthly reports and inspection after rain/storm events greater than 0.5 inches, the Facility is also required to complete the quarterly and annual reports. I also noticed that the SWPPP binder do not have tabs to locate the Plan's contents. I recommend that the binder be more organized by putting proper tabs that corresponds to the contents.

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The Facility is required to conduct an annual training of designated staff in the implementation of the Stormwater Pollution and Prevention. Mr. Kramer informed me that they did not have a training conducted in 2016. Currently, the Plant Engineering Supervisor position was vacant. This position was responsible for providing SWPPP training. Mr. Kramer is now designated to conduct this training. He proposes to have this training during the spring time (May) to accommodate both classroom and practical training. MDE is okay with that as long as it will be consistent for the following years. The last SWPPP training was conducted on December 15-16, 2015.

I also reviewed the Facility's Spill Prevention, Control, and Counter Measure Plan (SPCC), which was updated on October 2014 and found to be adequate. The Facility has no recorded spill since the last inspection. However, there were seven (7) significant spills recorded in the past three years before October 2014. These spills and leaks include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA Section 311 or Section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC §9602. Spill reports were submitted to MDE and copies were kept on file.

Required and Recommended Actions:

1. In addition to monthly inspection reports, conduct quarterly visual inspection reports and annual comprehensive reports.
2. Ensure that annual training activities are conducted timely and consistently.
3. SWPP binder needs tabs to correspond to the plan's contents.

NPDES Industrial Stormwater- Inspection Checklist

<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
1. Does the facility have a discharge permit? [Environment Article §9-323(a)(1-3)]	No Violations Observed	
2. Has a Stormwater Pollution Prevention Plan (SWPPP) been implemented as required? [40 CFR Part 122 Subpart B Section 122.26.(c)(1)(i)(A-B)]	Yes	
3. Is the number and location of discharge outfalls as described within the Stormwater Pollution Prevention Plan (SWPPP)? [40 CFR Part 122 Subpart B Section 122.26.(c)(1)(i)(A-B)]	No Violations Observed	
4. Are identified outfalls representative of stormwater discharges from the site? [40 CFR Part 122 Subpart B Section 122.26.(c)(1)(i)(A-B)]	No Violations Observed	
5. Does the Stormwater Pollution Prevention Plan (SWPPP) require modifications to prevent runoff of pollutants? [40 CFR Part 122 Subpart C Section 122.42.(b)(1-3)]	No Violations Observed	
6. Are adequate records being maintained for the quarterly routine facility inspections? [Environment Article §9-261(a)(2)]	No	See Findings

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NPDES Industrial Stormwater- Inspection Checklist

<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
7. Are adequate records being maintained for the quarterly visual monitoring? [Environment Article §9-261(a)(2)]	No	See Findings
8. Are adequate records being maintained for the annual comprehensive evaluation? [Environment Article §9-261(a)(2)]	No	See Findings
9. Are adequate records being maintained for the employee training who are implementing activities necessary to meet the conditions of the permit? [Environment Article §9-261(a)(2)]	No Violations Observed	
10. If monitoring of benchmark parameters is required, has the permittee performed the required quarterly monitoring? [COMAR 26.08.04.03A(2)]	No Violations Observed	
11. If monitoring of benchmark parameters is required, has the permittee submitted quarterly benchmark monitoring results electronically within the allotted time? [COMAR 26.08.04.03C(2), 40 CFR Part 127.16]	No Violations Observed	
12. Were visible pollutants observed in the receiving waters or in a position likely to pollute water of the State? [Environment Article §9-322]	No	
13. If discharges were observed, were samples of the discharge taken? [Environment Article §9-261(c)(1)]	No Violations Observed	

NPDES Municipal Major Surface Water

Permit / Approval Numbers: 15-DP-0632
NPDES #: MD0021741

Site Status: Active

Site Condition: Satisfactory/Compliance

Recommended Action: Continue Routine Inspection

Inspection Reason: Initial Yearly

Evidence Collected: Samples Taken, Photos/Videos Taken, Visual Observation

Weather: Clear, 55°F, Zero precipitation from the last 24 hours

Inspection Findings:

Sample Type	Results	Units	Date	Time	Taken By	Location
Flow	23.069	MG	4/19/2017	1105	Operator	Effluent

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pH	7.6	S.U.	4/19/2017	1001	Operator	Effluent
Dissolve Oxygen	9.8	mg/L	4/19/2017	1000	Operator	Effluent

Western Branch WWTP Inspection – Wednesday, April 19, 2017

An announced routine inspection was conducted at the Western Branch Waste Water Treatment Plant on Wednesday, April 19, 2017. Mr. David Kramer, Chief Plant Operator; and Mr. Nigel Duncan, Plant Operator was present during the inspection. Mr. Duncan accompanied me to the site inspection and did well in explaining the Plant's treatment process. He and Mr. Kramer provided the requested necessary documents. Mr. Brian Mosby, Plant Superintendent was not present during this inspection due to prior commitment. He holds both Operator and Superintendent's Certificate # 6867 (W5A) which is valid until April 1, 2019 from the Maryland State Board of Water Works and Wastewater System Operators. There are currently 29 certified operators working under Mr. Mosby's supervision, which includes a Chief Plant Operator, Electrical/Mechanical Coordinator. During this inspection, the Plant's Engineering Supervisor is vacant. All operators hold Operator Certificate for W5A category. Three (3) of them hold temporary operator certificate. The Facility staff operates in three (3) shifts. The first shift starts from 10:30 PM to 7 AM, second shift from 6:30 PM to 3 PM, and the third shift from 2:30 PM to 11 PM. A half hour overlap is used for turnover procedure to ensure efficient work transition.

The Western Branch WWTP operates under renewed NPDES State Discharge Permit Number 15-DP-0632, and NPDES Number MD0021741 with effective dates from September 1, 2016, to August 31, 2021. The Plant has a design capacity of 30.60 MGD for nutrients and 30 MGD for all other parameters, and is rated under the category of Maryland's major wastewater treatment plants. The Facility has substantially completed the ENR upgrade on December 21, 2016, after more than two years of delay. The original scheduled ENR completion date was June 1, 2014. The construction was done by Fru-Con Construction, LLC of Woodbridge, Virginia.

During this inspection, the Facility has experiencing problems with the new raw pumps that were installed during the upgrade. There were six (6) main pumps and two (2) bypass pumps replaced. Today, only one main pump (#4) and one bypass pump (#1) are in-service. Three main pumps were currently out of service. One main pump and one backwash pump were sent out for rebuild. Meantime, the Facility has installed six (6) temporary bypass lines. Five of these lines started from the influent pipe entrance and 1 bypass line from the Raw Pumping Station. All six bypass lines are connected to the flow splitter box. These bypass lines were installed on November 8, 2016 in anticipation to carry influent flow to the treatment reactors in case the two (2) pumps that are currently working also fail. The Plant is closely monitoring Pump #4 which is currently handling 12-16 MGD. The bypass pump #1 is a little bit smaller capacity and can handle about 12-13 MGD. The two in-service pumps can handle the normal flow of about 20 MGD.

The new ENR Upgrade Process flow uses the three-stage Activated Sludge System with 4 parallel trains. During his inspection, all four trains are working properly. The raw wastewater enters the rehabilitated influent pump station with eight (8) pumps and two (2) fine screens. The screened wastewater goes to the aerated grit and grease removal chambers. The grits are collected and hauled to local landfill. During this inspection, one of the scum pumps is out of service and being

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repaired. It then flows to the High Rate Activated Sludge (HRAS) reactors where most BOD's are removed, then flows to the HRAS clarifiers. After primary settling is achieved from the HRAS clarifiers, it then flows to the compartmentalized Nitrifying Activated Sludge (NAS) reactors, and then flows to the NAS clarifiers to complete the nitrification cycle. I noticed that the NAS clarifiers have visible duck weeds in it. Mr. Duncan informed me that as the weather gets warmer the Facility will start manually removing the duck weeds. The weeds are more prevalent during cold season. The Methanol is added at a rate of 17 mg/l before it flows to the Denitrifying Activated Sludge (DNAS) Reactors. Alum is added at a rate of 3 mg/l before it goes to the Nitrifying Stripping Channels to aid in the Phosphorus removal. Wastewater then flows to the Denitrifying Activated Sludge (DNAS) clarifiers (4) where complete denitrification occurs. Some Activated Sludge from HRAS, NAS, and DNAS clarifiers are returned to the HRAS reactors and some are wasted. The secondary effluents goes to multi media filters and then undergoes UV Disinfection before discharging to the final Outfall. There are a total 378 UV bulbs in three channels used in the disinfection, (126 bulbs per channel). The UV bulbs were last serviced on February 21-23, 2017. Backwash water used in the filtration goes back to the HRAS reactors. Meantime, wasted activated sludge (WAS) goes to the Dissolved Air Flootation (DAF) where polymers are added. Sewage Sludge is processed onsite using Centrifuge Dewatering System. Biosolids are collected in trucks and hauled offsite. Centrate and DAF supernatant goes back to the HRAS reactors for another cycle of treatment. The Facility's incinerator system is out of service since my last inspection and needs to be upgraded to comply with the requirements of producing Class A Biosolids. WSSC is in the process of building a regional biosolids plant in Piscataway to process Class-A biosolids which will be collected from most of their operated treatment plants including Western Branch. There maybe no need to upgrade this treatment plant to produce Class-A biosolids. Currently, all biosolids produced are Class B. In 2016, the Facility generated a total of 29,379 wet tons, or 6,170 dry tons of Class-B biosolids, which were transported and landfilled in Virginia. Transportation of biosolids is handled by Synagro which operates under SSU Permit # 2015-STR-5137, and valid until April 6, 2025.

Operators monitor pH, dissolved oxygen, and total residual chlorine of the effluent three times per day (one per shift) as required. The calibrations records for each instrument were inspected and found to be adequate with the appropriate dates, times, and initials of the operator performing the calibration. However, I noticed that on April 6, 2017, DO calibration was not properly done. Operators perform a three point calibration of the pH meter and record the "as found" and "corrected" readings. Buffer solutions used for calibration was inspected and found them to contain expiration, received and opened dates inscribed on their containers. All the buffer solutions have current expiration dates. The membrane cap of the dissolve oxygen meter (HACH, HQ4440D Model) was last changed on June 27, 2016. Laboratory testing of nutrients including Ammonia, Nitrite+Nitrate, TKN and bacteria are brought off-site to WSSC Consolidated Laboratory in Laurel, Maryland. The Laboratory was not evaluated as part of this inspection.

The Permittee continues to submit monthly Discharge Monitoring Reports electronically using Net DMR since July 2014. I examined the DMR's reported for 2016 calendar year, and found to be complete with the required parameters, limits, units, frequency, and sample type. I conducted a data trace and found that all parameters are accurately transferred to the DMR's. In December 2016, the Facility has reported 86,513 lbs/year of Total annual cumulative TN loading rate. This is 77% less of the annual permitted TN loading rate of 372,776 lbs/year. During the same period, it

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reported 16,188 lbs/year of Total annual cumulative TP loading rate. This is 42% less than the permitted total annual TP loading rate of 27,958 lbs/year. There were no violations of these limits during the past year.

The Western Branch maintains adequate diesel powered backup generators. The equipments are tested regularly under load every week to ensure proper operating conditions. The new four (4) substations are all in service. The Facility is maintained properly and the ENR treatment system is performing well.

I will conduct routine inspection.

NPDES Municipal Major Surface Water- Inspection Checklist

<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
1. Does the facility have a discharge permit? [Environment Article §9-323(a)(1-3)]	No Violations Observed	
2. Is the discharge permit current? [Environment Article §9-328(a)(1)]	No Violations Observed	
3. If the permit is not current, has facility applied for renewal? [Environment Article §9-328(a)(1)]	Yes	
4. Does the facility operate as authorized by their current permit? [COMAR 26.08.04.01B(4)]	No Violations Observed	
5. Has the Permittee exceeded the permitted capacity of the WWTP? [40 CFR Part 122 Subpart C Section 122.42.(b)(1-3)]	No Violations Observed	
6. Is the number and location of discharge points as described in the discharge permit? [Environment Article §9-331]	No Violations Observed	
7. Has permittee submitted correct name and address of receiving waters? [40 CFR 122.21.j(3)]	No Violations Observed	
8. Is the permittee meeting the compliance schedule per permit requirements? [COMAR 26.08.04.02-1A(3)]	No Violations Observed	
9. Has the operator or superintendent been certified by the Board in the appropriate classification for the facility? [COMAR 26.06.01.05A(1)]	No Violations Observed	
10. Are adequate records being maintained for the sampling date, time, and exact location; analysis dates and times; individual performing analysis; and analytical results? [COMAR 26.08.04.03B(3)(a, b, c, e)]	No Violations Observed	
11. Are adequate records being maintained for the analytical methods/techniques used? [COMAR 26.08.04.03B(3)(d)]	No Violations Observed	
12. 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? [COMAR 26.08.04.03B(1)]	No Violations Observed	
13. Do lab records reflect that lab and monitoring equipment are being properly calibrated and maintained? [Environment Article §9-331]	No Violations Observed	
14. Does the permittee/laboratory use suitable QA/QC procedures and operate a formal quality assurance (QA) program using appropriate controls? [40 CFR Part 136.7]	Not Evaluated	

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15. Has the permittee submitted the monitoring results on the proper Discharge Monitoring Report form? [COMAR 26.08.04.03C(1)]	No Violations Observed	
16. Do the Discharge Monitoring Reports reflect permit conditions? [COMAR 26.08.04.03C]	No Violations Observed	
17. Has the permittee submitted these results within the allotted time electronically? [COMAR 26.08.04.03C(2), 40 CFR Part 127.16]	No Violations Observed	
18. Is the facility being properly operated and maintained including:(a) stand-by power or equivalent provisions available, (b) adequate alarm system for power or equipment failure available, (c) all treatments units are in service, . [40 CFR Part 122 Subpart C Section 122.41.e]	No Violations Observed	
19. Is sewage sludge managed correctly per permit requirements? [COMAR 26.04.06.09]	No Violations Observed	
20. If a by-pass occurred since last inspection, has the permittee submitted notice of the by-pass within the allotted time? [40 CFR Part 122 Subpart C Section 122.41.m(4)(i)(C)]	No Violations Observed	
21. If a non-complying discharge occurred since the last inspection, was the regulatory agency notified within the allotted time? [40 CFR Part 122 Subpart C Section 122.41.l(6)]	No Violations Observed	
22. If applicable, has the permittee complied with all special conditions of their permit? [COMAR 26.08.03.07D]	No Violations Observed	
23. Have overflows occurred since the last inspection? [COMAR 26.08.10.02A]	No Violations Observed	
24. Have records of overflows been maintained at the facility for at least five years? [COMAR 26.08.10.06A-B]	No Violations Observed	
25. Are flow measuring devices properly installed and operated, calibration frequency of flow meter adequate, flow measurement equipment adequate to handle expected ranges of flow? [40 CFR Part 122 Subpart C Section 122.41.e]	No Violations Observed	
26. Are discharge monitoring points adequate for representative sampling? [Environment Article §9-331(4)]	No Violations Observed	
27. Do parameters and sampling frequency meet the minimum requirements? [Environment Article §9-331(4)]	No Violations Observed	
28. Does the permittee use the method of sample collection required by the permit? [Environment Article §9-331(4)]	No Violations Observed	
29. Are analytical testing procedures used approved by EPA? [COMAR 26.08.01.02B(1)]	No Violations Observed	
30. If alternate analytical procedures are being used, has proper approval been obtained? [COMAR 26.08.01.02B(1)]	No Violations Observed	
31. Has the permittee notified the Department of the name and address of the commercial laboratory? [COMAR 26.08.04.03A(3)]	No Violations Observed	
32. Were discharges observed at the authorized outfalls? [Environment Article §9-314(b)(1)]	No Violations Observed	

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33. If discharges were observed, do the discharges or receiving waters have any visible pollutants observed? [Environment Article §9-314(b)(1)]	No Violations Observed	
34. Were discharge samples collected? [Environment Article §9-261(c)(1)]	No Violations Observed	
35. Does this facility have coverage under a a NPDES stormwater discharge permit? [40 CFR Part 122 Subpart B Section 122.26.(c)(1)(I)(A-B)]	No Violations Observed	
36. If the permittee has coverage under a NPDES storm water permit, has a storm water pollution prevention plan been developed and implemented as required? [40 CFR Part 122 Subpart B Section 122.26.(c)(1)(I)(A-B)]	No Violations Observed	
37. Are the permit conditions being met? [Environment Article §9-326(a)(1)]	No Violations Observed	

Inspector:  _____ 4/24/17
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Received by: _____
 Signature/Date

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