FACT SHEET

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

NPDES Permit No. DC0000019

The United States Environmental Protection Agency (EPA) Proposed the Reissuance of a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) For:

Department of the Army
Baltimore District, Corps of Engineers
Washington Aqueduct Division

APPLICANT INFORMATION	
Applicant Name	Department of the Army, Baltimore District, Corps of Engineers, Washington Aqueduct Division
Applicant Mailing Address	5900 MacArthur Boulevard, NW Washington, D.C. 20016-2514

PUBLIC COMMENT

Public Comment Start Date: 8/1/2019
Public Comment Expiration Date: 8/31/2019

Persons wishing to comment on, or request a public hearing for, the draft permit for this facility may do so in writing by the expiration date of the public comment period. All public comments and/or requests for a public hearing must state the nature of the issues to be raised as well as the requester's name, address, and telephone number. All public comments and requests for a public hearing must be in writing and submitted the following:

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Pursuant to 40 C.F.R. § 124.13, "[a]ll persons, including applicants, who believe any condition of a draft permit is inappropriate or that the [EPA]'s tentative decision to . . . prepare a draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing) under [40 C.F.R.] § 124.10. Any supporting materials which are submitted shall be included in full and may not be incorporated by reference, unless they are already part of the administrative record in the same proceeding, or consist of State or Federal statutes and regulations, EPA documents of general applicability, or other generally available reference materials. Commenters shall make supporting materials not already included in the administrative record available to EPA as directed by the Regional Administrator." 40 C.F.R. § 124.13.

After the public comment period ends, and all comments have been considered, EPA's regional Director for the Water Division will make a final decision regarding permit issuance. If no substantive comments have been received, the tentative conditions in the draft permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 C.F.R. § 124.19.

SUMMARY

FACILITY DESCRIPTION

The United States Army Corps of Engineers ("the Corps") owns and operates the Dalecarlia and McMillan Water Treatment Plants, which supply potable water to approximately one million residents in the District of Columbia Water and Sewer Authority (DC Water); Arlington County, Virginia; and the Fairfax County Water Authority (Fairfax Water). The plants provide water at cost to the Wholesale Customers, which are the District of Columbia; Arlington County, Virginia; and the City of Falls Church, Virginia. The Wholesale Customers approve the capital construction budget and are responsible for depositing sufficient funds with the Corps to cover their respective proportional share of the total cost of running and funding improvements at the plants. Together, the Dalecarlia and McMillan Water Treatment Plants are referred to as the Washington Aqueduct.

An act of Congress created the Washington Aqueduct Division water supply system in the mid-1800's with the construction of the Great Falls Dam and intake, which is located in Maryland on the Potomac River. There is a second intake at Little Falls, also located in Maryland, which the Corps uses intermittently. Water flows by gravity from the Great Falls intake to the Dalecarlia Reservoir. From the forebay, a low-lift booster pump station pumps water into the Dalecarlia Reservoir. The Little Falls pumping station can also deliver water directly to the Dalecarlia Reservoir.

The Dalecarlia Reservoir is a 46-acre earthen basin that serves as a pretreatment reservoir for the two water treatment plants. Approximately 51% of the untreated sediments, which are naturally occurring solids in the raw water taken from the Potomac River, are separated from the aqueous portion of the untreated water in the Dalecarlia Reservoir. The untreated sediments from the Dalecarlia Reservoir are periodically removed. (Depending on situation-specific market conditions, the sediments may be land applied, beneficially reused, or disposed of by other land-based means.)

Water from the Dalecarlia Reservoir is delivered by gravity to both the Dalecarlia Water Treatment Plant (Dalecarlia Sedimentation Basins) and the Georgetown Sedimentation Basins, which are locally known as the Georgetown Reservoir. Water from the Georgetown Sedimentation Basins is delivered to the McMillan Water Treatment Plant.

Water from the Dalecarlia Sedimentation Basins is treated at the Dalecarlia Water Treatment Plant. Regardless of which plant processes the water, treatment is a three-step process that includes sedimentation, filtration, and disinfection. The average total production of the Dalecarlia and McMillan Water Treatment Plants is 150 million gallons per day; however, during the summer, the peak may approach 265 million gallons per day.

Water delivered to the sedimentation basins at Dalecarlia and the Georgetown Sedimentation Basins contains solids that did not physically settle out at the Dalecarlia Reservoir. To make the water drinkable, these solids must be chemically treated. The Corps does this by adding aluminum sulfate (alum), which is considered a drinking water coagulant.

The Dalecarlia facility uses 36 rapid dual media filters and the McMillan facility uses 12 rapid dual media filters. Except for the filter backwash water at the McMillan Water Treatment Plant, which is recycled to the McMillan Reservoir, and the filter backwash water at the Dalecarlia Water Treatment Plant, which is recycled to the Dalecarlia Reservoir, all sedimentation residuals are collected in the Residual Processing Facility.

DISCHARGE DESCRIPTION

The Washington Aqueduct Water Treatment Plant consists of eight outfalls, seven of which are intermittent: 002, 003, 004, 006, 007, 008, and 009. Outfall 002Q is not intermittent, as specified in the Washington Aqueduct application.

Discharge Streams by Outfall and Expected Contaminants for Monitoring

Outfall	**002**	**002Q**	**003/004**	**006**	**007**	**008/009**
Waste Streams	Dalecarlia Flocculation – Sedimentation Basins	Leakage or Discharge from Spring at Hydro Building	Georgetown Basins	Georgetown Conduit	City Tunnel	Potable Water 2nd/3rd High Reservoir
Receiving Waters	Potomac River	Potomac River	Potomac River	Unnamed Tributary to the Potomac River	Rock Creek	Mill Creek
Designated Uses*	A[1],B[2],C[3],D[4], E[5]	A[1],B[2],C[3],D[4] ,E[5]	A[1],B[2],C[3],D[4], E[5]	A[1],B[2],C[3],D[4], E[5]	A[1],B[2],C[3],D[4], E[5]	A[1],B[2],C[3],D[4], E[5]
Coagulated Water	Yes	No	Yes	Yes	No	No
Settled Water	No	No	No	No	Yes	No
Finished Drinking Water	No	No	No	No	No	Yes
Groundwater	No	Yes	No	No	No	No
Basin Leakage	No	Yes	No	No	No	No
Expected Contaminants Based on Treatment Chemicals	TSS pH Total Al Sulfate	N/A	TSS pH Total Al Sulfate Fluoride Copper	TSS pH Total Al Sulfate Fluoride	TSS pH Fluoride	TSS Chlorine pH Fluoride Ammonia Phosphate
Approximate Controlled Max Daily Flow, MG	7	0.05	40/40	5	5	7/10
Yearly Flow, MG	N/A (intermittent, assume 1 event lasting 2 days every 5 years)	19.3	N/A (intermittent, assume 1 event lasting 2 days every 5 years)	N/A (intermittent, assume 1 event lasting 1 day every 3 years)	N/A (intermittent, assume 1 event lasting 2 days every 5 years)	N/A (intermittent, assume 1 event lasting 2 days every 5 years)

*Categories of Uses that Determine Water Quality Standards Classes of Water:
1. Class A - Primary contact recreation
2. Class B - Secondary contact recreation and aesthetic enjoyment
3. Class C - Protection and propagation of fish, shellfish, and wildlife
4. Class D - Protection of human health related
5. Class E - Navigation

BASIS FOR EFFLUENT LIMITATIONS

In general, the Clean Water Act (Act) requires compliance with all applicable statutory and regulatory requirements, including effluent limitations based on the capabilities of technologies available to control pollutants (i.e., technology-based effluent limits) and limitations that are protective of the water quality standards of the receiving water (i.e., water quality-based effluent limits). Typically, technology-based effluent limitations (TBELs) are developed for all applicable pollutants of concern and water quality-based effluent limitations (WQBELs) are developed where TBELs are not adequate to meet applicable water quality standards (WQS) in the receiving water.

The final effluent limitations will ensure that all applicable WQS are achieved.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBELS)

Federal regulations at 40 C.F.R. § 122.44(a) and § 125.3 require that permits include conditions requiring dischargers to meet applicable TBELS. When EPA has not promulgated effluent limitation guidelines (ELG) for an industry, permit limitations may be based on best professional judgment (BPJ). (40 C.F.R. § 125.3(c)).

The proposed effluent limits in this permit for TSS and Oil & Grease are TBELs for existing sources based on Best Conventional Pollutant Control Technology (BCT) available. These effluent limits are set at the same levels as in the previous permit to prevent backsliding (40 C.F.R. § 122.44(l)).

WATER QUALITY-BASED EFFLUENT LIMITATIONS (WQBELS)

40 C.F.R. § 122.44(d)(1)(i) requires limitations to be established in permits to control all pollutants or pollutant parameters that are or may be discharged at a level that *cause*, have the *reasonable potential (RP) to cause*, or *contribute* to an excursion above any state water quality standard (WQS), including state narrative water quality criteria. The WQBELs in this permit will be as stringent as necessary to ensure that the designated uses of the Potomac River, Rock Creek, and Mill Creek are protected, maintained, and/or attained. EPA assessed the reasonable potential (RP) for the discharges from this facility to cause, have the RP to cause, or contribute to an exceedance of the District's applicable WQSs. EPA used the *Technical Support Document for Water Quality-based Toxics Control* (TSD) approach to conduct that analysis.

Total Residual Chlorine & pH

The total residual chlorine and pH effluent limits in the permit are WQBELs designed to meet the District's WQS for those parameters.

The WQBEL for total residual chlorine is that no chlorine shall be discharged in detectable amounts – i.e., the discharge of total residual chlorine shall not be greater than the non-detect level of less than 0.1 mg/L. The WQBEL for pH is 6.0 to 8.5 as specified in Section 21-1104.8 of the District of Columbia Municipal Regulations, Water Quality Standards.

Parameters of Concern

EPA performed a RP analysis for the parameters of concern using the TSD approach. The data that EPA used for those RP analyses were obtained from permit application and the 2017 supplemental

information the permittee submitted as requested in the Section 308. For pollutants in which the RP analysis shows the potential to exceed in-stream water quality values, water quality-based effluent numbers must be calculated as required at 40 C.F.R. § 122.44(d).

The Washington Aqueduct Water Treatment Plant consists of eight outfalls, seven of them are intermittent: 002, 003, 004, 006, 007, 008, and 009.

The District of Columbia WQS defined that the Criterion Continuous Concentration (chronic aquatic life criterion) is an extended period of time of 96 hours (4-day). Since the duration of the discharges are less than 96 hours and intermittent, EPA made the determination to use the acute criterion. Since the duration of discharges from these outfalls is assumed to be less than 96 hours, see table in page 3, we consider that the acute water quality criteria will be protective of all the parameters of concerns. The permit includes special conditions that apply if the duration of the discharge is equal or greater than 96 hours. Should the duration of the discharge be equal or greater than 96 hours, EPA will reopen the permit to assess compliance with the chronic quality criteria. Below is the RP analysis.

Using the TSD approach, the following is a description of the steps used to conduct the RP analysis:

a. Determine the total number of effluent data values for the pollutant of interest (n) and identify the highest value of the dataset for that parameter.
b. Determine the coefficient of variation (CV) of the dataset. The CV is equal to the standard of deviation divided by the long-term average. The default CV for less that 10 data values is 0.6, as specified in Box 3-2 of the TSD.
c. Determine the appropriate confidence level for the RP analysis. For this permit, EPA used the 99th confidence level, recommended by the TSD.
d. Determine the RP multiplier, using Table 3-1 of the TSD. If n is greater than 20, use the multiplier assigned to 20 samples as identified on Table 3-1 of the TSD.

Outfall 002				
Parameters of concern	Number of samples (n)	Highest Effluent Concentration (mg/l)	CV	RP Multiplier[1]
Aluminum	2	0.120	0.60	7.4
Chloride	1	36.0	0.60	13.2
Copper	2	0.003	0.60	7.4
Manganese	2	0.059	0.60	7.4
Sulfate	1	47.683	0.60	13.2

1 - Table 3-1 of the TSD

Outfall 003 & 004				
Parameters of concern	Number of samples (n)	Highest Effluent Concentration (mg/l)	CV	RP Multiplier[1]
Aluminum	11	0.573	0.51	2.54
Chloride	11	62.0	0.33	1.84
Copper	11	0.005	0.61	2.835
Manganese	11	0.051	0.25	1.64
Sulfate	11	49.0	0.15	1.32
Zinc	11	0.006	0.40	2.10

1 - Table 3-1 of the TSD

Outfall 006				
Parameters of concern	Number of samples (n)	Highest Effluent Concentration (mg/l)	CV	RP Multiplier[1]
Aluminum	10	1.3136	0.30	1.82
Barium	2	0.0416	0.60	7.4
Chloride	11	0.0590	0.30	1.75
Copper	305	0.0042	0.32	1.0
Fluoride	1	0.0008	0.60	13.2
Iron	19	0.3349	0.66	2.52
Manganese	11	0.0668	0.19	1.47
Sulfate	11	49.60	0.16	1.34
Zinc	11	0.0037	0.30	1.75

1 - Table 3-1 of the TSD

Outfall 007				
Parameters of concern	Number of samples (n)	Highest Effluent Concentration (mg/l)	CV	RP Multiplier[1]
Aluminum	10	0.4155	0.31	1.8
Barium	2	0.0388	0.60	7.4
Chloride	11	52.50	0.28	1.7
Copper	2	0.0186	0.60	7.4
Fluoride	1	0.0008	0.60	13.2
Manganese	11	0.0447	0.33	1.5
Sulfate	11	48.70	0.14	1.3
Zinc	11	0.0037	0.39	2.0

1 - Table 3-1 of the TSD

Outfall 008 & 009				
Parameters of concern	Number of samples (n)	Highest Effluent Concentration (mg/l)	CV	RP Multiplier[1]
Aluminum	345	0.3198	0.64	1.0

1 - Table 3-1 of the TSD

e. Calculate the Adjusted Effluent Concentration (AEC): AEC = HEC x RPM, where

HEC – Highest Effluent Concentration
RPM – Reasonable Potential Multiplier

f. Determine if the AEC is greater than the Water Quality Criterion:

i. True: is a pollutant of concern, therefore RP analysis is necessary.
ii. False: not a pollutant of concern, therefore RP analysis is not necessary.

EPA used the water quality standards for Washington, DC to determine the acute numeric water quality criteria for all the parameters except aluminum. The Washington, DC water quality standards do not contain a numeric water quality criterion for aluminum. Therefore, the Corps

developed and calculated the WQBELs for aluminum based on its interpretation of the District's narrative water quality criteria using EPA's aluminum criterion calculator as allowed in 40 C.F.R. § 122.44(d)(1)(vi)(A). EPA reviewed the calculations submitted by the Corps and found that they were consistent with the EPA final Aquatic Life Ambient Water Quality Criteria for Aluminum 2017.

Outfall 002			
Parameter of concern	Adjusted Effluent Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Adjusted Effluent Concentration greater than the Water Quality Criterion?
Aluminum	0.891	1.900	False
Chloride	475.2	860.0	False
Copper	0.019	0.0134	True
Manganese	0.437	0.100	True
Sulfate	629.42	250.0	True

Outfall 003 & 004			
Parameter of concern	Adjusted Effluent Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Adjusted Effluent Concentration greater than the Water Quality Criterion?
Aluminum	1.455	1.100	True
Chloride	113.9	860.0	False
Copper	0.015	0.0134	True
Manganese	0.083	0.100	False
Sulfate	64.58	250.0	False
Zinc	0.013	0.1172	False

Outfall 006			
Parameter of concern	Adjusted Effluent Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Adjusted Effluent Concentration greater than the Water Quality Criterion?
Aluminum	2.391	1.200	True
Barium	0.307	1.000	False
Chloride	0.103	860.0	False
Copper	0.004	0.0134	False
Fluoride	0.010	4.0	False
Iron	0.844	1.0	False
Manganese	0.098	0.1	False
Sulfate	66.71	250.0	False
Zinc	0.0064	0.1172	False

Outfall 007			
Parameter of concern	Adjusted Effluent Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Adjusted Effluent Concentration greater than the Water Quality Criterion?
Aluminum	0.748	1.300	False
Barium	0.287	1.000	False
Chloride	88.99	860.0	False
Copper	0.1373	0.0134	True
Fluoride	0.0107	4.000	False
Manganese	0.0655	0.1000	False
Sulfate	63.55	250.0	False
Zinc	0.0076	0.1172	False

Outfall 008 & 009			
Parameter of concern	Adjusted Effluent Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Adjusted Effluent Concentration greater than the Water Quality Criterion?
Aluminum	0.3198	1.700	False

g. Calculate the Dilution Factor (DF):

The DF can be calculated using different mixing zone approaches, as specified in the TSD.

i. For Outfalls 002, 003, and 004, EPA calculated the mixing zone using the CORMIX Model as described in the October 4, 2001 Water Quality Studies in the Vicinity of Washington Aqueduct. The study, submitted by the permittee, is consistent with the District's WQS acute mixing zone regulation. Therefore, EPA assumed an acute mixing zone for Outfalls 002, 003, and 004.

Outfall No.	Dilution Factor [2]	Mixing Zone
002	169	Acute Mixing
003	2.3	Acute Mixing
004	2.3	Acute Mixing

2 – this dilution factor is the same as the previous permit based on the Water Quality Studies in the Vicinity of Washington Aqueduct made in October 4, 2001.

ii. For Outfalls 006, 007, 008, and 009, EPA assumed that there is rapid and complete mixing for because the instream waste concentration is greater than 50% so the stream is effluent dominated (see table below). EPA then used the equation: DF = 1/Instream Concentration, where

Instream Concentration = Effluent Flow/ (Stream Flow + Effluent Flow)

Outfall No.	Stream Flow (MGD)	Effluent Flow (MGD)	Instream Concentration % (MGD)	Is the instream concentration greater that the 50%?	Dilution Factor [3]	Mixing Zone
006	3.56	5	58	True	1.71	Rapid Mixing
007	3.56	5	58	True	1.71	Rapid Mixing
008	1.62E-03	7	100	True	1.0	Rapid Mixing
009	6.06E-07	10	100	True	1.0	Rapid Mixing

3 – this dilution factor was calculated using the StreamStats from NOAA website.

iii. Stream Stats provides information such as physical characteristics and streamflow statistics, and can be accessed using the following link: https://streamstats.usgs.gov/ss/

h. Calculate the Maximum Receiving Waste Concentration (MRWC): MRWC = ((AEC – IBC)/DF) + IBC, where

AEC – Adjusted Effluent Concentration
IBC – Instream Background Concentration
DF – Dilution Factor

Outfall 002				
Parameters of concern	Adjusted Effluent Concentration (mg/l)	Instream Background Concentration (mg/l)	Dilution Factor	Maximum Receiving Waste Concentration (mg/l)
Copper	0.02	0.002	169	0.002
Manganese	0.44	0.0438	169	0.046
Sulfate	629.42	31.1167	169	34.66

Outfall 003 & 004				
Parameters of concern	Adjusted Effluent Concentration (mg/l)	Instream Background Concentration (mg/l)	Dilution Factor	Maximum Receiving Waste Concentration (mg/l)
Aluminum	1.46	0.298	2.3	0.80
Copper	0.02	0.002	2.3	0.01

Outfall 006				
Parameters of concern	Adjusted Effluent Concentration (mg/l)	Instream Background Concentration (mg/l)	Dilution Factor	Maximum Receiving Waste Concentration (mg/l)
Aluminum	2.391	0.0	1.71	2.39

Outfall 007				
Parameters of concern	Adjusted Effluent Concentration (mg/l)	Instream Background Concentration (mg/l)	Dilution Factor	Maximum Receiving Waste Concentration (mg/l)
Copper	0.1373	0.0	1.71	0.08

i. Determine if the Maximum Receiving Waste Concentration is greater than the water quality criterion.

   i. True: EPA conclude that there is a reasonable potential and a WQBEL must be developed for this parameter.
   ii. False: There is no reasonable potential to cause or contribute to an instream excursion above the District of Columbia numeric or narrative water quality criteria based on the TSD RP procedures (40 C.F.R 122.44(d)(1)(ii)).

Outfall 002			
Parameters of concern	Maximum Receiving Waste Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Maximum Receiving Waste Concentration greater than the Criterion?
Copper	0.00	0.0134	False
Manganese	0.046	0.1	False
Sulfate	34.66	250	False

Outfall 003 & 004			
Parameters of concern	Maximum Receiving Waste Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Maximum Receiving Waste Concentration greater than the Criterion?
Aluminum	0.80	1.1	False
Copper	0.01	0.0134	False

Outfall 006			
Parameters of concern	Maximum Receiving Waste Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Maximum Receiving Waste Concentration greater than the Criterion?
Aluminum	2.39	1.2	True

Outfall 007			
Parameters of concern	Maximum Receiving Waste Concentration (mg/l)	Water Quality Criterion (mg/l)	Is the Maximum Receiving Waste Concentration greater than the Criterion?
Copper	0.08	0.0134	True

Developing a Water-Quality Based Effluent Limit:

For those pollutants where there was a reasonable potential to cause or contribute to an exceedance of applicable WQSs, the second step is the development of WQBEL for each pollutant. The procedure for this is described at Section 5.4 of the TSD.

a. Compute the Wasteload Allocation (WLA): WLA = ((WQC – IBC) * DF) + IBC, where

WQC – Water Quality Criterion
IBC – Instream Background Concentration
DF – Dilution Factor

Outfall 006				
Parameters of concern	Water Quality Criterion (mg/l)	Instream Background Concentration (mg/l)	Dilution Factor	Wasteload Allocation (mg/l)
Aluminum	1.2	0.0	1.0	1.2

Outfall 007				
Parameters of concern	Water Quality Criterion (mg/l)	Instream Background Concentration (mg/l)	Dilution Factor	Wasteload Allocation (mg/l)
Copper	0.134	0.0	1.71	0.023

b. Calculate the Long-Term Average (LTA), Maximum Daily (MDL) and the Average Monthly Limits (AML):

The long-term average calculation is based on the 99th confidence level as reflected with the z score of 2.326.

i. $LTA = WLA * e^{(0.5*\text{sigma square} - 2.326*\text{sigma})}$
Sigma square = $Ln (CV^2 + 1)$
Sigma = square root of Sigma Squared

ii. $MDL = LTA * e^{(2.326*\text{sigma} - 0.5*\text{sigma square})}$
Sigma square = $Ln (CV^2 + 1)$
Sigma = square root of Sigma Squared

iii. $AML = LTA * e^{(1.645*\text{sigma} - 0.5*\text{sigma square})}$
Sigma square = $Ln (CV^2 + 1)$
Sigma = square root of Sigma Squared

Outfall 006							
Parameters of concern	z	CV	Sigma Square	Sigma	Long-Term Average (mg/l)	Maximum Daily Limits (mg/l)	Average Monthly Limits (mg/l)
Aluminum	2.326	0.3	0.086	0.294	0.63	1.2	1.0

Outfall 007							
Parameters of concern	z	CV	Sigma Square	Sigma	Long-Term Average (mg/l)	Maximum Daily Limits (mg/l)	Average Monthly Limits (mg/l)
Copper	2.326	0.6	0.307	0.555	0.0043	0.0134	0.009

c. Compare the Water Quality Based Limits with the Technology Based Limits

EPA compared the WQBELs with the technology based effluent limits (TBELs) as indicated below. The most stringent effluent limit between the WQBEL and TBEL will be included in the permit. The limits are consistent with the anti-backsliding regulation specified in 40 C.F.R. § 122.44(l). For those parameters with no RP, EPA used the TBELs.

Outfall No.	Parameter	2019 TBELs[1]		Calculated 2019 WQBEL		Remarks
		AML (mg/l)	MDL (mg/l)	Interim Limit (mg/l)	MDL (mg/l)	
002	Aluminum	4.0	8.0	N/A	N/A	No RP, therefore the TBEL will be used.
003 & 004	Aluminum	4.0	8.0	N/A	N/A	No RP, therefore the TBEL will be used.
006	Aluminum	4.0	8.0	N/A	1.2	RP for aluminum, and the WQBEL is more stringent than the TBEL, so the permit uses the WQBEL.
007	Aluminum	4.0	8.0	N/A	N/A	No RP, so the permit uses the TBEL.
007	Total Recoverable Copper	N/A	N/A	0.023	0.013	RP for copper, and the WQBEL is more stringent than the TBEL, so the permit uses the WQBEL.
008	Aluminum	4.0	8.0	N/A	N/A	No RP, so the permit uses the TBEL.
009	Aluminum	4.0	8.0	N/A	N/A	No RP, so the permit uses the TBEL.

1 – EPA is carrying forward the 2008 TBELs for anti-backsliding purposes.

The 2008 Washington Aqueduct NPDES permit included a TBEL for iron. However, neither the 2003 permit nor the 2004 modifications to the 2003 permit contained TBELs for iron. EPA determined that technical mistakes were made in issuing the permit and therefore is not including an effluent limitation for iron in this permit; removal of the TBEL for iron does not constitute backsliding per 40 C.F.R. § 122.44(l)(2)(i)(B)(2).

The District of Columbia water quality criteria for copper are expressed as dissolved. EPA is assuming a 1:1 translator using a conservative approach to convert total dissolved metals criteria to total recoverable effluent limits, consistent with EPA Metal Translator Guidance. The permittee could submit a request for a site-specific metal translator.

The permittee requested a change in the average monthly limit for total aluminum from 4.0 mg/l to 6.0 mg/l and retention of the maximum daily limit at 8.0 mg/l for the Outfalls where the TBEL is used. Since these are a non-continuous discharge outfalls, the permit requires daily maximum limits for both concentration and mass, consistent with 40 C.F.R. § 122.45(e). EPA removed the average monthly limit for total aluminum from the 2019 permit.

TMDL

According to 40 C.F.R. § 122.44 (d)(1)(vii)(B), the effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, must be consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 C.F.R. § 130.7. As shown in the table below, the draft permit discharge to impaired stream segments for which TMDLs have been approved.

Outfalls	Receiving Stream	Approved TMDL	TMDL Parameters	Remarks
002, 003, 004	Potomac River (Chesapeake Bay Tributary)	Yes	E. Coli PCBs	The Washington Aqueduct is discharging to the Potomac River approved TMDL stream segments but E. Coli and PCBs are not a parameter of concern in this facility.
006, 007	Rock Creek(1) (Chesapeake Bay Tributary)	Yes	E. Coli Copper Lead Mercury Zinc	The Washington Aqueduct is discharging to the Rock Creek approved TMDL stream segments but E. Coli, Lead, Mercury and Zinc are not a parameter of concern in this facility.
008, 009	Mill Creek	No	N/A	The Mill Creek is not listed by DC as an impaired stream.
002,003,004, 006, 007, 008, 009	Chesapeake Bay (2)	Yes	Nitrogen Phosphorus TSS	The Washington Aqueduct is discharging to the Chesapeake Bay approved TMDL stream segments but nitrogen and phosphorus are not parameters of concern in this facility.

(1) The Rock Creek TMDL does not listed the Washington Aqueduct as a significant discharger. EPA performed a RP for all the metals identified in the TMDL and determined that copper is the only parameter that has RP for outfall 007. EPA established a WQBEL for this parameter that is as stringent as the percent reduction of the TMDL.

(2) The Chesapeake Bay TMDL ("Bay TMDL") categorizes the Washington Aqueduct as a non-significant discharger and is included in the aggregate wasteload allocations (WLAs) for TN, TP, and TSS. Due to a lack of data from nonsignificant dischargers for TN and TP, the aggregate WLAs were based on default assumptions regarding flow and concentrations (see section 8.3.3 Assumptions Supporting the Allocations of the Bay TMDL). The Bay TMDL also expects that renewed NPDES permits will require monitoring of TN, TP, and TSS to verify existing loads are

consistent with the assumptions of the aggregate WLAs. Therefore, a quarterly monitoring requirement for TN and TP is imposed in the permit to meet the assumptions of the WLA and to inform future TMDL revisions.

Section 4.5.2 of the Bay TMDL Sources of Nitrogen, Phosphorus, and Sediment to The Chesapeake Bay – Industrial Discharge Facilities states that discharges from industrial facilities represent a de minimis source of sediment. The aggregate WLA for sediment was established based on the TSS effluent limits for each facility included in the aggregate. At the time the Bay TMDL was approved, the Washington Aqueduct had an existing TSS effluent limit of 30 mg/L. Therefore, a monthly average limit of 30 mg/L of TSS must not be exceeded for the Washington Aqueduct discharges to be consistent with the TMDL. A 30 mg/L effluent limit for TSS is maintained in the permit to meet the aggregate WLA assumptions of the TMDL for sediment.

The draft permit contains a reopener clause that will allow EPA to modify this permit to require implementation of any approved TMDL WLA that is assigned to the Washington Aqueduct, if it is necessary.

SOLID MANAGEMENT FACILITY

The previous permit required TSS effluent limits, average monthly limits equal to 30 mg/l and daily maximum effluent equal to 60 mg/l. This permit carries forward those effluent limits, consistent with the anti-backsliding regulation specified in 40 C.F.R. § 122.44(l). The permittee shall ensure proper operation and maintenance of the Residual Processing Facility to comply with the effluent limits consistent with 40 C.F.R. § 122.41(e).

ENDANGERED SPECIES PROTECTION

EPA requested an official species list from the U.S. Fish and Wildlife Service (U.S. FWS) using their *Information for Planning and Consultation* tool found on their website at: https://ecos.fws.gov/ipac to determine if there are any federally listed threatened or endangered species or their designated critical habit(s) that will be affected by Washington Aqueduct discharge. The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) has indicated that the endangered Shortnose Sturgeon has been known to exist in the Potomac River drainage basin and may occur within the waters of the District of Columbia.

The Corps submitted a letter to EPA requesting the removal of Special Conditions for Sedimentation Discharges during the Sturgeon Spring Spawning Season, explaining that the permittee's past practice was to allow residuals/sediments to accumulate within the sedimentation basins over several months and then to release the accumulated concentrated sediments back to the Potomac River by flushing the sedimentation basins over a few days but, since the construction of the Residual Processing Facility, the permittee does not discharge sediments to the Potomac River. Consequently, the permittee believes that the prohibition of discharging sediment during the Sturgeon Spring Spawning Season is no longer necessary. However, as a precaution, EPA is retaining the prohibition on discharging sediment during the Sturgeon Spring Spawning Season in the permit.

During the Sturgeon Spring Spawning Season, the permittee shall not discharge residuals from the sedimentation basins through Outfalls 002, 003 or 004 and shall not allow any bypass from these outfalls. The permittee will not be allowed any discharge or bypass that would exceed the effluent limitation at any Outfalls. This condition complies with the backsliding regulation [40 C.F.R. § 122.44(l)].

NOTE: Per the requirements under Section 7 of the Endangered Species Act (50 C.F.R. 402; 16 U.S.C. § 1536(c)) and concurrent with public notice of this draft permit, EPA is submitting a Biological Evaluation to the U.S. FWS and NOAA Fisheries. Following consultation, the Services may stipulate requirements for the final permit.

ANTI-BACKSLIDING PROVISIONS

Section 402(o) of the CWA and 40 C.F.R. § 122.44(l) prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions, or standards that are less stringent than those established in the existing permit, unless certain exceptions are met.

All effluent limits in the permit are either identical to or more stringent than those in the existing permit; thus, this permit does not violate the anti-backsliding provisions of the CWA.

ANTIDEGRADATION STATEMENT

The draft permit contains WQBELs and TBELs that will ensure compliance with the DC water quality standards and the antidegradation policy.

DISTRICT OF COLUMBIA 401 CERTIFICATION

In accordance with CWA 401(a)(1), EPA requested a water quality certification from the District of Columbia, via DOEE, to ensure compliance with the District's WQS.

401 Certification mailed to DOEE: 8/1/2019
401 Certification received from DOEE: TBD