AUTHORIZATION TO DISCHARGE UNDER
THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, 33 U.S.C. §§ 1251 et seq. (the "CWA"),

Solutia, Inc.

is authorized to discharge from a facility located at

730 Worcester Street
Springfield, MA 01151

to receiving water named

Chicopee River
Bircham Bend Brook
Chicopee River Watershed

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This Permit shall become effective on [*the first day of the calendar month following 60 days after signature*].[1]

This Permit expires at midnight on [*five years from the last day of the month preceding the effective date*].

This Permit supersedes the Permit issued on February 1, 2009.

This Permit consists of this **cover page**, **Part I**, **Attachment A** (Whole Effluent Toxicity Testing Protocol), **Attachment B** (PFAS Analytes), **Attachment C** (Pollutant Scan Analytes), and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

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Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

[1] Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the Permit will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge once-through non-contact cooling water and stormwater through **Outfall Serial Number 009** to the **Chicopee River**. The discharge shall be limited and monitored **during dry weather** as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements**[1,2,3]	
	Average Monthly	**Maximum Daily**	**Measurement Frequency**[4]	**Sample Type**[5]
Flow[6]	0.15 MGD	0.2 MGD	Continuous	Meter
Total Suspended Solids (TSS)	---	100 mg/L	1/Month	Grab
pH[7]	6.5 - 8.3 S.U.		1/Month	Grab
Temperature[8]	---	83°F	1/Month	Grab
Total Residual Chlorine[9]	---	Report µg/L	1/Month	
Total Polychlorinated Biphenyls (PCBs)[10]	0.1272 µg/L	Report µg/L	1/Month	Grab
Chloroform	---	Report µg/L	1/Quarter	Grab
Dichlorobromomethane	---	Report µg/L	1/Quarter	Grab
Per- and polyfluoroalkyl substances (PFAS)[11]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[12,13]				
LC_{50}	---	Report %	1/Year	Grab
Hardness	---	Report mg/L	1/Year	Grab
Ammonia Nitrogen	---	Report mg/L	1/Year	Grab
Total Aluminum	---	Report mg/L	1/Year	Grab
Total Cadmium	---	Report mg/L	1/Year	Grab
Total Copper	---	Report mg/L	1/Year	Grab
Total Nickel	---	Report mg/L	1/Year	Grab
Total Lead	---	Report mg/L	1/Year	Grab
Total Zinc	---	Report mg/L	1/Year	Grab

Ambient Characteristic[14]				

Hardness	---	Report mg/L	1/Year	Grab
Ammonia Nitrogen	---	Report mg/L	1/Year	Grab
Total Aluminum	---	Report mg/L	1/Year	Grab
Total Cadmium	---	Report mg/L	1/Year	Grab
Total Copper	---	Report mg/L	1/Year	Grab
Total Nickel	---	Report mg/L	1/Year	Grab
Total Lead	---	Report mg/L	1/Year	Grab
Total Zinc	---	Report mg/L	1/Year	Grab
pH[15]	---	Report S.U.	1/Year	Grab
Temperature[15]	---	Report °C	1/Year	Grab
Upstream Temperature[15]	---	Report °C	1/Year	Grab
Downstream Temperature[16]	---	Report °C	1/Year	Grab

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee must separately monitor discharges of once through non-contact cooling water and stormwater through **catchbasin 561** and **catchbasin 573 during wet weather** as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Flow[6]	Report MGD	Report MGD	1/Month	Estimate
Total Suspended Solids (TSS)	---	100 mg/L	1/Month	Grab
pH[7]	6.5 - 8.3 S.U.		1/Month	Grab
Escherichia coli (E. Coli)[17]	126 cfu/100mL	410 cfu/100mL	1/Month	Grab
Enterococci	---	Report cfu/100mL	1/Month	Grab
Chloroform	---	Report µg/L	1/Quarter	Grab
Dichlorobromomethane	---	Report µg/L	1/Quarter	Grab
Per- and polyfluoroalkyl substances (PFAS)[11]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[12,13]				
LC_{50}	---	≥50 %	2/Year	Grab
Hardness	---	Report mg/L	2/Year	Grab
Total Residual Chlorine	---	Report mg/L	2/Year	Grab
Ammonia Nitrogen	---	Report mg/L	2/Year	Grab
Total Aluminum	---	Report mg/L	2/Year	Grab
Total Cadmium	---	Report mg/L	2/Year	Grab
Total Copper	---	Report mg/L	2/Year	Grab
Total Nickel	---	Report mg/L	2/Year	Grab
Total Lead	---	Report mg/L	2/Year	Grab
Total Zinc	---	Report mg/L	2/Year	Grab

Ambient Characteristic[14]				
Hardness	---	Report mg/L	2/Year	Grab
Ammonia Nitrogen	---	Report mg/L	2/Year	Grab

Total Aluminum	---	Report mg/L	2/Year	Grab
Total Cadmium	---	Report mg/L	2/Year	Grab
Total Copper	---	Report mg/L	2/Year	Grab
Total Nickel	---	Report mg/L	2/Year	Grab
Total Lead	---	Report mg/L	2/Year	Grab
Total Zinc	---	Report mg/L	2/Year	Grab
pH[15]	---	Report S.U.	2/Year	Grab
Temperature[15]	---	Report °C	2/Year	Grab
Upstream Temperature[16]	---	Report °C	2/Year	Grab
Downstream Temperature[16]	---	Report °C	2/Year	Grab

3. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge once through non-contact cooling water and stormwater through **Outfall 017** to the **Chicopee River**. The discharge shall be limited and monitored **during dry weather** as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements**[1,2,3]	
	Average Monthly	**Maximum Daily**	**Measurement Frequency**[4]	**Sample Type**[5]
Flow[6]	4 MGD	6 MGD	Continuous	Meter
Total Suspended Solids (TSS)	---	100 mg/L	1/Month	Grab
pH[7]	6.5 - 8.3 S.U.		1/Month	Grab
Temperature[8]	---	83°F	1/Month	Grab
Total Residual Chlorine[9]	162.7 µg/L	Report µg/L	1/Month	Grab
Total Zinc	---	Report µg/L	1/Quarter	Grab
Cyanide[18]	---	Report µg/L	1/Quarter	Grab
Chloroform	---	Report µg/L	1/Quarter	Grab
Dichlorobromomethane	---	Report µg/L	1/Quarter	Grab
Per- and polyfluoroalkyl substances (PFAS)[11]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[12,13]				
LC_{50}	---	Report %	1/Year	Grab
Hardness	---	Report mg/L	1/Year	Grab
Ammonia Nitrogen	---	Report mg/L	1/Year	Grab
Total Aluminum	---	Report mg/L	1/Year	Grab
Total Cadmium	---	Report mg/L	1/Year	Grab
Total Copper	---	Report mg/L	1/Year	Grab
Total Nickel	---	Report mg/L	1/Year	Grab
Total Lead	---	Report mg/L	1/Year	Grab
Total Zinc	---	Report mg/L	1/Year	Grab

Ambient Characteristic[14]				
Hardness	---	Report mg/L	1/Year	Grab
Ammonia Nitrogen	---	Report mg/L	1/Year	Grab

Total Aluminum	---	Report mg/L	1/Year	Grab
Total Cadmium	---	Report mg/L	1/Year	Grab
Total Copper	---	Report mg/L	1/Year	Grab
Total Nickel	---	Report mg/L	1/Year	Grab
Total Lead	---	Report mg/L	1/Year	Grab
Total Zinc	---	Report mg/L	1/Year	Grab
pH[15]	---	Report S.U.	1/Year	Grab
Temperature[15]	---	Report °C	1/Year	Grab
Upstream Temperature[16]	---	Report °C	1/Year	Grab
Downstream Temperature[16]	---	Report °C	1/Year	Grab

4. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge once through non-contact cooling water and stormwater through **Outfall 017** to the **Chicopee River**. The discharge shall be limited and monitored **during wet weather** as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Flow[6]	4 MGD	6 MGD	Continuous	Meter
Total Suspended Solids (TSS)	---	100 mg/L	1/Month	Grab
pH[7]	6.5 - 8.3 S.U.		1/Month	Grab
Temperature[8]	---	83°F	1/Month	Grab
Total Residual Chlorine[9]	162.7 µg/L	Report µg/L	1/Month	Grab
Escherichia coli (E. Coli)[13]	126 cfu/100mL	410 cfu/100mL	1/Month	Grab
Enterococci	---	Report cfu/100mL	1/Month	Grab
Total Zinc	---	Report µg/L	1/Quarter	Grab
Chlorobenzene	---	Report µg/L	1/Quarter	Grab
Chloroform	---	Report µg/L	1/Quarter	Grab
Dichlorobromomethane	---	Report µg/L	1/Quarter	Grab
Per- and polyfluoroalkyl substances (PFAS)[11]	---	Report ng/L	1/Quarter	Grab

5. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge stormwater through **Outfall 10S, 14S, 15S, 19S, 51S, and 61S** to the **Chicopee River**. The discharge shall be limited and monitored **during wet weather** as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Flow[6]	Report MGD	Report MGD	1/Month	Estimate
Total Suspended Solids (TSS)	---	100 mg/L	1/Month	Grab
pH[7]	6.5 - 8.3 S.U.		1/Month	Grab
Escherichia coli (E. Coli)[17]	126 cfu/100mL	410 cfu/100mL	1/Month	Grab
Enterococci	---	Report cfu/100mL	1/Month	Grab
Chloroform	---	Report µg/L	1/Quarter	Grab
Dichlorobromomethane	---	Report µg/L	1/Quarter	Grab
Per- and polyfluoroalkyl substances (PFAS)[11]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[12,13]				
LC_{50} (Outfall 10S, 14S, 61S)	---	≥50 %	2/Year	Grab
LC_{50} (15S, 19S, 51S)	---	Report %	1/Year	Grab
Hardness	---	Report mg/L	See footnote 13	Grab
Total Residual Chlorine	---	Report mg/L	See footnote 13	Grab
Ammonia Nitrogen	---	Report mg/L	See footnote 13	Grab
Total Aluminum	---	Report mg/L	See footnote 13	Grab
Total Cadmium	---	Report mg/L	See footnote 13	Grab
Total Copper	---	Report mg/L	See footnote 13	Grab
Total Nickel	---	Report mg/L	See footnote 13	Grab
Total Lead	---	Report mg/L	See footnote 13	Grab
Total Zinc	---	Report mg/L	See footnote 13	Grab

Ambient Characteristic[14]				
Hardness	---	Report mg/L	See footnote 13	Grab

Ammonia Nitrogen	---	Report mg/L	See footnote 13	Grab
Total Aluminum	---	Report mg/L	See footnote 13	Grab
Total Cadmium	---	Report mg/L	See footnote 13	Grab
Total Copper	---	Report mg/L	See footnote 13	Grab
Total Nickel	---	Report mg/L	See footnote 13	Grab
Total Lead	---	Report mg/L	See footnote 13	Grab
Total Zinc	---	Report mg/L	See footnote 13	Grab
pH[15]	---	Report S.U.	See footnote 13	Grab
Temperature[15]	---	Report °C	See footnote 13	Grab

6. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge stormwater through **Outfall 20S** to the **Bircham Bend Brook**. The discharge shall be limited and monitored **during wet weather** as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Flow[6]	Report MGD	Report MGD	1/Month	Estimate
Total Suspended Solids (TSS)	---	100 mg/L	1/Month	Grab
pH[7]	6.5 - 8.3 S.U.		1/Month	Grab
Total Residual Chlorine[9]	---	19 µg/L	1/Month	Grab
Escherichia coli (E. Coli)[17]	126 cfu/100mL	410 cfu/100mL	1/Month	Grab
Enterococci	---	Report cfu/100mL	1/Month	Grab
Total Aluminum	---	290 µg/L	1/Month	Grab
Total Copper	---	2.27 µg/L	1/Month	Grab
Total Lead	---	6.99 µg/L	1/Month	Grab
Total Zinc	---	23.3 µg/L	1/Month	Grab
Chloroform		Report µg/L	1/Quarter	Grab
Dichlorobromomethane	---	Report µg/L	1/Quarter	Grab
Per- and polyfluoroalkyl substances (PFAS)[11]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[12,13]				
LC_{50}	---	≥100 %	4/Year	Grab
NOEC	---	≥RWC	4/Year	Grab
Hardness	---	Report mg/L	4/Year	Grab
Total Residual Chlorine[9]	---	Report mg/L	4/Year	Grab
Ammonia Nitrogen	---	Report mg/L	4/Year	Grab
Total Aluminum	---	Report mg/L	4/Year	Grab
Total Cadmium	---	Report mg/L	4/Year	Grab
Total Copper	---	Report mg/L	4/Year	Grab
Total Nickel	---	Report mg/L	4/Year	Grab
Total Lead	---	Report mg/L	4/Year	Grab

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Total Zinc	---	Report mg/L	4/Year	Grab

Ambient Characteristic[14]				
Hardness	---	Report mg/L	4/Year	Grab
Ammonia Nitrogen	---	Report mg/L	4/Year	Grab
Total Aluminum	---	Report mg/L	4/Year	Grab
Total Cadmium	---	Report mg/L	4/Year	Grab
Total Copper	---	Report mg/L	4/Year	Grab
Total Nickel	---	Report mg/L	4/Year	Grab
Total Lead	---	Report mg/L	4/Year	Grab
Total Zinc	---	Report mg/L	4/Year	Grab
pH[15]	---	Report S.U.	4/Year	Grab
Temperature[15]	---	Report °C	4/Year	Grab

7. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge stormwater and groundwater through **Outfall 21S** to the **Bircham Bend Brook**. The discharge shall be limited and monitored **during dry weather** as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements**[1,2,3]	
	Average Monthly	**Maximum Daily**	**Measurement Frequency**[4]	**Sample Type**[5]
Flow[6]	Report MGD	Report MGD	1/Month	Estimate
Total Suspended Solids (TSS)	---	30 mg/L	1/Month	Grab
pH[7]	6.5 - 8.3 S.U.		1/Month	Grab
Total Residual Chlorine[9]	---	19 µg/L	1/Month	Grab
Total Aluminum	---	290 µg/L	1/Month	Grab
Total Cadmium	---	0.374 µg/L		
Total Copper	---	2.93 µg/L	1/Month	Grab
Total Zinc	---	29.3 µg/L	1/Month	Grab
Cyanide[18]	---	22 µg/L	1/Quarter	Grab
Total Polychlorinated Biphenyls (PCBs)[10]	0.000064 µg/L Compliance Level = 0.095 µg/L	0.014 µg/L	1/Month	Grab
Chloroform	---	Report µg/L	1/Quarter	Grab
Dichlorobromomethane	---	Report µg/L	1/Quarter	Grab
Vinyl Chloride	---	Report µg/L	1/Quarter	Grab
Per- and polyfluoroalkyl substances (PFAS)[11]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[12,13]				
LC_{50}	---	≥100 %	4/Year	Grab
NOEC	---	≥RWC	4/Year	Grab
Hardness	---	Report mg/L	4/Year	Grab
Total Residual Chlorine[9]	---	Report mg/L	4/Year	Grab
Ammonia Nitrogen	---	Report mg/L	4/Year	Grab
Total Aluminum	---	Report mg/L	4/Year	Grab
Total Cadmium	---	Report mg/L	4/Year	Grab
Total Copper	---	Report mg/L	4/Year	Grab

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Total Nickel	---	Report mg/L	4/Year	Grab
Total Lead	---	Report mg/L	4/Year	Grab
Total Zinc	---	Report mg/L	4/Year	Grab

Ambient Characteristic[14]				
Hardness	---	Report mg/L	4/Year	Grab
Ammonia Nitrogen	---	Report mg/L	4/Year	Grab
Total Aluminum	---	Report mg/L	4/Year	Grab
Total Cadmium	---	Report mg/L	4/Year	Grab
Total Copper	---	Report mg/L	4/Year	Grab
Total Nickel	---	Report mg/L	4/Year	Grab
Total Lead	---	Report mg/L	4/Year	Grab
Total Zinc	---	Report mg/L	4/Year	Grab
pH[15]	---	Report S.U.	4/Year	Grab
Temperature[15]	---	Report °C	4/Year	Grab

8. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge stormwater and groundwater through **Outfall 21S** to the **Bircham Bend Brook**. The discharge shall be limited and monitored **during wet weather** as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Flow[6]	Report MGD	Report MGD	1/Month	Estimate
Total Suspended Solids (TSS)	---	30 mg/L	1/Month	Grab
pH[7]	6.5 - 8.3 S.U.		1/Month	Grab
Total Residual Chlorine[9]	---	19 µg/L	1/Month	Grab
Escherichia coli (E. Coli)[17]	126 cfu/100mL	410 cfu/100mL	1/Month	Grab
Enterococci	---	Report cfu/100mL	1/Month	Grab
Total Aluminum	---	290 µg/L	1/Month	Grab
Total Cadmium	---	0.374 µg/L		
Total Copper	---	2.93 µg/L	1/Month	Grab
Total Zinc	---	29.3 µg/L	1/Month	Grab
Cyanide[18]	---	22 µg/L	1/Quarter	Grab
Chloroform	---	Report µg/L	1/Quarter	Grab
Dichlorobromomethane	---	Report µg/L	1/Quarter	Grab
Per- and polyfluoroalkyl substances (PFAS)[11]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[12,13]				
LC_{50}	---	≥100 %	4/Year	Grab
NOEC	---	≥RWC	4/Year	Grab
Hardness	---	Report mg/L	4/Year	Grab
Total Residual Chlorine[9]	---	Report mg/L	4/Year	Grab
Ammonia Nitrogen	---	Report mg/L	4/Year	Grab
Total Aluminum	---	Report mg/L	4/Year	Grab
Total Cadmium	---	Report mg/L	4/Year	Grab
Total Copper	---	Report mg/L	4/Year	Grab
Total Nickel	---	Report mg/L	4/Year	Grab

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Total Lead	---	Report mg/L	4/Year	Grab
Total Zinc	---	Report mg/L	4/Year	Grab

Ambient Characteristic[14]				
Hardness	---	Report mg/L	4/Year	Grab
Ammonia Nitrogen	---	Report mg/L	4/Year	Grab
Total Aluminum	---	Report mg/L	4/Year	Grab
Total Cadmium	---	Report mg/L	4/Year	Grab
Total Copper	---	Report mg/L	4/Year	Grab
Total Nickel	---	Report mg/L	4/Year	Grab
Total Lead	---	Report mg/L	4/Year	Grab
Total Zinc	---	Report mg/L	4/Year	Grab
pH[15]	---	Report S.U.	4/Year	Grab
Temperature[15]	---	Report °C	4/Year	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken as follows:

Outfall 009	At the discharge point to the Chicopee River following mixing of the effluent from catchbasin 561 and catchbasin 573.
Internal Outfall 561	At the catchbasin, prior to comingling with the effluent from catchbasin 573.
Internal Outfall 573	At the catchbasin, prior to comingling with the effluent from catchbasin 561.
Outfall 017	At the discharge point to the Chicopee River.
Outfall 10S	At the catchbasin 546, prior to the discharge point to the Chicopee River.
Outfall 14S	At the catchbasin 524, prior to the discharge point to the Chicopee River.
Outfall 15S	At the catchbasin 520, prior to the discharge point to the Chicopee River.
Outfall 19S	At the inlet pipe closest to the discharge point to the Chicopee River.
Outfall 51S	At the catchbasin 542, prior to the discharge point to the Chicopee River.
Outfall 61S	At the catchbasin 521, prior to the discharge point to the Chicopee River.

Outfall 20S	At the discharge point to the Bircham Bend Brook.
Outfall 21S	At the discharge point to the Bircham Bend Brook.

Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA). The Permittee must report the results to EPA and the Massachusetts Department of Environmental Protection (the “State”) of any additional testing above that required herein, if testing is done in accordance with 40 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), The Permittee must monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is “sufficiently sensitive” when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term “minimum level” refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 0.01 µg/L, if the ML for a parameter is 0.01 µg/L). For calculating and reporting the average monthly concentration when one or more values are not detected, assign a value of zero to all non-detects and report the average of all the results. The number of exceedances shall be enumerated for each parameter in the field provided on every Discharge Monitoring Report (DMR).

4. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/quarter is defined as the sampling of one discharge event during each calendar quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. Measurement frequency of 2/year is defined as the sampling of two discharge events during one calendar year. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

5. A “grab” sample is an individual sample collected in a period of less than 15 minutes. Each wet weather grab sample shall be taken during the first 15 minutes of one discharge event consistent with the sampling procedures developed pursuant to the requirements in Part I.C.2.; and

Wet weather samples shall be collected on a wet weather day. Wet weather is defined as any day on which more than 0.1 inches of total precipitation falls or on which snow melt occurs, and the interval from the preceding measurable storm is at least 24 hours. The 24-hour storm interval is waived when the preceding measurable storm did not yield a measurable discharge, or if the Permittee is able to document that less than a 24-hour interval is representative for local storm events during the sampling period. Dry weather is defined as any day on which less than 0.1 inches of total precipitation occurs and no snow melt occurs.

6. Effluent flow shall be reported in million gallons per day (MGD). Flow must be recorded using a flow meter that collects continuous measurements, unless otherwise noted.

7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

8. The rise due to a discharge shall not exceed the change in temperature (ΔT) $\geq 5^{o}$F. To calculate the ΔT, an upstream and downstream temperature measurement shall be taken of the receiving water at the time of collection of effluent temperature samples.

9. Total residual chlorine (TRC) analysis must achieve a minimum level of detection no greater than 30 µg/L. TRC analysis must be completed using a test method in 40 CFR Part 136 so long as that test method achieves ≤30 µg/L (e.g., Standard Method 4500-Cl E). The compliance level for TRC, when applicable, is specified as non-detect and the test method achieves a minimum level of detection ≤30 µg/L.

10. Total polychlorinated biphenyls (PCBs) is the sum of the sum of all congener or all isomer or homolog or Aroclor analyses. PCB analysis must achieve a minimum level of detection no greater than 0.095 µg/L. Total PCB analysis must be completed using a test method in 40 CFR Part 136 so long as that test method achieves ≤0.095 (e.g., 608.3 with additional sample volume, if necessary) or EPA Method 1628. The compliance level for total PCBs, when applicable is specified as non-detect and the test method achieves a minimum level of detection ≤0.095.

11. The Permittee shall conduct analysis for per- and polyfluoroalkylated substances (PFAS) once per quarter for the analytes list in Attachment B (40 parameters), reported in nanograms per liter (ng/L). PFAS monitoring shall be conducted using EPA Method 1633. The reporting requirement for the listed PFAS analytes takes effect the first full calendar quarter following 6 months after the effective date of the permit. After one year of monitoring, if all samples are non-detect for all forty PFAS compounds, using EPA Method 1633, the Permittee may request to remove the requirement for PFAS monitoring. See Special Condition in Part I.C.7.

12. Whole Effluent Toxicity Testing must be completed in accordance with test procedures and protocol specified in **Attachment A and B** of this permit. LC_{50} and C-NOEC are defined in Part II.E. of this permit. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal that includes the results for that toxicity test. The Permittee must conduct acute and chronic toxicity tests (LC_{50} and C-NOEC) as specified for each outfall, below.

Outfall Number	Test Type	Frequency	Month(s)	Species
Catchbasin 561 and Catchbasin 573	Acute	2/year	1/ April through June, and 1/ July through September	*Ceriodaphnia dubia*
009, 017, 15S, 19S, 51S	Acute	1/outfall, rolling basis (i.e., Outfall 009 in Year 1, Outfall 017 in Year 2, etc.)	April	*Ceriodaphnia dubia* *Pimephales promelas*
10S, 14S	Acute	2/year	1/ April through June, and 1/ July through September	*Ceriodaphnia dubia* *Pimephales promelas*
61S	Acute	2/year	1/ April through June, and 1/ July through September	*Ceriodaphnia dubia*
20S	Acute and chronic	4/year	1/calendar quarter	*Pimephales promelas*
21S	Acute and chronic	4/year	1/calendar quarter	*Pimephales promelas*

13. For Whole Effluent Toxicity Testing, the Permittee must conduct the analyses specified in **Attachment A and/or B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee must follow procedures outlined in **Attachment A and/or B**, Section IV., DILUTION WATER. Even where alternate dilution water has been used, the results of the receiving water control (0% effluent) analyses must be reported. Minimum levels and test methods are specified in **Attachment A and/or B**, Part VI. CHEMICAL ANALYSIS. If the results indicate an exceedance of any toxicity limit or if the Permittee identifies or is provided notice of a localized die-off of the fish population (i.e., “fish kill”) in the vicinity of the discharge, the Permittee shall follow the procedures described in Part I.C.5 below.

14. For Ambient Characteristic, the Permittee must conduct the analyses specified in **Attachment A and/or B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge’s zone of

influence at a reasonably accessible location, as specified in **Attachment A and/or B**. Minimum levels and test methods are specified in **Attachment A and/or B**, Part VI. CHEMICAL ANALYSIS.

15. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection for and the results reported on the appropriate DMR. These pH and temperature measurements are independent of any pH and temperature measurements required by the WET testing protocol.

16. An upstream and downstream temperature measurement shall be taken of the receiving water at the time of collection of effluent temperature samples. The downstream sampling location should be in the vicinity of the discharge, but not within the zone of influence of the discharge. These temperature measurements are independent of any pH and temperature measurements required elsewhere in the permit.

17. The monthly average limit for *Escherichia coli* (*E. coli*) is expressed as a geometric mean. No more than 10% of all samples collected within any 30-day interval shall exceed the statistical threshold value of 410 cfu/100mL.

18. The limitation for cyanide is shown as free cyanide per liter. However, total cyanide must be reported.

Part I.A. continued.

9. Authorized Non-Stormwater Discharges

   a. Discharges from emergency/unplanned fire-fighting activities.

   b. Fire hydrant flushings.

   c. Potable water, including uncontaminated water line flushings.

   d. Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids.

   e. Irrigation/landscape drainage, provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling.

   f. Foundation or footing drains where flows are not contaminated with oil or hazardous materials.

   g. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the Facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown; drains).

   h. Any discharge authorized by this NPDES permit mixed with a discharge authorized by a different NPDES permit.

10. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify EPA as soon as they know or have reason to believe (40 CFR § 122.42):

    a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

       (1) 100 micrograms per liter (µg/L);
       (2) 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (mg/L) for antimony;
       (3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
       (4) Any other notification level established by EPA in accordance with 40 CFR § 122.44(f) and State regulations.

    b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) 500 µg/L;
(2) One mg/L for antimony;
(3) 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
(4) Any other notification level established by EPA in accordance with 40 CFR § 122.44(f) and State regulations.

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes the discharges listed in Part I.A. and only from the outfall(s) listed in Part I.A. in accordance with the terms and conditions of this permit. Discharges from any other point sources are not authorized by this permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).

2. The following discharges are expressly prohibited:

a. Discharge of any solid hazardous waste in combination with stormwater discharges or other allowable non-stormwater discharges including, but not limited to: sludge and/or bottom deposits from any tank(s), basin(s), and/or collection structure(s), tank bottom water. Examples of tanks and/or basins include, but are not limited to: primary catch basins, oil/water separators, water treatment tanks, baffled storage tanks collecting spills;

b. Discharge of liquid hazardous waste alone or in combination with stormwater or other allowable non-stormwater discharge;

c. Discharges of non-stormwater discharges, including alone or in combination with stormwater or other authorized non-stormwater discharge, except as specifically authorized in Part I.A.1-10. Prohibited discharges include, but are not limited to: process wastewater, groundwater.[2]

C. SPECIAL CONDITIONS

1. Stormwater Pollution Prevention Plan

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2 For the purposes of this permit, "groundwater" shall mean: the waters below the ground surface that contain (i.e., soluble) or transports (i.e., insoluble) pollutants from releases of oil and hazardous materials to soil or groundwater at the Facility that infiltrates into the stormwater collection system and discharges to the receiving waters either during dry weather flows or that is flushed out during wet weather flows.

The Permittee must develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that documents the selection, design, installation/operation, and maintenance of control measures, including BMPs to meet the effluent limits required in this permit to minimize the discharge of pollutants from the Facility's authorized outfalls to the receiving water. The SWPPP shall be a written document consistent with the terms of this Permit. The SWPPP must document the implementation of all requirements in Part I.C.2 through 6 and be kept up to date throughout the permit term, such as making revisions when changes are made to the stormwater collection system or based on corrective actions.

a. The SWPPP shall be developed, implemented, signed consistent with the signatory requirements in Part II.D.2 of this Permit, and submitted to EPA within 90 days after the effective date of this Permit. EPA will provide any comments on the SWPPP within 90 days of receipt confirmation and comments must be reasonably considered by the Permittee for inclusion in the SWPPP. The SWPPP must be updated at least once per calendar year and a copy submitted to EPA by January 31.

b. The SWPPP shall be prepared by a qualified person in accordance with good engineering practices and manufacturer's specifications and must take future conditions into consideration. The SWPPP shall contain the elements listed in EPA's 2021 MSGP[3] as described below:

   (1) Stormwater pollution prevention team

The Permittee must identify the personnel that comprise the Facility's stormwater pollution prevention team as well as their individual responsibilities. The stormwater pollution prevention team is responsible for overseeing development of the SWPPP, any modifications to it, and for implementing/operating and maintaining control measures and taking corrective actions, when required in Part I.C.5. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of this permit, the most updated copy of the SWPPP, and other relevant documents or information that must be kept with the SWPPP.

i. Description of the control measures implemented in the drainage area of each outfall with treatment system schematics that describe each major treatment system component/process;
ii. Description of the exposed materials located in the drainage area of each outfall that are likely to contribute pollutants via stormwater discharges;
iii. An estimate of the runoff coefficient of the drainage areas (low = under 40%; medium = 40 to 65%; high = above 65%);

   (2) Facility description

3 The SWPPP requirements are consistent with those found in EPA's 2021 MSGP Part 2.1.2.

The Permittee must provide the following in the SWPPP, at a minimum:

i. A description of the nature of the activities at the Facility.
ii. A general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of the Facility and all receiving waters for the authorized discharges.
iii. A site map showing:

1) Boundaries of the property and the size of the property in acres;
2) Location and extent of significant structures and impervious surfaces;
3) Boundary of each drainage area at the Facility contributing to each outfall including directions of stormwater flow (use arrows);
4) Locations of all stormwater control measures;
5) Locations of all receiving waters, in the immediate vicinity of the Facility. Indicate listed impairments;
6) Locations of all stormwater conveyances including manholes, catch basins, and pipes;
7) Locations of potential pollutant sources, including, at a minimum, the soil or groundwater management areas at the Facility;
8) Locations where significant spills or leaks have occurred;
9) Locations of all authorized outfalls and showing the precise monitoring locations;
10) Locations of City of Pittsfield stormwater inflow and discharge pathway and outfalls;
11) The location of municipal separate storm sewer systems (MS4s) and where MS4 stormwater mixes with site wastewaters;
12) Areas of Endangered Species Act-designated critical habitat for endangered or threatened species, if any;
13) Locations of any of the following: fueling stations; vehicle and equipment maintenance and/or cleaning areas; loading/unloading areas; locations used for the treatment, storage, or disposal of wastes; liquid or solid hazardous waste storage; remedial activity areas; immediate access roads; transfer areas for substances in bulk; equipment; and locations and sources of run-on to the Facility from adjacent property that contains significant quantities of pollutants.

(3) Summary of potential pollutant sources;

The Permittee must describe in the SWPPP areas at the Facility where materials or activities are exposed to stormwater, or from which authorized non-stormwater discharges originate. Materials include but are not limited to: soil and groundwater management areas, soil, sediment or groundwater from remedial activities, including landfill leachate; remedial equipment; raw materials or products (e.g., treatment chemicals); treatment byproducts, and waste products. Activities include, but are not limited to: the storage, loading and unloading, transportation, disposal, or conveyance of any material, or waste product. For structures located in areas of activity, the structures themselves are potential sources of pollutants. For each area identified, the description must include:

i. A list of the activities exposed to stormwater.
ii. A list of the pollutant(s) or pollutant constituents (e.g., oil recovery, sulfuric acid, cleaning solvents) associated with each identified activity, which could be exposed to rainfall or snowmelt and could be discharged from the Facility. The pollutant list must include all significant materials that have been handled, treated, stored, released, or disposed at the Facility since this NPDES permit was last issued (September 30, 2008).
iii. Documenting where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding outfall(s) that would be affected by such spills and leaks. The Permittee must document all significant spills and leaks of oil or toxic or hazardous substances that actually occurred at exposed areas, or that drained to a stormwater conveyance, since this NPDES permit was last issued (September 30, 2008).
iv. Evaluation of unauthorized discharges. The Permittee must inspect and document all discharge points at the Facility as part of the SWPPP. Documentation of this evaluation must include:

1) The date of the evaluation;
2) A description of the evaluation criteria used;
3) A list of the discharge points that were directly observed during the evaluation;
4) If there any unauthorized discharges identified, The Permittee must immediately take action(s), such as implementing control measures, to eliminate those discharges, obtain permission to discharge to the sanitary sewer, or modify this permit.
5) An explanation of all actions taken to immediately eliminate the unauthorized discharge per Part I.C.5.
6) A summary of all discharge sampling data collected at the Facility since this NPDES permit was last issued (September 30, 2008). The summary shall include data tables/figures (and may include a narrative description) that adequately summarizes the collected sampling data to yield data representative of the discharges from the Facility.

(4) Description of all stormwater control measures;

The Permittee must document the location and type of control measures in use to comply with the effluent limitations and conditions of this permit. The Permittee must also document the following, as appropriate:

i. How the control measure meets the selection and design considerations in in Part I.C.2;
ii. How the control measures address the pollutant sources identified.

iii. The flow schematic of each control measure, or combination of control measures that depict each major treatment system component.
iv. Any additional information necessary to describe how the Permittee has met effluent limit requirements in this permit that do not involve the site-specific selection of a control measure or are specific activity requirement.

(5) Schedules and procedures pertaining to implementation of control measures

The Permittee must document the following with regards to control measure in the SWPPP:

i. Good Housekeeping: A schedule or the convention used for determining when pickup and disposal of waste materials occurs. Also provide a schedule for routine inspections for leaks and conditions of drums, tanks and containers.
ii. Maintenance: Preventative maintenance procedures, including regular inspections, testing, maintenance and repair of all control measures used to meet the effluent limits in this permit, and any back-up practices in place should a discharge occur while a control measure is off-line. The SWPPP shall include the schedule or frequency for maintaining all control measures used to comply with the effluent limits in this permit.
iii. Spill Prevention and Response Procedures: Procedures for preventing and responding to spills and leaks, including notification procedures. For preventing spills, include in the SWPPP the control measures for material handling and storage, and the procedures for preventing spills that can contaminate stormwater. Also specify cleanup equipment, procedures and spill logs, as appropriate, in the event of spills.
iv. Erosion and Sediment Controls: If polymers and/or other chemicals are used as erosion and sediment controls, the polymers and/or chemicals used, and the purpose must be documented and disclosed in accordance with Part I.C.6;
v. Employee Training: The elements of employee training plan shall include but are not limited to: the content of the training; the frequency/schedule of training for employees who work in areas where materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit; a log of the dates on which specific employees received training.

(6) Schedules and procedures pertaining to implementation of inspections and assessments

The Permittee must document the procedures for performing, as appropriate, the types of inspections specified by this permit, including routine facility inspections quarterly visual assessments. For each type of inspection performed, the SWPPP must identify: person(s) or positions of person(s) responsible for the inspection; schedules for conducting inspections; specific items to be covered by the inspection, including schedules for specific outfalls.

(7) Schedules and procedures pertaining to implementation of monitoring

The Permittee must document the procedures for collecting the samples required for discharge and receiving water monitoring specified by this permit and must include documentation of each of the following for each type of monitoring:

i. Locations where samples are collected, including geographic coordinates.
ii. Parameters for sampling and the frequency of sampling for each parameter.
iii. Schedules for monitoring at the Facility.
iv. The procedures for collecting field samples.
v. The procedure for reporting exceedances of numeric limits applicable to discharges from each authorized outfall when results are obtained at the time of collection (i.e., pH).

(8) Documentation Requirements

The Permittee is required to keep the following inspection, monitoring, and certification records with the SWPPP that together demonstrate compliance with the conditions of this permit:

i. A copy of this permit as issued final, including any subsequent permit modifications, if any in either a hard copy or an electronic copy easily available to SWPPP personnel.
ii. Documentation of any maintenance and repairs of control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of repair/replacement, and for repairs, date(s) that the control measure(s) returned to full function, and the justification for any extended maintenance/repair schedules.
iii. All inspection reports, including the routine facility inspection and visual assessment documentation (see Part I.C.4).
iv. Description of any deviations from the schedule for visual assessments and/or monitoring, and the reason for the deviations (e.g., adverse weather or it was impracticable to collect samples within the first flush of a measurable storm event).
v. Documentation of any effluent limit exceedances, the corrective action taken, and the corrective action documentation required per Part I.C.5, including any rationale where SWPPP changes were not made, or any documentation required to meet any corrective action extension.

c. The Permittee must amend and update the SWPPP within 14 days of any changes at the Facility affecting the SWPPP or if the revision is due to corrective action, in accordance with the applicable corrective action schedule in Part I.C.5. Changes that may affect the SWPPP include, but are not limited to:

(1) A change in design, operation, or maintenance of the Facility or control measure which has a significant effect on the potential for the discharge of pollutants to the waters of the United States;
(2) A release of a reportable quantity of pollutants as described in 40 CFR § 302;
(3) A determination by the Permittee or EPA that the SWPPP appears to be ineffective in achieving the general objective of controlling pollutants in stormwater discharges; or
(4) Any revisions or improvements made to the Facility's stormwater management program based on new information and experiences with wet weather events, including major storm events and flooding conditions. Any amended or updated versions of the SWPPP shall be re-certified by the Permittee. Such re-certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit.

d. The Permittee must certify at least annually that the previous year's inspections, corrective actions, and training activities were conducted, results were recorded, and records were maintained, as described in the SWPPP. Certifications must be submitted by March 1 of the following calendar year. If the Facility is not in compliance with any limitations and/or control measure, including BMPs described in the SWPPP, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit. The Permittee must submit a copy of the current SWPPP and all SWPPP certifications (i.e., the initial certification, recertifications, and annual certifications) signed during the effective period of this Permit to EPA. All documentation of SWPPP activities shall be kept at the Facility for at least five years.

2. Best Management Practices (BMPs)

The Permittee must select, design, install, implement/operate, and maintain stormwater control measures, including best management practices (BMPs) to minimize[4] pollutant discharges to the receiving waters from stormwater and stormwater comingled with any other authorized wastewater that meet the numeric limits contained in Part I.A.1-8 address the selection and design considerations in Part I.C.2.a, meet the non-numeric technology-based effluent limits in Part I.C.2.b, meet the requirements for control measures, including BMPs in Part I.C.2.c and d, and meet the water quality-based effluent limitations in Part I.C.3. The selection, design, installation, and implementation/operation and maintenance of control measures to comply with this permit must be in accordance with good engineering practices and manufacturer's specifications. Note that control measures may deviate from such manufacturer's specifications with justification for such deviation and documentation of the

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4 "Minimize" (unless otherwise stated) means to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practices.

rationale is included in the Facility's SWPPP. The Permittee must perform routine inspections of control measures per Part I.C.4 and modify control measures per Part I.C.5 if control measures are not achieving their intended effect of minimizing pollutant discharges (i.e., discharges will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards or meet any of the other numeric or non-numeric effluent limits in this permit).

a. The Permittee must consider the following when selecting and designing control measures:[5]

(1) Preventing stormwater from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from stormwater;
(2) Using stormwater control measures in combination may be more effective than using control measures in isolation for minimizing pollutants in stormwater discharges;
(3) Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective stormwater control measures that will achieve the limits in this permit;
(4) Minimizing impervious areas at the Facility and infiltrating stormwater onsite can reduce the frequency and volume of discharges, so long as any re-infiltration avoids ground water contamination/recontamination; and
(5) Attenuating flow using can reduce wet weather flows that exceed the design flow capacity of treatment systems.

b. The Permittee must comply with the following non-numeric effluent limits:[6]

(1) Minimize Exposure.

The Permittee must minimize the exposure of material areas including loading and unloading, storage, disposal, cleaning, maintenance, and soil and groundwater management areas to rain, snow, snowmelt, and stormwater in order to minimize pollutant discharges by either locating these materials and activities inside or protecting them with storm resistant coverings. Unless infeasible, the Permittee must also:

i. Use grading, berming or curbing to prevent discharges of contaminated runoff and divert run-on away from these areas;
ii. Locate materials, equipment, and activities so that potential leaks and spills are contained or able to be contained or diverted before discharge;
iii. Store leaky vehicles and equipment indoors;

5 These selection and design considerations are consistent with those found in EPA's 2021 MSGP Part 2.1.1.
6 These non-numeric technology-based effluent limits are consistent with those found in EPA's 2021 MSGP Part 2.1.2.

iv. Perform all vehicle and/or equipment cleaning operations indoors, under cover, or in bermed areas that prevent discharges and run-on and also that capture any overspray; and
v. Drain fluids from equipment and vehicles that will be decommissioned, and, for any equipment and vehicles that will remain unused for extended periods of time, inspect at least quarterly for leaks.

(2) Good Housekeeping

The Permittee must keep clean all exposed areas that are potential sources of pollutants. The Permittee must perform good housekeeping measures in order to minimize pollutant discharges, including but not limited to, the following:

i. Sweep or vacuum at regular intervals or, alternatively, wash down material areas and/or equipment and collect and/or treat, and properly dispose of the washdown water;
ii. Store materials in appropriate containers;
iii. Keep all dumpster lids closed when not in use. For dumpsters and roll off boxes that do not have lids and could leak, ensure that discharges have a control (e.g., secondary containment, treatment).
iv. Minimize the potential for waste, garbage and floatable debris to be discharged by keeping exposed areas free of such materials, or by intercepting them before they are discharged.

(3) Maintenance

The Permittee must maintain all control measures that are used to achieve the effluent limits in this permit in effective operating condition, as well as all industrial equipment and systems, in order to minimize pollutant discharges. This includes:

i. Performing inspections and preventive maintenance of stormwater drainage, source controls, treatment systems, and treatment materials and systems that could fail and result in discharges of pollutants via stormwater.
ii. Maintaining non-structural control measures.
iv. Cleaning catch basins in line with manufacturer specifications, or as directed in Part I.C.2.d, whichever is lower, and keeping the debris surface at least six inches below the lowest outlet pipe.
v. If the Permittee finds that a control measure needs routine maintenance, the Permittee must conduct the necessary maintenance immediately[7] in order to minimize pollutant discharges.

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7 For the purposes of corrective action, "immediately" means the day the Permittee identifies that a control measure needs to be maintained, repaired, or replaced, the Permittee must take all reasonable steps to minimize

vi. If the Permittee finds that a control measure needs to be repaired or replaced, the Permittee must immediately take all reasonable steps[8] to prevent or minimize the discharge of pollutants until the final repair or replacement is implemented, including cleaning up any contaminated surfaces so that the material will not be discharged during subsequent storm events. Final repairs/replacement of stormwater controls should be completed as soon as feasible but must be no later than the timeframe established in Part I.C.5 for corrective actions. If a control measure was never installed, was installed incorrectly or not otherwise in accordance with this permit, or is not being properly operated or maintained, the Permittee must conduct corrective action as specified in I.C.5.

(4) Spill Prevention and Response

The Permittee must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur in order to minimize pollutant discharges. The Permittee must conduct spill prevention and response measures, including but not limited to, the following:

i. Clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants.
ii. Use drip pans and absorbents if leaky vehicles and/or equipment are stored outdoors.
iii. Use spill/overflow protection equipment.
iv. Plainly label containers (e.g., "Used Oil," "Treatment Chemical," "Solid Hazardous Waste," "Liquid Hazardous Waste") that could be susceptible to spillage or leakage to ensure proper handling and facilitate rapid response if spills or leaks occur.
v. Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas.
vi. Develop training on the procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible.
vii. Keep spill kits onsite, located near areas where spills may occur or where a rapid response can be made.

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or prevent the discharge of pollutants until the Permittee can implement a permanent solution. However, if the Permittee identifies a problem too late in the workday to initiate action, the Permittee must perform the action the following workday morning.

8 For the purposes of corrective action, "all reasonable steps" means the Permittee must respond to the conditions triggering the action, such as, cleaning up any exposed materials that may be discharged in a storm event (e.g., through sweeping, vacuuming) or making arrangements (i.e., scheduling) for a new control measure to be installed.

viii. Notify appropriate Facility personnel when a leak, spill, or other release occurs.[9]

(5) Erosion and Sediment Controls

To minimize pollutant discharges in stormwater, the Permittee must minimize erosion by stabilizing exposed soils at Facility wherever feasible (i.e., not in conflict with remedial activities at the Facility), including placing flow velocity dissipation devices at outfall locations, if necessary to minimize streambank erosion and scour in the immediate vicinity of outfalls. The Permittee must also use structural and non-structural control measures to minimize the discharge of sediment, including backflow prevention devices to minimize re-entrainment of sediment in the discharge and/or mobilization of sediment from the receiving water.

(6) Management of Stormwater

The Permittee must divert, infiltrate, reuse, contain, or otherwise reduce stormwater to minimize pollutants in the discharges. In any instance of infiltration, the discharge shall not interfere with the remedial activities that are being conducted or have been completed at the Facility.

(7) Salt Storage Piles or Piles Containing Salt

The Permittee must enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, in order to minimize pollutant discharges. The Permittee must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered pursuant to this permit if stormwater from the piles is not discharged.

(8) Employee Training

The Permittee must train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to comply with this permit (e.g., inspectors, maintenance personnel), including all members of the stormwater pollution prevention team. The Permittee must ensure personnel understand the requirements of this permit and their specific responsibilities with respect to

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9 Where a leak, spill or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, the Permittee must notify the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as the Permittee has knowledge of the discharge. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available.

those requirements.[10] Personnel must be trained in at least the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections):

i. An overview of what is in the SWPPP.
ii. Spill response procedures, good housekeeping, maintenance requirements, and material management practices.
iii. The location of all the control measures required by this permit, and how they are to be operated and maintained.
iv. The proper procedures to follow with respect to the permit's pollution prevention requirements.
v. When and how to conduct inspections, record applicable findings, and take corrective actions.
vi. The Facility's emergency procedures, and when these procedures are applicable.

(9) Non-Stormwater Discharges

The Permittee must evaluate for the presence of non-stormwater discharges. The Permittee must eliminate any non-stormwater discharges not explicitly authorized in this permit. If not covered under this permit, wastewater, wash water and any other unauthorized non-stormwater must be discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or otherwise disposed of appropriately. See also Part I.C.2.d.

(10) Dust Generation and Tracking of Waste Materials

The Permittee must minimize generation of dust and off-site tracking of waste materials in order to minimize pollutants discharged via stormwater.

c. The Permittee must meet the general and specific requirements in Sector C - Chemical and Allied Products Manufacturing, and Sector Y - Rubber, Miscellaneous Plastic Products and Miscellaneous Manufacturing Industries of EPA's 2021 MSGP, These requirements are located at Part 8 Subpart C and Y, respectively. The sector-specific requirements are as follows:

(1) In accordance with Sector C the Permittee is subject to a prohibition of non-stormwater discharges, except where explicitly authorized. See Part I.B.2. The Permittee is required to evaluate for the presence of non-stormwater discharges, and eliminate any non-stormwater discharges not explicitly authorized in the permit

10 "Personnel" means: 1) Those responsible for the design, installation, maintenance, and/or repair of controls (including pollution prevention measures); 2) Those responsible for the storage and handling of chemicals and materials that could become pollutants discharged via stormwater; 3) Those who are responsible for conducting and documenting inspections and monitoring; and 4) Those who are responsible for taking and documenting corrective actions.

or covered by another NPDES permit. See Part I.C.1.d. for the specific requirements of this non-stormwater discharge detection and elimination.

(2) In accordance with Sector Y, the Permittee to minimize the discharge of plastic resin pellets in stormwater discharges through implementation of control measures, such as the following, where determined to be feasible (list not exclusive): minimizing spills; cleaning up of spills promptly and thoroughly; sweeping thoroughly; pellet capturing; employee education; and disposal precautions.

d. The Permittee must select, design, install, implement/operate, and maintain the following control measure, including BMPs, consistent with those described in EPA's Dewatering and Remediation General Permit.[11]

(1) Pollutant Minimization

The Permittee must document the control measures that meet the following requirements:

i. Control measures must ensure dilution is not used as a form of treatment, or as a means to achieve the limitations and requirements in this permit; and
ii. The Permittee must select, design, install and properly operate and maintain the pollution control technologies necessary to meet the limitations and requirements in this permit.

(2) Quality Assurance/Quality Control (QA/QC)

The Permittee must document QA/QC practices including, at a minimum:

i. A record of each sample collection, indicating the location of each sampling location with a geographic identifier (i.e., latitude and longitude coordinates), and the collection date, time and personnel (or automated sampler) that conducted the sampling.
ii. Specifications for the number of samples, type of samples, type and number of containers, type of preservation, type and number of quality assurance samples, if applicable, type and number of field samples, if applicable, and sample storage, holding times, and shipping methods, including chain-of-custody procedures.
iii. Specifications for test methods, including any test methods authorized specifically for use in this permit, and the sufficiently sensitive minimum levels for each required parameter.
iv. A schedule for review of sample results and reporting of any exceedance of the effluent limits in this permit.
v. A description of data validation and data reporting processes.

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[11] The current DRGP was effective August 2, 2022 and is available at: https://www.epa.gov/npdes-permits/dewatering-and-remediation-general-permit-drgp.

(3) Major Storm and Flood Events[12]

The Permittee must implement adaptive measures[13] and/or, if appropriate, combinations of adaptative measures that minimize[14] discharges that result from impacts[15] of major storm and flood events.[16] The Permittee must document in the SWPPP its assessment of the major storm and flood events experienced at the Facility under current conditions[17] and if the Facility may be exposed in the future to major storm and flood events based on the best available data,[18] and all control measures considered to address discharges resulting from these events.[19] For all control measures considered, the Permittee must document in the SWPPP the rationale for either implementing or not implementing the measure. The assessment must be presented in sufficient detail to allow EPA, the public, or an independent qualified person to evaluate the reasonableness of the decision. For control measures already in place, including requirements from state, local or federal agencies, a description of the controls and how they meet the

12 The Major Storm and Flood Events BMP is found in Part 2.2.2.7 of EPA's 2022 DRGP and the Stormwater Control Measure Selection and Design Considerations pertaining to major storm events is found in Part 2.1.1.8 of EPA's 2021 MSGP.

13 "Adaptive Measures" refers to structural improvements, enhanced/resilient pollution prevention measures, and/or other control measures, actions, or strategies that mitigate the effects of impacts. They may include but are not limited to: building or modifying infrastructure, utilization of models (including but not limited to: flood, increased precipitation, system performance), monitoring and inspecting (including but not limited to: flood control, infrastructure, treatment) and repair/retrofit.

14 "Minimize" means to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

15 "Impacts" refers to an effect on a component of the stormwater collection system and/or related operation that may include destruction, damage, or ineffective operation such as bypass, upset or failure, overflow, increased inflow and infiltration or discharges of pollutants, and effluent limit exceedance. Impacts may be economic, environmental, or public health related.

16 "Major storm and flood events" refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events. "Extreme/heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season.

17 "Current conditions" refers to observations relative to the 100-year flood (the 1% -annual-chance flood) based on historical records.

18 "Best available data" refers to using the elevation and flood hazard area that results from the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on federal, state, and local data, where available.

19 The assessment must evaluate conditions considering, at a minimum, changes in precipitation, and the frequency of major storm events, and inland flooding, and incorporate the results of the evaluation in a manner that demonstrates that the control measures taken are precautionary and sufficiently protective. Evaluation must be completed by a qualified person at least annually considering: 1) historical observations from all years the Permittee has operated the facility prior to this permit's term; 2) all observations of events that occurred in the prior year; and 3) an appropriate forward-looking time period from the review year to assess impacts, considering site-specific factors such as the expected design life of the stormwater collection system components, and inspection and maintenance schedules, or other factors, as appropriate.

requirement(s) of this permit must be documented in the SWPPP. The Permittee must consider, at a minimum, the following control measures to minimize discharges:[20]

i. Construct flood barriers to protect infrastructure or reinforce infrastructure to withstand flooding and additional exertion of force.
ii. Prevent floating of structures by elevating above flood level[21] or securing with non-corrosive device.
iii. Store materials and waste above flood level.
iv. Reduce or eliminate outdoor storage.
v. Relocate any mobile or unsecured equipment to higher ground.
vi. Develop emergency procedures for major storm or flood event that apply when a storm is anticipated within 48 hours until after the storm or any residual impact recedes.
vii. Identify and maintain up-to-date emergency contacts for staff and contractors; and
viii. Conduct staff training for implementing emergency procedures for major storm and flood events at regular intervals and in conjunction with Part I.C.4.

e. The Permittee must conduct non-stormwater discharge detection and elimination. Specifically, the Permittee is required to:

(1) Monitor for the discharge of non-stormwater discharges, including infiltration of groundwater to the stormwater collection system through routine observation to ensure that the Facility does not contribute additional pollutants to stormwater system from areas where process wastewaters are generated, oil and hazardous materials are stored or disposed, and soil and/or groundwater remediation activities occur or are exposed to stormwater.
(2) In the event prohibited non-stormwater discharges are identified (e.g., groundwater infiltration into the stormwater collection system is observed during a routine inspection), because these discharges are now considered prohibited under this permit except for specific outfalls, the Permittee must follow the corrective action requirements described above to eliminate such discharges.
(3) The Permittee must document the components of this BMP in the SWPPP.

3. Inspections

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20 EPA Region 1 currently maintains a resource of additional data sources for evaluation and incorporation pursuant to this BMP at https://www.epa.gov/npdes-permits/dewatering-and-remediation-general-permit-drgp.
21 "Flood level" is the computed elevation to which floodwater is anticipated to rise during the reference flood. The reference flood shall be either the flood elevation that results from adding an additional 2 feet to the 100-year flood elevation for non-critical actions and by adding an additional 3 feet to the 100-year flood (the 1% -annual-chance flood) elevation for critical actions or the flood elevation that result from 500-year flood (the 0.2% -annual-chance flood) and selecting the higher of the two flood elevations.

The Permittee must plan and conduct routine inspections that meet the following requirements:[22]

a. Inspection Personnel. Qualified personnel[23] must perform the inspections.

b. Inspection Areas. Qualified personnel must conduct inspections of areas of the Facility covered by the requirements in this permit, including, but not limited to, the following:

(1) Areas where materials or activities are exposed to stormwater;
(2) Areas identified in the SWPPP that are potential pollutant sources;
(3) Areas where spills and leaks have occurred in the past three years;
(4) Outfalls;
(5) Receiving water in the vicinity of the outfalls; and
(5) Control measures used to comply with the effluent limits contained in this permit.

c. Inspection Activities. During the inspection, the qualified personnel must examine the following:

(1) Materials, residue or wastes that may have or could come into contact with stormwater;
(2) Leaks or spills from equipment, drums, tanks and other containers;
(3) Offsite tracking of waste materials, or sediment where vehicles enter or exit the site;
(4) Tracking or blowing of raw, or waste materials from areas of no exposure to exposed areas;
(5) Erosion of soils at the Facility that could be transported by stormwater runoff into the stormwater collection system;
(6) Non-authorized non-stormwater discharges;
(7) Control measures needing replacement, maintenance or repair;
(8) During an inspection occurring during a stormwater discharge event, the Permittee must observe the control measures implemented to comply with effluent limits to ensure they are functioning correctly;
(9) During an inspection occurring during a stormwater discharge event, the Permittee must observe discharges from the authorized stormwater outfalls; and
(10) During an inspection of the receiving water, which must occur during a stormwater discharge event, the Permittee must observe the receiving water in the vicinity of each outfall during a stormwater discharge event.

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22 These inspection requirements are consistent with those found in EPA's 2021 MSGP Parts 3.1 and 3.2.

23 "Qualified personnel" means: those who are knowledgeable in the principles and practices of control measures and pollution prevention, and who possess the education and ability to assess conditions at the Facility that could impact discharge quality, and the education and ability to assess the effectiveness of control measures selected and installed to meet the requirements of the permit.

d. Inspection Frequency. The qualified personnel must conduct discharge and receiving water inspections at least quarterly (i.e., once each calendar quarter). All inspections must be conducted during a period when a stormwater discharge is occurring.

e. Documentation. The Permittee must document the findings of the Facility inspections and maintain this report with the SWPPP. Document all findings, including but not limited to, the following information:

(1) The inspection date and time;
(2) The name(s) and signature(s) of the qualified personnel that conducted the inspection;
(3) Weather information;
(4) All observations relating to the implementation of stormwater control measures at the Facility, including:

i. A description of any discharges occurring at the time of the inspection;
ii. Any previously unidentified discharges from and/or pollutants at the Facility;
iii. Any evidence of, or the potential for, pollutants entering the stormwater collection system;
iv. Observations regarding the physical condition of and around all authorized outfalls, including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
v. Any stormwater control measures needing maintenance, repairs, or replacement;
vi. Any additional stormwater control measures needed to comply with the permit requirements;
vii. Any incidents of noncompliance; and
viii. Any corrective action(s) taken as a result of inspections.

(5) The Permittee shall also report any complaints it receives from the public regarding the taste and/or odor of the receiving water and document what remedial actions, if any, it took to address such complaints.

f. Visual Assessment

(1) Visual Assessment Frequency. Once each quarter for the duration of permit coverage, the Permittee must collect a stormwater sample from each outfall and conduct a visual assessment of each of these samples. These samples are not required to be collected consistent with 40 CFR Part 136 procedures but must be collected in such a manner that the samples are representative of the authorized discharge from each outfall. inspection

(2) Visual Assessment Procedures. The visual assessment must include the following:

i. Make the assessment of a stormwater discharge sample in a clean, colorless glass or
plastic container, and examined in a well-lit area;
ii. Make the assessment of the sample collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes, and document why it was not possible to take the sample within the first 30 minutes. In the case of snowmelt, samples must be taken during a period with a measurable discharge; and
iii. For storm events, make the assessment on discharges that occur at least 72 hours (three days) from the previous discharge. The 72-hour (three-day) storm interval does
not apply if less than a 72-hour (three-day) interval is representative for local storm events during the sampling period.
iv. Visually inspect or observe the receiving water in the vicinity of each outfall during a discharge event for any changes that may be caused by the discharge as follows: 1) any observable change in odor; 2) any visible change in color; 3) any visible change in turbidity; 4) the presence or absence of any visible floating materials, scum or foam; 5) the presence or absence of any visible settleable solids; and 6) the presence or absence of any visible film or sheen on the surface of the water or coating the banks of the water course.
v. Whenever the visual assessment shows evidence of stormwater pollution in the discharge or a change in the receiving water that may be caused by the discharge, initiate the corrective action procedures in Part I.C.5.

(3) Visual Assessment Documentation. The Permittee must document the results of visual assessments and maintain this documentation onsite with the SWPPP. Any corrective action required as a result of a quarterly visual assessment must be conducted consistent with Part I.C.5 of this permit. Documentation of each visual assessment must include:

i. Sample location(s);
ii. Sample collection date and time, for each sample;
iii. Qualified personnel collecting the sample and conducting visual assessment;
iv. Nature of the discharge (e.g., stormwater runoff from rainfall, snowmelt);
v. Observations of the stormwater discharge;
vi. Possible sources of any observed indications of pollution;
vii. If applicable, why it was not possible to take samples within the first 30 minutes.

4. Corrective Action[24]

24 These corrective action requirements are consistent with those found in EPA's 2021 MSGP Part 5.1.

a. Conditions Requiring SWPPP Review and Revision

When any of the following conditions occur or are detected during an inspection, monitoring or other means, or EPA informs the Permittee that any of the following conditions have occurred, the Permittee must review and revise, as appropriate, the SWPPP (e.g., sources of pollution, spill and leak procedures, non-stormwater discharges, selection, design, installation and implementation of control measures) so that this permit's effluent limits are met and pollutant discharges are minimized:

(1) An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this permit, or discharge of a prohibited discharge listed in Part I.B.2 of this permit to a water of the United States) occurs at the Facility.
(2) A discharge violates a numeric effluent limit listed in Part I.A.1-9 and/or in Part I.E. State 401 Certification Conditions.
(3) The stormwater control measures are not stringent enough for stormwater discharges to be controlled as necessary to meet State water quality standards or to meet the non-numeric effluent limits in this permit.
(4) A required control measure was never installed, was installed incorrectly or not otherwise in accordance with Part I.C.2 of this permit, or is not being properly operated or maintained.
(5) Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, turbidity, floating solids, suspended solids, settleable solids, visible film). Also see Part I.C.4.

b. Conditions Requiring SWPPP Review

The Permittee must review the SWPPP (e.g., sources of pollution, spill and leak procedures, non-stormwater discharges, selection, design, installation and implementation of control measures) to determine if modifications are necessary to meet the effluent limits in this permit if construction or a change in design, operation, or maintenance at the Facility occurs that:

(1) Significantly changes the nature of pollutants discharged via stormwater from the Facility: or
(2) Significantly increases the quantity of pollutants discharged.

c. Deadlines for Corrective Actions

(1) Immediate Actions.

The Permittee must immediately take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution can be implemented, including cleaning any contaminated surfaces so that the pollutants will not be discharged in subsequent storm events.

(2) Subsequent Actions

If additional actions are necessary beyond those implemented as an immediate action, the Permittee must complete the corrective actions (e.g., install a new or modified control and make it operational, complete the repair) before the next storm event if possible, and within 14 calendar days from the time of discovery of the permit limit or condition is not met. If it is infeasible to complete the corrective action within 14 calendar days, the Permittee must document why it is infeasible to complete the corrective action within the 14-day timeframe. The Permittee must also identify the schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe but no longer than 45 days after discovery. If the completion of corrective action will exceed the 45-day timeframe, the Permittee may take the minimum additional time necessary to complete the corrective action, provided that a request to implement an alternative schedule is provided to EPA in writing for concurrence. Any such request must include rationale for the extension, and a completion date. Where corrective actions result in changes to any of the control measures or BMPs documented in the SWPPP, the Permittee must modify the SWPPP accordingly within 14 calendar days of completing corrective action. These time intervals are schedules for documenting findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements do not persist indefinitely.

(3) Effect of Corrective Action

If the event triggering the review is a permit violation (e.g., non-compliance with an effluent limit), correcting it does not remove the original violation. Additionally, failing to take corrective action in accordance with this section is an additional permit violation. EPA may consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations.

5. Discharges of Chemicals or Additives

The discharge of any chemical[25] that was not reported in the application submitted to EPA or provided through a subsequent written notification submitted to EPA is prohibited. Upon the effective date of this permit, any chemical that has been disclosed to EPA may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical are authorized under this Permit 30 days following written notification to EPA unless otherwise

25 "Chemical" includes, but is not limited to: algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, surfactants and bioremedial agents, including microbes.

notified by EPA. To request authorization to discharge a new chemical, the Permittee must submit a written notification to EPA in accordance with Part I.D.3.a of this permit. The written notification must include the following information, at a minimum:

a. The following information for each chemical that will be discharged:

   (1) Product name, chemical formula, general description, and manufacturer of the chemical;
   (2) Purpose or use of the chemical;
   (3) Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical;
   (4) The frequency (e.g., hourly, daily), magnitude (i.e., maximum application concentration), duration (e.g., hours, days), and method of application for the chemical;
   (5) The vendor's reported aquatic toxicity, if available (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

b. Written rationale that demonstrates that the discharge of such chemicals as proposed will not: 1) add any pollutants in concentrations that exceed any permit effluent limitation; and 2) add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

6. Pollutant Scan

a. The Permittee shall conduct a pollutant scan once in the first year (12 calendar months) of the permit term for each outfall for the analytes listed in Attachment C of this permit. The Permittee must report the pollutants and concentrations detected to EPA in accordance with Part I.D.3. and all results of the pollutant scan must be summarized in a tabulated format and submitted with this report. Any monitoring required for any pollutant also listed elsewhere in the permit that are taken concurrently with this pollutant scan may be used to meet the reporting requirement for that parameter in the applicable monitoring period.
b. After the first year (12 calendar months) of the permit term and at one sample result for each outfall, the Permittee may discontinue sampling for the remainder of the permit term for any pollutant that is not detected in the sample(s) from a given outfall.
c. Sampling must continue for the remainder of the permit term at an annual frequency for any pollutant detected at a given outfall. Results must reported as required in a., above. For any pollutant detected at a given outfall, such a detection serves as a corrective action trigger for the non-numeric requirements specified in Part I.C.4. For any pollutant detected that is also listed elsewhere in the permit, the more frequent monitoring requirement for that pollutant applies.

7. PFAS Monitoring Frequency Reduction

After one year of monitoring, if all samples are non-detect for all forty PFAS compounds, using either a method in 40 CFR Part 136 or EPA Draft Method 1633, the Permittee may request to remove the requirement for PFAS monitoring. Until written notice is received from EPA indicating that the monitoring requirements have been changed, the Permittee is required to continue the monitoring specified in this Permit. See Reporting Requirements in Part I.D.3.a.

D. REPORTING REQUIREMENTS

Unless otherwise specified in this Permit, the Permittee must submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs Using NetDMR

   The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month following the monitoring period. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

2. Submittal of Reports as NetDMR Attachments

   Unless otherwise specified in this Permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. See Part I.D.5 for more information on State reporting. Because the due dates for reports described in this Permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month following the monitoring period), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this Permit.

3. Submittal of Requests and Reports to EPA Water Division (WD)

   a. The following requests, reports, and information described in this Permit shall be submitted to the NPDES Applications Coordinator in EPA WD:

      (1) Transfer of Permit notice;
      (2) Request for changes in sampling location;
      (3) SWPPP reports and certifications;
      (4) Pollutant Scan reports;
      (5) Request to discharge new chemicals or additives;
      (6) Request for discontinuation of per- and polyfluoroalkyl substances (PFAS) sampling (*see* Part I.A.1, footnote 11) requirements; and

(7) Report on unacceptable dilution water/request for alternative dilution water for WET testing.

b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

4. Written Notifications

Written notifications required under Part II, Standard Conditions must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system that will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

5. State Reporting

Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

Massachusetts Department of Environmental Protection
Bureau of Water Resources
Division of Watershed Management
8 New Bond Street
Worcester, Massachusetts 01606

6. Verbal Reports and Verbal Notifications

a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this Permit, shall be made to both EPA and to the State. This includes verbal reports and notifications that require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

b. Verbal reports and verbal notifications shall be made to EPA's Enforcement and Compliance Assurance Division (ECAD) at: 617-918-1510

c. Verbal reports and verbal notifications shall be made to the State's Emergency Response at: 888-304-1133

E. STATE 401 CERTIFICATION CONDITIONS

This Permit is in the process of receiving State water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate all State water quality certification requirements (if any) into the Final Permit.

[NOTE: See Parts 2.2.5 and 5.5 of the Fact Sheet for more details regarding the state certification requirements.]

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 136

[FRL-]

The Administrator signed the following rule on November 8, 2002, and EPA is submitting it for publication in the *Federal Register*. While we have taken steps to ensure the accuracy of this pre-publication version of the rule, it is not the official version for purposes of compliance. Please refer to the official version in a forthcoming *Federal Register* publication, on GPO's website at: http://www.access.gpo.gov/su_docs/aces/aces140.html, or on EPA's website at http://www.epa.gov/waterscience/WET.

Guidelines Establishing Test Procedures for the Analysis of Pollutants; Whole Effluent Toxicity Test Methods; Final Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final Rule.

SUMMARY: In this final regulation, EPA ratifies approval of several test procedures for measuring the toxicity of effluents and receiving waters. The test procedures are commonly referred to as whole effluent toxicity or WET test methods. EPA also withdraws two WET test methods from the list of nationally-approved biological test procedures for the analysis of pollutants. This action also revises some of the WET test methods to improve performance and increase confidence in the reliability of the results. Today's action will satisfy settlement agreement obligations designed to resolve litigation over an earlier rulemaking that originally approved WET test methods.

DATES: This regulation is effective **[insert 30 days from date of publication in the Federal Register]**. For judicial review purposes, this final rule is promulgated as of 1:00 p.m. Eastern Standard Time on **[insert 14 days from date of publication in the Federal Register]** in accordance with 40 CFR 23.7. The incorporation by reference of certain publications listed in this rule is approved by the Director of the Federal Register as of **[insert 30 days from date of publication in the Federal Register]**.

FOR FURTHER INFORMATION CONTACT: Marion Kelly; Engineering and Analysis Division (4303T); Office of Science and Technology; Office of Water, U.S. Environmental Protection Agency; Ariel Rios Building; 1200 Pennsylvania Avenue, NW; Washington, DC 20460, or call (202) 566-1045, or E-mail at kelly.marion@epa.gov. For technical information regarding method changes in today's rule, contact Debra L. Denton, USEPA Region 9, c/o SWRCB, 1001 I Street, Sacramento, CA 95814, or call (916)341-5520, or E-mail denton.debra@epa.gov.

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I. General Information

A. Potentially Regulated Entities

EPA Regions, as well as States, Territories, and Tribes authorized to implement the National Pollutant Discharge Elimination System (NPDES) program, issue permits that comply with the technology-based and water quality-based requirements of the Clean Water Act. In doing so, NPDES permitting authorities make a number of discretionary choices associated with permit writing, including the selection of pollutants to be measured and, in many cases, limits for those pollutants in permits. If EPA has “approved” (i.e., promulgated through rulemaking) standardized test procedures for a given pollutant, the NPDES permitting authority must specify one of the approved testing procedures or an EPA-approved alternate test procedure for the measurements required under the permit. In addition, when a State, Territory, or authorized Tribe provides certification of Federal licenses under Clean Water Act section 401, States, Territories and Tribes are directed to use the approved testing procedures. Categories and entities that may be regulated include:

Category	Examples of potentially regulated entities
Federal, State, Territorial, and Indian Tribal Governments	Federal, State, Territorial, and Tribal entities authorized to administer the NPDES permitting program; Federal, State, Territorial, and Tribal entities providing certification under Clean Water Act section 401
Municipalities	Municipal operators of NPDES facilities required to monitor whole effluent toxicity
Industry	Private operators of NPDES facilities required to monitor whole effluent toxicity

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility or organization is regulated by this action you should carefully examine 40 CFR 122.41(j)(4), 122.44(i)(1)(iv), and 122.21. If you have questions regarding the applicability of this action to a particular entity, consult the first person listed in the preceding "FOR FURTHER INFORMATION CONTACT" section.

B. How Can I Get Copies Of Related Information?

1. Docket

EPA has established an official public docket for this action under Docket ID No. WET-X (Electronic Docket No. OW-2002-0024). The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. Although a part of the official docket, the public docket does not include Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. The official public docket is the collection of materials that is available for public viewing at the Office of Water (OW) Docket, in the EPA Docket Center (EPA/DC), EPA West, Room B-102, 1301 Constitution Avenue N.W., Washington, D.C. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m. EST, Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the OW Docket is (202) 566-2426.

2. Electronic Access

You may access this Federal Register document electronically through the EPA Internet under the "Federal Register" listings at http://www.epa.gov/fedrgstr/.

An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at http://www.epa.gov/edocket/ to view public comments, access the index listing of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility identified in Unit I.B.1. Once in the system, select "search," then key in the appropriate docket identification number.

II. Statutory Authority

EPA promulgates today's rule pursuant to the authority of sections 301, 304(h), 402, and 501(a) of the Clean Water Act ("CWA" or the "Act"), 33 U.S.C. 1311, 1314(h), 1342, 1361(a) (the "Act"). Section 101(a) of the Act sets forth the "goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters" and prohibits "the discharge of toxic pollutants in toxic amounts." Section 301 of the Act prohibits the discharge of any pollutant into navigable waters unless the discharge complies with a National Pollutant Discharge Elimination System (NPDES) permit, issued under section 402 of the Act. Section 304(h) of the Act requires the Administrator of the EPA to "promulgate guidelines establishing test procedures for the analysis of pollutants that shall include the factors which must be provided in any certification pursuant to section 401 of this Act or permit applications pursuant to section 402 of this Act." Section 501(a) of the Act authorizes the Administrator to "prescribe such regulations as are necessary to carry out his function under this Act." EPA publishes CWA analytical method regulations at 40 CFR Part 136. The Administrator also has made these test procedures applicable to monitoring and reporting of NPDES permits (40 CFR Parts 122, §§122.21, 122.41, 122.44, and 123.25), and implementation of the pretreatment standards issued under section 307 of the Act (40 CFR Part 403, §§403.10 and 403.12).

III. Background

A. Regulatory History

On October 16, 1995, EPA amended the “Guidelines Establishing Test Procedures for the Analysis of Pollutants,” 40 CFR Part 136, to add a series of standardized toxicity test methods to the list of Agency approved methods for conducting required testing of aqueous samples under the CWA (60 FR 53529) (WET final rule). The WET final rule amended 40 CFR 136.3 (Tables IA and II) by adding acute toxicity methods and short-term methods for estimating chronic toxicity. These methods measure the toxicity of effluents and receiving waters to freshwater, marine, and estuarine organisms. Acute methods (USEPA, 1993) generally use death of some percentage of the test organisms during 24 to 96 hour exposure durations as the measured effect of an effluent or receiving water. The short-term methods for estimating chronic toxicity (USEPA, 1994a; USEPA, 1994b) use longer durations of exposure (up to nine days) to ascertain the adverse effects of an effluent or receiving water on survival, growth, and/or reproduction of the organisms. The methods listed at 40 CFR Part 136 for measuring aquatic toxicity are referred to collectively as "WET test methods," methods specific to measuring acute toxicity are referred to as "acute" test methods, and short-term methods for estimating chronic toxicity are referred to as "chronic" methods.

EPA standardized the test procedures for conducting the approved acute and chronic WET test methods in the following three method manuals, which were incorporated by reference in the WET final rule: *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*, Fourth Edition, August 1993, EPA/600/4-90/027F (acute method manual); *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms,* Third Edition, July 1994, EPA/600/4-91/002 (freshwater chronic method manual); and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms,* Second Edition, July 1994, EPA/600/4-91/003 (marine chronic method manual). EPA explains in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (USEPA, 1991) that these WET test methods, along with chemical controls and bioassessments, are a component of EPA's integrated strategy for water quality-based toxics control. The TSD recommends that WET tests using the most sensitive of at least three test species from different phyla be used for monitoring the toxicity of effluents.

Since the 1995 WET final rule, EPA has issued several rulemakings and guidance documents in fulfillment of settlement agreements to resolve judicial challenges to the WET final rule (see Settlement Agreement discussion in Section III.B). On February 2, 1999, EPA published technical corrections that incorporated into the WET final rule an errata document to correct minor errors and omissions, provide clarification, and establish consistency among the WET final rule and method manuals (64 FR 4975; February 2, 1999). On July 18, 2000, EPA announced the availability of a WET Variability Guidance Document (65 FR 44528; July 18, 2000). On July 28, 2000, EPA published the availability of a WET Method Guidance Document (65 FR 46457; July 28, 2000). On September 28, 2001, EPA proposed specific revisions to the WET test methods, and EPA proposed to ratify its previous approval of these methods (66 FR 49794; September 28, 2001) (see Section III.C). Today, EPA takes final action on the September 2001 proposal.

B. Settlement Agreement

Following promulgation of the WET methods on October 16, 1995, several parties challenged the rulemaking (Edison Electric Institute v. EPA, No. 96-1062 (D.C. Cir.); Western Coalition of Arid States v. EPA, No. 96-1124 (D.C. Cir.); and Lone Star Steel Co. v. EPA, No. 96-1157 (D.C. Cir.)). To resolve the litigation, EPA entered into settlement agreements with the various parties and agreed to publish a technical correction notice, publish a method guidance document and a variability guidance document, conduct an interlaboratory variability study, publish a peer-reviewed interlaboratory variability study report (including a table of coefficients of variation), address pathogen contamination, propose specific technical method changes, and propose to ratify or withdraw WET test methods evaluated in the interlaboratory variability study. Today's final action fulfills EPA's obligations under the settlement agreements.

C. Proposed Rule

On September 28, 2001, EPA proposed modifications to the WET test methods (66 FR 49794). The proposal included updates to the methods, minor corrections and clarifications, and specific technical changes in response to stakeholder concerns. Specifically, EPA proposed technical changes to 1) require "blocking" by known parentage in the *Ceriodaphnia dubia*

Survival and Reproduction Test; 2) specify procedures to control pH drift that may occur during testing; 3) incorporate review procedures for the evaluation of concentration-response relationships; 4) clarify recommendations regarding nominal error rate assumptions; 5) clarify limitations in the generation of confidence intervals; 6) add guidance on dilution series selection; 7) clarify requirements regarding acceptable dilution waters; and 8) add procedures for determining and minimizing the adverse impact of pathogens in the Fathead Minnow Survival and Growth Test.

EPA also solicited comment on other modifications to improve the performance of the methods, including the incorporation of variability criteria and increases in the minimum number of test replicates. EPA proposed to incorporate WET method changes into new editions of each of the WET method manuals (USEPA, 1993; USEPA, 1994a; USEPA, 1994b) and to update Table IA at 40 CFR Part 136 to cite the new method manual editions.

In the September 28, 2001 proposed rule, EPA also proposed to ratify 11 of the 12 WET methods evaluated in EPA's WET Interlaboratory Variability Study. EPA proposed to ratify the *Ceriodaphnia dubia* Acute Test; Fathead Minnow Acute Test; Sheepshead Minnow Acute Test; Inland Silverside Acute Test; *Ceriodaphnia dubia* Survival and Reproduction Test; Fathead Minnow Larval Survival and Growth Test; *Selenastrum capricornutum* Growth Test; Sheepshead Minnow Larval Survival and Growth Test; Inland Silverside Larval Survival and Growth Test; *Mysidopsis bahia* Survival, Growth, and Fecundity Test; and *Champia parvula* Reproduction Test. To support ratification of these methods, EPA presented the results of the WET Interlaboratory Variability Study (USEPA, 2001a; USEPA, 2001b), a national study of 12 WET methods involving 56 laboratories and over 700 samples. EPA proposed to withdraw *Holmesimysis costata* as an acceptable substitute species for use in the *Mysidopsis bahia* Acute

Test method protocol. In its place, EPA proposed a new *Holmesimysis costata* Acute Test protocol.

EPA invited public comment for 60 days and later extended the comment period for an additional 45 days (66 FR 58693; November 23, 2001). EPA received 38 comment packages during the allotted comment period.

IV. Summary of Final Rule

A. Proposed WET Method Changes

Today's action incorporates most of the method changes proposed on September 28, 2001 (66 FR 49794) with minor modifications to address public comments. For a summary of major changes from the proposed rule, including proposed actions not incorporated in today's rule, see Section V of this preamble. Method manual revisions promulgated in today's action include:

- Minor corrections and clarifications,
- Incorporation of updated method precision data,
- Requirement for "blocking" by known parentage in the *Ceriodaphnia dubia* Survival and Reproduction Test,
- Specification of procedures to control pH drift that may occur during testing,
- Review procedures for the evaluation of concentration-response relationships,
- Clarification of limitations in the generation of confidence intervals,
- Guidance on dilution series selection,
- Clarification of requirements regarding acceptable dilution waters,
- Procedures for determining and minimizing the adverse impact of pathogens in the Fathead Minnow Survival and Growth Test,

- Requirement for the use of ethylenediaminetetraacetic acid (EDTA) in the *Selenastrum capricornutum* Growth Test.

B. Additional Revisions to WET Test Methods

In addition to requesting comment on the specific modifications to WET test methods mentioned above, EPA solicited comment on any additional modifications that would improve the overall performance of the methods. Specifically, EPA solicited comment on application of variability criteria to test results, modification of test acceptability criteria, and increases in test replication requirements. In response to comments, today's final rule also incorporates the following additional modifications to WET test methods:

- Requirement to meet specific variability criteria when NPDES permits require sublethal WET testing endpoints expressed using hypothesis testing,
- Increases in the required minimum number of replicates for several tests,
- Clarification of required and recommended test conditions for the purposes of reviewing WET test data submitted under NPDES permits,
- Additional clarification of sample holding times,
- Clarification of requirements for reference toxicant testing and additional guidance on evaluating reference toxicant test results,
- Clarification of allowable sample holding temperatures,
- Clarification of biomass as the measured endpoint in survival and growth tests,
- Clarification of requirements for measuring total residual chlorine in WET samples,
- Modification of the test termination criteria for the *Ceriodaphnia dubia* Survival and Reproduction Test to exclude the counting of fourth brood neonates,
- Additional minor corrections identified by commenters.

C. Ratification and Withdrawal of Methods

Based on the WET Interlaboratory Variability Study, peer review comments, and comments on the proposed rule, EPA is ratifying ten methods evaluated in the WET Interlaboratory Variability Study and withdrawing two methods. EPA is ratifying the *Ceriodaphnia dubia* Acute Test; Fathead Minnow Acute Test; Sheepshead Minnow Acute Test; Inland Silverside Acute Test; *Ceriodaphnia dubia* Survival and Reproduction Test; Fathead Minnow Larval Survival and Growth Test; *Selenastrum capricornutum* Growth Test; Sheepshead Minnow Larval Survival and Growth Test; Inland Silverside Larval Survival and Growth Test; and *Mysidopsis bahia* Survival, Growth, and Fecundity Test. In accordance with EPA's Report to Congress on the Availability, Adequacy, and Comparability of testing procedures (USEPA, 1988), EPA has confirmed that the methods ratified today are repeatable and reproducible (i.e., exhibit adequate within-laboratory and between-laboratory precision), available and applicable (i.e., adaptable to a wide variety of laboratories and use widely available organisms and supplies), and representative (i.e., predictive of receiving system impacts). See Section VI.C.1 of this preamble.

EPA's WET Interlaboratory Variability Study demonstrated that the methods ratified today generally have a high rate of successful completion, do not often produce false positive results, and exhibit precision comparable to chemical methods approved at 40 CFR Part 136. Table 1 summarizes the performance characteristics for the ten WET test methods ratified today. In ratifying these WET test methods, EPA reaffirms the conclusion expressed in the 1995 WET final rule (60 FR 53529; October 16, 1995), that these methods, including the modifications in today's rule, are applicable for use in NPDES permits.

Table 1. Summary of performance characteristics for ratified WET methods.

Test method	Successful test completion rate (%)	False positive rate[a] (%)	Interlaboratory precision (%CV)[b]
Ceriodaphnia dubia Acute Test	95.2	0.00	29.0
Ceriodaphnia dubia Survival and Reproduction Test	82.0	3.70	35.0
Fathead Minnow Acute Test	100	0.00	20.0
Fathead Minnow Larval Survival and Growth Test	98.0	4.35	20.9
Selenastrum capricornutum Growth Test	63.6	0.00	34.3
Mysidopsis bahia Survival, Growth, and Fecundity Test	97.7	0.00	41.3
Sheepshead Minnow Acute Test	100	0.00	26.0
Sheepshead Minnow Larval Survival and Growth Test	100	0.00	10.5
Inland Silverside Acute Test	94.4	0.00	38.5
Inland Silverside Larval Survival and Growth Test	100	0.00	43.8

[a] False positive rates reported for each method represent the higher of false positive rates observed for hypothesis testing or point estimate endpoints.
[b] Coefficients of variation (CVs) reported for each method represent the CV of LC50 values for acute test methods and IC25 values for chronic test methods. CVs reported are based on total interlaboratory variability (including within-laboratory and between-laboratory components of variability) and averaged across sample types.

EPA is withdrawing the *Holmesimysis costata* Acute Test and the *Champia parvula* Reproduction Test methods from 40 CFR Part 136. EPA was unable to obtain interlaboratory precision data for these methods in the WET Interlaboratory Variability Study due to laboratory unavailability. EPA was unable to contract with a minimum of six laboratories qualified and willing to conduct these test methods within the time frame of the Study. Due to this lack of interlaboratory precision data generated from the Study for these methods, several commenters recommended that these methods not be approved at 40 CFR Part 136 for national use. In response, today's action removes the *Holmesimysis costata* Acute Test method (1995 version) and the *Champia parvula* Reproduction Test method from the list of test methods approved for nationwide use at 40 CFR Part 136.

By withdrawing these methods from 40 CFR Part 136 for nationwide use, EPA does not reject their use on more limited bases. Today's withdrawal simply reflects that the Agency has not validated these methods for national use. EPA continues to support the use of these methods for applications other than for the determination of compliance with NPDES permit limits, as well for limited, localized, or regional use where the methods have been validated by other entities. In addition, EPA continues to support the use of the *Holmesimysis costata* Acute Test to measure toxicity to marine organisms of the Pacific Ocean. Because test procedures for measuring toxicity to estuarine and marine organisms of the Pacific Ocean are not listed at 40 CFR Part 136, permit writers may include (under 40 CFR 122.41(j)(4) and 122.44(i)(1)(iv)) requirements for the use of test procedures that are not approved at Part 136, such as the *Holmesimysis costata* Acute Test and other West Coast WET methods (USEPA, 1995b) on a permit-by-permit basis.

D.   Amendment to 40 CFR 136.3 Table IA

Today's rule amends 40 CFR 136.3 by removing the *Champia parvula* Reproduction Test method (Method 1009.0) from Table IA, modifying the reference to acute "mysid" tests in Table IA to include only *Mysidopsis bahia* (and not *Holmesimysis costata*), adding method numbers to acute tests, revising the parameter measured in marine tests to refer to organisms "of the Atlantic Ocean and Gulf of Mexico," and modifying footnotes and references to cite the updated versions of the method manuals.

V. Changes from the Proposed Rule

A. Proposed WET Method Changes

On September 28, 2001, EPA proposed technical method changes to improve the performance and clarity of WET test methods and to address specific stakeholder concerns. These provisions were presented and discussed in Section III of the proposed rule preamble (66 FR 49794) and detailed in the document titled, *Proposed Changes to Whole Effluent Toxicity Method Manuals* (USEPA, 2001e). In today's action, EPA is withdrawing or revising some of the proposed revisions based on comments received on the proposed rule. These revisions are discussed below. Other comments that EPA addressed but did not result in changes from the proposal are discussed in Section VI.

1. Blocking by Known Parentage

EPA proposed specific method manual modifications that would require blocking by known parentage in the *Ceriodaphnia dubia* Survival and Reproduction Test method. Today, EPA is finalizing the proposed method changes with a minor modification to clarify that neonates from a single known parent may be used in the initiation of more than one test. This minor modification mitigates some commenters' concerns regarding the increased cost of blocking by known parentage. Blocking by known parentage requires the use of at least six neonates from each of at least ten separate parents. If more than six neonates from a given parent remain after allocating organisms to a test, those remaining neonates may be discarded, used as future culture organisms, or used in another test initiated on the same day (provided that the neonates meet age requirements).

2. pH Drift

During the conduct of static or static-renewal WET tests, the pH in test containers may fluctuate or drift from the initial pH value. EPA proposed specific procedures that may be used to control this pH drift in chronic WET tests. Today, EPA is revising the specified procedures in response to stakeholder comments. Some commenters requested that EPA clarify the pH that should be maintained in pH-controlled tests. Today's action clarifies that, when the test objective is to determine the toxicity of an effluent in the receiving water, the target pH to maintain in a pH-controlled test is the pH of the receiving water measured at the edge of any mixing zone authorized in a permit. When the test objective is to determine the absolute toxicity of the effluent, the target pH to maintain in a pH-controlled test is the pH of the sample upon completion of collection. The revisions also clarify that in pH-controlled tests, the pH should be maintained within ±0.2 pH units of the target pH in freshwater chronic tests and within ±0.3 pH units for marine/estuarine chronic tests. EPA also added guidance on interpreting the results of parallel testing.

The revisions also remove language from the proposed method manual changes that warned about effects from pH drift in the absence of pH-dependent toxicants. To address the concern that the daily cycle of pH drift and renewal caused artifactual toxicity by "shocking" test organisms, EPA proposed language in the method manuals that warned of such potential interference from pH drift even when pH-dependent toxicants were not present. EPA specifically requested that commenters provide "any data that show the value of proposed pH control measures in situations where ammonia or other pH-dependent toxicants are not present." EPA did not receive such data. EPA believes that pH drift alone is not a test interference if pH is within the organism's tolerance range. The degree of pH drift typically observed in effluent samples should generally only interfere with test results if the sample contains a compound with toxicity that is pH dependent and at a concentration that is near the toxicity threshold. Because EPA did not receive data to suggest otherwise, EPA is removing any reference to pH drift interference in the absence of pH-dependent toxicants.

Many commenters recommended that EPA include the proposed pH control guidance for acute test methods as well as chronic methods because of the insufficiency of static renewal testing to control the pH drift and the impracticability and cost of flowthrough testing. In today's action, EPA has not provided additional techniques that involve modification of the sample to control pH drift in acute test methods, because EPA believes that the current acute methods provide adequate remedies for pH drift without modifying the sample. In acute tests, pH drift may be remedied by more frequent test renewals or use of flowthrough testing. While EPA agrees that flowthrough testing is more costly than static or static renewal testing, today's action does not impose any additional costs by requiring flowthrough testing. Today's action simply retains the options for pH control that are currently described in the acute method manual and does not add additional options.

3. Nominal Error Rates

Today's action does not incorporate the proposed method manual changes regarding nominal error rates. The method manuals maintain the original statement recommending a nominal error rate of 0.05. EPA proposed changes to its recommendation regarding nominal error rate assumptions, specifically, the change from 0.05 to 0.01 under specific circumstances. EPA proposed changes to its recommended error rate assumptions based on the settlement agreement, which identified the circumstances under which EPA would change its recommendations regarding nominal error rate reductions. These specified circumstances do not necessarily represent cases where the risk of false positive results increase, but rather situations for which the petitioners sought specific relief.

Commenters on the proposed rule commented that there was no scientific justification for reducing nominal error rate assumptions in only these circumstances and recommended reducing the nominal error rate in all circumstances. EPA agrees with the commenters that there is not a scientific justification for allowing reduced nominal error rates in these specific circumstances, but disagrees that nominal error rates should be reduced in all circumstances. Some commenters claimed that a reduced nominal error rate is needed to improve confidence in the test results. Reducing the nominal error rate, however, does not inherently improve confidence in test results. Because of the relationship between Type I and Type II statistical errors, reductions in nominal error rates improve confidence in results that identify toxicity, but reduce confidence in results that do not identify toxicity. This reduces the power of the test and the chance of identifying toxic discharges, thereby reducing environmental protection. In addition, the statistical test designs (i.e., test replication requirements) of WET methods and all supporting method validation data were based on a nominal error rate of 0.05. Because there is no scientific justification for recommending reductions in nominal error rates in the circumstances proposed and commenters did not provide such supporting rationale or data, EPA has not incorporated the proposed method manual recommendations regarding nominal error rates. The method manuals maintain the original recommendation to assume a nominal error rate of 0.05.

4. Dilution Series

EPA is finalizing the proposed guidance on the selection of dilution series in WET testing. In addition to the proposed guidance, EPA has made minor modifications in response to comments to further clarify that no one particular dilution series is required. Specific dilution series used in the WET method manuals are provided as examples and recommendations, not requirements.

5. Dilution Waters

EPA is finalizing the proposed guidance on the selection of dilution waters in WET testing. In addition to the proposed guidance, EPA has made minor modifications in response to comments to further clarify that no single dilution water type is required for all tests. The method manuals now clarify that receiving waters, synthetic waters, or synthetic waters adjusted to approximate receiving water characteristics may be used for dilution water, provided that the water meets the qualifications for an acceptable dilution water. EPA clarified in the method manuals that an acceptable dilution water is one which is appropriate for the objectives of the test; supports adequate performance of the test organisms with respect to survival, growth, reproduction, or other responses that may be measured in the test (i.e., consistently meets test acceptability criteria for control responses); is consistent in quality; and does not contain contaminants that could produce toxicity. EPA also provided clarification on the use of dual controls. When using dual controls, the dilution water control should be used for determining the acceptability of the test and for comparisons with the tested effluent. If test acceptability criteria (e.g., minimum survival, reproduction, or growth) are not met in the dilution water control, the test must be repeated on a newly collected sample. Comparisons between responses in the dilution water control and in the culture water control can be used to determine if the dilution water, which may be a receiving water, possesses ambient toxicity.

6. Pathogen Interference

In today's action, EPA finalizes the proposed guidance on controlling pathogen interference in the Fathead Minnow Larval Survival and Growth Test with several modifications to address commenter concerns. Some commenters were concerned that the proposed guidance allowed the use of pathogen control techniques such as UV, chlorination, filtration, and antibiotics only after the recommended modified test design (fewer fish per cup) failed to control pathogen interference. Today's revisions clarify that EPA recommends pathogen control techniques that do not modify the sample, such as the modified test design technique, over ones that do. Upon approval by the regulatory authority, however, analysts also may use various sample sterilization techniques that modify the sample to control pathogen interference, provided that parallel testing of altered and unaltered samples further confirms the presence of pathogen interference and demonstrates successful pathogen control.

The manuals also now provide further explanation regarding the purpose for and required extent of pathogen source determination. Commenters were concerned that EPA was requiring permittees to generate data that was irrelevant to correcting for pathogen test interference. This is not the case. Determining whether tests are adversely affected by pathogens in the effluent or pathogens in the receiving water used for test dilution is an important first step in selecting an appropriate pathogen control technique. If the source of interfering pathogens in the test is the receiving water used as the dilution water, then pathogen interference may be controlled by simply using an alternative dilution water. If the source of interfering pathogens in the test is the effluent, then pathogen control techniques are appropriate to control the interference. To further address the comments, EPA removed mention of pathogen source identification beyond determining whether the pathogen source was the effluent or dilution water. EPA also made several minor modifications in response to comments, including an acknowledgment that pathogen control techniques may not eliminate pathogens, but should minimize the adverse influence of pathogens so that test results are not confounded by mortality due to pathogens.

7. EDTA in the *Selenastrum capricornutum* Growth Test

In the WET Interlaboratory Variability Study, EPA found that performance of the *Selenastrum capricornutum* Growth Test was much higher (lower interlaboratory variability and lower false positive rate) when the test was conducted with EDTA (ethylenediaminetetraacetic acid). Based on this finding, EPA proposed to recommend the use of EDTA in the *Selenastrum capricornutum* Growth Test. Several commenters expressed concern that EPA only recommended, rather than required, the use of EDTA. Commenters stated that this recommendation was not sufficient to ensure the acceptable performance of the method and encouraged EPA to require the use of EDTA. To address these comments, the *Selenastrum capricornutum* Growth Test now requires the addition of EDTA to nutrient stock solutions when conducting the *Selenastrum capricornutum* Growth Test and submitting data under NPDES permits. To address concerns that EDTA may interfere with (i.e., mask) the toxicity of metals, the method continues to caution that the addition of EDTA may cause the *Selenastrum capricornutum* Growth Test to underestimate the toxicity of metals. EPA cautions regulatory authorities to consider this possibility when selecting test methods for monitoring effluents that are suspected to contain metals. As recommended in EPA's *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (USEPA, 1991), the most sensitive of at least three test species from different phyla should be used for monitoring the toxicity of effluents.

B. Additional Revisions to WET Test Methods

1. Variability Criteria

Today's action incorporates mandatory variability criteria for five chronic test methods. EPA recommends the use of point estimation techniques over hypothesis testing approaches for calculating endpoints for effluent toxicity tests under the NPDES Permitting Program. However, to reduce the within-test variability and to increase statistical sensitivity when test endpoints are expressed using hypothesis testing rather than the preferred point estimation techniques, variability criteria must be applied as a test review step when NPDES permits require sublethal hypothesis testing endpoints (i.e., no observed effect concentration (NOEC) or lowest observed effect concentration (LOEC)) and the effluent has been determined to have no toxicity at the permitted receiving water concentration These variability criteria must be applied for the following methods: Fathead Minnow Larval Survival and Growth Test; *Ceriodaphnia dubia* Survival and Reproduction Test; *Selenastrum capricornutum* Growth Test; *Mysidopsis bahia* Survival, Growth, and Fecundity Test; and Inland Silverside Larval Survival and Growth Test. Within-test variability, measured as the percent minimum significant difference (PMSD), must be calculated and compared to upper bounds established for test PMSDs. Under this new requirement, tests conducted under NPDES permits that fail to meet the variability criteria (i.e., PMSD upper bound) and show "no toxicity" at the permitted receiving water concentration (i.e., no significant difference from the control at the receiving water concentration or above) are considered invalid and must be repeated on a newly collected sample. Lower bounds on the PMSD are also applied, such that test concentrations shall not be considered toxic (i.e., significantly different from the control) if the relative difference from the control is less than the lower PMSD bound.

In the proposed rule, EPA solicited comment on the required use of upper and lower PMSD bounds in the calculation of NOEC and LOEC values. According to the proposed approach, any test treatment with a percentage difference from the control (i.e., [mean control response - mean treatment response]/ mean control response * 100) that is greater than the upper PMSD bound would be considered as significantly different; and any test treatment with a percentage difference from the control that is less than the lower PMSD bound would not be considered as significantly different.

EPA received comments on this proposed approach that expressed concern that variability criteria were used only to adjust NOEC and LOEC values and not to invalidate tests. Commenters argued that the proposed approach does not control variability unless tests failing to meet the variability criteria are invalidated. In response to these comments, EPA has modified the application of variability criteria in today's action. Rather than implementing variability criteria as a component of endpoint calculation, today's method modifications implement variability criteria (upper and lower PMSD bounds) as a test review step that is required when NPDES permits require sublethal WET testing endpoints expressed using hypothesis testing for the five test methods previously listed. Reviewed tests that fail to meet the variability criteria and do not detect toxicity at the receiving water concentration are invalid and must be repeated on a newly collected sample.

EPA received comments both for and against implementation of variability criteria as test acceptability criteria. To balance these comments, the final rule implements the variability criteria as a required test review step when NPDES permits require sublethal WET testing endpoints expressed using hypothesis testing for the five test methods previously listed. As such, the variability criteria have the potential to invalidate highly variable tests. Invalidation, however, is contingent upon other data evaluation steps. For instance, tests that exceed the variability criteria are only invalidated when the test also fails to detect toxicity at the permitted receiving water concentration. The method manuals continue to restrict use of the term "test acceptability criteria" to biological measurements in test controls (i.e., control survival, reproduction, and growth) that independently assess test acceptability. Unlike the variability criteria instituted today, the use of “test acceptability criteria” to invalidate tests are not contingent on any other data evaluation steps. For this reason, the term “test acceptability criteria” is not applicable to the variability criteria established in today’s action.

EPA received comments that recommended alternative measures for controlling within test variability, such as limits on the coefficient of variation (CV) for the control treatment. In developing variability criteria, EPA considered other measures of test precision, including the standard deviation and coefficients of variation for treatments and control, minimum significant difference (MSD), and the mean square for error from the analysis of variance of treatment effects. EPA considers the PMSD to be the measure that is most easily understood and that is most directly applied to determination of NOEC and LOEC values. The PMSD quantifies the smallest percentage difference between the control and a treatment (effluent dilution) that could be declared as statistically significant. It thus includes exactly that variability affecting determination of the NOEC and LOEC. The CV for the control or any one treatment, or selected treatments, represents only a portion of the variability affecting the NOEC and LOEC. Some State or Regional WET programs have requirements on the CV for the control and the treatment representing the receiving water concentration (RWC). Such requirements can provide finer control over the variability influencing a single comparison between the control and the RWC treatment. The PMSD upper bound provides control over the total within-test variability and is intended specifically for multi-concentration tests in which the NOEC or LOEC are determined by using hypothesis testing. Regulatory authorities may continue to use variability control strategies adopted within their jurisdiction, but when NPDES permits require sublethal WET testing endpoints expressed using hypothesis testing, the variability criteria required by today’s action must be implemented as well. Requiring such variability criteria provides national consistency and control of WET test precision when hypothesis testing approaches are chosen. In today's action, EPA reiterates the recommendation of the method manuals and the TSD (USEPA, 1991) by stating that for the NPDES Permit Program, point estimation techniques are preferred over hypothesis testing approaches for calculating endpoints for effluent toxicity tests.

EPA received comments that the upper and lower bounds established for PMSD variability criteria were arbitrary or unrepresentative. EPA established the proposed variability criteria as performance-based standards set at the 10^{th} and 90^{th} percentiles of PMSD values from EPA's evaluation of national reference toxicant test data (USEPA, 2000c). In today's action, EPA has revised the variability criteria to reflect the 10^{th} and 90^{th} percentiles of PMSD values based on EPA's Interlaboratory Variability Study. The use of data from this study reflects not only tests performed on reference toxicants, but tests performed on effluents, receiving waters, and non-toxic "blank" samples as well. Data from this study also is representative of qualified laboratories that routinely conduct WET testing for permittees (see Section VI.C.2 of this preamble). In method development, EPA routinely uses such data from interlaboratory validation studies to set performance-based criteria.

In September 2001, EPA proposed variability criteria for four methods. Some commenters recommended that EPA expand the variability criteria to other test methods and other test endpoints. EPA did not propose variability criteria for the *Selenastrum capricornutum* Growth Test and the Sheepshead Minnow Larval Survival and Growth Test because these methods showed lower within-test variability in EPA's evaluation of national reference toxicant test data (USEPA, 2000c). EPA's WET Interlaboratory Variability Study confirmed that the Sheepshead Minnow Larval Survival and Growth Test was less variable than the methods for which EPA proposed variability criteria, however, the *Selenastrum capricornutum* Growth Test showed comparable within-test variability to methods for which EPA proposed variability criteria. For this reason, EPA is today requiring variability criteria for the *Selenastrum capricornutum* Growth Test in addition to the four methods for which variability criteria were proposed.

As previously stated in the method manuals (USEPA, 1993; USEPA, 1994a; USEPA, 1994b) and EPA's Technical Support Document (USEPA, 1991), EPA recommends the use of point estimation techniques over hypothesis testing approaches for calculating endpoints for effluent toxicity tests under the NPDES Permitting Program. EPA is instituting variability criteria to reduce within-test variability and to increase statistical sensitivity when test endpoints are expressed using hypothesis testing rather than the preferred point estimation techniques. For the five methods for which EPA is instituting variability criteria when test results are analyzed by hypothesis test methods, less than 90% of tests are able to detect a 25% reduction in growth or reproduction (from the control treatment) as statistically significant using the hypothesis test. A 25% reduction in growth or reproduction is equivalent to the effect level measured using the preferred point estimation endpoint for chronic methods (i.e., the IC25). Instituting variability criteria for these five chronic methods will improve the overall statistical sensitivity when using hypothesis testing and allow hypothesis testing approaches to achieve a level of statistical sensitivity that is more comparable to the preferred point estimation endpoint (IC25).

EPA is not requiring variability criteria for the Sheepshead Minnow Larval Survival and Growth Test, because the WET Interlaboratory Variability Study confirmed that this method is less variable than the five methods for which EPA is requiring variability criteria. In EPA's WET Interlaboratory Variability Study, all Sheepshead Minnow Larval Survival and Growth Tests were able to detect effects of 25% or less as statistically significant in hypothesis testing without instituting variability criteria. The 90th percentile PMSD for the Sheepshead Minnow Larval

Survival and Growth Test was 17%, compared to 29%, 47%, 30%, 37%, and 28% for the five methods for which EPA is requiring variability criteria. For the chronic methods that were not evaluated in the WET Interlaboratory Variability Study, EPA does not have sufficient data to support the implementation of mandatory variability criteria at this time.

EPA is not requiring variability criteria for survival endpoints of acute methods because, in general, these methods are less variable than sublethal chronic test methods, and hypothesis testing approaches are able to achieve a level of statistical sensitivity similar to the preferred point estimation endpoint for acute methods and survival endpoints (i.e., the LC50). The preferred point estimation endpoint for the analysis of survival in acute methods is the LC50, which represents an effect level of 50% mortality. Over 90% of acute tests in the WET Interlaboratory Variability Study were able to detect effects of 50% mortality or less as statistically significant in hypothesis testing without instituting variability criteria. The 90th percentile of PMSD values in the WET Interlaboratory Variability Study was 39% for the Fathead Minnow Acute Test, 25% for the *Ceriodaphnia dubia* Acute Test, 17% for the Sheepshead Minnow Acute Test, and 31% for the Inland Silverside Acute Test. Based on these measured PMSD values, well over 90% of acute tests should be able to detect effects at the LC50 as statistically significant without instituting variability criteria.

By requiring application of variability criteria today in five methods, EPA does not intend to discourage permitting authorities from applying variability criteria for other endpoints or methods, or from applying more stringent variability criteria for the five chronic methods subject to today's action. While EPA continues to recommend that permitting authorities apply variability criteria to additional methods as recommended in EPA guidance (USEPA, 2000c), today's rule does not require such variability criteria for additional methods or endpoints.

2. Minimum Number of Replicates

EPA solicited comment on increasing the minimum number of replicates in certain WET tests from three to four. Commenters were supportive of this proposed change and stated that this change was needed to support the use of non-parametric hypothesis tests as outlined in the method manuals. In today's action, EPA is increasing the minimum number of replicates as proposed.

3. Test Requirements/Recommendations

Several commenters on the proposed rule expressed concern that WET methods do not adequately differentiate between mandatory test conditions (i.e., those required using the words "must" or "shall") and discretionary test conditions (i.e., those recommended using the word "should"). Commenters claimed that this situation causes difficulty in reviewing, validating, and certifying test results submitted under NPDES permits. To address this concern, EPA modified the WET methods to clearly distinguish between required and recommended test conditions for the purposes of reviewing WET test data submitted under NPDES permits. In today's action, EPA has modified the tables of test conditions and test acceptability criteria presented in the method manuals for each method, such that each test condition is identified as required or recommended. In addition, EPA has added to each method manual a section on test review. This section provides guidance on the review of sampling and handling procedures, test acceptability criteria, test conditions, statistical methods, concentration-response relationships, reference toxicant testing, and test variability. This section also establishes two new requirements for WET test review: mandatory review of concentration-response relationships and, for some methods, the mandatory variability criteria described earlier.

4. Sample Collection and Holding Times

In today's action, EPA has further clarified the requirements for sample collection and sample holding times. EPA made these modifications in response to comments requesting additional clarification and additional flexibility. In today's action, EPA has not modified the default maximum 36 hour sample holding time (up to 72 hours with regulatory authority approval), which must be met for first use of the sample, but EPA has provided additional clarification and additional flexibility for the use of samples for test renewals when the samples meet the initial sample holding times for first use. Sample holding times apply to "first use of the sample," and samples may be used for renewal at 24, 48, and/or 72 hours after first use.

The method manuals also now provide additional flexibility when shipment of renewal samples is delayed during an ongoing test. If shipping problems (e.g., unsuccessful Saturday delivery) are encountered with renewal samples after a test has been initiated, the permitting authority may allow the continued use of the most recently used sample for test renewal. EPA also clarified that sample collection on days one, three, and five is the recommended (not required) sample collection scheme. A minimum of three samples are required for seven-day chronic tests, but variations in the sampling scheme (i.e., the days on which new samples are collected) also are allowed.

5. Reference Toxicant Testing

Today's action clarifies the purpose and requirements of reference toxicant testing and the appropriate use of reference toxicant test results. Several commenters identified inconsistencies in the requirements for reference toxicant testing and recommended that EPA clarify the purpose of generating reference toxicant test data. In today's action, EPA clarifies that reference toxicant testing is used to 1) initially demonstrate acceptable laboratory performance, 2) assess the sensitivity and health of test organisms, and 3) document ongoing laboratory performance. EPA has made method manual modifications consistent with this stated purpose. Regardless of the source of test organisms (in-house cultures or purchased from external suppliers), the testing laboratory must perform at least one acceptable reference toxicant test per month for each type of toxicity test method conducted in that month. If a test method is conducted only monthly, or less frequently, a reference toxicant test must be performed concurrently with each effluent toxicity test. This requirement will document ongoing laboratory performance and assess organism sensitivity and consistency when organisms are cultured in-house. When organisms are obtained from external suppliers, concurrent reference toxicant tests must be performed with each effluent sample, unless the test organism supplier provides control chart data from at least the last five months of reference toxicant testing. This requirement assesses organism sensitivity and health when organisms are obtained from external vendors. To initially demonstrate acceptable laboratory performance, the method manuals require a laboratory to obtain consistent, precise results with reference toxicants before it performs toxicity tests with effluents under NPDES permits.

In today's action, EPA also clarifies the appropriate use of reference toxicant test results. Commenters recommended that EPA provide additional guidance on evaluating reference toxicant test results and using these results to validate toxicity tests on test samples of unknown toxicity. In response, EPA clarifies that reference toxicant test results should not be used as a *de facto* criterion for rejection of individual effluent or receiving water tests. Reference toxicant testing is used for evaluating the sensitivity and consistency of organisms over time and for documenting initial and ongoing laboratory performance. EPA clarified the steps to take when more than 1 in 20 reference toxicant tests falls outside of control chart limits, or when a reference toxicant test result falls “well” outside of control limits. Under these circumstances, the laboratory should investigate sources of variability, take corrective actions to reduce identified sources of variability, and perform an additional reference toxicant test during the same month.

In response to comments that reference toxicant testing only compares variability within a laboratory, EPA added guidance for evaluating test precision among laboratories and for limiting excessive variability in reference toxicant testing. EPA has recommended that laboratories compare the calculated coefficient of variation, also referred to as the CV (i.e., standard deviation / mean), of the IC25 or LC50 for the 20 most recent data points to the distribution of laboratory CVs reported nationally for reference toxicant testing (USEPA, 2000c). If the calculated CV exceeds the 75th percentile of CVs reported nationally for LC50s or IC25s, the laboratory should use the 75th and 90th percentiles to calculate warning and control limits, respectively, and the laboratory should investigate options for reducing variability.

Several commenters recommended standardizing reference toxicants and acceptance ranges for reference toxicant test results. Other comments opposed mandatory reference toxicants and required acceptance ranges claiming that insufficient guidance and data are available for instituting such requirements and that such requirements would impose additional costs on laboratories. In today’s action, EPA is not requiring the use of specific reference toxicants or setting required acceptance ranges for reference toxicant testing. EPA agrees that requiring specific reference toxicants and acceptance ranges would increase laboratory costs. Many laboratories would be forced to develop initial and ongoing documentation of laboratory performance (e.g., reference toxicant control charts) using a new reference toxicant. For these laboratories, years of historic performance information using the original reference toxicant would be rendered useless. In addition, EPA believes that certain advantages gained by requiring reference toxicant acceptance ranges are already provided by method modifications instituted in today's action. For instance, today's action institutes variability criteria when NPDES permits require sublethal WET testing endpoints expressed using hypothesis testing. This method modification limits WET test variability, which would be one of the primary purposes of any standardized reference toxicant acceptance ranges.

6. Sample Holding Temperature

Today's action clarifies the allowable sample holding temperatures for WET samples as 0/-6/C. EPA received comments that the Agency should establish acceptable ranges for the current sampling holding temperature of 4/C. EPA has defined the acceptable range as 0/-6/C based on current NELAC (National Environmental Laboratory Accreditation Conference) standards which state that, "for samples with a specified storage temperature of 4/C, storage at a temperature above the freezing point of water to 6/C shall be acceptable" (NELAC, 2001). EPA also clarifies that hand-delivered samples used on the day of collection do not need to be cooled to 0/-6/C prior to test initiation.

7. Biomass

Today's action clarifies that the sublethal endpoint used in survival and growth tests is based on the number of initial organisms exposed. Comments expressed concern that by calculating the chronic endpoint based on the number of initial organisms (rather than surviving organisms), the growth endpoint was in error and biased. EPA disagrees. In the 1995 WET final rule, EPA changed the test endpoint from a growth endpoint that was based on the number of surviving organisms, to a combined growth and survival endpoint that is based on the number of initial organisms. This does not represent an error in the endpoint calculation, but rather a change in the endpoint itself. EPA made this change: 1) to provide consistency with other methods (e.g., *Ceriodaphnia dubia* Survival and Reproduction Test) that incorporate survival along with sublethal effects, and 2) because the survival and growth endpoint is a more sensitive measure than the growth endpoint alone. While the 1995 WET final rule changed the test endpoint to a combined survival and growth endpoint, the method manuals continued to refer to the endpoint as a "growth" endpoint. Today's action clarifies that the endpoint is, in fact, a combined survival and growth endpoint that is more accurately termed biomass.

8. Total Residual Chlorine

Today's action clarifies the requirements for measuring total residual chlorine in WET test samples. Several commenters stated that certain requirements for measuring total residual chlorine were unnecessary when the absence of the chemical has already been determined. In response to these comments, EPA has clarified that if total residual chlorine is not detected in effluent or dilution water at test initiation, it is unnecessary to measure total residual chlorine at test solution renewal or at test termination. If total residual chlorine is detected at test initiation, then measurement of total residual chlorine at test solution renewal and test termination would continue to be required. EPA also has clarified that the measurement of total residual chlorine is unnecessary in laboratory prepared synthetic dilution water.

Commenters also recommended that EPA remove the requirement for the analysis of total residual chlorine immediately following sample collection. EPA has maintained this requirement in today's action, because information on chlorine at the site and time of collection is important for evaluating the effectiveness of chlorination/dechlorination processes and comparing the results of WET testing with instream effects.

9. *Ceriodaphnia dubia* Survival and Reproduction Test Termination Criteria

Commenters recommended various modifications to the test termination criteria in the *Ceriodaphnia dubia* Survival and Reproduction Test. Some commenters recommended a strict seven-day test, and others recommended that the test last no longer than seven days. Other commenters recommended that the test be terminated when 80% of control females produce three broods, rather than the current criteria of 60%. Still other commenters recommended that fourth brood neonates not be counted. To evaluate the recommended approaches to terminating *Ceriodaphnia dubia* Survival and Reproduction Tests, EPA analyzed test data from the WET Interlaboratory Variability Study using each of the recommended test termination criteria. EPA compared the recommended criteria to the current criteria by calculating within-test variability and successful test completion rates under each of the test termination scenarios. While some of the recommended test termination criteria (such as termination when 80% of control females produce three broods or a maximum of seven days) slightly improved the within-test variability of the method (from a median PMSD of 23.2% to 19.9%), these criteria caused significant reductions in successful test completion (from 83% successful completion to 66%). Only the recommendation to exclude fourth brood neonates resulted in a decrease in within-test variability without an offsetting decrease in the rate of successful test completion. Based on these results, EPA is modifying the *Ceriodaphnia dubia* Survival and Reproduction Test to specify that neonates from fourth broods are excluded from the number of neonates counted in the test. With the exception of excluding fourth brood neonates, EPA is maintaining the current test termination criteria. These criteria state that the test is terminated when 60% or more of the surviving control females have produced their third brood, or at the end or eight days, whichever occurs first. These criteria may be met at six, seven, or eight days.

10. Additional Minor Corrections

Some commenters identified additional errors in the WET method manuals or the proposed changes that EPA was not aware of at the time of proposal. In today's action, EPA has made these additional corrections and minor clarifications.

C. Ratification and Withdrawal of Methods

In the September 28, 2001 proposal, EPA proposed to ratify the following eleven test methods evaluated in the WET Interlaboratory Variability Study: *Ceriodaphnia dubia* Acute Test; Fathead Minnow Acute Test; Sheepshead Minnow Acute Test; Inland Silverside Acute Test; *Ceriodaphnia dubia* Survival and Reproduction Test; Fathead Minnow Larval Survival and Growth Test; *Selenastrum capricornutum* Growth Test; Sheepshead Minnow Larval Survival and Growth Test; Inland Silverside Larval Survival and Growth Test; *Mysidopsis bahia* Survival, Growth, and Fecundity Test; and *Champia parvula* Reproduction Test. EPA proposed to withdraw the *Holmesimysis costata* Acute Test and, in its place, proposed a revised version of the method. As explained previously, EPA is ratifying ten of these methods today based on the results of EPA's WET Interlaboratory Variability Study that demonstrate the adequacy, availability, and comparability of the methods (see Section IV.C). For these ten methods, EPA generated sufficient interlaboratory validation data, and those data justify ratification. EPA's WET Interlaboratory Study evaluated interlaboratory precision, successful test completion rates, and false positive rates of the WET methods from the testing of over 700 samples in 56 laboratories. For each method ratified in today's action, EPA obtained interlaboratory data on four sample matrices from at least seven laboratories to as many as 35 laboratories.

Several commenters expressed concern that EPA did not properly validate WET test methods, specifically, the *Champia parvula* Reproduction Test and the *Holmesimysis costata*

Acute Test. EPA was unable to obtain interlaboratory precision data for these methods in the WET Interlaboratory Variability Study. Because these WET methods are not used widely in NPDES permits, EPA was unable to contract with a minimum of six laboratories qualified and willing to conduct these test methods within the time frame of the Study. In the proposed rule, EPA supported these methods with intralaboratory precision data and limited interlaboratory precision data (two trials of the *Holmesimysis costata* Acute Test in two laboratories), but commenters questioned the sufficiency of such data for validating methods for nationwide use, as well as the necessity to approve such methods for nationwide use.

EPA has reviewed its proposal to ratify the *Champia parvula* Reproduction Test in light of comments received and has decided to withdraw the method from the list of nationally-approved test methods at 40 CFR Part 136. At the current time, an insufficient number of laboratories nationwide have the capabilities to perform the method. As noted, EPA was thus unable to obtain a rigorous multi-laboratory performance data set to comprehensively evaluate this method. EPA had predicted that as the requirements for use of this organism in the NPDES permit program increased, the resulting increase in market demand would result in an increase in the number of laboratories capable of performing the test. However, the number of permits requiring the *Champia parvula* chronic test has remained low (DeGraeve et al., 1998), so few laboratories have invested in developing *Champia parvula* cultures or standard operating procedures for the method. While today's action removes the *Champia parvula* chronic test method from the 40 CFR Part 136 listing, EPA retains the standardized method in the marine chronic method manual with an explanation that the method is not listed at 40 CFR Part 136 for nationwide use. Accordingly, retention of the method in the method manual continues to enable standardization of the method for developmental and other non-regulatory purposes and may foster laboratories to maintain or even develop expertise in performing the method.

EPA also has reviewed its proposal of the *Holmesimysis costata* Acute Test in light of comments received. As proposed, EPA now withdraws *Holmesimysis costata* as an acceptable species for use in the *Mysidopsis bahia* Acute Test method. EPA does not, however, promulgate the proposed *Holmesimysis costata* Acute Test method as a nationally-approved method at 40 CFR Part 136 at this time. Because the *Holmesimysis costata* Acute Test is used in only a small number of permits on the West Coast, EPA was unable to obtain sufficient interlaboratory data on this method during the time that the WET Interlaboratory Variability Study was conducted to support today's rulemaking. While today's action removes the *Homesimysis costata* Acute Test from the 40 CFR Part 136 listing, EPA includes the proposed method in the method manual with an explanation that the method has not yet been approved at 40 CFR Part 136 for nationwide use.

Three commenters, including the California State Water Resources Control Board, supported ratification of the *Holmesimysis costata* Acute Test method. The California State Water Resources Control Board added that ratification of this method was "particularly important, as it is the only method employing a marine species that is indigenous to the Pacific coast." The California State Water Resources Control Board has been proactive in developing, testing, validating, and implementing WET test methods specific to West Coast species (USEPA, 1995b), and EPA does not intend to frustrate that effort by today's action. For this reason, EPA is specifying in Table IA of 40 CFR Part 136 that the marine acute and marine chronic test methods ratified in today's rulemaking measure toxicity to estuarine and marine organisms "of the Atlantic Ocean and Gulf of Mexico." By defining the parameter measured by promulgated marine methods as toxicity to organisms "of the Atlantic Ocean and Gulf of Mexico," today's action does not displace West Coast methods that have been approved for use in States such as California. Because test procedures for measuring toxicity to estuarine and marine organisms of the Pacific Ocean are not listed at 40 CFR Part 136, permit writers may include (under 40 CFR 122.41(j)(4) and 122.44(i)(1)(iv)) requirements for the use of test procedures that are not approved at Part 136, such as West Coast WET methods (USEPA, 1995b) on a permit-by-permit basis. Furthermore, this rule does not preclude permit writers addressing marine or estuarine waters of the Pacific Ocean from requiring, on a permit-by-permit basis, any method designated as approved for "estuarine and marine organisms of the Atlantic Ocean and Gulf of Mexico," where such method is suitable for the specific application.

VI. Response to Major Comments

EPA encouraged public participation in this rulemaking and requested comments on the proposed revision and ratification of WET methods. EPA also requested data supporting comments, if available. Thirty-eight stakeholders provided comments on the proposal. Stakeholders included eight laboratories, eight regulatory authorities, 11 industries/industry groups, nine publicly-owned treatment works (POTWs), and two environmental consulting companies.

This section summarizes major comments received on the proposed rule that were not previously addressed in Section V and provides a summary of EPA’s responses. The complete comment summary and response document can be found in the public record for this final rule.

A. Proposed WET Method Changes

EPA received comments on each of the proposed method changes, and those comments that prompted modifications to the proposed method changes are discussed in Section V of this preamble. Other substantial comments on proposed method changes follow.

1. Cost

Several commenters expressed concern that proposed method modifications will increase test costs. Of the WET method modifications instituted in today's action, only four are additional mandatory changes that have the potential to increase test costs. These four modifications include: 1) the requirement for blocking by known parentage in the *Ceriodaphnia dubia* Survival and Reproduction Test; 2) the requirement to review test results for concentration-response relationships; 3) the incorporation of mandatory variability criteria for certain test methods when NPDES permits require sublethal WET testing endpoints expressed using hypothesis testing; and 4) the increase in the minimum number of replicates for the Fathead Minnow Larval Survival and Growth Test, *Selenastrum capricornutum* Growth Test, Sheepshead Minnow Larval Survival and Growth Test, Inland Silverside Larval Survival and Growth Test, and Sea Urchin Fertilization Test. EPA believes that the overall cost increases due to these changes will be minor and that the potential benefits of these modifications outweigh the incremental costs. EPA has estimated that the total cost of these modifications for all permittees will be less than five million dollars per year nationwide for all tests (Table 2 and USEPA, 2002). EPA believes that these costs also would be alleviated by a potential reduction in costs for retesting and additional investigations (e.g., toxicity identification evaluations). The modifications should result in improved test performance and increased confidence in the reliability of testing results.

Table 2. Estimated total cost resulting from WET method modifications required by today's action (from USEPA, 2002).

Modification	Cost ($/yr)
Blocking-by-parentage	$352,592
Concentration-response relationship	$98,069
Increased replicates	$886,634
Variability criteria	$2,595,873
Total	**$3,933,168**

2. Concentration-Response Relationships

Today, EPA is finalizing proposed method modifications to require the review of concentration-response relationships for all multi-concentration tests. Under this requirement, the concentration-response relationship generated for each multi-concentration test must be reviewed to ensure that calculated test results are interpreted appropriately. In conjunction with this requirement, EPA has provided recommended guidance for concentration-response relationship review (USEPA, 2000a).

Several commenters expressed concern that the proposed method modifications require that the concentration-response relationship be reviewed but does not require that a concentration-response relationship be established before determining that toxicity is present. Commenters recommended that EPA require the establishment of a "valid" concentration-response relationship prior to determining toxicity. Though within the scope of the proposed rule, EPA does not consider such a requirement appropriate for several reasons. First, WET methods and the WET testing program rely on the measurement of specific test endpoints (NOECs, LC50s, IC25s) for determining toxicity, not on achievement of specified concentration-response patterns. Second, the concentration-response guidance is a component of test review that ensures that test endpoints, which are used to determine toxicity, are calculated and interpreted appropriately. Second, concentration-response relationships are empirical; and a single definition for a "valid" concentration-response relationship is not appropriate. A range of toxicants may produce an infinite range of different shaped responses. In addition, a single response pattern may be due to several different reasons, some indicating toxicity, and some not. For example, the presence of pathogens, considered an adverse effect confounding WET tests, may produce the same concentration-response pattern as a true toxicant. For this reason, EPA designed the guidance as a step-by-step review process that investigates the causes for non-ideal concentration-response patterns and provides for proper interpretation of test endpoints. Third, WET testing has inherent characteristics that may limit the ability to achieve ideal concentration-response relationships. For instance, WET testing is constrained to 100% effluent sample as the highest test concentration. This sometimes inhibits the ability to establish an ideal concentration-response relationship that extends gradually from no effect at one concentration to complete effect at some higher concentration. Traditional toxicology on pure substances, from which the concentration-response relationship concept is borrowed, is not similarly constrained. Test concentrations can be increased or lowered until an ideal response is generated. The typical WET test design of five concentrations and a control also may limit the ability to generate ideal concentration-response relationships. The location or spacing of these five concentrations may miss the gradual transition from no effect to complete effects. In traditional toxicology using pure substances, tests can be rerun with altered or additional test concentrations of the same compound, but in WET testing each individual sample and test is unique and cannot be exactly duplicated due to the complex and dynamic nature of the test samples over time. Non-ideal concentration-response relationships will occasionally be encountered in WET testing, and the goal of concentration-response relationship review is to properly interpret these non-ideal patterns.

Fourth, the concentration-response relationship guidance has been shown to be very effective at reducing false positives. For instance, in the WET Interlaboratory Variability Study, the use of the concentration-response relationship guidance reduced false positive incidences from above 14% to below 5% for some methods (USEPA, 2001a).

3. Confidence Intervals

EPA is finalizing the proposed method modifications that provide guidance when confidence intervals are not generated. This guidance clarifies that confidence intervals may not be generated by EPA software when test data do not meet specific assumptions required by the statistical methods, when point estimates are outside of the test concentration range, or when specific limitations imposed by the software are encountered. EPA also provides guidance for proceeding under each circumstance. Some commenters stressed the importance of obtaining confidence intervals in all circumstances and recommended that EPA use confidence intervals in assessing the reliability of results and determining compliance. EPA believes that the failure to generate confidence intervals should not adversely affect WET test result reporting because confidence intervals surrounding point estimates are not currently reported in the Permit Compliance System (the national database tracking compliance with NPDES permits) or used in compliance determinations. Compliance with permit requirements is based on the point estimate itself and not confidence intervals surrounding the estimate. This approach is no different in WET testing than in chemical testing, where compliance is also based on the analytical result itself. EPA demonstrated in the WET Interlaboratory Variability Study that the WET methods provide adequate precision and adequate protection from false positives. Therefore, EPA is not altering the compliance determination approach to include the use of confidence intervals.

B. Additional Revisions to WET Test Methods

In addition to receiving comment on proposed method modifications, EPA received comments recommending additional method modifications. Those recommendations that EPA incorporated in today's action and those comments that prompted additional modifications are discussed in Section V of this preamble. Other substantial comments on additional method changes are discussed below.

1. Method Flexibility

EPA received comments that requested additional requirements be added to WET test methods, as well as comments that WET test methods are overly restrictive and would benefit from additional flexibility. As with all promulgated methods, EPA has attempted to balance these two opposing objectives. EPA has prescribed certain method elements when necessary to ensure the reliability of results, and allowed flexibility in other method elements so that the performance of analytical methods can be optimized. As noted in Section V.B.3, EPA reevaluated the use of mandatory and discretionary terms in the WET test methods to ensure that the terms are included in the manuals as intended.

EPA received comments that WET test methods do not adequately distinguish between required and recommended procedures. In response, EPA modified the tables of test conditions and test acceptability criteria presented in the method manuals for each method, such that each item is identified as required or recommended. In addition, EPA added to each method manual a section on test review. This section provides direction on the review of sampling and handling procedures, test acceptability criteria, test conditions, statistical methods, concentration-response relationships, reference toxicant testing, and test variability.

EPA believes that these method modifications clarify the requirements for acceptable WET test results submitted under NPDES permits. However, EPA acknowledges that these method modifications will not solve all commenters concerns regarding inconsistencies in WET test review and acceptance. In the WET test methods, EPA established the minimum requirements for acceptable WET tests. In some cases, NPDES permits incorporate recommendations from the WET test method manuals as requirements in the permit (on a permit-by-permit basis). Authorized States retain the authority to establish more stringent requirements or to require additional procedures, test conditions, or QC elements. Thus, WET requirements ultimately reflected as NPDES permit requirements may continue to differ among States.

2. Test Acceptability Criteria

In the proposed rule, EPA solicited comments on increasing the test acceptability criteria for mean control reproduction in the *Ceriodaphnia dubia* Survival and Reproduction Test and mean control weight in the Fathead Minnow Larval Survival and Growth Test. EPA also requested that commenters submit supporting data. EPA received comments both in favor of and opposed to increasing test acceptability criteria for these methods, but these comments were not accompanied by supporting data. Because EPA does not currently possess and did not receive data indicating that such changes would improve the performance of the methods, EPA is not modifying the survival, growth and reproduction test acceptability criteria for these methods in today's action.

EPA also received comments recommending the Agency establish requirements for additional test acceptability criteria, such as limits on control variability. Today's action does establish mandatory variability criteria when NPDES permits require sublethal WET testing endpoints expressed using hypothesis testing. EPA has incorporated these variability criteria as a required test review step for five methods rather than as test acceptability criteria, meaning that, depending on the reviewed result, retesting may be necessary. EPA continues to use the term “test acceptability criteria” only to refer to the evaluation of biological measurements in test controls (i.e., control survival, reproduction, and growth).

3. Quality Assurance/Quality Control Requirements

Some commenters expressed concern that WET test methods do not contain adequate quality assurance/quality control (QA/QC) requirements. Each of the toxicity test method manuals contains separate, detailed, QA/QC guidelines, and each analytical method within these manuals discusses all aspects of the tests which are related to QA/QC. Section 4 of each method manual provides QA/QC requirements and guidance for facilities, equipment, and test chambers; test organisms; culturing and test dilution water; effluent and receiving water sampling and handling; test conditions; food quality; test acceptability criteria; calibration and standardization; replication and test sensitivity; demonstrating acceptable laboratory performance; documenting ongoing laboratory performance; and record keeping. The primary QA/QC requirements of WET test methods, as contained in Section 4 of the method manuals, remain the requirements for acceptable biological performance (survival, reproduction, and growth) in test controls and the requirement for the routine analysis of reference toxicants. In today’s action, however, EPA added additional QA/QC requirements including the required review of concentration-response relationships and mandatory variability criteria when NPDES permits require sublethal WET testing endpoints expressed using hypothesis testing. EPA believes that the QA/QC requirements of WET tests will adequately ensure that results are reliable and of known and acceptable quality.

4. Statistical Methods

Several commenters recommended that EPA approve and use alternative statistical methods (such as percent effect approaches and Generalized Linear Models). EPA has not included such alternative statistical methods in today's modifications to WET test methods. EPA believes that the statistical methods currently recommended in the WET methods are appropriate, and acknowledges that these recommended statistical methods are not the only appropriate techniques. The method manuals state that, "the statistical methods recommended in this manual are not the only possible methods of statistical analysis." The recommended statistical methods described in the method manuals were selected because they are "(1) applicable to most of the different toxicity test data sets for which they are recommended, (2) powerful statistical tests, (3) hopefully 'easily' understood by nonstatisticians, and (4) amenable to use without a computer, if necessary" (see Subsection 9.4.1.2 of USEPA, 1994a).

Several commenters also expressed concern over bias introduced by the smoothing technique that is used in the recommended Inhibition Concentration Procedure (ICp). EPA has acknowledged in the method manuals and in method guidance (USEPA, 2000a) that the smoothing process may result in an upward adjustment in the control mean. EPA has provided guidance on concentration-response relationship review that corrects anomalous results that may arise from this smoothing procedure (USEPA, 2000a). This guidance warns that results from point estimation techniques should be interpreted carefully when the response pattern includes stimulation at low concentrations and no significant effect at higher concentrations. Under these conditions, the smoothing process could result in anomalous results, so EPA guidance recommends evaluating the ICp calculation without smoothing in these cases. If the percent effect at the receiving water concentration (RWC) is less than 25% when calculated without smoothing, and the response at the RWC is not statistically significantly different from the control response, then a calculated IC25 of less than the RWC should be noted as anomalous and the effluent determined to be non-toxic at the RWC.

C. Ratification and Withdrawal of Methods

1. Validation of Performance Characteristics

Several commenters stated that EPA did not properly validate WET test methods because it did not evaluate essential performance characteristics. Commenters referenced EPA's *Report to Congress on the Availability, Adequacy, and Comparability of Testing Procedures* (USEPA, 1988) and stated that EPA failed to validate the following performance characteristics required by this report: accuracy, precision, dynamic range, detection limits, interferences, ruggedness (applicability), reporting, and representativeness/method comparability. EPA disagrees with this assertion and maintains that the WET test methods ratified in today's action were adequately validated according to all of the applicable criteria identified in the 1988 Report to Congress.

The list of performance characteristics cited by the commenters is provided in the 1988 Report to Congress within the context of chemical methods, and several of these characteristics are not applicable to biological test methods such as the WET methods that EPA is ratifying today. The 1988 Report to Congress specifically notes that not all such criteria apply to biological testing. The Report explains that the generation of scientifically accurate and valid biological measurements for environmental pollutants requires approximately the same criteria for assessing the adequacy of a method as previously described for chemical analyses, however, there are several differences which are important. Detection limits and dynamic range are specifically listed as characteristics that "are not usually appropriate concepts for all biological measurements unless instrumentation is required." Because some performance characteristics listed in the 1988 Report to Congress for chemical methods are not applicable to biological test methods, EPA did not (and, in fact, could not) evaluate those inapplicable performance characteristics for WET test method validation.

In ratifying the previously approved WET test methods, EPA applied the availability, adequacy, and comparability criteria identified in the Report as relevant to biological measurements. The WET test methods ratified today are "available" because EPA has identified a sufficient number of laboratories that can conduct the test and culture the test organisms. The ratified WET test methods are "adequate" because the multi-laboratory tests (as well as aggregation of single laboratory tests) demonstrate high degrees of precision; the tests are reproducible. In addition, the manuals identify interferences and ways to control interference. Finally, the test acceptability criteria for control performance and requirements for reference toxicant testing provide sufficient standards to ensure data integrity, absent the "calibration" procedures available with non-living analytical instrumentation.

The Report specifically identified detection limits and dynamic range as performance characteristics that are usually not applicable to biological measurements, and the 1988 conclusions remain true today. In addition, accuracy is a performance characteristic that is not completely applicable to WET testing. Accuracy as a performance characteristic of a measurement system describes the closeness of measured results to a known result. Chemical methods generally measure some surrogate property (e.g., absorption of light at a particular wavelength) of an analyte (e.g., copper) to determine the concentration of that analyte. To confirm that the surrogate measure accurately represents the true concentration of the analyte, the pure analyte can be weighed, diluted to a known concentration, and measured using the analytical procedure under study. This procedure cannot be conducted for whole effluent toxicity. Toxicity cannot be purified, weighed, or diluted to a known concentration of "toxicity." Toxicity is only defined by its effects on organisms, and it is these effects that are directly measured in the toxicity test. Because toxicity is inherently defined by the measurement system (a “method-defined analyte”), and toxicity cannot be independently measured apart from a toxicity test, accuracy as a performance characteristic is not completely applicable. The inapplicability of the accuracy performance characteristic does not mean that WET tests are not accurate or that permittees are incapable of certifying the accuracy of WET test results reported on discharge monitoring reports. It means simply that the procedures commonly used in analytical testing to measure the performance characteristic that is termed “accuracy” cannot be applied to WET test methods.

Notwithstanding the previous explanation, one component of accuracy can be described for WET tests. The American Society for Testing and Materials (ASTM) defines accuracy as “a measure of the degree of conformity of a single test result generated by a specific procedure to the assumed or accepted true value and <u>includes both precision and bias</u>” (ASTM, 1998; emphasis added). Bias is defined as “the persistent positive or negative deviation of the average value of a test method from the assumed or accepted true value” (ASTM, 1998). Precision is defined as “the degree of agreement of repeated measurements of the same property, expressed in terms of dispersion of test results about the arithmetical mean result obtained by repetitive testing of a homogeneous sample under specified conditions” (ASTM, 1998). Like ASTM, the 1988 Report to Congress (USEPA, 1988) also explains that accuracy includes both bias and precision. As explained previously, EPA conducted an Interlaboratory Variability Study of the ratified methods in order to, among other things, generate a quantified estimate of the precision for each method studied. WET tests are therefore amenable to the precision portion of accuracy. It is the bias portion of accuracy that is not applicable to WET test methods and cannot be described for WET as it is described for chemical analytes.

The additional performance characteristics listed in the 1988 Report to Congress, namely precision, interferences, ruggedness (applicability), reporting, and representativeness, are applicable to biological test methods, and EPA evaluated and considered these characteristics in ratifying the WET test methods. To establish the precision of the methods, EPA conducted an Interlaboratory Variability Study for each of the WET methods ratified today. From the Study, EPA established single-laboratory and multi-laboratory precision estimates for multiple sample matrices for each method (USEPA, 2001a; USEPA, 2001b). EPA also conducted a study of within laboratory precision measured when testing reference toxicants (USEPA, 2000c). In today's action, EPA is modifying the WET method manuals to include this new and updated single-laboratory and multi-laboratory precision data for each method. Precision data from the WET Interlaboratory Variability Study confirmed that the WET test methods provided adequate precision (CVs ranged from 10.5 to 43.8%). The measured precision ranges for the ratified toxicity tests demonstrate the tests are comparable to (no more variable than) chemical analytical methods approved at 40 CFR Part 136. Finally, the precision had improved since the time the methods were promulgated in 1995, thus confirming EPA's conclusions that precision would improve with time, i.e., as analysts developed more expertise the methods would be "validated by use."

In addition to precision, EPA evaluated and considered the performance characteristic of interferences. Each WET test method contains a section describing possible test interferences. In today's action, EPA has expanded that section to address two additional interference concerns that were raised by stakeholders by including guidance for controlling test interference that could be due to pH drift in the test and interference caused by pathogens.

EPA also evaluated and considered the performance characteristic of ruggedness or applicability. The methods ratified today use materials that are widely available and organisms that can be easily cultured in the laboratory. By conducting a national interlaboratory study of these methods, EPA also confirmed that the methods are adaptable to a wide variety of laboratories and that the methods generate reproducible results in those laboratories. In the WET Interlaboratory Variability Study, EPA documented successful test completion rates of 63.6% to 100% for WET methods. EPA anticipates that method modifications instituted today will improve the successful test completion rate for methods at the bottom of this range, such as the *Selenastrum capricornutum* Growth Test. Today, EPA is requiring the use of EDTA in this test. As laboratories gain experience in performing the test with EDTA, EPA anticipates that successful test completion rates will improve. See Section VI.C.4 of this preamble.

EPA also considered the aspect of result reporting in its development and validation of WET test methods. Each method manual contains a section devoted to test review and reporting. In today's action, EPA has supplemented this section by providing guidance on the review of sampling and handling, test acceptability criteria, test conditions, statistical methods, concentration-response relationships, reference toxicant testing, and test variability. In addition, EPA clarified the required and recommended test conditions when submitting data under NPDES permits.

EPA documented and considered the representativeness or comparability of WET methods. Prior to approving the WET test methods in the 1995 WET final rule, EPA conducted several studies that demonstrated the ability of WET tests to predict impacts of effluents on the biological integrity of receiving waters (USEPA, 1991). In a 1995 workshop of nationally recognized WET experts (the Society of Environmental Toxicology and Chemistry's Pellston Workshop), including those from academia, government, and the regulated community (e.g., POTWs and industry), the experts concluded that "WET testing is an effective tool for predicting receiving system impacts when appropriate considerations of exposure are considered" (Waller et al., 1996). The workgroup also agreed that "further laboratory-to-field validation is not essential for the continued use of WET testing" (Waller et al., 1996).

2. Interlaboratory Variability Study

Several commenters expressed concern that EPA used data from the Interlaboratory Variability Study that was of poor quality and would have been discarded in a regulatory context. In conducting the WET Interlaboratory Variability Study, EPA's objective was to validate the WET methods as promulgated. EPA was not attempting to validate the diversity of testing requirements that may be implemented in various States. State regulatory authorities retain the discretion to enhance the requirements of a method for implementation in their State as well as to require procedures that EPA otherwise recommends. In the WET Interlaboratory Variability Study, EPA appropriately evaluated data according to the promulgated methods and ASTM guidance for measuring interlaboratory method precision. EPA accurately invalidated tests according to test acceptability criteria specified in each method. EPA acknowledges that the promulgated methods allow flexibility in the review of test conditions. The method manuals state that departures in specified test condition ranges do not necessarily invalidate test results. In today's action EPA modified the methods to better clarify this allowable flexibility. For the purposes of reviewing data submitted under NPDES permits, the manuals now clearly distinguish between requirements of the method and recommended test condition ranges.

Several commenters expressed concern that EPA did not use the results of reference toxicant tests from the WET Interlaboratory Variability Study to qualify or disqualify data. EPA agrees.

EPA used reference toxicant tests in the manner in which they are described in the method manuals. Failure of reference toxicant tests do not necessarily invalidate a test. In today's action, EPA has incorporated method modifications to clarify reference toxicant testing requirements and the appropriate use of reference toxicant test data. EPA has clarified that reference toxicant test results should not be used as a *de facto* criterion for rejection of individual effluent or receiving water tests, but rather, reference toxicant testing is used for evaluating the health and sensitivity of organisms over time and for documenting initial and ongoing laboratory performance.

Several commenters expressed concern that too few data points were used to estimate method performance in the WET Interlaboratory Variability Study. In accordance with ASTM guidance on determining interlaboratory method precision, EPA set a data quality objective of a minimum of six complete and useable data sets for each WET test method evaluated in the Study. To meet this data quality objective, EPA endeavored to sponsor a minimum of nine laboratories per method. For all of the methods that EPA is ratifying today, seven or more laboratories participated in interlaboratory testing. For several individual sample matrices and test method combinations that were tested (blank sample analyzed using the *Selenastrum capricornutum* Growth Test, receiving water sample analyzed using the *Selenastrum capricornutum* Growth Test without EDTA, and the receiving water sample analyzed using the Inland Silverside Acute Test), fewer than six useable data sets were obtained. EPA did not, however, establish precision criteria in today's rule based on results from a single sample matrix. EPA tested four sample matrices (blank, reference toxicant, effluent, and receiving water) with each test method, and precision estimates were based on the combined results of reference toxicant, effluent and receiving water testing. Because multiple sample matrices were used to generate precision estimates, more than six useable data sets were used for each method. In fact, at least 17 data sets were used to establish precision estimates for each method.

Several commenters also expressed concern that the selection of laboratories for the WET Interlaboratory Variability Study was biased. EPA disagrees. EPA believes that the laboratories that participated in the WET Interlaboratory Variability Study were representative of the laboratory community that commonly conducts WET testing for permittees. From the outset, EPA and the regulated community wanted to ensure that participants in the Study were representative. Industry trade groups, such as AMSA (Association of Metropolitan Sewerage Agencies), surveyed their member permittees to identify the laboratories that provide their routine WET testing services. AMSA requested that members sponsor those laboratories' participation in the Study. Of the 55 participant laboratories involved in the Study, 44 (or 80%) were specifically recommended by AMSA with commitments from AMSA members to sponsor such laboratories' participation in the Study. Thirty-seven of these laboratories were ultimately sponsored by AMSA members to analyze samples using one or more methods. The remaining seven laboratories had commitments of sponsorship from AMSA members, but were ultimately sponsored by EPA in the Study because their bids were among the nine lowest. The high percentage (80%) of laboratories in the Study that were sponsored by permittees for participation demonstrates that the laboratories involved in the Study are representative of those that commonly conduct WET testing for permittees.

Several commenters expressed concern that a majority of laboratories did not detect toxicity in the reference toxicant sample type distributed for the *Ceriodaphnia dubia* Survival and Reproduction Test method. Prior to interlaboratory testing in the WET Interlaboratory Variability Study, referee laboratories conducted preliminary testing to determine the appropriate composition of samples to prepare for the Study. This preliminary testing was important for ensuring that test samples prepared for the Study produced results within the test concentration range. Despite these preliminary testing efforts, the spiking level selected for the reference toxicant sample type in the *Ceriodaphnia dubia* Survival and Reproduction Test method was insufficient to produce the targeted level of effect. The spiking concentration of KCl for this sample was selected to achieve an IC25 of approximately 50% sample based on preliminary testing, but the spiked sample missed this targeted effect level. The prepared sample was only slightly toxic and could not be detected as toxic in 67% of tests. Depending on the sensitivity of test organisms at individual laboratories, some laboratories identified the sample as toxic, while other laboratories did not. Similarly, marginally toxic effluents may exhibit intermittent toxicity in routine monitoring. In such cases, permittees and regulatory authorities should consult EPA guidance that addresses marginal and intermittent toxicity (USEPA, 1991; USEPA, 2000c; USEPA, 2001f).

The reference toxicant sample used in the Study also was prepared as an ampule that was reconstituted at each participant laboratory. This reconstitution process also likely produced minor variations (from laboratory to laboratory) in the final sample composition that influenced whether toxicity was detected. While the concentration of potassium ions was not measured in each final reconstituted sample, conductivity was measured and can be used as an approximate surrogate measure. In samples that showed toxicity, the average conductivity was 873 :mhos, and in samples that did not show toxicity, the average conductivity was 797 :mhos. The differences in conductivity between tests that indicated toxicity and tests that did not were statistically significantly different (at the alpha = 0.05 level). This finding indicates that those samples which were less diluted in the reconstitution process, were also more likely to be toxic.

Several commenters also expressed concern over the way EPA handled outlier data points in the WET Interlaboratory Variability Study. EPA believes that outliers were treated according to standard practice and according to ASTM standards for measuring method precision. EPA identified outliers using ASTM's h and k statistics, and discarded outliers only when a probable cause for the outlier was identified. In all, only eight tests in the entire study of 698 tests were excluded based on outlier analysis.

3. Variability

Several commenters stated that the variability of the WET methods (measured in terms of CV) is too high for use in NPDES permits. Commenters also recommended that specific steps be taken to account for variability in the permit limit derivation and compliance determination process. EPA believes that the WET Interlaboratory Variability Study accurately estimated the precision of WET test methods, and that this precision is adequate for regulatory use of the WET methods. The precision measured for the WET test methods is comparable to that of chemical methods. While EPA agrees with commenters that WET test methods cannot be compared in all aspects to chemical methods, the comparison of interlaboratory precision values does demonstrate that WET test methods are no more variable than other methods approved at 40 CFR Part 136 and used for regulatory compliance purposes.

In a recent peer-reviewed guidance document (USEPA, 2000c), EPA thoroughly evaluated the issue of WET test method variability and accounting for such variability in NPDES applications. The document concluded that "comparisons of WET method precision with method precision for analytes commonly limited in NPDES permits clearly demonstrate that the variability of the promulgated WET methods is within the range of variability experienced in other types of [required regulatory] analyses." The analytical variability of WET test methods is accounted for appropriately in the development of permit limits derived according to EPA's Technical Support Document (TSD) (USEPA, 1991). The TSD approach accounts for both effluent variability and method variability. The TSD statistical approach to determination of reasonable potential and permit limit derivation considers combined effluent and analytical variability through the CV of measured effluent values. Because the determination of effluent variability is based on empirical measurements, the variability estimated for effluent measurements includes the variability of pollutant levels, sampling variability, and a smaller component owed to method variability.

EPA does not recommend additional approaches or factors to account for variability, because the TSD approach appropriately accounts for method variability in the permit derivation process. In the guidance document, EPA evaluated additional approaches to account for variability in the permit derivation process and concluded that such approaches would not ensure adequate protection of water quality. The TSD approach was designed to provide a reasonable degree of protection for water quality as well as from effluent and analytical variability. Alternative approaches would undermine these objectives.

Some commenters expressed specific concern that the *Selenastrum capricornutum* Growth Test method was too variable. EPA believes that the variability of the *Selenastrum capricornutum* Growth Test method, as measured in the WET Interlaboratory Variability Study (USEPA, 2001a) and variability guidance document (USEPA, 2000c), is acceptable for the intended regulatory use of the methods. EPA observed in the WET Interlaboratory Variability Study that the variability of the *Selenastrum capricornutum* Growth Test method was lower when the method was conducted with the addition of EDTA. In today's action, EPA is removing the option to conduct the test without the addition of EDTA when data is submitted under NPDES permits. EPA believes that this modification will improve the overall performance of the test method. False positive rates decreased from 33.3% to 0.00% and interlaboratory variability decreased from 58.5% to 34.3% when EDTA was added. EPA cautions, however, that the required addition of EDTA may make the *Selenastrum capricornutum* Growth Test less sensitive, thus less useful, for measuring the toxicity of some test samples, specifically, samples that contain toxic levels of metals.

4. Successful Test Completion Rate

Some commenters stated that EPA incorrectly calculated successful test completion rates in the WET Interlaboratory Variability Study by failing to invalidate tests that did not meet specific test condition ranges. As previously discussed (see Section VI.C.2 of this preamble), EPA accurately invalidated tests according to the test acceptability criteria specific to each method, and successful test completion rates were based on meeting these criteria. EPA acknowledges that the promulgated methods allow flexibility in the review of test conditions. The method manuals state that departures in specified test condition ranges do not necessarily invalidate test results. In today's action EPA has modified the methods to better clarify this allowable flexibility. For the purposes of reviewing data submitted under NPDES permits, the manuals now clearly distinguish between requirements of the method and recommended test condition ranges.

Several commenters stated that the successful test completion rate measured for the *Ceriodaphnia dubia* Survival and Reproduction Test method was unacceptable and indicates a lack of ruggedness. EPA believes that the successful test completion rate observed for the *Ceriodaphnia dubia* Survival and Reproduction Test method in the WET Interlaboratory Variability Study was artificially suppressed by very poor performance in a small subset of laboratories. Only ten of the 34 participant laboratories performed invalid tests, but eight of these laboratories performed invalid tests on 50% or more of the samples tested. The low rate of successful test completion in these eight laboratories may have been influenced by the Study's strict testing schedule, which required that each test be conducted on a given day and that all tests be conducted within a 15-day time period. When invalid tests conducted in a given laboratory were likely due to marginal or poor health of the test organism cultures, then it was logical that the laboratory would fail a high percentage of tests during the Study because culture health was unlikely to fully recover within 15 days. EPA believes that measuring an individual laboratory's rate of successful test completion over a 15-day period may not be representative of that laboratory's overall successful test completion rate. For instance, several laboratories had successful test completion rates of 0% during the WET Interlaboratory Variability Study. Obviously, this result is not indicative of the laboratory's overall successful test completion rate. If so, the laboratory would not be in business or would not have been able to prequalify for participation in the Study. EPA believes that successful test completion rates for this method are higher in routine use because testing laboratories are allowed flexibility in the timing of sample collection and can avoid initiating tests during periods of marginal to poor culture health.

Some commenters expressed concern that the successful test completion rate for the *Selenastrum capricornutum* Growth Test method was too low. In today's action, EPA is removing the option to conduct the test without the addition of EDTA. EPA believes that this modification will improve successful test completion rates for the method as laboratories consistently culture and test with EDTA. The successful test completion rate of 63.6% (when conducted with EDTA) was in part due to laboratory inexperience in using both the with and without-EDTA techniques. For example, two laboratories that cultured organisms without EDTA and generally conducted tests without EDTA showed poor successful test completion rates (failing eight of eight tests) when EDTA was used. These laboratories failed all eight tests conducted with EDTA and passed all but one test (seven of eight) without EDTA. Commenters point out that laboratories were prequalified for participation in the WET Interlaboratory Variability Study, but this prequalification required only experience with the method, not experience with both the with and without-EDTA procedures of the method. Some laboratories cultured organisms and typically conducted tests with EDTA, and other laboratories cultured organisms and typically conducted tests without EDTA.

5. False Positive Rate

Several comments stated that EPA underestimated the false positive rates measured in the WET Interlaboratory Variability Study and that the measured rates are unacceptably high for regulatory use. In the context of WET methods, the false positive rate is the rate at which tests conducted on non-toxic dilution waters indicate the presence of toxicity (i.e., NOEC, LC50, or IC25 test endpoints are <100% effluent). EPA disagrees with comments that stated that false positive rates for WET test methods are unacceptably high. EPA's WET Interlaboratory Variability Study conclusively showed that measured false positive rates were below the theoretical rate of 5% estimated for the methods. Measured false positive rates were 3.7% for the *Ceriodaphnia dubia* Survival and Reproduction Test method, 4.35% for the Fathead Minnow Larval Survival and Growth Test method, and 0% for all other methods evaluated in the WET Interlaboratory Variability Study (with the exception of the *Selenastrum capricornutum* Growth Test conducted without EDTA, which EPA is removing as an option in today's action). A total of 150 valid WET tests were conducted on blank samples in the Study. Of these, only two tests (1.3%) resulted in a false positive result.

The WET Interlaboratory Variability Study conclusively demonstrated that the false positive rate of WET methods is at or below the level expected for the methods. While this rate is low (below 5%), false positives do occur. EPA accounts for this possibility in the compliance and enforcement guidance. EPA policy states that "EPA does not recommend that the initial response to a single exceedance of a WET limit, causing no known harm, be a formal enforcement action with a civil penalty" (USEPA, 1995a). EPA policy suggests additional testing is an appropriate initial response to a single WET limit exceedance.

Several commenters expressed concern that WET tests do not have method detection limits as contained in chemical methods to protect from reporting false positive results. As previously discussed (see Section VI.C.1 of this preamble), method detection limit concepts are not applicable to WET test methods and have not been applied historically to toxicity testing methods developed by EPA or by voluntary consensus standards bodies.

EPA established the method detection limit (MDL) concept specifically for chemical methods, where results generally consist of a single measurement of the pollutant of interest by an analytical instrument. The MDL concept uses information about the variability of the measurement system to determine a response level at which the measurement can be reliably distinguished from background "noise," thus providing protection from false positive results. In WET testing, the final result is not based on a single measurement, but is the product of a series of replicated measurements on a range of effluent concentrations. The additional measurements, controls, replication, and statistical approaches included in the WET test method "measurement system" ensure that measured responses can be reliably distinguished from background noise.

While results from chemical methods may rely on a single instrument measurement, each WET test is designed as an experiment. WET tests contain at least six treatments, each replicated from four to ten times. Measurements are made on each replicate of each treatment, so that results reflect average responses and the variability of those responses can be estimated. Each test also includes a control treatment, which is also replicated. This control treatment provides a measure of the background response and the “noise” or variability associated with that response.

The control response is then compared to the response in effluent treatments using statistical methods to test the hypothesis that treatments containing effluent are not significantly different from the control treatment. If this hypothesis is rejected (considering the measured background or control responses, the treatment responses, and the variability associated with those responses), then the effluent is considered toxic. Hypothesis testing techniques provide protection from false positive results by specifically setting the Type I error rate allowed in rejecting the null hypothesis. Point estimation techniques use regression analysis to determine the effluent concentration that produces a specified level of response (e.g., the IC25 endpoint specifies a 25% difference between control and effluent treatment response in order for the effluent to be determined as toxic). In this case, false positive protection is inherently provided by the level of response required for generation of the selected endpoint. EPA believes that the test design employed in WET testing (including controls, replication, and hypothesis testing or point estimation) provides adequate protection from false positives.

6. Implementation

Some commenters commented on issues specifically related to the implementation of WET permits, such as reasonable potential determinations, independent applicability of WET limits, discharge monitoring report certifications, and use of WET methods in NPDES permits. Many such comments are beyond the scope of this rulemaking. In the proposed rulemaking, EPA invited comments “only on the conduct of WET test methods and not on the implementation of

WET control strategies through NPDES permits.” EPA recognizes that NPDES permittees have continuing concerns about implementation of WET requirements in NPDES permits. In a 'WHEREAS clause' to the Settlement Agreement described previously, EPA acknowledged that the provisions of the Settlement Agreement, which focused primarily on test methodology and, to a lesser extent, interpretation of test results, did not address all of the litigants' concerns regarding applicability of WET testing requirements to particular waterbodies (with specific reference to intermittent or effluent dependent waterbodies located in the Arid West) and did not address many of the litigants' concerns regarding regulatory implementation of WET control programs (e.g., toxicity identification evaluation requirements, toxicity reduction evaulation requirements, compliance determinations, and trigger thresholds). In addition, the Settlement Agreement also acknowledged that the 1995 rule, which incorporated the WET test methods in dispute, did not specify means to adjust for the frequency, duration, or magnitude of instream exposure conditions, and that such decisions are to be made by the regulatory authority in the context of water quality standard setting and/or NPDES permitting decisions. EPA continues to acknowledge these continuing concerns and will continue to address implementation concerns as they arise in concrete circumstances or through guidance, as appropriate.

VII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735; October 4, 1993), the Agency must determine whether the regulatory action is "significant" and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that this rule is not a "significant regulatory action" under the terms of Executive Order 12866 and is therefore not subject to OMB review.

B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. This rule revises and ratifies test methods that are currently approved for use in NPDES permits and does not impose any additional information collection requirements.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) a small business as defined by the U.S. Small Business Administration definitions at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less that 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. Today's rule revises and ratifies EPA WET test methods currently approved for use at 40 CFR Part 136. Overall, the costs of these revisions are minimal. While some of the revisions may increase costs (e.g., quality control requirements), EPA believes that these costs will be alleviated by a potential reduction in retesting and additional investigations (e.g., accelerated testing, toxicity identification evaluations, or toxicity reduction evaluations) by the permittee that may result from improved test performance and increased confidence in the reliability of testing results. Many of the laboratories that conduct WET testing are already implementing the additional requirements, further minimizing any potential cost increases. EPA estimates that the average incremental cost per permit per year for today's method revisions is $276. Because monitoring frequency is typically less frequent for small entities than large entities, EPA expects the average incremental cost per permit per year to be even less than $276 for small entities. Using a cost of $276 and average revenue information for small governmental jurisdictions and businesses, EPA estimates that the incremental costs for these method revisions are less than 0.1 percent of revenue for small entities.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, Tribal, and local governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with “Federal mandates” that may result in expenditures to State, Tribal, and local governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation of why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for the notification of potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that today's rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, Tribal, and local governments, in the aggregate, or the private sector in any one year. This rule promulgates revisions to WET test methods that are currently approved for use in NPDES permits and certification of Federal licenses under the CWA. The revisions are minor and the cost to implement them is minimal. Thus, today's rule is not subject to sections 202 and 205 of the UMRA. For the same reasons, EPA has also determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. Thus, today's rule also is not subject to the requirements of section 203 of the UMRA.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255; August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Today’s rule promulgates revisions to WET test methods that are currently approved for use in NPDES permits and certification of Federal licenses under the CWA. The revisions are minor and the cost to implement them is minimal. Thus, Executive Order 13132 does not apply to this rule.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Executive Order 13175, entitled “Consultation and Coordination with Indian Tribal Governments” (65 FR 67249; November 9, 2000), requires EPA to develop an accountable process to ensure “meaningful and timely input by Tribal officials in the development of regulatory policies that have Tribal implications.” “Policies that have Tribal implications” is defined in the Executive Order to include regulations that have “substantial direct effects on one or more Indian Tribes, on the relationship between the Federal government and the Indian Tribes or on the distribution of power and responsibilities between the Federal government and Indian Tribes.”

This final rule does not have Tribal implications. It will not have substantial direct effects on Tribal governments, on the relationship between the Federal government and Indian Tribes, or on the distribution of power and responsibilities between the Federal government and Indian Tribes, as specified in Executive Order 13175. Today’s rule promulgates revisions to WET test methods that are currently approved for use in NPDES permits and certification of Federal licenses under the CWA. The revisions are minor and the cost to implement them is minimal. Thus, Executive Order 13175 does not apply to this rule.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

Executive Order 13045 (62 FR 19885; April 23, 1997) applies to any rule that: (1) is determined to be “economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency. This rule is not subject to the Executive Order because it is neither “economically significant” as defined in Executive Order 12866, nor does it concern an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children.

H. Executive Order 13211: Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use

This rule is not subject to Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use” (66 FR 28355; May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995, (“NTTAA”), Public Law 104-113, section 12(d) (15 U.S.C. 272 note), directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., material specifications, test methods, sampling procedures, business practices) that are developed or adopted by voluntary consensus standards bodies (VCSBs). The NTTAA directs EPA to provide Congress, through the Office of Management and Budget (OMB), explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This rulemaking would revise existing EPA WET test methods. For the methods that EPA is revising, the Agency did not conduct a search to identify potentially applicable voluntary consensus standards, because the revisions EPA is promulgating today would merely incorporate more specificity and detail into currently approved EPA test methods. EPA did, however, consult available voluntary consensus standards, such as ASTM standards, for guidance in conducting the Interlaboratory Variability Study and in defining certain performance characteristics of the methods.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the *Federal Register*. A major rule cannot take effect until 60 days after it is published in the *Federal Register*. This action is not a “major rule” as defined by 5 U.S.C. 804(2). This rule will be effective on **[Insert 30 days from publication date in the**

Federal Register.]

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FL, pp. 271-286.

List of Subjects at 40 CFR Part 136

Environmental protection, Incorporation by reference, Reporting and recordkeeping requirements, Water pollution control.

Dated: ____________________

____

Christine Todd Whitman,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations, is amended as follows:

PART 136 - GUIDELINES ESTABLISHING TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS

1. The authority citation for Part 136 continues to read as follows:

Authority: Secs. 301, 304(h), 307, and 501(a), Pub. L. 95-217, 91 Stat. 1566, *et seq.* (33 U.S.C. 1251, *et seq.*) (The Federal Water Pollution Control Act Amendments of 1972 as amended by the Clean Water Act of 1977).

2. Section 136.3 is amended:

a. In Table IA of paragraph (a) by revising entries 6 to 9.

b. In paragraph (b) by revising references (34), (38), and (39).

c. In paragraph (b) by removing and reserving reference (42).

The revisions read as follows:

§136.3 Identification of test procedures.

(a) * * *

TABLE IA.—LIST OF APPROVED BIOLOGICAL METHODS

Parameter and units	Method[1]	EPA	Standard Methods 18th, 19th, 20th Ed.	ASTM	AOAC	USGS	Other
* * * * * * *							
Aquatic Toxicity:							
6. Toxicity, acute, fresh water organisms, LC50, percent effluent.	*Ceriodaphnia dubia* acute	2002.0[7]					
	Daphnia pulex and *Daphnia magna* acute	2021.0[7]					
	Fathead minnow, *Pimephales promelas*, and Bannerfin shiner, *Cyprinella leedsi*, acute	2000.0[7]					
	Rainbow trout, *Oncorhynchus mykiss*, and brook trout, *Salvelinus fontinalis*, acute	2019.0[7]					
7. Toxicity, acute, estuarine and marine organisms of the Atlantic Ocean and Gulf of Mexico, LC50, percent effluent.	Mysid, *Mysidopsis bahia*, acute	2007.0[7]					
	Sheepshead minnow, *Cyprinodon variegatus*, acute	2004.0[7]					
	Silverside, *Menidia beryllina*, *Menidia menidia*, and *Menidia peninsulae*, acute	2006.0[7]					
8. Toxicity, chronic, fresh water organisms, NOEC or IC25, percent effluent.	Fathead minnow, *Pimephales promelas*, larval survival and growth	1000.0[8]					
	Fathead minnow, *Pimephales promelas*, embryo-larval survival and teratogenicity	1001.0[8]					
	Daphnia, *Ceriodaphnia dubia*, survival and reproduction	1002.0[8]					
	Green alga, *Selenastrum capricornutum*, growth	1003.0[8]					

Parameter and units	Method[1]	EPA	Standard Methods 18th, 19th, 20th Ed.	ASTM	AOAC	USGS	Other
9. Toxicity, chronic, estuarine and marine organisms of the Atlantic Ocean and Gulf of Mexico, NOEC or IC25, percent effluent.	Sheepshead minnow, *Cyprinodon variegatus*, larval survival and growth	1004.0[9]					
	Sheepshead minnow, *Cyprinodon variegatus*, embryo-larval survival and teratogenicty	1005.0[9]					
	Inland silverside, *Menidia beryllina*, larval survival and growth						
	Mysid, *Mysidopsis bahia*, survival, growth, and fecundity	1006.0[9]					
	Sea urchin, *Arbacia punctulata*, fertilization	1007.0[9]					
		1008.0[9]					

Notes to Table IA:

[1] The method must be specified when results are reported.

* * * * *

[7] USEPA. October 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fifth Edition. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 821-R-02-012.

[8] USEPA. October 2002. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 821-R-02-013.

[9] USEPA. October 2002. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. Third Edition. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 821-R-02-014.

* * * * *

*   *   *   *   *

(b) *   *   *

REFERENCES, SOURCES, COSTS, AND TABLE CITATIONS:

*   *   *   *   *

(34) USEPA. October 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fifth Edition. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 821-R-02-012. Available from: National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, Publ. No. PB2002-108488. Table IA, Note 7.

*   *   *   *   *

(38) USEPA. October 2002. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 821-R-02-013. Available from: National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, Publ. No. PB2002-108489. Table IA, Note 8.

(39) USEPA. October 2002. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. Third Edition. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. EPA 821-R-02-014. Available from: National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, Publ. No. PB2002-108490. Table IA, Note 9.

*   *   *   *   *

(42) [RESERVED]

*   *   *   *   *

Attachment B: PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentansulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1*H*,1*H*, 2*H*, 2*H*-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1*H*,1*H*, 2*H*, 2*H*-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1*H*,1*H*, 2*H*, 2*H*-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3*H*-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

Target Analyte Name	Abbreviation	CAS Number
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2*H*,2*H*,3*H*,3*H*-Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

Attachment C

Appendix D to Part 122

Table II—Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GS/MS)

Volatiles

1V acrolein

2V acrylonitrile

3V benzene

5V bromoform

6V carbon tetrachloride

7V chlorobenzene

8V chlorodibromomethane

9V chloroethane

10V 2-chloroethylvinyl ether

11V chloroform

12V dichlorobromomethane

14V 1,1-dichloroethane

15V 1,2-dichloroethane

16V 1,1-dichloroethylene

17V 1,2-dichloropropane

18V 1,3-dichloropropylene

19V ethylbenzene

20V methyl bromide

21V methyl chloride

22V methylene chloride

23V 1,1,2,2-tetrachloroethane

24V tetrachloroethylene

25V toluene

26V 1,2-trans-dichloroethylene

27V 1,1,1-trichloroethane

28V 1,1,2-trichloroethane

29V trichloroethylene

31V vinyl chloride

Acid Compounds

1A 2-chlorophenol

2A 2,4-dichlorophenol

3A 2,4-dimethylphenol

4A 4,6-dinitro-o-cresol

5A 2,4-dinitrophenol

6A 2-nitrophenol

7A 4-nitrophenol

8A p-chloro-m-cresol

9A pentachlorophenol

10A phenol

11A 2,4,6-trichlorophenol

Base/Neutral

1B acenaphthene

2B acenaphthylene

3B anthracene

4B benzidine

5B benzo(a)anthracene

6B benzo(a)pyrene

7B 3,4-benzofluoranthene

8B benzo(ghi)perylene

9B benzo(k)fluoranthene

10B bis(2-chloroethoxy)methane

11B bis(2-chloroethyl)ether

12B bis(2-chloroisopropyl)ether

13B bis (2-ethylhexyl)phthalate

14B 4-bromophenyl phenyl ether

15B butylbenzyl phthalate

16B 2-chloronaphthalene

17B 4-chlorophenyl phenyl ether

18B chrysene

19B dibenzo(a,h)anthracene

20B 1,2-dichlorobenzene

21B 1,3-dichlorobenzene

22B 1,4-dichlorobenzene

23B 3,3'-dichlorobenzidine

24B diethyl phthalate

25B dimethyl phthalate

26B di-n-butyl phthalate

27B 2,4-dinitrotoluene

28B 2,6-dinitrotoluene

29B di-n-octyl phthalate

30B 1,2-diphenylhydrazine (as azobenzene)

31B fluroranthene

32B fluorene

33B hexachlorobenzene

34B hexachlorobutadiene

35B hexachlorocyclopentadiene

36B hexachloroethane

37B indeno(1,2,3-cd)pyrene

38B isophorone

39B napthalene

40B nitrobenzene

41B N-nitrosodimethylamine

42B N-nitrosodi-n-propylamine

43B N-nitrosodiphenylamine

44B phenanthrene

45B pyrene

46B 1,2,4-trichlorobenzene

Pesticides

1P aldrin

2P alpha-BHC

3P beta-BHC

4P gamma-BHC

5P delta-BHC

6P chlordane

7P 4,4’-DDT

8P 4,4’-DDE

9P 4,4’-DDD

10P dieldrin

11P alpha-endosulfan

12P beta-endosulfan

13P endosulfan sulfate

14P endrin

15P endrin aldehyde

16P heptachlor

17P heptachlor epoxide

18P PCB-1242

19P PCB-1254

20P PCB-1221

21P PCB-1232

22P PCB-1248

23P PCB-1260

24P PCB-1016

25P toxaphene

Table III—Other Toxic Pollutants (Metals and Cyanide) and Total Phenols

Antimony, Total

Arsenic, Total

Beryllium, Total

Cadmium, Total

Chromium, Total

Copper, Total

Lead, Total

Mercury, Total

Nickel, Total

Selenium, Total

Silver, Total

Thallium, Total

Zinc, Total

Cyanide, Total

Phenols, Total

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)[1]

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[1] Updated July 17, 2018 to fix typographical errors.

A. GENERAL REQUIREMENTS

1. Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. <u>Permit Actions</u>

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from responsibilities, liabilities or penalties to which the Permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

5. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

6. Confidentiality of Information

   a. In accordance with 40 C.F.R. Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

   b. Claims of confidentiality for the following information will be denied:

      (1) The name and address of any permit applicant or Permittee;
      (2) Permit applications, permits, and effluent data.

   c. Information required by NPDES application forms provided by the Director under 40 C.F.R. § 122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

7. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The Permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this Section.

c. Notice

(1) *Anticipated bypass*. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

(2) *Unanticipated bypass*. The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

d. *Prohibition of bypass.*

(1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The Permittee submitted notices as required under paragraph 4.c of this Section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. <u>Upset</u>

a. *Definition*. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated; and
(3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
(4) The Permittee complied with any remedial measures required under B.3. above.

d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. <u>Monitoring and Records</u>

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. <u>Inspection and Entry</u>

The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. <u>Reporting Requirements</u>

a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).

(3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. *Transfers*. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.

d. *Monitoring reports*. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. *Twenty-four hour reporting.*

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.

h. *Other information.* Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

i. *Identification of the initial recipient for NPDES electronic reporting data*. The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. <u>Signatory Requirement</u>

a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. <u>Availability of Reports</u>.

Except for data determined to be confidential under paragraph A.6. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

E. DEFINITIONS AND ABBREVIATIONS

1. <u>General Definitions</u>
For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and federal standards and limitations to which a "discharge," a "sewage sludge use or disposal practice," or a related activity is subject under the CWA, including "effluent limitations," water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," pretreatment standards, and "standards for sewage sludge use or disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in "approved States," including any approved modifications or revisions.

Approved program or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

Best Management Practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Bypass see B.4.a.1 above.

C-NOEC or *"Chronic (Long-term Exposure Test) – No Observed Effect Concentration" means* the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483and Public Law 97-117, 33 U.S.C. 1251 *et seq*.

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily Discharge means the "discharge of a pollutant" measured during a calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the "discharge of a pollutant."

Director means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts' authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by Permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Director on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under section 304(b) of CWA to adopt or revise "effluent limitations."

Environmental Protection Agency ("EPA") means the United States Environmental Protection

Agency.

Grab Sample means an individual sample collected in a period of less than 15 minutes.

Hazardous substance means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Interference means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal.

LC_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.

(b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program."

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants;"

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source;" and

(d) Which has never received a finally effective NPDES permit for discharges at that "site."

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Director in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Director shall consider the factors specified in 40 C.F.R. §§ 125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System."

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge (see definition above) which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (40 C.F.R § 122.28). "Permit" does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or "proposed permit."

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train*, 8 E.R.C. 2120 (D.D.C. 1976), *modified* 12 E.R.C. 1833 (D.D.C. 1979)); also listed in Appendix A of 40 C.F.R. Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a "POTW."

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly owned treatment works (POTW) means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary industry category means any industry which is not a "primary industry category."

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substance designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (*see* 40 C.F.R. § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or waste water treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and disposal in 40 C.F.R. Part 503 as a "treatment works treating domestic sewage," where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Waste pile or *pile* means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States or waters of the U.S. means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands;"

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

 (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

 (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

 (3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test.

*Zone of Initial Dilution (*ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen

kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0001147

PUBLIC NOTICE START AND END DATES: January 21, 2025 – February 20, 2025

NAME AND MAILING ADDRESS OF APPLICANT:

Solutia, Inc., A Subsidiary of Eastman Chemical Company
730 Worcester Street
Springfield, MA 01151

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Indian Orchard Plant
730 Worcester Street
Springfield, MA 01151

RECEIVING WATER AND CLASSIFICATION:

Chicopee River
Bircham Bend Brook
Chicopee River Watershed (MA36-24)
Class B, Warm Water Fishery

SIC CODES:

2821 - Plastic Material and Resins
2891 - Adhesives and Sealants
2869 - Industrial Organic Chemicals, Not Elsewhere Classified
3081 - Unsupported Plastic Film and Sheet

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1.0 Proposed Action

Solutia, Inc. (the Permittee) has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to authorize pollutant discharges from the Indian Orchard Plant (the Facility) into the Chicopee River and Bircham Bend Brook.

The permit currently in effect was issued on December 4, 2008, with an effective date of February 1, 2009, and expired on January 31, 2014 (the 2009 Permit). The Permittee filed an application seeking NPDES permit reissuance from EPA dated July 30, 2013, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on November 21, 2013, the Facility's 2009 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the Massachusetts Department of Environmental Protection (MADEP or the State) conducted a site visit on June 18, 2019.

2.0 Statutory and Regulatory Authority for Setting NPDES Permit Requirements

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. §§ 1251 – 1387 and commonly known as the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except to the extent authorized under specific provisions of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" on the condition that the discharge will comply with the standards specified in certain other provisions of the statute (e.g., CWA §§ 301, 306 and 403). CWA § 402(a)(1). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 CFR Parts 122, 124, 125, and 136.

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Sections 301 and 402 of the CWA. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). Technology-based effluent limitations (TBELs) represent the minimum level of pollutant discharge control that must be satisfied under Sections 301(b) and 402(a)(1) of the CWA. *See also* 40 CFR § 125.3(a). When limits more stringent than technology-based limits are needed to maintain or achieve compliance with state water quality standards (WQS), then NPDES permit must include water quality-based effluent limits (QBELs). *See* CWA §§ 301(b)(1)(C) and 401; 40 CFR §§ 122.4(d), 122.44(d)(1) and (5), 124.53, and 124.55.

Section 402(p) of the CWA, 33 U.S.C. § 1342(p) requires stormwater discharges associated with industrial activity to be authorized by a NPDES permit. See also 40 CFR § 122.26(a)(1)(ii).

2.1 Technology-Based Requirements

NPDES permit limits must, at a minimum, satisfy applicable federal technology standards under the CWA. CWA §§ 301(b), 304(b) and 402(a); 40 CFR § 125.3(a). The statute specifies several different narrative technology standards that apply to different types of pollutants. Technology-based effluent limitations are set to reflect the greatest degree of pollution control that can be achieved by using a technology that satisfies the applicable technology standard. Effluent limitations based on the best practicable control technology currently available (BPT) standard apply to "conventional pollutants" under certain circumstances, while effluent limitations applied to conventional pollutants are otherwise based on the best conventional control technology standard (BCT). *See* CWA §§ 301(b)(2)(E) and 304(a)(4), (b)(1) and (b)(4). *See also* 40 CFR §§ 125.3(a)(2)(i) and (ii). Effluent limitations based on the best available technology economically achievable (BAT) apply to toxic and non-conventional pollutants. *See* CWA § 301(b)(1)(A) and (b)(2)(A) – (D) and (F), and 304(b)(2); 40 CFR §§ 125.3(a)(iii) and (iv); and 401.12. If a discharger is a "new source" under Section 306 of the CWA, 33 U.S.C. § 1316, however, then it must meet new source standards based on the "best available demonstrated technology" (BADT). *See also* 40 CFR §§ 122.2 (definition of "new source") and 122.29.

Subpart A of 40 CFR Part 125 establishes criteria and standards for developing and applying technology-based requirements in permits under § 301(b) and 402(a) of the CWA. Where EPA has established national effluent limitation guidelines (ELGs) for an industrial category or subcategory, permit *limits* for a facility within that category are set by applying the limits from the national guideline. 40 CFR § 125.3(c)(1). *See also* CWA § 402(a)(1)(A). Where EPA has not yet promulgated an applicable national ELG, then the permitting authority develops permit limits based on a facility-specific, Best Professional Judgment (BPJ) application of the relevant technology standard. 40 CFR § 125.3(c)(2). *See also* CWA § 402(a)(1)(B). Where national ELGs have been promulgated for some, but not all, of the pollutants regulated by the permit, limits are set using the appropriate approach for each pollutant. 40 CFR § 125.3(c)(3).

Facilities other than publicly owned sewage treatment plants must generally comply with technology standards as expeditiously as practicable but in no case later than either three years after the date such limitations are established or March 31, 1989, whichever comes first. *See* 40 CFR § 125.3(a)(2). NPDES permits may not include compliance schedules inconsistent with a CWA statutory compliance deadline. 40 CFR§ 122.47(a)(1).

2.2 Water Quality-Based Requirements

The CWA and federal regulations also require that permit effluent limits based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. Such water quality-based limits are necessary when less stringent TBELs would be less stringent and would interfere with the attainment or maintenance of WQS in the receiving water. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 CFR §§ 131.10 - 131.12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses for a water body or a segment of a water body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. The applicable WQSs for Massachusetts can be found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and particular numeric and narrative water quality criteria intended to help attain the designated uses. Then the state assigns one of the water body classifications to each water body in the state. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to monthly average limits. These criteria apply to continuous discharges (i.e., non-contact cooling water), defined in § 122.2.

For discharges that are non-continuous (i.e., stormwater and groundwater), EPA has considered the acute aquatic life criteria for the purposes of selecting the applicable water quality criteria. Non-continuous discharges are those which are not continuous, as defined in § 122.2. These discharges must be particularly described and limited, considering the factors in 40 C.F.R. 122.25(e), as appropriate. EPA's consideration is based on the intermittent frequency of stormwater and groundwater discharges, which in turn leads to significant variability in both the magnitude and duration of discharges, and therefore, the rate of pollutant discharge.

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," 2) based on a "case-by-case" assessment using CWA § 304(a) recommended water quality criteria supplemented as necessary by other relevant information; or 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A) – (C). In order to ensure compliance with applicable narrative water quality standards, the Region has included numeric water quality-based effluent limitations and monitoring requirements in lieu of narrative limitations, as described in greater detail below. See sections 5.3 and 5.4. These more specific requirements related to WET testing, pollutant scans, benthic studies, and visual inspections of the receiving water provide more direction to permittees as to how to ensure compliance with the narrative water quality standards. EPA may remove or reduce these new requirements in the future and/or implement an alternative permitting approach if EPA finds that the additional data are no longer necessary to protect these water quality standards.

2.2.2 Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

Massachusetts' statewide antidegradation policy, entitled "Antidegradation Provisions" is found in the State's WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled "Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00." dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the antidegradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses of a receiving water body must be maintained and protected.

This permit is being reissued with effluent limitations and conditions sufficiently stringent to satisfy the State's antidegradation requirements, including the protection of the existing uses of the receiving water.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) unimpaired and not threatened for all designated uses; 2) unimpaired waters for some uses and not assessed for others; 3) insufficient information to make assessments for any uses; 4) impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among the various sources, including point source discharges, subject to NPDES permits. *See* 40 CFR § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be "consistent with the assumptions and requirements of any available WLA". 40 CFR § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C), and 40 CFR § 122.44(d)(1), NPDES permits must include any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. In addition, permit limits "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality." 40 CFR § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

Given that EPA guidance[1] directs that these reasonable potential analyses be based on critical conditions, EPA uses the pollutant concentrations based on all available information provided to EPA during the development of the permit. As discussed in more detail in the pollutant-specific sections below, this information includes data from the Permittee's most recent application, DMR data during the review period, and any other available information included in the administrative record.

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

If the permitting authority determines that the discharge of a pollutant will not cause, have the reasonable potential to cause, or contribute to an excursion above WQSs, the permit does not need to contain WQBELs for that pollutant. However, EPA must ensure that the discharge of that pollutant does not increase during the permit term to the point that would violate water quality standards. Therefore, Part I.B.1 (Unauthorized Discharges) of the permit includes the following provision to ensure that EPA's reasonable potential analyses (for all pollutants) remain protective throughout the

[1] See 2010 NPDES Permit Writer's Manual, chapter 6 available at: https://www.epa.gov/sites/default/files/2015-09/documents/pwm_chapt_06.pdf

life of the permit, and which would also clearly articulate the scope of the protections afforded to the Permittee pursuant to CWA section 402(k):

"Any pollutant loading greater than the proposed discharge (based on the chemical-specific data and the facility's design flow as described in the permit application, or any other information provided to EPA during the permitting process) is not authorized by this permit."

EPA notes that such increases may be allowable, but the Permittee must first submit a request to EPA to authorize such an increase. This request will allow EPA to conduct an updated reasonable potential analysis to reassess whether a WQBEL is needed for the newly proposed discharge. Permit modification or reissuance may be required before the proposed discharge would be authorized.

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State's WQSs, or the State waives, or is deemed to have waived, its right to certify. See 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

In addition, the State may provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law, including water quality standards.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of State law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by State law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id*. EPA regulations pertaining to permit limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

See Section 5.5 below for a detailed discussion of the expected state certification conditions and the potential impact to the permit. Note that the draft state certification will also be made available for public comment[2] by the State separately from this Draft Permit as part of the permit reissuance process. EPA does not have authority to make changes to the state certification conditions. Any comments regarding the draft state certification conditions should be made directly to MassDEP as part of that separate public notice.

2.3 Effluent Flow Requirements

Generally, EPA uses a discharger's effluent flow volume both to determine whether an NPDES permit needs certain effluent limitations and to calculate the effluent limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in its reasonable potential and WQBEL calculations to ensure compliance with WQSs under CWA § 301(b)(1)(C). Should a facility's effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations might not be sufficiently protective (i.e., might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have a reasonable potential to do so at a higher flow due to the decreased dilution in the receiving water (which, conversely, means there will be a higher concentration of the pollutants). In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" effluent flow assumptions through imposition of permit conditions for effluent flow.[3] In this regard, the effluent flow limitation is a component of any WQBELs because the WQBELs are premised on a maximum flow level. The effluent flow limit may also be necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

Setting limits on effluent flow volumes is within EPA's authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with EPA's authorities under the CWA.

As provided in Part II.B.1 (Standard Conditions) of the proposed permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Consequently, an effluent flow limit is a permit condition that relates to the Permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a

[2] Once the public notice period for the MassDEP's draft 401 certification begins, it will be posted here: https://www.mass.gov/info-details/massdep-permits-approvals-for-comment. Following MassDEP's public notice period, the draft certification will be moved to here: https://www.mass.gov/info-details/massachusetts-draftindividual-surface-water-discharge-permits-and-associated-documents.

[3] EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id.* 40 CFR §122.44(d)(1)(ii). *Both* the effluent flow and receiving water flow may be considered when assessing reasonable potential. *In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 599 (EAB 2010). EPA guidance directs that this "reasonable potential" analysis be based on "worst-case" conditions. *See In re Washington Aqueduct Water Supply Sys.,* 11 E.A.D. 565, 584 (EAB 2004).

reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

Sections 308(a) and 402(a)(2) of the CWA and the implementing regulations at 40 CFR Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(h), (j) and (1)(9), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numeric effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. *See* 40 CFR § 122.41(j)(4). Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.[4] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level[5] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or

[4] Fed. Reg. 49,001 (Aug. 19, 2014).

[5] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a

- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the State electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. Further information about NetDMR can be found on EPA's NetDMR support portal webpage.[6]

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Exceptions are provided in the permit such as for providing certain reports, information, and requests to EPA's NPDES Applications Coordinator in the Water Division and written notifications required under Part II Standard Conditions.

2.5 Standard Conditions

The Standard Conditions, included as Part II of the Draft Permit, are based on applicable regulations found in EPA's NPDES permitting regulations. *See* 40 CFR § 122.41. *See also, generally,* 40 CFR Part 122.

2.6 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified with conditions less stringent than the corresponding conditions in a previous permit issued to the same facility unless doing so is authorized by one of the specified exceptions to the anti-backsliding requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(*l*). Anti-backsliding provisions apply to effluent limits based on technology, water quality, and/or State certification requirements.

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factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Fed. Reg. 49,001 (Aug. 19, 2014).

[6] https://netdmr.zendesk.com/hc/en-us.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2009 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

3.0 Description of Facility and Discharge

3.1 Description of Facility

The Facility, which encompasses approximately 170 acres located along the Chicopee River and Worcester Street in Springfield, Massachusetts, is a multi-product industrial facility. Approximately 70 percent of the Facility is currently used for manufacturing, research and development, power generation, temporary materials storage or administrative buildings. The remainder of the Facility (approximately 50 acres) comprises parking areas, product and employee transportation corridors, or open space. Solutia, Inc. (Solutia) has owned the Facility since 1997. Although Solutia, Inc. was purchased by the Eastman Chemical Company in 2012, the Facility continues to operate as Solutia, Inc., a subsidiary of Eastman Chemical Company. The prior owner, Monsanto, purchased the Facility from Fiberloid Manufacturing in 1938. Fiberloid Manufacturing owned and operated the Facility from 1904 to 1938. In addition to Solutia's research development and production operations, several companies conduct guest operations with Solutia, lease land on Solutia property, or have bought land from Solutia. Prefere Melamines, LLC (previously INEOS)is a chemical company that own portions of the Facility. Seven acres on the site are leased to MassPower, which runs a cogeneration facility that utilizes non-contact cooling water produced by Solutia, Inc. The northwest area of the Facility, was sold to Nova Chemicals Inc. prior to 2009 and is now owned by Chet's Automotive.

The Facility conducts research and development operations and produces Saflex polyvinyl butyral (PVB) plastic sheet interlayer, Butvar polyvinyl butyral (PVB) resin for Saflex. Saflex interlayer is a Polyvinyl Butyral plastic sheet interlayer used to make shatter-resistant laminated glass for automotive,
architectural, and aircraft purposes. Butvar resin is an intermediate product ingredient for the Saflex interlayer. This resin is mixed with plasticizer, heated, and then extruded into a plastic sheet to create the
Saflex interlayer. Final products are packaged at the Facility and generally sold to other companies who use them for manufacturing. The Facility is in continuous operation, 24 hours a day, 7 days a week. Some of the major required raw materials include: polyvinyl alcohol, butyraldehyde, polyvinyl butyral, plasticizer, ethyl alcohol, polyvinyl acetate, ethyl acetate and vinyl acetate. Most of the materials are received in bulk by rail car and stored throughout the Facility.

In addition, several companies conduct guest operations with Solutia, Inc., lease land on Solutia, Inc.'s property, or have purchased land from Solutia, Inc. Prefere Melamines, LLC is a chemical company that owns an on-site plant, in which Solutia's maintenance and logistics personnel aide in the day-to-day operations. Seven acres on the site are owned by MassPower, which runs a cogeneration facility that utilizes non-contact cooling water produced by Solutia. The northwest area of the facility formerly owned by INEOS Styrolution, and the associated outfalls, was sold to and is currently owned by Chet's Automotive. The INEOS Styrolution manufacturing unit was removed in 2017. In addition, the former Bayer facility, located next to the southern portion of the Facility, was sold to Voith Paper Finishing Inc. in February 2001. Voith Paper closed in 2008 and this area is now operated by SuperBrush LLC. The stormwater catch basins on the former Bayer facility that connected to Outfall 017 were cut and plugged, and a retention area was created to handle stormwater runoff. The stormwater runoff from this area is not discharged to outfalls authorized under this individual permit.

All process wastewaters from the manufacturing activities described above are treated and discharged to the sanitary sewer for treatment at the Springfield Regional Wastewater Treatment Facility at Bondi Island. Discharges of these wastewaters are not authorized by this individual permit. Solutia, Inc. is authorized to discharge only non-contact cooling water (NCCW), stormwater, and certain groundwater infiltration. Non-contact cooling water is used by Solutia in its boilers and discharged via two outfalls at the Facility. Additional non-contact cooling water is used and discharged by Prefere Melamines LLC to one of these two outfalls. Approximately 1-2 MGD of additional non-contact cooling water from Solutia, Inc. is used by the MassPower cogeneration facility for boiler feed and cooling tower water makeup. Approximately 0.2 – 0.27 MGD of water from MassPower is discharged back to Solutia's wastewater treatment facility, where it is pretreated along with Solutia's process wastewater and discharged to the sanitary sewer. None of these discharges contain biocides or other chemical additives. Any spills of organic matter are cleaned using absorbent materials that are disposed of as solid waste or go to the sewer.

A Site plan is provided in Figure 2.

3.1.1 Site History

A timeline of significant permitting activities for the Facility is summarized as follows:

Permit Expired January 31, 2014
Application Received from Solutia, Inc. dated July 30, 2013
Eastman Chemical Company purchased Solutia Inc. in 2012
Permit Issued to Solutia, Inc. on December 4, 2008, effective February 1, 2009
Permit Expired October 26, 1998
Application Received from Solutia, Inc. June 22, 1998
Permit Transferred from Monsanto Company to Solutia, Inc. December 19, 1997
Permit Modification Issued November 3, 1993
Permit Effective after Appeal Process October 26, 1993
Permit Issued to Monsanto Company September 18, 1987

The Facility has also undertaken Massachusetts Chapter 21E investigations and extensive environmental monitoring of the groundwater, surface water, and soil on portions of the property. EPA reviewed the tracking numbers associated with spills and releases maintained by the State for this site to ensure the Draft Permit contains the indicator parameters necessary to detect pollutants that could come into contact with stormwater or migrate into the stormwater collection system.[7] For example, groundwater samples have indicated the presence of chlorobenzene and vinyl chloride from a prior spill or release. To address this condition, site remediation has occurred in the northeast portion of the Facility near the Nova Chemicals portion of the property. The remediation activities included the use of sodium permanganate to oxidize residues in groundwater. According to the Facility, no surface water discharges are associated with remediation activities at the Facility.

3.2 Description of Discharge

In general, the 2009 Permit authorizes the discharge of:

1) Stormwater, which consists of rainwater/snowmelt and/or flood waters throughout the Facility that accumulates in open paved areas and building roofs that flows by gravity into the stormwater collection system. Stormwater collected in the stormwater collection system typically discharges in conjunction with a storm event (i.e., "wet weather"). However, stormwater may remain in the stormwater collection system following a storm event depending on the volume of stormwater generated.

2) Groundwater, which infiltrates into the stormwater collection system from the hydrologic storage below the ground surface. For the purposes of the Draft Permit, groundwater refers to the waters below the ground surface that may contain (i.e., soluble) or transport (i.e., insoluble) pollutants from releases of oil and hazardous materials to soil or groundwater at the Facility that infiltrates into the stormwater collection system and discharges to the receiving waters either during dry weather flows or that is flushed out during wet weather flows.

3) Potable water/non-contact cooling water, which consists of the municipal water used for once-through non-contact cooling water at portions of the Facility.

4) Allowable non-stormwater discharges, which includes the discharges described in Section 5.4.3 below.

The facility discharges these wastewaters to the Chicopee River and Bircham Bend Brook.

3.2.1 Currently Authorized Outfalls

The 2009 NPDES Permit specifically authorizes these discharges to the Chicopee River and Bircham Bend Brook through a total of ten outfalls, including two internal catchbasin sampling locations. The authorized outfalls and discharges are as follows:

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[7] Information regarding the Massachusetts Chapter 21E activities at the Facility can be found on the Massachusetts Executive Office of Energy and Environmental Affairs Data Portal, available at: https://eeaonline.eea.state.ma.us/portal/dep/wastesite/.

Table 1: Description of Outfalls

Outfall Number	Type of Discharge	Receiving Water
009	Untreated once through noncontact cooling water & stormwater; 100% of non-contact cooling water from Solutia, Inc.	Chicopee River
Catchbasin 561	Internal sampling location that discharges to Outfall 009	Chicopee River via Outfall 009
Catchbasin 573	Internal sampling location that discharges to Outfall 009	Chicopee River via Outfall 009
017	Untreated once through noncontact cooling water & stormwater; approximately 95 percent of non-contact cooling water from Prefere Melamines LLC and approximately 5 percent of non-contact cooling water from Solutia, Inc	Chicopee River
10S	Untreated stormwater	Chicopee River
14S	Untreated stormwater	Chicopee River
15S	Untreated stormwater	Chicopee River
19S	Untreated stormwater	Chicopee River
20S	Untreated stormwater	Bircham Bend Brook
21S	Untreated stormwater & groundwater infiltration	Bircham Bend Brook
51S	Untreated stormwater	Chicopee River
61S	Untreated stormwater	Chicopee River

The approximate latitude and longitude, area of impervious surface, and total area drained for permitted outfalls at the Facility are presented in Table 2.

Table 2: Outfall Locations

Outfall Number	Latitude (degrees, minutes, seconds)	Longitude (degrees, minutes, seconds)	Area of Impervious Surface (ft^2)	Total Area Drained (ft^2)
009	42° 9’ 35”	72° 31’ 15”	36,700 ft^2	43,600 ft^2
017	42° 9’ 35”	72° 31’ 15”	2,625,500 ft^2	3,642,000 ft^2
10S	42° 9’ 35”	72° 31’ 30”	131,900 ft^2	174,800 ft^2
14S	42° 9’ 35”	72° 31’ 45”	37,900 ft^2	37,900 ft^2
15S	42° 9’ 35”	72° 31’ 0”	59,100 ft^2	59,100 ft^2
19S	42° 9’ 35”	72° 31’ 30”	7,600 ft^2	7,600 ft^2
20S	42° 9’ 35”	72° 31’ 30”	92,800 ft^2	404,900 ft^2
21S	42° 9’ 35”	72° 31’ 30”	936,400 ft^2	1,139,300 ft^2
51S	42° 9’ 35”	72° 31’ 30”	16,000 ft^2	16,000 ft^2

61S	42° 9’ 35”	72° 31’ 30”	3,800 ft^2	3,800 ft^2

Two outfalls are used for the discharge of both non-contact cooling water and stormwater, while the remaining eight outfalls are dedicated to stormwater discharge only. See Table 1. Outfalls 009, 017, 10S, 51S, 14S, 61S, 15S, and 19S discharge to the Chicopee River. Outfalls 20S and 21S discharge to Bircham Bend Brook. The two main outfalls for the facility are Outfall 009 and Outfall 017. Outfall 009 discharges non-contact cooling water from the chiller system for the telephone and central computer facility, air conditioning condensate in Building 11, and stormwater from a one-acre portion of the facility. Stormwater includes drainage from Building 1, which is now owned by NOVA Chemicals. Effluent monitoring samples are collected at the discharge point to the river. Flow is estimated based on measurements at a v-notch weir.

Outfall 017 discharges non-contact cooling water from the Resimine® and Butvar® processes in Buildings 81 and 92. The source of all non-contact cooling water is the Springfield Municipal Water Supply. The storm drains leading to this outfall drain 83.6 acres of the site, including stormwater from the MassPower area. The former Bayer facility, located next to the southern portion of Solutia, was sold to Voith Paper Finishing, Inc. in February 2001. According to the Permittee, the stormwater catchbasins on the former Bayer facility that connected to Outfall 017 were cut and plugged, and a retention area was created to handle stormwater runoff. The stormwater runoff from this area is not covered by this NPDES permit.

Outfalls 10S, 51S, 14S, 61S, 15S, and 19S, listed in order from upstream to downstream, collect stormwater from seven acres in the northern portion of the site along the Chicopee River towards the riverbank, and discharge to the Chicopee River. These areas consist of almost entirely impervious surfaces and include the Cytec Industries research building and various recreational areas. According to the Facility, these outfalls discharge similar wastewater based on the comparable nature of the drainage areas and the activities that occur in those areas. The EPA Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity allows sampling at a representative outfall when a facility has two or more outfalls that are believed to discharge substantially similar effluent based on the similarities of the general industrial activities and control measures, exposed materials that may significantly contribute pollutants to stormwater, and runoff coefficients of their drainage areas. As a result, the 2009 Permit allowed the Permittee to develop a rotating sampling schedule in place of sampling each of the above outfalls for each monitoring period. However, as also stated in Part 4.1.1 of the 2021 MSGP, “The allowance for monitoring only one of the [substantially identical discharge point] is not applicable to any discharge points with numeric effluent limitations.” Since each of these outfalls is subject to one or more numeric effluent limitations, the monitoring frequency specified in the Draft Permit applies to all outfalls. This will ensure sufficient data is collected to assess compliance with newly imposed effluent limitations and conditions and adequately evaluate discharge characteristics of each outfall for future reissuances.

Outfalls 20S and 21S discharge to Bircham Bend Brook on the southwestern portion of the site. The drainage areas include the Saflex (SIC code 3081) and South Butvar (SIC code 2821) buildings. The permittee’s application describes a discernable dry weather flow, which the facility traced back to ground water infiltration in the Saflex Building (Building 99) area. A priority pollutant scan was conducted by the facility and results showed pollutant concentrations (including vinyl chloride and chlorobenzene) to be below the detection limit. This flow discharges through Outfall 21S.

All discharges from the above-listed outfalls do not receive additional treatment.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges to Chicopee River segment MA36-24, which is part of the Chicopee River watershed. The Facility also discharges to this segment via Bircham Brook. Segment MA36-24 consists of 8.8 miles from the Wilbraham Pumping Station (old wastewater treatment plant) in Wilbraham/Ludlow to the Chicopee Falls Dam (NATID: MA00719), in Chicopee, Massachusetts. The watershed basin for the Chicopee River is an estimated 714.23 square miles.[8] The Chicopee River borders the Facility to the north and Bircham Bend Brook borders the Facility in the south-southwestern corner.

These receiving waters are classified as Class B, warm water fishery and CSO in the Massachusetts WQSs, 314 Code of Massachusetts Regulations (CMR) 4.06. Class B waters are described in the Commonwealth of Massachusetts Water Quality Standards at 314 CMR 4.05(3)(b) as follows: *"designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment (Treated Water Supply). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value."*

Primary contact recreation is defined as any recreation or other water use in which there is prolonged and intimate contact with the water with a significant risk of ingestion of water. These include, but are not limited to, wading, swimming, kayaking, diving, surfing and water skiing. Secondary contact recreation is defined as recreation or other water use in which contact with the water is either incidental or accidental. These include but are not limited to fishing, human consumption of fish, boating, and limited contact incident to shoreline activities. The MASWQS also describe Class B warm water fisheries as having an instream temperature that shall not exceed 83˚F (28.3˚C), and the receiving waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

[8] *Appendix 13 Chicopee River Watershed Assessment and Listing Decision Summary Final Massachusetts Integrated List of Waters for the Clean Water Act 2018/2020 Reporting Cycle*; CN: 505.1, November 2021.

Segment MA36-24 of the Chicopee River is listed in the *Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle* (303(d) List) as a Category 5 "Waters Requiring a TMDL.[9] The pollutants and conditions requiring a TMDL are Escherichia coli (*E. coli*), and fecal coliform. To date no TMDL has been developed for this segment for the listed impairments. The status of each designated use is presented below.

Table 3: Summary of Designated Uses and Listing Status

Designated Use	**Status**
Aquatic Life	Support* Alert Status
Aesthetics	Support
Primary Contact Recreation	Support* Alert Status Impairment: E. coli and Fecal coliform
Secondary Contact Recreation	Support* Alert Status Impairment: E. coli and Fecal coliform
Fish Consumption	Not Assessed

According to the most recent listing, segment MA36-24 is supporting designated uses for aquatic life but includes an alert status. Although the benthic, fish and water quality data were indicative of good conditions, an impairment for the presence of the non-native aquatic macrophyte species *Trapa natans* (water chestnut) has been added. The alert status is also due to the potential impacts of hydromodification resulting from the hydropower operations. The *Chicopee River Water Quality Assessment Report* (WQAR)[10] indicates that given the low E. coli bacteria counts the Primary and Secondary Contact Recreation Uses are assessed as support. But due to the presence of CSOs both Primary and Secondary Contact Recreation Uses are listed with an "Alert Status" and the segment is listed as impaired in the most recent listing cycle due to E. coli and Fecal coliform. Given the lack of objectionable conditions, the Aesthetics Use is assessed as support. The fish consumption designated use has not been assessed.

4.2 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.[11]
The critical flow is some measure of the low flow of the receiving water and may stipulate the magnitude, duration, and frequency of allowable excursions from the magnitude component of criteria in order to prevent adverse impacts of discharges on existing and designated uses. State WQSs specify the hydrologic condition at which water quality criteria must be applied. For rivers and streams, the lowest flow condition at and above which aquatic life criteria must be applied is typically the lowest mean flow for seven consecutive days, recorded once in 10 years, or 7-day 10-year low flow (7Q10).

[9] *Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle*; CN: 568.1, May 2023. Available at: https://www.mass.gov/lists/integrated-lists-of-waters-related-reports.
[10] *Chicopee River Watershed 2003 Water Quality Assessment Report*. MassDEP Division of Watershed Management, Worcester, Massachusetts; October 2008, Report Number: 36-AC-3; CN 106.5.
[11] EPA Permit Writer's Manual, Section 6.2.4

See 314 CMR 4.03(3)(a). Further, for rivers and streams, human health criteria may be applied at the harmonic mean flow. *See* 314 CMR 4.03(3)(d). The harmonic mean flow estimates the concentration of toxic pollutants in liters of water per day when daily variation is high. The harmonic mean flow is appropriate for modeling human health effects of toxic pollutants because it models exposure to low concentrations of a substance over a longer term.

For discharges to the Chicopee River, EPA calculated the 7Q10 and harmonic mean flow for the Chicopee River based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gauging station to the Facility along the Chicopee River (USGS 01177000: Chicopee River at Indian Orchard, MA[12]) for a 30-year period of record, and the USGS StreamStats for Massachusetts watershed delineation tool.[13] Because the stream gauge is located less than 500 yards upstream of the Facility, the 7Q10 and harmonic mean flow at the gage is assumed to be the same as at the points of discharge to the Chicopee River. Therefore, for outfalls that discharge to the Chicopee River, the dilution factors are determined as follows:

Where:

Drainage Area$_{@Gauge}$ = 689 square miles (mi^2)
7Q10 Flow$_{@Gauge}$= 128 cubic feet per second (cfs) = 82.73 MGD
Harmonic Mean Flow$_{@Gauge}$= 461 cubic feet per second (cfs) = 297.89 MGD

Using the above-calculated 7Q10 (Q_s), the dilution factor (DF) was calculated using the daily maximum flow (Q_d) as follows:

$$DF = (Q_s + Q_d)/Q_d$$

Where:

Q_S = 7Q10 in million gallons per day (MGD)
Q_d = Daily maximum discharge flow in MGD

Using the above-calculated harmonic mean flow (Q_s), the dilution factor (DF) was calculated using the average flow (Q_d) for each outfall as follows:

$$DF = (Q_s + Q_d)/Q_d$$

Where:

Q_S = 7Q10 in million gallons per day (MGD)
Q_d = Monthly average discharge flow in MGD

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[12] USGS StreamStats National Data Collection Station Report for Station 01177000: Chicopee River, Springfield, MA, 1000 ft downstream from West Street Bridge at Indian Orchard and 1.1 mi upstream from Fuller Brook. https://streamstatsags.cr.usgs.gov/gagepages/html/01177000.htm
[13] USGS StreamStats for Massachusetts Interactive Map: http://water.usgs.gov/osw/streamstats/massachusetts.html

For discharges to Bircham Bend Brook, effluent limitations must be met at the end-of-pipe and no dilution applies as the critical low flow is insufficient to allow for a mixing zone. This determination is based on State WQSs that require discharges be "limited or prohibited to protect existing uses and not interfere with the attainment of designated uses in downstream and adjacent segments. The Department will provide a reasonable margin of safety to account for any lack of knowledge concerning the relationship between the pollutants being discharged and their impact on water quality." See 314 CMR 4.03(1)(a). Further, 314 CMR 4.03(3) provides that criteria should be applied at flows lower than those specified in order to prevent adverse impacts of discharges on existing and designated uses.

The dilutions factors as calculated above are as follows:

Table 4: Description of Outfalls

Outfall Number	Discharge Flow (MGD)	Dilution Factors	Receiving Water
009	Daily Max: 0.2 Monthly Avg: 0.15	@7Q10 DF = 414.65 @Harmonic Mean DF = 1,987.3	Chicopee River
017	Daily Max: 6 Monthly Avg: 4	@7Q10 DF = 14.79 @Harmonic Mean DF = 75.49	Chicopee River
10S, 14S, 15S, 19S, 51S, 61S	Maximum Daily Max Reported: 0.002275	@7Q10 DF = 36,365.84	Chicopee River
20S	---	No dilution	Bircham Bend Brook
21S	---	No dilution	Bircham Bend Brook

EPA used these dilution factors (DFs) in its reasonable potential analysis and the quantitative derivation of WQBELs for pollutants in the Draft Permit.

4.3 Ambient Data

A summary of available ambient data collected in the receiving water in the vicinity of the Facility that is referenced in this Fact Sheet can be found in Appendix B of this Fact Sheet. These data include the results of sampling and analysis conducted instream in conjunction with Whole Effluent Toxicity testing (i.e., Chemical Analysis and Dilution Water).

5.0 Description of Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived pursuant to the CWA, State and federal regulations, and State WQSs are described below. These proposed effluent limitations and conditions, the bases of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

The State and Federal regulations, data regarding discharge characteristics, and data regarding ambient characteristics described above, were relied upon and applied during the effluent limitation development process. Discharge and ambient data are included in Appendix A and B. EPA's Reasonable Potential Analysis for chemical-specific parameters is included in Appendix C and results are discussed in the sections below.

EPA determined limitations for this Facility based on the maximum flow at each outfall.For the purposes of this permit, these flows reflect the magnitude, frequency and duration of discharge. EPA based these flows on the maximum flow reported for each outfall by the Permittee, except where numeric effluent limitations for flow apply (i.e., Outfalls 009 and 017).

5.1 Effluent Limitation Guidelines

EPA has not promulgated applicable technology-based effluent limitation guidelines (ELGs) in 40 CFR Subchapter N Parts 405 through 471 for stormwater discharges associated with the SIC Codes applicable to the Facility. Specifically, the ELGs found in 40 CFR Part 414 for SIC Code 2821 - Plastic Material and Resins and SIC Code 2869 - Industrial Organic Chemicals, Not Elsewhere Classified, and 2891 - Adhesives and Sealants apply to process wastewaters, which, at this Facility are treated at the Springfield wastewater treatment facility and not discharged through any authorized outfall. Therefore, these ELGs do not apply. For non-contact cooling water, the ELGs in 40 CFR Part 463 for SIC Code 3081 - Unsupported Plastic Film and Sheet that apply to process wastewaters explicitly exclude non-contact cooling water. Instead, this regulation states that non-contact cooling water is subject to an individual permit on a case-by-case basis.

Therefore, in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2), EPA may establish effluent limitations on a case-by-case basis using BPJ. EPA's NPDES permitting regulations at 40 CFR §125.3(c)(2) state that permits developed on a case-by-case basis under Section 402 (a)(1)(B) of the CWA shall apply the appropriate factors listed in 40 CFR § 125.3(d) and must consider 1) the appropriate technology for the category or class of point sources of which the applicant is a member, based on available information, and 2) any unique factors relating to the applicant. In addition to considering these factors, EPA's BPJ analysis (see Appendix E) has also been informed, to the extent relevant to the Facility, by the technology-based limitations and conditions found in the ELGs noted above, as well as the following:

- EPA promulgated the regulations for industrial stormwater in 1990 and issued the first *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP) in 1995. This general permit was last reissued January 15, 2021 (2021 MSGP).[14] The stormwater generated at the Facility falls under the following sectors of this general permit:
    - Sector C, subsector C4 (Plastics Materials, Synthetic Resins, and Nonvulcanizable Elastomers, SIC Code 2821);

[14] *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP), is currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp. The 2021 MSGP became effective on March 1, 2021.

  - Sector C, subsector C5 (Adhesives and Sealants, SIC Code 2891 and Industrial Organic Chemicals, Not Elsewhere Classified, SIC Code 2869); and
  - Sector Y, subsector Y2 (Unsupported Plastics Film and Sheet, SIC Code 3081).

- EPA's *General Permit for Dewatering and Remediation Activity Discharges* (DRGP)[15] was last issued on August 2, 2022. The wastewater types covered under this General Permit, which is applicable to discharges that are a result of dewatering and remediation activities, include the wastewater types discharged from the Facility, specifically groundwater infiltration that may come into contact with stormwater, and potable water used for non-contact cooling water. Further, the pollutants considered in this General Permit include the pollutants present in discharges from the Facility. Specifically, the Facility collects stormwater, groundwater, and potable water (i.e., all wastewater types in the DRGP), and discharges via stormwater infrastructure (i.e., the infrastructure dewatering activity category of the DRGP).

- EPA's *General Permit for Non-contact Cooling Water Discharges* (NCCWGP)[16] was last issued on April 18, 2024. This General Permit is applicable to discharges of non-contact cooling water, including when potable water is used. The pollutants considered in this General Permit include the pollutants present in non-contact cooling water discharges from the Facility (e.g., pH, total residual chlorine, temperature).

5.2 Indicator Parameters

EPA notes that it would be both impractical and unnecessary to attempt to evaluate and limit every possible individual pollutant among the pollutants present at the Facility where industrial activity occurs and could come into contact with stormwater, and where industrial activities have taken place in the past and significant materials remain and are exposed to stormwater. As a result, EPA determined that use of "indicator parameters" in accordance with 40 CFR § 122.44(d)(1)(vi)(C) is reasonable and sufficiently stringent to carry out the provisions of the CWA and ensure compliance with applicable WQSs as required by CWA § 401(a)(2) and 40 CFR § 122.4(d).

For this Draft Permit, EPA has determined that:

- The Draft Permit identifies indicator parameters and which pollutants are intended to be controlled using the numeric and/or non-numeric effluent limitations for these indicator parameters;

[15] The *National Pollutant Discharge Elimination System (NPDES) General Permit for Dewatering and Remediation Activity Discharges* is currently available at: https://www.epa.gov/npdes-permits/dewatering-and-remediation-general-permit-drgp. The 2022 DRGP became effective on August 2, 2022.
[16] The *National Pollutant Discharge Elimination System (NPDES) General Permit for Non-Contact Cooling Water Discharges* is currently available at: https://www.epa.gov/npdes-permits/2024-non-contact-cooling-water-general-permit-nccw-gp-massachusetts-new-hampshire. The 2022 NCCW GP became effective on April 18, 2024.

- This Fact Sheet sets forth the basis for the limitations, and finds that compliance with the effluent limitations on the indicator parameters will result in controls on the pollutants of concern which are sufficient to attain and maintain applicable WQSs;
- The Draft Permit requires effluent and ambient monitoring necessary for EPA to evaluate whether the limitations on the indicator parameters meet applicable WQSs; and
- The Draft Permit contains a reopener clause allowing EPA to modify or revoke and reissue the permit if the limitations on the indicator parameters no longer attain and maintain applicable WQSs.

EPA selected indicator parameters that: 1) are more common (i.e., more frequently detected in wastewaters or pollutant sources at this Facility and sufficient monitoring data exists); 2) are more toxic (e.g., priority pollutants in Appendix A to 40 CFR §423); 3) exhibit limiting physical and/or chemical characteristics with respect to susceptibility to treatment by pollution control technologies; and/or 4) exhibit physical and/or chemical characteristics strongly representative of other pollutants, which ensures that other pollutants with similar characteristics would also be removed by pollution control technologies. Therefore, effluent limitations established to control indicator parameters, also control the pollutants the indicator parameters represent. Further, monitoring requirements established for indicator parameters ensure that the numeric and non-numeric limitations in the permit are being met. EPA has grouped most indicator parameters, as shown below and described in the sections that follow. Stand-alone parameters included in the Draft Permit are noted as such (e.g., effluent flow, pH, chlorine, temperature). Indicator parameters included in the Draft Permit are intended for:

- Solids (e.g., TSS)
- Bacteria (e.g., *E.Coli*)
- Volatile and semi-volatile organic compounds (e.g., chloroform, total PCBs)
- Per- and polyfluoroalkyl substances (PFAS)

The use of indicator parameters included in the Draft Permit is unchanged from the 2009 Permit. The following sections describe the indicator parameters and the basis for the effluent limitations or monitor-only requirements for the selected indicator parameters. At the request of the Permittee, monitoring for certain indicator parameters has been reduced or eliminated, depending on the frequency of detection. However, increased monitoring and/or effluent limitations have been added where indicator parameters indicate the presence of pollutants.

5.3 Effluent Limitations and Monitoring Requirements

The State and Federal regulations, data regarding discharge characteristics, and data regarding ambient characteristics described above, were used during the effluent limitations development process. Discharge data from the reporting periods January 1, 2019 through June 30, 2024 are included in Appendix A. Ambient data summarized by the Permittee is provided in Appendix B. EPA's Reasonable Potential Analysis is included in Appendix C and results are discussed in the applicable sections below. Whole Effluent Toxicity data and EPA's analysis are included in Appendix D.

5.3.1 Effluent Flow

The Facility's 2009 Permit included effluent flow limits at Outfalls 009 and 017, and monitoring-only for flow at all other outfalls. Flow, in millions of gallons per day (MGD), reported at each authorized outfall was as follows:

Table 5: Summary of Flow at the Facility

Outfall Number	Minimum Reported Flow (MGD)	Maximum Reported Flow (MGD)	Flow Limitations	Monitoring Conditions
009	0.027393	0.092181	0.2 Daily Max 0.15 Monthly Avg	Dry weather (Wet weather monitored at catchbasins 561 and 573)
Catchbasin 561	0.000187	0.004565	Report	Wet weather
Catchbasin 573	0.000187	0.004565	Report	Wet weather
017	0.06 (dry) 0.31 (wet)	3.27 (dry) 2.59 (wet)	6 Daily Max 4 Monthly Avg	Dry and wet weather
10S	0.000763	0.0007632	Report	Wet weather
14S	0.000763	0.0022752	Report	Wet weather
15S	0.0003744	0.0007632	Report	Wet weather
19S	0.000389	0.000763	Report	Wet weather
20S	0.001138	0.0227952	Report	Wet weather
21S	0.000374 (dry) 0.001526 (wet)	0.004565 (dry) 0.0227952 (wet)	Report	Dry and wet weather
51S	0.000389	0.001526	Report	Wet weather
61S	0.001526	0.001526	Report	Wet weather

The Draft Permit maintains the limitations monitoring requirements for maximum daily and average monthly flow at all outfalls, as applicable. The Draft Permit also requires continuous monitoring using a totalizer or similar device for all outfalls. Flow rate and total flow must be reported for all outfalls representative of dry weather and wet weather conditions, separately. Any non-stormwater discharge that occurs dry weather except where specifically authorized is prohibited (i.e., non-contact cooling water at Outfalls 009 and 017, groundwater infiltration at Outfall 21S).

In addition, several requirements included in the Best Management Practices (BMP) requirements of the Draft Permit pertain to flow. See Section 5.4, below.

5.3.2 pH

The hydrogen-ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life. pH can also have an indirect effect on the toxicity of other pollutants in the water. The pH, in S.U., is as follows for each of the authorized outfalls:

Table 6: Summary of pH at the Facility

Outfall Number	Minimum Reported pH (S.U.)	Maximum Reported pH (S.U.)	pH Limitations (S.U.)	Monitoring Conditions
009	6.78	7.77	6.5-8.3	Dry weather (Wet weather monitored at catchbasins 561 and 573)
Catchbasin 561	6.81	7.54	6.5-8.3	Wet weather
Catchbasin 573	6.72	7.62	6.5-8.3	Wet weather
017	6.76 (dry) 6.79 (wet)	7.72 (dry) 7.44 (wet)	6.5-8.3	Dry and wet weather
10S	7.08	7.32	6.5-8.3	Wet weather
14S	6.87	7.05	6.5-8.3	Wet weather
15S	7.08	7.23	6.5-8.3	Wet weather
19S	6.88	7.09	6.5-8.3	Wet weather
20S	6.85	7.45	6.5-8.3	Wet weather
21S	6.84 (dry) 6.87 (wet)	7.42 (dry) 7.49 (wet)	6.5-8.3	Dry and wet weather
51S	6.66	7.2	6.5-8.3	Wet weather
61S	6.74	7.31	6.5-8.3	Wet weather

The Draft Permit requires a pH range of 6.5 to 8.3 S.U. at all outfalls as noted above by grab samples. These limitations are water quality-based pH limitations found in the State WQSs for Inland Water, Class B at 314 CMR 4.05(3)(b)3 and have been retained from the 2009 Permit. These limitations are necessary to comply with CWA § 301(b)(1)(C) and 40 CFR § 122.44(d). EPA also notes that subsectors C5 and Y2 are subject to pH requirements in EPA's 2021 MSGP.

5.3.3 Total Suspended Solids

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Solids can clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as PCBs, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

Sorption to soils and sediments is probably the most influential factor on the transport and fate of organic contaminants in the environment (Chiou and Kile, 2000). Sediment-associated contaminants are one of the most common sources of tissue contamination in aquatic life (bioaccumulation). Such contamination is linked to impacts to other biota higher in the food chain via biomagnification, an effect especially quantifiable with organochlorines such as PCBs (Burton and Pitt, 2002). Non-benthic organisms can also ingest contaminated sediment directly when the sediment at rest at the bottom of a waterbody is mobilized. Because TSS serves as a transport media for other pollutants in this permit (e.g., PCBs, metals), TSS also functions as an indicator parameter in this Permit (see Section 5.2, above). TSS monitoring is a sector-specific requirement for subsectors C5 and Y2 in EPA's 2021 MSGP. TSS, reported in mg/L, was as follows for each of the authorized outfalls:

Table 7: Summary of TSS at the Facility

Outfall Number	Number of Samples	Number of Non-Detects	Daily Maximum Concentration (mg/L)
009	---	---	---
Catchbasin 561	17	5	48
Catchbasin 573	17	6	93
017	21	12	33
10S*	4	2	32
14S*	2	2	---
15S*	2	2	---
19S*	3	1	24
20S	17	4	94
21S	17	4	73
51S*	4	2	42
61S*	2	1	120

*: monitored as "substantially identical discharge points."

Because no national technology-based effluent limitation guidelines (ELGs) are applicable for the type of activities or discharges from the site, in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2), EPA is authorized to establish technology-based effluent limitations on a case-by-case basis using its BPJ by applying the appropriate factors listed in 40 CFR § 125.3(d). As a result, determining BCT, BPT, and/or BAT and then developing a TBEL for TSS based on BPJ is appropriate at this Facility. As part of its analysis of the factors set forth in section 125.3(d), EPA considered the TSS values and conditions described in Section 5.2, above, that address similar wastestreams, as set forth in more detail in Appendix E.

The TSS limitations proposed is a daily maximum limit of 100 mg/L at all stormwater outfalls, including those mixed with potable water (Outfalls 002, 017, 10S, 14S, 15S, 19S, 20S, 51S, and 61S) and a daily maximum limit of 30 mg/L for stormwater mixed with groundwater (Outfall 21S), monitored monthly. Because discharges at each outfall are subject to limitations and requirements individually, monitoring for TSS no longer qualifies for a reduced monitoring frequency as substantially identical discharge points and compliance with numeric effluent limitations must be assessed at each outfall.

5.3.4 Temperature

Section 502(6) of the Clean Water Act defines heat as a "pollutant." *See* 33 U.S.C. § 1362(6). Water temperature affects the metabolic and reproductive activities of aquatic organisms and can determine which fish and macroinvertebrate species can survive in a given water body. Certain cold-blooded species cannot regulate their body temperature through physiological means, so their body temperatures reflect the temperatures of the water they inhabit. Rapid increases or decreases in ambient water temperature can directly affect aquatic life, particularly fish. Ambient water temperature can indirectly affect aquatic life by influencing water quality parameters such as dissolved oxygen, by which the solubility of oxygen decreases as water temperature increases.

Temperature is limited to a daily maximum limit of 83^o Fahrenheit (F) at Outfall 009 and 85^o F at Outfall 017 by the current permit. At Outfall 009, reported temperature sample results have ranged from 50.54^o F to 80.42^o F. At Outfall 017, reported temperature sample results have ranged from 49.28^o F to 81.32^o F. The instream temperature requirements in the Massachusetts Surface Water Quality Standards for Class B warm water fisheries require that the temperature shall not exceed 83°F in warm water fisheries, that the rise in temperature due to a discharge shall not exceed 5°F in rivers and streams designated as warm water fisheries (based on the minimum expected flow for the month); and that the natural seasonal and daily variation shall be maintained. There shall be no change from background conditions that would impair any use designated to this class (314 CMR 4.05 (3)(b)). Massachusetts WQSs do allow for the calculation of a mixing zone, which is limited to an area or volume as small as feasible, for the initial dilution of a discharge (314 CMR 4.03 (2)). To meet the requirements of the Massachusetts WQSs, the Draft Permit contains a daily maximum temperature limit of 83°F for both Outfall 009 and Outfall 017. Based on monitoring data, the Permittee will meet this revised limit at Outfall 017.

5.3.5 Bacteria

While the Facility does not engage in activities expected to generate large sources of bacteria, stormwater runoff can readily transport bacteria from surfaces susceptible to the waste products of warm-blooded animals or pathogens, which attach to organic and inorganic particles. Fecal coliform, E. coli, and enterococci bacteria, are indicators of contamination from sewage and/or the feces of warm-blooded wildlife (mammals and birds). These bacteria can survive in freshwater and saltwater environments and can impact water quality. As described above, the Chicopee River is a Class B water impaired for *E. coli* and fecal coliform. Consistent with EPA's 2021 MSGP, which requires impaired water monitoring, the 2009 Permit requires wet weather monitoring of *E. coli* from all permitted outfalls. *Escherichia coli*, also known as *E. coli*, is a Gram-negative, facultative anaerobic, rod-shaped, coliform bacterium of the genus *Escherichia* that is commonly found in the lower intestine of warm-blooded organisms.

E. coli, reported in colony forming units (CFU) per 100 milliliters (mL), was as follows for each of the authorized outfalls:

Table 8: Summary of *E. coli* at the Facility

Outfall	**Number of Samples**	**Number of Non-detects**	**Maximum *E. coli* (CFU/100mL)**
Catchbasin 561	5	0	2419.6
Catchbasin 573	5	2	2419.6
017	5	1	325.5
10S	1	0	579.4
14S	1	0	579.4
15S	1	0	<1
19S	1	0	10
20S (Wet)	5	1	816.4
21S (Wet)	5	1	2419.6
51S	1	0	85
61S	1	0	209

For Class B waters, the Massachusetts WQSs requires "For protection of primary contact recreation, surface waters shall meet the minimum criteria for bacteria set forth in 314 CMR 4.05(5)(f)1. and 3." (4.05(3)(b)4.) The numeric criteria that apply in 314 CMR 4.05(5)(f)1. are as follows:

Bacterial Indicator	Bacterial Criteria for Inland Waters (cfu/100mL)*	
	Geometric Mean*	Statistical Threshold Value*
E. coli	≤126	≤410
enterococci	≤35	≤130
*The geometric mean for at least one indicator shall not be exceeded in any 90-day or smaller interval. No more than 10% of all samples collected within that interval shall exceed the statistical threshold value for that indicator.		

Further, reduced interval requirements apply in accordance with 314 CMR 4.05(5)(f)3. when:

The geometric mean and statistical threshold value used for calculating the minimum criteria for bacteria set forth in 314 CMR 4.05(5)(f)1. and 2., shall be calculated and assessed, respectively, over a 30-day or smaller interval in lieu of any otherwise applicable longer interval, if either of the conditions set forth in 314 CMR 4.05(5)(f)3.a.i. or ii. is met.

a. Conditions which require a reduced interval:

i. criteria are being applied to waters adjacent to any public or semi-public beach, at a location used for bathing and swimming purposes, and for the dates of operation of any such beach as posted or as otherwise established by the operator pursuant to 105 CMR 445.020: Operation; or *ii. criteria are being applied to segments impacted by CSO-, B(CSO)-, SB(CSO)-, or POTW-discharges.*

CSOs, such as those in the Chicopee River, have historically been a significant contributor to bacteria pollution. As aggressive efforts to control CSO discharges reduce bacteria loads from these sources, stormwater discharges are a major source of bacteria pollution along with non-point sources. *E. coli* samples collected under the 2009 Permit contain relatively high pathogen counts. Given the pathogen levels in the effluent and the impairment status of the receiving water, the Draft Permit establishes *E. coli* effluent limitations of ≤126 organisms per 100 mL and ≤410 organisms per 100 mL in not more than 10 % of the samples over a 30-day interval in accordance with Massachusetts WQSs. Due to the 30-dayinterval, monitoring must be conducted monthly. The bacteria limitations and requirements no longer qualify for reduced monitoring as substantially identical discharge points and must be assessed at each outfall, individually, given that compliance with numeric effluent limitations must be assessed.

At the same time, Massachusetts WQSs also use enterococcus as the preferred indicator for recreational designated uses. Therefore, the Draft Permit establishes monitoring requirements for Enterococcus consistent with the Massachusetts WQSs. The Draft Permit specifies monthly monitoring to provide data necessary to further evaluate pathogen issues in Chicopee River. After one year, if all monitoring results are below the applicable WQS, the monitoring frequency may be reduced to once per year, in conjunction and performed with the annual monitoring event.

5.3.6 Total Residual Chlorine

Chlorine and chlorine compounds are toxic to aquatic life. Free chlorine is directly toxic to aquatic organisms and can react with naturally occurring organic compounds in receiving waters to form toxic compounds such as trihalomethane. Potable water sources are typically chlorinated to minimize or eliminate pathogens. 40 CFR § 141.72 stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/L for more than four hours.

The source of the non-contact cooling water at the Facility is the Springfield municipal water supply and therefore, total residual chlorine may be found in the discharge of NCCW. The 2009 Permit included monthly monitoring requirements for total residual chlorine (TRC) at Outfalls 009 and 017, where discharges of once-through non-contact cooling water are authorized, and monitoring in conjunction with Whole Effluent Toxicity testing at all other outfalls. The maximum concentration at each outfall, reported in milligrams per liter (mg/L), was as follows for each of the authorized outfalls:

Table 9: Summary of TRC at the Facility

Outfall	Number of Samples	Number of Non-detects	Maximum TRC (mg/L)
009	49	4	0.18
Catchbasin 561	5	0	0.08
Catchbasin 573	5	0	0.11

017	66	3	0.3
10S	1	0	0.02
14S	1	0	0.07
15S	1	0	0.07
19S	1	0	0.04
20S	5	0	0.12
21S	11 5	1 0	0.2 (dry) 0.1 (wet)
51S	1	0	0.06
61S	1	0	0.01

The acute and chronic aquatic life criteria in Massachusetts WQSs for freshwater are 19 µg/L and 11µg/L, respectively. In addition, the Massachusetts Water Quality Standards *Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, dated February 23, 1990, states that waters shall be protected from unnecessary discharges of excess chlorine and at no time may a discharge contain total residual chlorine in excess of 1.0 mg/L.

The results of EPA's analysis indicate discharges of TRC cause, or have a reasonable potential to cause, or contribute to an excursion above the applicable criteria at Outfalls 017, 20S, and 21S (Appendix C). For Outfall 017, given the dilution factor of 14.79, the effluent limitations are calculated as follows:

Chronic criterion= 11 µg/L (0.011 mg/L)* DF (14.79) = 162.7 µg/L = monthly average limit

For Outfalls 20S and 21S, given that the dilution factor for the Bircham Bend Brook is zero (i.e., 1:1), the TRC maximum daily effluent limitations are equal to the acute criteria as follows:

Acute criterion= 19 µg/L (0.019 mg/L) = daily maximum limit

The Draft Permit proposes monthly monitoring. Since no other outfalls were found to cause, have reasonable potential to cause, or contribute to an excursion above WQSs, and since no projected effluent concentration exceeds the maximum allowable TRC in the Massachusetts *Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, no additional effluent limitations are proposed in the Draft Permit; however, as TRC was detected at all outfalls at concentrations that exceed the applicable criteria without dilution, continued monitoring is necessary to ensure these discharges continue to meet WQSs. The proposed effluent limitation and continued monitoring requirements are necessary and appropriate to carry out the provisions of the CWA and ensure compliance with State WQSs. See CWA §308(a), 33 U.S.C. §1318(a); 40 CFR §§ 122.4(d), 122.44(d)(1).

Where effluent limits have been established in NPDES permits but compliance cannot be determined using currently approved analytical methods (e.g. if WQBELs are less than the analytical capability of the methods), EPA must establish a compliance level. The *National Pollutant Discharge Elimination*

System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule[17] requires the use of an EPA-approved method that is sufficiently sensitive. Therefore, because the minimum level of detection for TRC is above the criterion, EPA has set a compliance level in the Draft Permit of 30 µg/L.[18] This ML is based on the method that has the lowest method detection limit of the analytical methods approved under 40 CFR Part 136, and is calculated in accordance with 40 CFR Part 136. This approach is consistent with EPA's TSD, page 111, which recommends, "the compliance level be defined in the permit as the minimum level."[19]

5.3.7 Ammonia

Ammonia (NH3) is the un-ionized form of ammonia nitrogen. Elevated levels of ammonia can be toxic to aquatic life. Temperature and pH affect the toxicity of ammonia to aquatic life. The toxicity of ammonia increases as temperature increases and ammonia concentration and toxicity increase as pH increases. Ammonia can affect fish growth, gill condition, organ weights and hematocrit, and can result in excessive plant and algal growth, which can cause eutrophication. Ammonia can also affect dissolved oxygen through nitrification, in which oxygen is consumed as ammonia is oxidized. Low oxygen levels can then, in turn, increase ammonia by inhibiting nitrification. Total ammonia-nitrogen concentrations in surface waters tends to be lower during summer than during winter due to uptake by plants and decreased ammonia solubility at higher temperatures.

The Permittee obtained yearly monitoring data for ammonia in conjunction with Whole Effluent Toxicity testing for Outfall 009 sampling locations catchbasin 561 and 573, and Outfalls 10S, 14S, 15S, 19S, 20S, 21S, 51S, and 61S. The maximum concentration at each outfall, reported in milligrams per liter (mg/L), was as follows for each of the authorized outfalls:

Table 10: Summary of Ammonia at the Facility

Outfall	Maximum Ammonia (mg/L)
009	---
Catchbasin 561	0.24
Catchbasin 573	0.24
017	---
10S	0.12
14S	0.063
15S	0.028
19S	0.028
20S	0.23
21S	0.48

[17] Fed. Reg. 49,001 (Aug. 19, 2014).
[18] Standard Method 4500-Cl E, low-level amperometric direct method (low-level amperometric titration method) method detection limit of 10 µg/L multiplied by a factor of 3.
[19] *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (Second Printing).

51S	0.05
61S	0.22

EPA's recommended criteria for ammonia in freshwater are based on temperature and pH in the receiving water and consider the presence of certain aquatic organisms at early life stages. Higher temperatures and higher (more basic) pH values are of greater environmental concern because these conditions result in higher concentrations of the more toxic neutral form of ammonia (NH3) rather than the ammonium ion (NH4 +). The median value of pH measurements, 7.2 S.U., recorded at the nearest USGS gauging station to the Facility along the Chicopee River (USGS 01177000: Chicopee River at Indian Orchard, MA) and maximum temperature allowed by the Massachusetts WQSs, 83^{o}F, was used to calculate the acute and chronic ammonia criteria, 1.2 mg/L and 9.1 mg/L, respectively.

EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs (Appendix C). The results of EPA's analysis indicate discharges of ammonia do not cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs. As a result, the Draft Permit does not propose numeric effluent limitations. However, ammonia monitoring will continue in conjunction with the chemical analysis required for Whole Effluent Toxicity testing.

5.3.8 Metals

Metals are naturally occurring constituents in the environment and generally vary in concentration according to local geology. Metals are neither created nor destroyed by biological or chemical processes. However, metals can be transformed through processes including adsorption, precipitation, co-precipitation, and complexation. Some metals are essential nutrients at low levels for humans, animals, plants and microorganisms, but toxic at higher levels (e.g., copper and zinc). Other metals have no known biological function (e.g., lead). The environmental chemistry of metals strongly influences their fate and transport in the environment and their effects on human and ecological receptors. In aquatic systems, metal bioavailability refers to the concentration of soluble metal that adsorb onto, or absorb into and across, membranes of living organisms. The greater the bioavailability, the greater the potential for bioaccumulation, leading to increased toxicological effects.[20] Toxicity results when metals are biologically available at toxic concentrations affecting the survival, reproduction and behavior of an organism.

The Permittee obtained yearly monitoring data for total recoverable aluminum, cadmium, chromium, copper, lead, nickel and zinc in the discharge and the receiving water in conjunction with Whole Effluent Toxicity testing for Outfall 009 sampling locations catchbasin 561 and 573, and Outfalls 10S, 14S, 15S, 19S, 20S, 21S, 51S, and 61S, as well as additional quarterly and/or annual monitoring for copper and/or zinc. Zinc monitoring is required for Outfall 009, but WET testing and the associated metals analyses are not required. Similarly, for Outfall 017, monitoring for copper and zinc is required,

[20] Magelhaes, Danielly et al. 2015. *Metal bioavailability and toxicity in freshwaters.* Environmental Chemistry Letters. DOI 10.1007/s10311-015-0491-9.

but WET testing and the associated metals analyses are not required. The maximum metals concentrations, reported in milligrams per liter (mg/L), were as follows for each of the authorized outfalls:

Table 11: Summary of Metals Parameters at the Facility

Outfall	Aluminum (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Nickel (mg/L)	Zinc (mg/L)
009	---	---	---	---	---	ND
Catchbasin 561	0.19	ND	0.0058	0.0052	0.0046	0.058
Catchbasin 573	0.082	ND	0.0068	0.0061	0.0024	0.064
017	---	---	ND	---	---	0.19
10S	ND	ND	0.0029	ND	0.0019	0.085
14S	ND	ND	ND	ND	ND	0.36
15S	0.029	ND	0.0025	0.00062	0.0018	0.025
19S	0.068	ND	ND	ND	ND	0.044
20S	0.24	ND	0.012	0.0069	0.0018	0.27
21S	0.56	0.00025	0.034	0.0036	0.0027	2
51S	0.075	ND	ND	ND	ND	0.12
61S	0.23	ND	0.0079	ND	ND	0.06

Note: ND= not detected

EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs (Appendix C). Massachusetts WQSs contain numeric criteria applicable to all surface waters for toxic pollutants, including metals (314 CMR 4.05(5)(e)). The results of EPA's analysis indicate discharges of one or more metals at Outfalls 20S and 21S cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs. As a result, the Draft Permit proposes numeric effluent limitations as described below. EPA notes that the criteria for cadmium, copper, lead, and zinc are hardness-dependent using the equations found at 314 CMR 4.06 and were calculated as explained in Appendix C of this Fact Sheet. The hardness value for Outfall 20S is 14.5 mg/L and the hardness value for Outfall 21S is 17.5 mg/L.

Aluminum

Studies on the toxic effects of aluminum in the aquatic environment have shown that inorganic aluminum can be toxic to several freshwater species of fish, invertebrates, bacteria, and algae. The aluminum species causing toxicity depends on water chemistry, aquatic organism affected, and the effect being monitored. Physical and chemical characteristics such as settling velocity and dissolved organic carbon (DOC) may alter the toxicity of aluminum in the environment.[21]

[21] Summarized from Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Aluminum*, September, 2008.

The Massachusetts WQSs (314 CMR 4.00) were amended in 2022 to include EPA's revised national recommended ambient water quality criteria for aluminum, which are dependent on hardness, pH and dissolved organic carbon (DOC) as described at 314 CMR 4.06 Table 29.[22]

For this Facility, absent the information necessary to apply the site-specific aluminum criteria, the Massachusetts WQSs specify default water quality criteria for aluminum for each watershed. Therefore, the default acute water quality criterion for the Chicopee River watershed was used to calculate the applicable limits. See Appendix C.

Aluminum Limitations, Outfall 20S
Maximum daily = 290 µg/L

Aluminum Limitations, Outfall 21S
Maximum daily = 290 µg/L

Cadmium

Cadmium is used in products such as batteries, pigments, coatings and platings, stabilizers for plastics, nonferrous alloys, electronics, and nanoparticles used in solar cells and color displays. Cadmium is a non-essential metal with no biological function in aquatic animals. In addition to acute effects such as mortality, chronic exposure to cadmium can lead to adverse effects on growth, reproduction, immune and endocrine systems, development, and behavior in aquatic organisms. Cadmium is also a probable human carcinogen. Cadmium and its compounds may travel through soil, but generally binds strongly to organic matter. In water, cadmium exists as the hydrated ion or as ionic complexes with other inorganic or organic substances. Soluble forms migrate in water. Insoluble forms of cadmium are immobile and will deposit and absorb to sediments.[23]

For this Facility, the hardness-dependent acute criteria for cadmiumwere used to calculate the applicable limits. See Appendix C.

Cadmium Limitations, Outfall 21S
Maximum daily = 0.345 µg/L

Copper

Bioavailable copper, beyond required levels, can cause sub-lethal or lethal effects (Eisler, 1998; Scannell, 2009). Exposure to elevated copper concentrations in aquatic species can cause growth impacts, metabolic inhibition, photosynthetic issues, reduced feeding, reduced reproduction, gill damage in aquatic invertebrates, olfactory response changes in freshwater fish species, and adverse behavioral effects (Eisler, 1998; Sommer et al., 2016). Copper bioavailability is affected by numerous

[22] *Final Aquatic Life Ambient Water Quality Criteria for Aluminum*. EPA 822-R-18-001, December 2018.
[23] Summarized from Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Cadmium,* September 2012.

water chemistry parameters, including pH, total hardness, and dissolved organic carbon (DOC). For example, as DOC increases, the bioavailability of copper decreases (Santore et al., 2001).

The Massachusetts WQSs (314 CMR 4.00) were amended in 2020 to include both EPA's 1996 hardness-dependent national recommended ambient water quality criteria for acute and chronic copper exposure in freshwater and the 2007 EPA updated criteria in the form of software (Biotic Ligand Model version 2.2.3 (USEPA, 2007)), which calculates instantaneous acute and chronic dissolved copper criteria values based on the concentration of copper at a biotic ligand in varying water conditions that can lead to toxicity (USEPA, 2007; McConaghie and Matzke, 2016).[24]

For this Facility, absent the information necessary to apply the Biotic Ligand Model, the hardness-dependent acute criteria for copper were used to calculate the applicable limits. See Appendix C.

Copper Limitations, Outfall 20S
Maximum daily = 2.27 µg/L

Copper Limitations, Outfall 21S
Maximum daily = 2.71 µg/L

Lead

Lead most commonly occurs in the oxidation state Pb^{2+}. Lead does not breakdown, but may transform to other lead compounds. When lead is exposed to air and water, films of lead sulfate, lead oxides, and lead carbonates form, creating a protective barrier that slows or halts corrosion. Lead also strongly adsorbs to soil. As a result, lead is most commonly found in the upper layers of soil and sediment. The solubility of lead compounds in water is a function of pH, hardness, salinity, and the presence of humic material. Solubility is highest in soft, acidic water. Because of widespread historic use and the persistence of lead in the environment, high concentrations of lead can be present at industrial sites.[25]

For this Facility, the hardness-dependent acute criteria for lead were used to calculate the applicable limits. See Appendix C.

Lead Limitations, Outfall 20S
Maximum daily = 6.99 µg/L

Zinc

Zinc occurs mainly as a free ion (i.e., Zn^{2+}) and can occur in both suspended and dissolved forms. Suspended zinc can dissolve and can readily adsorb onto suspended solids. Dissolved zinc generally increases as pH decreases and may occur as the free ion or as dissolved complexes and compounds. Under aerobic conditions and at high pH, zinc readily adsorbs onto hydrous iron and manganese

[24] *Aquatic Life Ambient Freshwater Quality Criteria – Copper*. EPA-822-R-07-001, February, 2007.
[25] *Toxicological Profile for Lead*. Agency for Toxic Substances and Disease Registry: August, 2007.

oxides, clay minerals, and organic material. Zinc compounds found in stormwater runoff may include zinc chloride, zinc oxide, zinc sulfate, and zinc sulfide.[26] Zinc is subject to a sector-specific benchmark requirement for subsector C4 in the 2021 MSGP. The benchmark value is the hardness dependent water quality criteria for freshwater. For this Facility, the hardness-dependent acute criteria for zinc were used to calculate the applicable limits. See Appendix C.

Zinc Limitations, Outfall 20S
Maximum daily = 23.3 µg/L

Zinc Limitations, Outfall 21S
Maximum daily = 27.4 µg/L

The monitoring frequency for limited metals in the Draft Permit is monthly. Annual monitoring for total recoverable aluminum, cadmium, copper, lead, nickel and zinc in the discharge and the receiving water continue to be required in conjunction with Whole Effluent Toxicity Testing for all outfalls, discussed further below. The quarterly and annual monitoring requirements for copper and zinc continued to be required in the Draft Permit where these metals have been detected.

5.3.9 Cyanide

Cyanide is an inorganic pollutant often limited in conjunction with metals, because it readily forms complexes with transition metals, particularly iron. Cyanide occurs in water in many forms, including hydrogen cyanide (HCN), the cyanide ion (CN^-), simple cyanides, metallocyanide complexes, and as organic compounds. The relative concentrations of these forms depend mainly on pH and temperature. Both HCN and CN^- are toxic to aquatic life. The cyanide ion readily converts to hydrogen cyanide at pH values less than 7.0. As a result, when present in surface water, cyanide occurs more commonly as the more toxic hydrogen cyanide. Certain bacteria, fungi, and algae can also produce cyanide, and cyanide is found naturally in several species of plants.[27]

Prior to the 2009 Permit, the Permittee was required to conduct a Priority Pollutant Scan. The 2009 Permit proposed removal of this requirement based on the results of monitoring indicating that the concentrations for the majority of pollutants in the scan were below the analytical detection limit. However, in response to comments received on the draft, the 2009 Permit ultimately retained monitoring for cyanide because it was a pollutant detected in the scan. The maximum concentration at each outfall, reported in milligrams per liter (µg/L), was as follows for each of the authorized outfalls:

Table 12: Summary of Cyanide at the Facility

Outfall	Number of Samples	Number of Non-detects	Maximum Cyanide (mg/L)
009 (dry weather)	5	5	---

[26] *Toxicological Profile for Zinc*. Agency for Toxic Substances and Disease Registry: August, 2005.
[27] *Toxicological Profile for Cyanide*. Agency for Toxic Substances and Disease Registry: July, 2006.

Catchbasin 561 (wet weather)	5	5	---
Catchbasin 573 (wet weather)	5	5	---
017 (dry and wet weather)*	10	8	0.018 (dry weather)
10S (wet weather)	1	1	---
14S (wet weather)	1	1	---
15S (wet weather)	1	0	0.016
19S (wet weather)	1	1	---
20S (wet weather)	5	5	---
21S (dry and wet weather)*	16	15	0.022 (dry weather)
51S (wet weather)	1	1	---
61S (wet weather)	1	1	---

Note*: dry weather sample results were used in EPA's analysis since the detection occurred under this discharge condition but did not occur under the wet weather discharge condition.

For Outfalls 009, including catchbasin 561 and 573, 10S, 14S, 19S, 20S, 51S, and 61S, where monitoring results indicate that cyanide has not been detected in discharges, the monitoring has been removed, as requested by the Permittee, except as required as part of the Priority Pollutant Scan (i.e., once in the first year of the permit term and in accordance with the Non-Stormwater Discharge Detection and Elimination requirements (see Section 5.3.9, below).

The acute aquatic life criteria in Massachusetts WQSs for freshwater 22 µg/L. For Outfall 21S, the results of EPA's analysis indicates discharges of cyanide cause, or have a reasonable potential to cause or contribute to an excursion of State WQSs (Appendix C). As a result, the Draft Permit numeric effluent limitations. Given that the dilution factor for the Bircham Bend Brook is zero (i.e., 1:1), the cyanide maximum daily effluent limitation is equal to the acute criteria as follows:

Acute criterion= 22 µg/L (0.022 mg/L) = daily maximum limit

The Draft Permit proposes monthly monitoring.

For Outfalls 017, and 15S, the results of EPA's analysis indicate discharges of cyanide do not cause, or have a reasonable potential to cause or contribute to an excursion of State WQSs (Appendix C). As a result, the Draft Permit does not propose numeric effluent limitations for cyanide at these outfalls. However, because the concentrations of cyanide measured are equal to or exceed one or more of the criteria in Massachusetts WQSs for cyanide (prior to dilution in the mixing zone), monitoring for cyanide is retained in the Draft Permit for these outfalls, required twice per year to ensure these discharges comply with Massachusetts WQSs.

5.3.10 Volatile and Semi-Volatile Organic Compounds (VOCs and SVOCs)

An organic compound is any of a large class of chemical compounds whose molecules contain carbon. For historical reasons, a few types of compounds such as carbonates, simple oxides of carbon and cyanides, as well as the allotropes of carbon, are considered inorganic. Volatile organic compounds, or VOCs, are organic compounds whose composition makes it possible for them to evaporate under normal indoor atmospheric conditions of temperature and pressure. This is the general definition of VOCs that is used in the scientific literature and is consistent with the definition used for regulatory purposes. The World Health Organization (WHO) categorizes these organic pollutants by the ease they will be emitted as:

- Very volatile organic compounds (VVOCs) (e.g., propane, butane, methyl chloride)
- Volatile organic compounds (VOCs) (e.g., formaldehyde, toluene, acetone, ethanol (ethyl alcohol), isopropyl alcohol)
- Semi-volatile organic compounds (SVOCs) (e.g., pesticides (DDT, chlordane, plasticizers (phthalates), fire retardants (PCBs, PBB))

The higher the volatility, the more likely the compound will be emitted from a material or surface into the air. Very volatile organic compounds are so volatile that they are difficult to measure and are found almost entirely as gases in the air rather than in materials or on surfaces. The least volatile compounds found in air constitute a far smaller fraction of the total present indoors while the majority will be in solids or liquids that contain them or on surfaces including dust, furnishings and building materials.

Prior to the 2009 Permit, the Permittee was required to conduct a Priority Pollutant Scan. The 2009 Permit proposed removal of this requirement based on the results of monitoring indicating that the concentrations for the majority of pollutants in the scan were below the analytical detection limit. The 2009 Permit ultimately retained monitoring for a small number of VOCs/SVOCs that were either detected in the scan, or are known to be historically present at the Facility. These were: chloroform, methanol, dichlorobromomethane, chlorobenzene, and total polychlorinated biphenyls (PCBs). In addition, the Permittee was required to sample Outfall 21S for the 113 Organic Toxic Pollutants and the 15 Other Toxic Pollutants, plus dioxin, listed in Tables II and III of Appendix D to 40 CFR 122. After completion of this test, the Permittee was required to sample twice (2) per year for the 43 volatile and inorganic compounds listed in Table II and III of Appendix D at 40 CFR Part 122. These results were not required to be reported on DMRs. The maximum concentrations of the VOCs/SVOCs required on the DMRs, reported in micrograms per liter (µg/L), were as follows for each of the authorized outfalls:

Table 13: Summary of Volatile/Semi-Volatile Organics at the Facility

Outfall	Maximum Chloroform µg/L)	Maximum Dichlorobromomethane (µg/L)	Maximum Chlorobenzene (µg/L)	Maximum Methanol (µg/L)	Maximum PCBs (µg/L)
009 (dry)	12.5	2.3	ND	ND	0.126
Catchbasin 561 (wet)	0.21	1.1	ND	ND	ND
Catchbasin 573 (wet)	2.2	ND	ND	ND	ND

017 (dry)	46	4.03	ND	ND	ND
017 (wet)	42	3.8	0.11	ND	ND
10S, 19S, 61S (wet)	ND	ND	ND	ND	ND
14S (wet)	0.16	ND	ND	ND	ND
15S (wet)	27	2.7	ND	ND	ND
20S (wet)	37	3.4	ND	ND	ND
21S (dry)	22	2	ND	ND	0.252
21S (wet)	4.35	0.53	ND	ND	ND
51S (wet)	4.4	ND	ND	ND	ND

ND= not detected

Chloroform

Chloroform is used widely as a chemical solvent and as an intermediate in the production of refrigerants, plastics, and pharmaceuticals. Chloroform is also a common disinfection byproduct, formed from chlorination of drinking water and are regulated under EPA's drinking water program, found at 40 CFR §141.53 and §141.64. Water that contains organic material and is chlorinated can generate chloroform.[28] Because chloroform was either detected in the scan or are known to be historically present at the Facility due to the use of potable water for non-contact cooling water, the 2009 Permit requires monitoring for chloroform at a frequency of twice per year at Outfall 21S and once per year at all other outfalls. Chloroform was detected at during dry and wet weather at Outfalls 009 (at catchbasin 561 and 573 during wet weather), 017 and 21S, and during wet weather at Outfalls 14S, 15S, 20S, and 51S.

For Outfalls 10S, 19S, and 61S, where monitoring results indicate that chloroform has not been detected in discharges, the monitoring has been removed, as requested by the Permittee, except as required as part of the Priority Pollutant Scan (i.e., once in the first year of the permit term and in accordance with the Non-Stormwater Discharge Detection and Elimination requirements (see Section 5.3.9, below).

The criteria in Massachusetts WQSs for freshwater is the human health organism-only criterion (fish and shellfish consumption only) and is 2,000 µg/L (chronic). In addition, the criteria in Massachusetts WQSs for freshwater for total trihalomethanes (TTHM), which is the sum of bromodichloromethane, dibromochloromethane, bromoform (tribromomethane) and chloroform (trichloromethane) is 80 µg/L, which is the Massachusetts Maximum Contaminant Level (MMCL) (chronic). For Outfalls 009, 017, 14S, 15S, 20S, 21S, and 51S the results of EPA's analysis indicate discharges of chloroform do not cause, or have a reasonable potential to cause or contribute to an excursion of State WQSs (Appendix C). As a result, the Draft Permit does not propose numeric effluent limitations for chloroform at these outfalls. However, because chloroform has been detected at these outfalls, chloroform functions as an indicator parameter of VOCs that will inform the non-stormwater discharge detection and elimination

[28] *Update of Human Health Ambient Water Quality Criteria: Chloroform 67-66-3*. EPA 820-R-15-027, June 2015.

requirements in the Draft Permit. As a result, monitoring is retained in the Draft Permit for these outfalls, required once per year to ensure these discharges comply with Massachusetts WQSs.

Dichlorobromomethane

Dichlorobromomethane, also known as bromodichloromethane, is a trihalomethane and is considered a probable human carcinogen. Like chloroform, dichlorobromomethane is a common disinfection byproduct, and can form when chlorine reacts with other naturally occurring substances in water, such as decomposing plant material. Dichlorobromomethane was also used in the past to make other chemicals such as fire extinguisher fluids, spray can propellants, refrigerator fluid, and pesticides. It is now only used on a small scale in laboratories. Dibromochloromethane is soluble in water and mobile in soils, and may seep into groundwater.[29] Because dichlorobromomethane was either detected in the scan or is known to be historically present at the Facility or are known to be historically present at the Facility due to the use of potable water for non-contact cooling water, the 2009 Permit requires monitoring for dichlorobromomethane at a frequency of twice per year at Outfall 21S and once per year at all other outfalls. Dichlorobromomethane was detected at during dry and wet weather at Outfalls 009 (at catchbasin 561 during wet weather), 017 and 21S, and during wet weather at Outfalls 15S, and 20S.

For Outfalls 10S, 14S, 19S, 51S, and 61S, where monitoring results indicate that dichlorobromomethane has not been detected in discharges, the monitoring has been removed, as requested by the Permittee, except as required as part of the Priority Pollutant Scan (i.e., once in the first year of the permit term and in accordance with the Non-Stormwater Discharge Detection and Elimination requirements (see Section 5.3.9, below).

The criteria in Massachusetts WQSs for freshwater is the human health organism-only criterion (fish and shellfish consumption only) is 27 µg/L (chronic). In addition, the criteria in Massachusetts WQSs for freshwater for total trihalomethanes (TTHM), which is the sum of bromodichloromethane, dibromochloromethane, bromoform (tribromomethane) and chloroform (trichloromethane) is 80 µg/L, which is the Massachusetts Maximum Contaminant Level (MMCL) (chronic). For Outfalls 009, 017, 15S, 20S, and 21S, the results of EPA's analysis indicate discharges of dichlorobromomethane do not cause, or have a reasonable potential to cause or contribute to an excursion of State WQSs (Appendix C). As a result, the Draft Permit does not propose numeric effluent limitations for dichlorobromomethane at these outfalls. However, because dichlorobromomethane has been detected at these outfalls, it functions as an indicator parameter of VOCs that will inform the non-stormwater discharge detection and elimination requirements in the Draft Permit. As a result, monitoring is retained in the Draft Permit for these outfalls, required once per year to ensure these discharges comply with Massachusetts WQSs.

Chlorobenzene

[29] *ToxFAQs: Bromodichloromethane.* Agency for Toxic Substances and Disease Registry, February, 2020.

Chlorobenzene is an aromatic organic compound commonly used as a solvent and intermediate in the manufacturing of other chemicals and is produced commercially by the chlorination of benzene in the presence of a catalyst (e.g., ferric chloride, aluminum chloride, or stannic chloride). Primary uses of chlorobenzene were as a solvent for pesticide formulations, diisocyanate manufacture, degreasing automobile parts, and for the production of nitrochlorobenzene and diphenyl oxide. Chlorobenzene has also been used in silicone resin production, as a heat transfer medium, and as an intermediate in the synthesis of other halogenated organics (e.g., DDT). Chlorobenzene evaporates relatively quickly (i.e., 72 hours), adsorbs moderately well to soils, and has moderate solubility in water. Evaporation, hydrolysis, and microbial degradation, in that order, are likely to be the major fates of chlorobenzene discharged to water, whereas evaporation and microbial degradation, in that order, are likely to be the major fates of chlorobenzene in soils and sediments.[30] Chlorobenzene is very toxic to aquatic organisms, even at low concentrations and is moderately toxic to humans. Because chlorobenzene was either detected in the scan or is known to be historically present at the Facility, the 2009 Permit requires monitoring for chlorobenzene at a frequency of twice per year at Outfall 21S and once per year at all other outfalls. Chlorobenzene was detected at during wet weather at Outfall 017.

For Outfalls 009, including catchbasin 561 and 573, 10S, 14S, 15S, 19S, 20S, 21S, 51S, and 61S, where monitoring results indicate that chlorobenzene has not been detected in discharges, the monitoring has been removed, as requested by the Permittee, except as required as part of the Priority Pollutant Scan (i.e., once in the first year of the permit term and in accordance with the Non-Stormwater Discharge Detection and Elimination requirements (see Section 5.3.9, below).

The criteria in Massachusetts WQSs for freshwater for human health organism-only criterion (fish and shellfish consumption only) is 800 µg/L, and the organoleptic effect criteria for all surface waters in 20 µg/L. For Outfall 017, the results of EPA's analysis indicate discharges of chlorobenzene do not cause, or have a reasonable potential to cause or contribute to an excursion of State WQSs (Appendix C). As a result, the Draft Permit does not propose numeric effluent limitations for chlorobenzene at this outfall. However, because chlorobenzene has been detected at this outfall, it functions as an indicator parameter of VOCs that will inform the non-stormwater discharge detection and elimination requirements in the Draft Permit. As a result, monitoring is retained in the Draft Permit for these outfalls, required once per year to ensure these discharges comply with Massachusetts WQSs.

Methanol

Methanol is a very volatile aliphatic alcohol used as a basic building block for numerous chemicals, such as a solvent, a denaturant for ethanol, and in the synthesis of other chemicals. Many of its derivatives are used in the construction, housing or automotive industries. Consumer products that contain methanol include varnishes, shellacs, paints, windshield washer fluid, antifreeze, adhesives, and deicers. Because methanol was detected during a priority pollutant scan, the 2009 Permit requires monitoring of methanol on a yearly basis. However, methanol has not been detected in any sample at

[30] Summarized from *Toxicological Profile for Chlorobenzene.* Agency for Toxic Substances and Disease Registry, October, 2020.

any outfall since 2008 (Appendix A). As a result, this monitoring requirement has been removed from the Draft Permit at the request of the Permittee.

Polychlorinated Biphenyls (PCBs)

PCBs encompass a class of compounds with a dual ring chemical structure that is formed by the addition of chlorine (C_{12}) to biphenyl ($C_{12}H_{10}$). PCBs include up to 209 variations, or congeners, with different physical and chemical characteristics. PCBs were commonly used as mixtures called aroclors, typically found in oils associated with electrical transformers or gas pipelines. PCBs alone are not very mobile in subsurface soils or water and are only slightly soluble in water, but bind strongly to soil and sediments, and are resistant to degradation. As a result, PCBs persist in the environment and can be transported by solids.[31] PCBs exhibit a wide range of bioavailability and toxicity. The human health and ecological risks associated with PCBs are a function of exposure and the toxicity of PCBs. PCBs are known to cause cancer in animals and are classified as a probable human carcinogen by national and international health-protective organizations.[32] Total PCBs is the sum of the sum of all congener or all isomer or homolog or Aroclor analyses, per 314 CMR 4.00 Table 29. There are seven PCB aroclors listed as priority pollutants in Appendix A to 40 CFR Part 423. They are:

- Aroclor 1242
- Aroclor 1254
- Aroclor 1221
- Aroclor 1232
- Aroclor 1248
- Aroclor 1260
- Aroclor 1016

For Outfalls 017, 10S, 14S, 15S, 19S, 20S, 51S, and 61S, and the Outfall 009 wet weather sampling locations catchbasin 561 and 573, where monitoring results indicate that PCBs have not been detected in discharges, the monitoring has been removed, as requested by the Permittee, except as required as part of the Priority Pollutant Scan (i.e., once in the first year of the permit term and in accordance with the Non-Stormwater Discharge Detection and Elimination requirements (see Section 5.3.9, below). Further, in accordance with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*[33] (SSTM), the Draft Permit requires the use of an EPA-approved method that is sufficiently sensitive for all future analyses of total PCBs. The Draft Permit requires that the quantitative methodology used for PCB analysis must achieve the ML of ≤0.095 µg/L using EPA Method 608.3. The MLs for Method 608.3 can achieve the required sensitivity in a relatively clean matrix with a low calibration standard of 0.05 µg/L and a final volume of 1 mL. This could be further reduced by using a larger sample volume (e.g., 2 L yields a ML of

[31] *Remediation Technologies Screening Matrix and Reference Guide, Version 4.0, Section 2.6.1: Properties and Behavior of Halogenated SVOCs* (2007).
[32] *Toxicological Profile for Polychlorinated Biphenyls (PCBs)*. Agency for Toxic Substances and Disease Registry: November, 2000.
[33] Fed. Reg. 49,001 (Aug. 19, 2014).

0.025 µg/L). Method 608.3 is the test method currently approved at 40 CFR Part 136, which targets seven common Aroclor mixtures and has a published MDL and ML for PCB–1242 of 65 ng/L (0.065 µg/L) and 95 ng/L (0.095 µg/L), respectively.[34]

For outfalls where PCBs were detected, including Outfalls 009, and 21S, EPA evaluated these data to determine if discharges from the Facility cause, or have a reasonable potential to cause, or contribute to an excursion above Massachusetts WQSs (Appendix C). The criteria in Massachusetts WQSs for freshwater are the aquatic life criterion continuous concentration (CCC) = 0.014 µg/L (acute) and the human health organism-only criterion (fish and shellfish consumption only) = 0.000064 µg/L (chronic).

For Outfall 21S, the results of EPA's analysis indicate discharges of PCBs cause, or have a reasonable potential to cause or contribute to an excursion of State WQSs (Appendix C). As a result, the Draft Permit includes numeric effluent limitations. Given that the dilution factor for the Bircham Bend Brook is zero (i.e., 1:1), the PCB maximum daily and average monthly effluent limitations are equal to the criteria as follows:

Acute criterion= 0.014 µg/L = daily maximum limit; and
Human health criterion = 0.000064 µg/L = monthly average limit

The Draft Permit proposes monthly monitoring. In addition, as for TRC, above, compliance cannot be determined using currently approved analytical methods (e.g. the WQBELs are less than the analytical capability of the methods), and EPA must establish a compliance level. Therefore, because the minimum level of detection for PCBs is above the criterion, EPA has set a compliance level in the Draft Permit of 0.065 µg/L.[35] This ML is based on the method that has the lowest minimum level of the analytical methods approved under 40 CFR Part 136, and is published in 40 CFR Part 136.

For Outfall 009, the results of EPA's analysis indicate discharges of PCBs do not cause, or have a reasonable potential to cause or contribute to an excursion of State WQSs for aquatic life (acute) but cause, or have a reasonable potential to cause or contribute to an excursion of State WQSs for human health (Appendix C). As a result, the Draft Permit includes numeric effluent limitations. Using the mass balance equation explained in Appendix C, the dilution factor for the Chicopee River (i.e., 1:1,987.3), yields the PCB average monthly effluent limitation is as follows:

0.1272 µg/L = monthly average limit

Since the limit is above the ML for PCB analysis, a compliance level does not apply to this limit. The Draft Permit proposes monthly monitoring.

Vinyl Chloride

[34] See Table 1 in 40 CFR Part 136, Method 608.3 - Organochlorine Pesticides and PCBs by GC/HSD, Part 21.
[35] Standard Method 4500-Cl E, low-level amperometric direct method (low-level amperometric titration method) method detection limit of 10 µg/L multiplied by a factor of 3.

Vinyl chloride is a halogenated VOC. It has high water solubility and can enter groundwater before evaporation can occur. Vinyl chloride can also occur in groundwater from of anaerobic reductive dehalogenation of PCE, TCE, and 1,1,1-TCA, which generally occurs relatively slowly. The persistence of vinyl chloride in water can be affected by turbidity and the presence of salts, which form complexes with vinyl chloride that increase its water solubility. Vinyl chloride is also highly mobile in soils.[36]

As previously described, a release of vinyl chloride occurred in the vicinity of Outfall 21S. Since discharges of groundwater from this outfall are authorized by this permit and to ensure that this pollutant is not discharged at concentrations that cause, have a reasonable potential to cause, or contribute to an excursion above State WQSs, the Draft Permit includes a monitoring requirement for this parameter at Outfall 21S.

Priority Pollutant Scan

As previously described, the Permittee has been required to conduct pollutant scans of discharges from the Facility. VOCs, SVOCs and other toxic pollutants at the Facility are generally found in process wastewater, liquid or solid hazardous wastes, or releases to soil, sediment, and, therefore, groundwater. The Permittee has requested reduction or elimination of these monitoring requirements. However, because the Draft Permit contains non-numeric limits, such as prohibitions (e.g., liquid and solid hazardous wastes, and non-stormwater discharges, including process wastewaters), the presence of VOCs and SVOCs function as indicator parameters because they are a means to detect these discharges. As a result, the Draft Permit includes monitoring requirements for VOCs and SVOCs and other toxic pollutants at all outfalls that are authorized to discharge. The Permittee must sample for the 113 Organic Toxic Pollutants and the 15 Other Toxic Pollutants, listed in Tables II and III, respectively, of Appendix D to 40 CFR 122 (see Draft Permit attachment for list of parameters) once within the first year of the permit term, report the total number of pollutants detected to EPA, and provide the full results for each outfall. While past sampling was conducted for general discharge characterization, the purpose of this sampling is to demonstrate compliance with the non-numeric limitations in the Draft Permit and narrative Massachusetts WQSs at 314 CMR 4.05(5)(e) that require, “All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.”

The pollutant scan must be conducted once in the first year of the permit term for each outfall. The Draft Permit proposes that this monitoring be discontinued after the first year of the permit term for any pollutant not detected in the discharges from a given outfall. For individual pollutants required in the pollutant scan to which limitations and/or more frequent monitoring applies, duplicate samples are not required so long as the pollutant scan sample is taken concurrently with other samples for a given outfall in the applicable monitoring period.

Should VOCs or SVOCs be detected in pollutant scan samples, as this is an indication of either process wastewaters, liquid or solid hazardous wastes, or other non-stormwater discharges within the

[36] Toxicological Profile for Vinyl Chloride. Agency for Toxic Substances and Disease Registry: July, 2006.

stormwater collection system, such a detection serves as a corrective action trigger for the non-numeric requirements pertaining to the required control measures for these discharges and monitoring for these pollutants must be continued on at least an annual basis. Depending on the source, the control measure requirements specify the corrective action. For example, if the source is identified as groundwater infiltration, the corrective actions the Permittee must take to eliminate such infiltration are described in the Non-Stormwater Discharge Detection and Elimination requirements.

5.3.11 Per- and polyfluoroalkyl substances (PFAS)

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.[37] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from certain industrial facilities and wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

On October 20, 2020, MassDEP published final regulations establishing a drinking water standard, or a Maximum Contaminant Level (MCL) of 20 parts per trillion (ppt) for the sum of the following six PFAS. *See* 310 CMR 22.00.

- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctanoic acid (PFOA)
- Perfluorodecanoic acid (PFDA)

Although the Massachusetts water quality standards do not include numeric criteria for PFAS, the Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) states:

> *All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.*

The narrative criterion is further elaborated at 314 CMR 4.05(5)(e)2, which states:

> *Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health-based regulation of the toxic pollutant shall be in accordance with guidance*

[37] EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan,* EPA 823R18004, February 2019. Available at: https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf

> *issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00.*

In addition, EPA published the *PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024 (PFAS Strategic Roadmap)*, in October 2021.[38] On page 14, of this document, EPA identifies categories known or suspected to discharge PFAS including: organic chemicals, plastics & synthetic fibers (OCPSF); metal finishing; electroplating; electric and electronic components; landfills; pulp, paper & paperboard; leather tanning & finishing; plastics molding & forming; textile mills; paint formulating, and airports. On December 5, 2022, EPA issued a memorandum addressing PFAS discharges in EPA-issued NPDES Permits with recommendations for monitoring requirements for different types of facilities (PFAS Memo). This memo explains that the list of categories known or suspected to discharge PFAS does not include all possible industrial sources that discharge PFAS. "For example, Centralized Waste Treatment (CWT) facilities may receive wastes from the aforementioned industries and should be considered for monitoring. There may also be categories of dischargers that do not meet the applicability criteria of any existing ELG; for instance, remediation sites, chemical manufacturing not covered by OCPSF, and military bases." [39]

Consistent with EPA's guidance,[40] given that PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, and to ensure there are adequate data to assess the presence and concentration of PFAS in discharges, the Draft Permit requires that the Facility conduct quarterly effluent sampling for all 40 PFAS chemicals using analytical Method 1633 (see Draft Permit attachment for list of PFAS parameters). The quarterly monitoring shall begin the first full calendar quarter beginning six months after the effective date of the permit. The annual monitoring for certain industrial users shall begin the first full calendar year following the effective date of the permit.

The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this Facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility-specific basis. EPA is authorized to require this monitoring and reporting by CWA § 308(a), which states:

> *SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance;*

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[38] See https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf
[39] Radhika Fox, Assistant Administrator, EPA to Water Division Directors, EPA Regions 1-10, December 5, 2022, Subject: "Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs." Available at: https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf
[40] *Id*.

(3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—

(A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require….

All monitoring results may be used by EPA in the next permit reissuance to ensure the discharge continues to protect designated uses.

EPA has also recently published Method 1621 to screen for organofluorines in wastewater. Organofluorines (molecules with a carbon-fluorine bond) are rarely naturally occurring and the most common source of organofluorines are PFAS and non-PFAS fluorinated compounds such as pesticides and pharmaceuticals. The PFAS Memo states that the Adsorbable Organic Fluorine CWA wastewater method 1621 can be used in conjunction with Method 1633, if appropriate. EPA has not included this additional monitoring requirement in the Draft Permit because the Facility is not authorized to discharge process wastewaters. Further, the Permittee is required to identify and eliminate non-stormwater discharges except those specifically authorized, which will ensure that pollutants associated with the manufacturing activities at the Facility are not exposed to stormwater, groundwater or potable water authorized for discharge.

5.3.12 Whole Effluent Toxicity Testing

As discussed in Section 2, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs, including not only numeric criteria, but also both narrative criteria to protect designated uses and antidegradation requirements that prevent increases in pollutant loading except under certain circumstances. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement narrative water quality criteria calling for “no toxics in toxic amounts.” *See also* 40 CFR § 122.44(d)(1). The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, “All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.” In addition, the Massachusetts WQSs at 314 CMR 4.03(2)(a) require no lethality to organisms passing through a mixing zone. EPA generally considers WET testing in addition to chemical specific criteria when evaluating whether discharges from a facility meet WQSs.

CWA §§ 402(a)(2) and 308(a) provide EPA and States with the authority to require toxicity testing. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism, and persistence of the pollutants in the discharge do not cause toxicity, even when the individual pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Draft Permit will assure that the Facility does not discharge combinations of pollutants into the receiving water in amounts that would be toxic to aquatic life or human health.

The 2009 Permit required to conduct acute WET testing for Outfall 21S twice per year and for Outfalls 009, including sampling locations catchbasin 561 and 573, 017, 10S, 14S, 15S, 19S, 20S, 51S, and 61S once per year. In addition, the 2009 Permit required that testing be conducted for the daphnid *Ceriodaphnia dubia* and fathead minnow *Pimpahles promelas*. The frequencies and test species could be reduced or eliminated if test results showed no toxicity, and these reductions were approved for several outfalls over the permit term. As a result, the number of WET tests completed at each outfall varies. Since the 2009 Permit was issued, WET testing results at each of the authorized outfalls were as follows:

Table 14: Summary of WET Testing at the Facility

Outfall Number	No. of Ceriodaphnia Tests	LC50 Acute Ceriodaphnia Minimum (%)	LC50 Acute Ceriodaphnia Number of Tests 100%	No. of Pimephales Tests	LC50 Acute Pimephales Minimum (%)	LC50 Acute Pimephales Number of Tests 100%
009 (dry)	3	100	3	3	100	3
Catchbasin 561 (wet)	15	<6.25	13	15	68.6	14
Catchbasin 573 (wet)	15	<6.26	13	15	68.6	14
017 (dry)	3	100	3	3	100	3
10S (wet)	3	70.7	2	3	71.6	2
14S (wet)	3	35.2	2	3	46.3	1
15S (wet)	1	100	1	3	100	3
19S (wet)	3	100	3	3	100	3
20S (wet)	3	100	3	15	66.2	12
21S (wet)	3	100	3	15	17.7	12
21S (dry)	8	100	8	9	88.6	7
51S (wet)	3	100	3	3	100	3
61S (wet)	3	<6.25	2	3	100	3

The Facility has documented toxicity in 19 of the 159 WET tests completed since 2009 for acute toxicity endpoints for the two species at the wet weather sampling locations for Outfall 009 (catchbasin 561 and 573), 10S, 14S, 20S, 21S and 61S. EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs using the acute criterion of 0.3 T.U. specified in the *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) (Appendix D).

Because discharges at Outfalls 017, 15S, 19S, and 51S have shown no toxicity since 2009, EPA has proposed one acute WET test be conducted for each outfall on a rotating basis during the permit term. This frequency is a reduction in the frequency of WET testing for these outfalls as compared to the 2009 Permit. However, EPA has added this one-time WET testing requirement to the dry weather discharge requirements for Outfall 009, since no WET testing was conducted for the 2009 Permit term.

EPA determined that discharges at Outfall 009 at catchbasin 561 and 573, and Outfalls 10S, 14S, 20S, 21S, and 61S cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs (Appendix D). *See* 40 CFR § 122.44(d)(1)(ii). Therefore, WET limitations are necessary and appropriate to carry out the provisions of the CWA and ensure compliance with State WQSs. *See* CWA §308(a), 33 U.S.C. §1318(a).

In accordance with 40 CFR § 122.44(d), the acute WET limits for Outfalls 009 at catchbasin 561 and 573 are LC_{50} greater than or equal to 50%, and the chronic and acute WET limits for Outfall 20S and 21S in the Draft Permit are C-NOEC greater than or equal to 100% and LC_{50} greater than or equal to 100%, respectively. The daphnid test species (*Ceriodaphnia dubia*) is required at Outfalls 009 at catchbasin 561 and 573, and Outfalls 10S, 14S, 61S, and 21S. The fathead minnow test species (*Pimephales promelas*) is required at Outfalls 10S, 14S, 20S, and 21S. The testing must be conducted twice per year for Outfall 009 at catchbasin 561 and 573, and Outfalls 10S, 14S, and 61S and quarterly at Outfalls 20S and 21S. Toxicity testing must be performed in accordance with EPA Region 1's test procedures and protocols specified in **Attachment A,** *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011), **and Attachment B,** *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit. The Permittee must collect the required receiving water sample (i.e., diluent) from the Chicopee River and/or Bircham Bend Brook at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. A receiving water control (0% effluent) must also be tested. If toxicity is indicated in the diluent, the Permittee may use alternate dilution water in accordance with the provisions in the Draft Permit. Results of these toxicity tests will demonstrate compliance with State WQSs for toxicity.

EPA maintains that WET testing is warranted because: 1) the receiving water is impaired for one or more of its designated uses; 2) the discharges from this Facility is a source of the pollutants listed as the cause of one or more of these impairments; 3) one or more of the pollutants present in discharges from this Facility are known environmentally persistent pollutants that exhibit additive, synergistic or antagonistic effects for which bioavailability can vary; 4) analytical testing cannot detect to the numeric water quality criteria and/or to the levels at which aquatic life and/or human health effects can occur for one or more pollutants present in the discharge; and 5) it is technically infeasible to identify and impose chemical-specific numeric limitations for every pollutant potentially present in the discharge in order to meet State narrative WQSs.

5.4 Special Conditions

5.4.1 Best Management Practices

Best management practices (BMPs) may be expressly incorporated into a permit on a case-by-case basis where it is determined that they are necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA under § 402(a)(1). BMPs may be necessary to control or abate the discharge of pollutants when: 1) authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) authorized under CWA § 402(p) for the control of stormwater discharges; 3) numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. *See* 40 CFR § 122.44(k). Pollutants may be present in areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater, such as when pollutant sources are generated during remedial activities at the Facility, or when pollutants are present in groundwater or soil that comes into contact with stormwater, which could result in significant amounts of these pollutants reaching waters of the United States via discharges of stormwater.

In this case, the Draft Permit requires the selection, design, installation, and implementation of control measures for stormwater, including stormwater that comingles with groundwater infiltration, to comply with the technology- and water quality-based effluent limits and requirements in the Draft Permit. The Draft Permit requires the Permittee to implement and continually evaluate the Facility's structural controls (e.g., treatment systems, containment areas, holding tanks), and non-structural controls (operational procedures, site inspections, and operator training). Proper implementation of BMPs will minimize (i.e., reduce or eliminate) the potential discharge of pollutants related to inadequate treatment, human error, and/or equipment malfunction. The non-numeric limitations consist of the technology-based effluent limitations and control measures specified in Part 2.1 and the water quality-based effluent limitations specified in Part 2.2 of EPA's *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP), effective March 1, 2021,[41] and as required in 314 CMR 4.05 for Class B waterbodies. Non-numeric limitations include:

- Minimize exposure of processing and material storage areas to stormwater discharges;
- Design good housekeeping measures to maintain areas that are potential sources of pollutants;
- Implement preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
- Implement spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur;
- Design erosion and sediment controls to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants;
- Utilize runoff management practices to the extent feasible at the Facility to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;

[41] The 2021 MSGP is currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp#.

- Develop proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
- Conduct employee training to ensure personnel understand the requirements of the Draft Permit;
- Evaluate for the presence of non-stormwater discharges. Any non-stormwater discharges not explicitly authorized in the Draft Permit or covered by another NPDES permit are not authorized for discharge and must be eliminated (*see* Authorized Non-Stormwater Discharges in Section 5.4.3 for the non-stormwater discharges explicitly authorized, and Prohibited Discharges in Section 5.4.5 for non-stormwater discharges expressly prohibited, below;
- Minimize dust generation and vehicle tracking of industrial materials; and

In addition to the general limitations described above, the Draft Permit also includes BMPs on a case-by-case basis informed by EPA's MSGP and DRGP.[42] These BMP requirements include:

- Administrative controls: requires the Permittee to incorporate the inspection and visual assessment requirements in Part 3.1 and 3.2 of the 2021 MSGP and the corrective action requirements in Part 5.1 through 5.3 of the 2021 MSGP;[43]
- Control measures: requires the Permittee to incorporate the control measure requirements in Part 2.1 and 2.1.1 of the 2021 MSGP and Part 2.5.2.d of the 2022 DRGP in order to identify pollutant sources and select, design, install and maintain the pollution control technology necessary to meet the effluent limitations in the permit and that ensure dilution is not used as a form of treatment. In accordance with § 125.3(f), technology-based treatment requirements cannot be satisfied through the use of "non-treatment" techniques such as flow augmentation and in-stream mechanical aerators;[44]
- Effluent flow requirements: requires the Permittee to document the measures and methods used to control flow through the treatment systems to ensure that the design flows of the treatment systems are not exceeded;
- Pollutant minimization requirements: requires the Permittee to document the selection, design, installation and proper operation and maintenance of pollution control technologies used to meet the permit's effluent limits and ensure dilution is not used as a form of treatment, or as a means to achieve the limitations and requirements;
- Quality Assurance/Quality Control: requires the Permittee to document monitoring

[42] The DRGP is currently available at: https://www.epa.gov/npdes-permits/dewatering-and-remediation-general-permit-drgp.
[43] Where the MSGP refers to limitations, conditions or benchmarks, including the SWPPP, for the purposes of this permit, EPA has revised the requirement to refer to the limitations and conditions in this permit.
[44] These techniques may be considered as a method of achieving water quality standards on a case-by-case basis when: 1) The technology-based treatment requirements applicable to the discharge are not sufficient to achieve the standards; 2) The discharger agrees to waive any opportunity to request a variance under section 301 (c), (g) or (h) of the Act; and 3) The discharger demonstrates that such a technique is the preferred environmental and economic method to achieve the standards after consideration of alternatives such as advanced waste treatment, recycle and reuse, land disposal, changes in operating methods, and other available methods.

requirements, sample collection procedures, sample analysis procedures,[45] a schedule for the review of sample results and data validation and reporting processes; and

In addition to the general limitations described above, the Draft Permit also includes BMPs based on EPA's MSGP, as applicable to all sectors, or are included in in Part 8, Sector C - Chemical and Allied Products Manufacturing, and Sector Y - Rubber, Miscellaneous Plastic Products and Miscellaneous Manufacturing Industries.[46] Additional BMPs are based on EPA's RGP.[47] BMP requirements include:

- The Draft Permit requires the Permittee to comply with the inspection requirements in Part 3.1 and 3.2 of the 2021 MSGP and the corrective action requirements in Part 5.1.1 through 5.1.4 of the 2021 MSGP;[48]
- The Draft Permit requires the Permittee to comply with the control measure requirements in Part 2.1 and 2.1.1 of the 2021 MSGP in order to identify pollutant sources and select, design, install and maintain the pollution control technology necessary to meet the effluent limitations in the permit that ensure dilution is not used as a form of treatment;[49]
- Sector specific non-numeric technology-based effluent limitations included in Part 8.Y.2.2. of the 2021 MSGP for Sector Y includes a requirement to minimize the discharge of plastic resin pellets in stormwater discharges through implementation of control measures, such as the following, where determined to be feasible (list not exclusive): minimizing spills; cleaning up of spills promptly and thoroughly; sweeping thoroughly; pellet capturing; employee education; and disposal precautions.
- Sector specific non-numeric technology-based effluent limitations included in Part 8.C.2.1 of the 2021 MSGP for Sector C includes a prohibition of non-stormwater discharges, except where explicitly authorized This BMP requirement is based on EPA's 2021 MSGP Part 2.1.2.9 for non-stormwater discharges and Part 8.C.2.1 for non-stormwater discharges specific to Sector C. This part of the 2021 MSGP prohibits non-stormwater discharges except where explicitly authorized, requires the permittee to evaluate for the presence of non-stormwater discharges, and eliminate any non-stormwater discharges not explicitly authorized in the permit or covered by another NPDES permit. If not covered under a separate NPDES permit, any unauthorized non-stormwater must be discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or otherwise disposed of appropriately. EPA has incorporated site-specific information into this BMP requirement, as appropriate. This prohibition has been

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[45] Sample analysis must comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*. *See* Fed. Reg. 49,001 (Aug. 19, 2014).

[46] The 2021 MSGP is currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp.

[47] The 2017 RGP is currently available at: https://www.epa.gov/npdes-permits/remediation-general-permit-rgp-massachusetts-new-hampshire.

[48] Where the MSGP refers to limitations, conditions or benchmarks, including the SWPPP, for the purposes of this permit, these shall refer to the limitations and conditions in this permit.

[49] Page 7-113 of EPA-821-R-04-014 states, "[w]astewater requiring primary and/or secondary treatment (because it is contaminated with oil and grease and total petroleum hydrocarbons) is typically tank bottom water, loading/unloading rack water, a portion of the tank basin water, wastewater generated during remediation, and water used for hydrostatic testing." *See* Part 2.5.2.d of the 2017 RGP for example technologies and additional resources.

included in the Draft Permit as a Prohibited Discharge, described further in Section 5.4.5, below. The BMP requirements necessary for the Permittee to demonstrate compliance with this prohibition are as follows:

- The Draft Permit requires the Permittee to conduct non-stormwater discharge detection and elimination. Specifically, the Permittee is required to: 1) Monitor for the discharge of non-stormwater discharges, including infiltration of groundwater to the stormwater collection system through routine observation to ensure that the Facility does not contribute additional pollutants to stormwater system from areas where process wastewaters are generated, oil and hazardous materials are stored or disposed, and soil and/or groundwater remediation activities occur or are exposed to stormwater; 2) In the event prohibited non-stormwater discharges are identified (e.g., groundwater infiltration into the stormwater collection system is observed during a routine inspection), because these discharges are now considered prohibited under the Draft Permit except for specific outfalls, the Permittee must follow the corrective action requirements described above to eliminate such discharges. See also Section 5.5.6, below., except when the non-stormwater discharge is explicitly authorized.

The Draft Permit requires the Permittee to document all above BMP requirements in the SWPPP. The Draft Permit also requires the Permittee to submit a report annually to EPA certifying that discharges comply with these permit requirements and summarizing activities conducted to achieve such compliance.

All of the above non-numeric effluent limitations support, and are as equally enforceable as, the numeric effluent limitations included in the Draft Permit. The purpose of these requirements is to ensure that discharges from the Facility will meet Massachusetts WQSs pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1). They have been selected on a site-specific basis based on those appropriate for this facility. *See* CWA §§ 304(e), 402(a)(1); 40 CFR § 122.44(k). Unless otherwise stated, the Permittee may select, design, install, implement and maintain BMPs as the Permittee deems appropriate to meet the permit requirements. The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications and must take future conditions into consideration.

Regarding the site-specific requirements, which requires the Permittee to identify and eliminate non-stormwater discharges, among other activities, the Permittee may potentially identify the need to repair, replace, or abandon conveyance infrastructure. Therefore, EPA requests comment with specificity as to whether a compliance schedule is warranted in order to complete such eliminations in lieu of the corrective action process schedule. See also Part 5.4.7, below.

5.4.2 Stormwater Pollution Prevention Plan

EPA first issued its general permit for stormwater discharges associated with industrial activity in 1995, which, among other things, required all facilities to implement technology-based pollution prevention measures and to prepare a Stormwater Pollution Prevention Plan (SWPPP) documenting the implementation of these measures. [50] The general permit established a process whereby the operator of the industrial facility evaluates potential pollutant sources at the site and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in stormwater runoff.[51] The current MSGP was issued in 2021. This Draft Permit contains BMPs for stormwater associated with industrial activity at the Facility based on the MSGP. Likewise, EPA Region 1's DRGP, last issued in 2022, contains substantially similar requirements for a Best Management Practices Plan (BMPP) to document the technology-based pollution prevention measures implemented to prevent or control the discharge of pollutants in groundwater, stormwater and potable water. This Draft Permit contains BMPs for discharges of comingled groundwater and potable water (i.e., non-contact cooling water) at the Facility based on the DRGP. Therefore, in addition to BMPs, the Draft Permit requires the Permittee to develop, implement, and maintain a SWPPP for discharges of stormwater and other wastewaters from the Facility. These requirements are consistent with Part 5 of EPA's 2021 MSGP and Part 2.2 of EPA's DRGP. The Draft Permit specifies that the SWPPP must include the following, at a minimum:

- Stormwater pollution prevention team;
- Site description;
- Drainage area site map;
- Summary of potential pollutant sources;
- Description of all stormwater control measures, including a detailed stormwater collection infrastructure diagram, any BMP or pollution control technology schematics, and the specific control measures the operator uses to reduce the pollutants in discharges from the site; and
- Schedules and procedures pertaining to implementation of inspections and assessments, monitoring, and corrective action.

The development and implementation of the SWPPP is an enforceable element of the permit. The Draft Permit directs the Permittee to incorporate BMPs, as described above, directly into the SWPPP, which serves to document the selection, design and installation of control measures selected to meet the permit effluent limitations. The goal of the SWPPP is to document the implementation of BMPs designed to reduce or prevent the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff.

Within ninety (90) days of the effective date of the permit, the Draft Permit requires the Permittee to certify that the SWPPP has been prepared, meets the requirements of the permit, and documents the control measures, including BMPs, that have been implemented or will be implemented to reduce or eliminate the discharge of pollutants from stormwater associated with the operation of the Facility and submit a copy of the SWPPP to EPA. The Permittee must also certify at least annually that the Facility has complied with the BMPs described in the SWPPP, including inspections, maintenance, and training activities and submit the most current SWPPP along with the certification to EPA. The Permittee is

[50] 57 Fed. Reg. 41,236, 41,264 (September 9, 1992). The latest reissuance of this permit was effective on March 1, 2021.
[51] *Id.* at 41242.

required to amend and update the SWPPP if any change occurs at the Facility affecting the SWPPP, such as changes in the design, construction, operation, or maintenance of the Facility, or revisions and improvements are made to the stormwater management program based on new information and experiences with wet weather events, including major storm events and extreme flooding conditions. The Permittee must continue to complete an annual summary report that describes all such amendments and updates and the change(s) that occurred and submit this report to EPA with the annual SWPPP and certification submittals. If EPA finds deficiencies in the SWPPP, or any subsequent revisions or summary reports, EPA will provide comments to the Permittee in writing to correct such deficiencies. The SWPPP must be maintained on site at the Facility. All SWPPP records must be maintained on-site for at least five years.

5.4.3 Authorized Non-Stormwater Discharges

EPA's MSGP, which provided NPDES coverage for stormwater discharges from the Facility in the past, authorizes certain additional non-stormwater discharges. EPA typically includes these non-stormwater discharges in individual NPDES permits in Region 1, provided the additional non-stormwater discharges meet all effluent limitations in the permit. Except for discharges of non-contact cooling water, and groundwater, which are wastewaters specifically authorized and limited in this permit, the following non-stormwater discharges allowable under EPA's 2021 MSGP[52] have been included in the Draft Permit:

- Discharges from emergency/unplanned fire-fighting activities;
- Fire hydrant flushings;
- Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids;
- Irrigation/landscape drainage, provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling;
- Foundation or footing drains where flows are not contaminated with oil or hazardous materials;
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown; drains); and
- Any discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

5.4.4 Discharges of Chemicals and Additives

Chemicals and additives include, but are not limited to: algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants. The Draft Permit allows the discharge of only those chemicals and additives specifically disclosed by the Permittee to EPA and the State. The chemicals and additives used or stored at the Facility were disclosed to EPA and are included in this Fact Sheet in

[52] *See* Part 1.2.2.1 of EPA's 2021 MSGP.

Attachment 1. These chemicals and additives are not used for treatment of the discharges, nor are they expected to come into contact with stormwater during routine operations at the Facility. However, they may come into contact with stormwater, groundwater, and/or potable water (i.e., non-contact cooling water) in the event of a spill or release. The Draft Permit includes several requirements to prohibit discharges of these chemicals and additives and ensure detection of any such discharge of these materials, described previously.

EPA also recognizes that chemicals and additives may change, or may become necessary for wastewater treatment at a Facility during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA and the State in writing of the proposed discharge of a new chemical or additive; allows for EPA and State review of the change; and provides the factors for EPA and State consideration of such a change. The Draft Permit specifies that for each chemical or additive, the Permittee must submit the following information, at a minimum, in writing to EPA and the State:

- Product name, chemical formula, and manufacturer of the chemical/additive.
- Purpose or use of the chemical/additive.
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive.
- The frequency (e.g., hourly, daily), magnitude (e.g., maximum application concentration), duration (e.g., hours, days), and method of application for the chemical/additive.
- If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

The Permittee must also provide an explanation which demonstrates that the discharge of such chemical or additive will not: 1) add any pollutants in concentrations which exceed any permit effluent limitation; and 2) add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

Assuming these requirements are met, discharge of a new chemical or additive is authorized under the permit upon notification to EPA and the State unless otherwise notified by EPA or the State.

5.4.5 Prohibited Discharges

The 2009 Permit specified the discharges that are specifically authorized. As no new point source discharges are authorized under this permit, any other point source discharges that are not specified in this NPDES Permit are considered prohibited, unless otherwise exempt from NPDES permitting. Therefore, the Draft Permit has specified the discharges that are expressly prohibited, as described below. Prohibition of these discharges is necessary to protect the receiving water from non-stormwater discharges that contain conventional, non-conventional, and toxic pollutants, including pollutants associated with industrial and remedial activities at the Facility.

5.4.5.1 Solid Hazardous Waste

The Draft Permit uses the term "solid and hazardous waste" to refer not just to sludge and solid bottom deposits but to also more broadly include any solids generated at the Facility that must be managed as hazardous waste. Discharges containing any solid hazardous waste, either alone or in combination with stormwater or other allowable non-stormwater discharges, are prohibited and not authorized in the Draft Permit.

5.4.5.2 Liquid Hazardous Waste

As for solid hazardous waste, several liquid hazardous waste sources may be generated at the Facility (e.g., process wastewaters). Discharges of these, or any other liquid hazardous waste, either alone or in combination with stormwater or other allowable non-stormwater discharges, are prohibited and not authorized in the Draft Permit.

5.4.5.3 Non-Stormwater Discharges

Several areas of the Facility generate process wastewaters. Process wastewaters are discharged via the sanitary sewer to the City of Springfield. In addition, several areas of the Facility have undergone soil/sediment and/or groundwater remedial activities as a result of a spill or release of hazardous material. Soil or groundwater that contains or is in contact with oil or hazardous materials, and/or is free-floating or adsorbed is either disposed, treated in-situ, or is stabilized in situ. Groundwater infiltration has previously been identified at Outfall 21S.

The non-stormwater discharges that are not covered by this permit include but are not limited to: non-stormwater discharges containing chemicals or substances (hazardous, nonhazardous, etc.) resulting from contact with process wastewater, or an onsite spill, including materials collected in drip pans; wash water from material handling and processing areas; and wash water from drum, tank or container rinsing and cleaning. The only non-stormwater discharges authorized by this permit are those specifically listed in the Draft Permit, once-through non-contact cooling water (i.e., potable water) at Outfalls 009 and 017, and groundwater infiltration at Outfall 21S. Therefore, the Draft Permit specifically:

1) Authorizes specific and limited allowable non-stormwater discharges consistent with Part 2.1.1 of the 2021 MSGP in Part I.A.10 of the Draft Permit;
2) Authorizes discharges of potable water as once-through non-contact cooling water at Outfalls 009 and 017, and groundwater infiltration at Outfall 21S, subject to the effluent limitations and monitoring requirements specified in the Draft Permit;
3) Prohibits discharges of any other non-stormwater discharge, including groundwater either alone or in combination with stormwater or other allowable non-stormwater discharges from any other Facility outfall; and
4) Requires a routine inspection for any prohibited non-stormwater discharges and Prohibits dilution as a form of treatment for non-stormwater wastewaters.

In the event prohibited non-stormwater discharges (e.g., additional groundwater infiltration) are identified in the future, this discharge is considered prohibited under the Draft Permit, and the Permittee must follow the corrective action requirements described above to eliminate such discharges, unless the Permittee requests modification of this permit. Future authorization of discharges containing pollutants from non-stormwater discharges may be subject to technology and/or water quality-based limits. EPA notes that in order for discharges from the Facility to meet this prohibition, maintenance of the existing stormwater collection system may be necessary. See Part II. for more information regarding operation and maintenance.

5.4.6 Reopener Clause

Since indicator parameters are included in the Draft Permit and in accordance with 40 CFR § 122.44(d)(1)(vi)(c), the Draft Permit includes a reopener clause. The reopener clause in the Draft Permit allows EPA to modify or revoke and reissue the permit in accordance with 40 CFR § 122.62, including if the limits on the indicator parameters no longer attain and maintain applicable water quality standards.

5.4.7 Compliance Schedule

Several new or more stringent effluent limitations are proposed in the Draft Permit (e.g., TSS, TRC, metals). The Draft Permit does not propose a compliance schedule. However, in order for discharges from the Facility to meet the proposed effluent limitations, physical modification of the existing stormwater treatment and/or collection system, including the addition of treatment, may be necessary. Therefore, EPA encourages public comment regarding whether the permit should include a compliance schedule(s) and, if so, what the terms of any schedule(s) should be. Federal regulations provide that any such schedule must require compliance "as soon as possible, but not later than the applicable statutory deadline under the CWA." 40 CFR § 122.47(a)(1). Thus, while a NPDES permit may not include a compliance schedule to meet technology-based effluent limits (e.g., TSS), a permit may include compliance schedules for meeting water quality-based effluent limits (e.g., TRC, metals), provided that the schedule would achieve compliance with such limits "as soon as possible." *See id.* § 125.3(a)(2). Further, if a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule must include interim requirements and the dates for their achievement. *See id.* § 122.47(a). Massachusetts regulations for schedules of compliance can be found at 314 CMR 3.11(10).

5.5 Potential Alternative Permit Conditions

Part I.A of the 2009 Permit includes narrative water quality-based requirements to protect designated uses in accordance with state water quality standards. In the development of this permit, EPA Region 1 (the Region) considered a variety of alternative permit conditions and monitoring requirements in lieu of the narrative requirements, as described in greater detail below. To ensure compliance with these applicable state narrative water quality standards, the State has indicated that it will include the narrative requirements in its draft water quality certification. Specifically, the State has notified EPA that it will propose the following narrative water quality-based requirements as state certification conditions in accordance with § 401(a) of the CWA and 40 CFR § 124.53:

- The discharge shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
- The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms.
- The discharge shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to the receiving water, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.
- The discharge shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the receiving water.
- The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the receiving water, impart an oily taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.
- The discharge shall be free from taste and odor in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to the receiving water, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.
- The discharge shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

Based on the State's intent to include these requirements in the state certification, EPA does not find it necessary to include the alternative permit conditions and monitoring requirements in the Draft Permit. However, if some or all of these narrative conditions are not included in the final state certification, EPA will include the applicable alternative permit conditions and monitoring requirements in the Final Permit. Therefore, EPA has described these alternative permit conditions and monitoring requirements in detail below and is soliciting public comments on the inclusion of these if the state certification does not include the applicable narrative conditions.

The alternative permit conditions and monitoring requirements described below relate to reasonable potential analyses, WET testing, visual inspections of the receiving water, and benthic surveys. Each of these are related to compliance with specific narrative state water quality standards. It should also be noted that if any of these alternative requirements and monitoring requirements were to be included in this permit reissuance, EPA may remove or reduce these in the future and/or implement an alternative permitting approach if EPA finds that these are no longer necessary to protect designated uses in accordance with state water quality standards.

To be clear, each of the items described in this section below are not included in the Draft Permit and EPA intends to include them in the Final Permit only if the corresponding narrative condition is not included in the State's final certification of this permit and pursuant to any changes based on public comments.

Reasonable Potential Analyses

Given that EPA guidance[53] directs that reasonable potential analyses should be based on critical conditions, EPA uses the pollutant concentrations based on all available information provided to EPA during the development of the permit. As discussed in more detail in the pollutant-specific sections above, this information includes data from the Permittee's most recent application, DMR data during the review period, and any other available information included in the administrative record.

If the permitting authority, in this case EPA, determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

If the permitting authority, determines that the discharge of a pollutant will not cause, have the reasonable potential to cause, or contribute to an excursion above WQSs, the permit does not need to contain WQBELs for that pollutant. However, the permitting authority must ensure that the discharge of that pollutant does not increase during the permit term to the point that would violate water quality standards. Therefore, Part I.B.1 (Unauthorized Discharges) of the permit may include the following provision to ensure that EPA's reasonable potential analyses (for all pollutants) remain protective throughout the life of the permit, and which would also clearly articulate the scope of the protections afforded to the Permittee pursuant to CWA section 402(k):

> "For any pollutant without an effluent limitation in this permit, any pollutant loading greater than the proposed discharge (the "proposed discharge" is based on the chemical-specific data and the facility's design flow as described in the permit application, or any other information provided to EPA during the permitting process) is not authorized by this permit."

EPA notes that such increases may be allowable, but the Permittee must first submit a request to EPA to authorize such an increase. This request will allow EPA to conduct an updated reasonable potential analysis to reassess whether a WQBEL is needed for the newly proposed discharge. Permit modification or reissuance may be required before the proposed discharge would be authorized.

Toxicity

The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." To ensure the receiving water is free from pollutants in concentrations or combinations that are toxic to humans,

[53] See 2010 NPDES Permit Writer's Manual, chapter 6 available at: https://www.epa.gov/sites/default/files/2015-09/documents/pwm_chapt_06.pdf

aquatic life or wildlife, throughout the permit term, EPA will incorporate additional circumstance-dependent WET requirements described below.

Under the following circumstances, the Permittee would be required to conduct at least two accelerated re-tests at 14-day intervals, which must be started within 14 days and 28 days of receiving the results:

- If any WET test results are in violation of any WET limit and the test acceptability criteria were met, re-test for the species that failed; or
- If the Permittee identifies or is provided notice of a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge, test for all species identified in permit.

If the receiving water was used as the dilution water and is suspected to be toxic (*e.g.*, based on results from the initial test), the Permittee would be required to conduct the accelerated WET tests using laboratory water as the dilution water with a similar pH and hardness as the receiving water. If the WET tests using laboratory water do not violate any WET limits, the Permittee would return to a normal monitoring frequency but would be required to request continued use of laboratory water as the dilution water based on these results. If either accelerated WET test violates any WET limits (and the test acceptability criteria were met), the discharge would be considered to have persistent toxicity and the Permittee would be required to immediately initiate a Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE) as described below to resolve any toxic impacts on the receiving water.

The specific proposed TIE/TRE requirements are presented below and were developed based on guidance available in EPA's *2024 NPDES WET Permit Writers' Manual*[54]. EPA notes that the results of the TIE/TRE might also lead to additional, future NPDES permit controls, such as additional WET permit limits, chemical-specific permit limits, or a compliance requirement to reduce or eliminate toxicity.

- If the WET re-test described above results in a violation of the WET limits, the Permittee must immediately initiate a TIE/TRE designed to identify and reduce toxicity in the discharge. Notice of TIE/TRE study implementation is to be submitted to EPA (via email: R1NPDESReporting@epa.gov) and the State within 10 days of receiving notification of WET re-test failure.

- A TIE/TRE schedule and action plan must be submitted to EPA and the State as an electronic attachment to the DMR within 60 days of receipt of WET re-test failure.

  The TIE/TRE schedule (from the initiation date to the termination date) must be as short as possible, and no longer than 24 months. The "TIE/TRE initiation date" is the date of the receipt of results for the toxicity test that confirms persistent toxicity and the "TIE/TRE termination

[54] Available at: https://www.epa.gov/system/files/documents/2024-06/npdes-wet-permit-writers-manual.pdf

date" is the date corrective actions to resolve toxicity are identified and a schedule for completing these corrective actions is proposed.

The objective of the action plan is to identify the source(s) of toxicity by analyzing toxicity testing samples for any toxicant identified as being a potential source of toxicity and ascertaining whether the same level of toxicity occurs when any suspected toxicant level varies. This information might lead to finding one or more toxicants or confirming or eliminating suspected toxicants and possibly their source(s).

- Quarterly "TIE/TRE Progress Reports" shall be submitted to EPA and the State as an electronic attachment to the DMR at the end of each quarter after the TIE/TRE initiation date. The progress report must list all activities and findings related to resolving toxicity, including all WET and chemical test data. The data summaries of the TIE/TRE must also be provided in a tabulated format with explanations of the procedures used and the recorded findings from the study.

- A "Final TIE/TRE Report" shall be submitted to EPA and the State within 45 days of the TIE/TRE termination date (as an electronic attachment to the DMR) and should summarize the TIE/TRE activities and findings, propose the corrective action(s) to be taken, and propose a schedule to complete any identified corrective action(s).

- After submission of the "Final TIE/TRE Report," the Permittee shall continue to submit quarterly "Toxicity Reduction Progress Reports" (as an electronic attachment to the DMR) documenting progress on the corrective actions being taken to reduce toxicity in accordance with the proposed schedule.

- Upon completion of all corrective actions identified in the "Final TIE/TRE Report," the Permittee shall submit a "Toxicity Reduction Completion Report" (as an electronic attachment to the DMR) summarizing the corrective actions taken based on the TIE/TRE and shall include all information necessary to demonstrate that the discharge is no longer toxic and consistently complies with all WET limits.

Visual Inspection of the Receiving Water

Massachusetts Surface Water Quality Standards include several narrative requirements related to aesthetics, solids and oil & grease, as follows:

> (314 CMR 4.05(5)(a)) **Aesthetics**. All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
>
> (314 CMR 4.05(3)(a)5.; (3)(b)5.; (3)(c)5.; (4)(a)5.; (4)(b)5.; and (4)(c)5.) **Solids**. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that

> would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.
>
> (314 CMR 4.05(3)(b)7. and (4)(b)7.) **Oil and Grease**. These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

To ensure compliance with these narrative water quality standards, Table A.1 of the permit would include a reporting requirement for "Aesthetics," and a footnote which more specifically requires the following monitoring requirements:

- Once per quarter, while discharging, the Permittee shall conduct a visual inspection of the receiving water in the vicinity of the outfall and report any changes that may be caused by the discharge as follows:

  - any observable change in odor;
  - any visible change in color;
  - any visible change in turbidity;
  - the presence or absence of any visible floating materials, scum or foam;
  - the presence or absence of any visible settleable solids; or
  - the presence or absence of any visible film or sheen on the surface of the water or coating the banks of the water course.

- Although there is no objective means to measure the impact of the discharge on the taste of the receiving water, the Permittee shall report to EPA and MassDEP any complaints it receives from the public regarding taste and/or odor and document what remedial actions, if any, it took to address such complaints.

- The results do not need to be submitted each quarter. Rather, a summary of the four quarterly visual inspections as well as any complaints received from the public regarding the taste of the receiving water shall be submitted as an electronic attachment to the December DMR, which is due each January 15th for the previous calendar year.

- If an oily sheen is observed on the surface of the water in the vicinity of the outfall during the monthly visual inspection, the Permittee shall follow the procedures described above related to accelerated WET testing and potentially (if the accelerated tests demonstrate toxicity) conduct a TIE/TRE.

The Massachusetts "aesthetics" narrative water quality standard also seeks to protect against any discharge that, "produce[s] undesirable or nuisance species of aquatic life." Because the production of undesirable or nuisance species of aquatic life is most commonly caused by the discharge of excess nutrients, the nitrogen monitoring required in the Draft Permit, as described in Section 5.1.5 of this Fact Sheet, would address this portion of the standard.

The "solids" narrative water quality standard also requires that waters shall be "free from floating, suspended and settleable solids…that would impair the benthic biota or degrade the chemical composition of the bottom." A Benthic Survey requirement, as discussed below, would address this portion of the standard particularly with respect to settleable solids. In addition, total suspended solid (TSS) requirements in the Draft Permit are proposed based on BPJ as described in Section 5.1.3 of this Fact Sheet.

The "oil & grease" narrative water quality standard also prohibits the receiving water from being deleterious or toxic to aquatic life. This portion of the standard is addressed in the Toxicity section above. The oil and grease monitoring requirement in the Draft Permit is described in Section 5.1.8 of this Fact Sheet.

Benthic Survey

Massachusetts Surface Water Quality Standards address bottom pollutants at 314 CMR 4.05(5)(b), which requires that "[a]ll surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms."

To ensure compliance with these standards, the permit would require that the Permittee conduct a benthic survey to assess impacts from the discharge to aquatic life in the benthic environment. The permit would include a requirement of one such survey this permit term during the third calendar quarter (*i.e.*, July through September) that begins at least 12 months from the effective date of the permit. The third calendar quarter represents the season of relatively low flow when the discharge has less dilution and is, therefore, more likely to impact the benthic population. The initial 12 months of the permit term allows the Permittee sufficient time to plan for this survey after permit issuance while ensuring results are available relatively soon in case further action is needed to protect the benthic population. The results of the benthic survey will assist EPA in the development of any future permit conditions needed to ensure compliance with 314 CMR 4.05(5)(b).

The specific proposed requirements will include:

- Benthic grab samples shall be taken at three locations sited along each of two transects (one immediately upstream/upgradient of the discharge at a location considered to be unimpacted by the discharge, and one downstream/downgradient of the discharge immediately outside of the estimated zone of initial dilution). Along each transect, duplicate samples shall be taken in the thalweg along with sites near each shoreline, for a total of six samples along each transect and 12 samples total. Organisms shall be sorted and identified to the lowest possible taxonomic level. Counts shall be standardized to densities per square meter of bottom. To characterize the bottom, grain size samples shall be collected at each grab site.

- Taxonomy must be performed by a professional freshwater macroinvertebrate taxonomist who, at a minimum, holds and maintains for the duration of the contract a certification from the Society of Freshwater Science for eastern genera in group 1 (Crustacea and Arthropods other than EPT and Chironomidae), group 2 (Ephemeroptera, Plecoptera, and Trichoptera nymphs and larvae only) and group 3 (Chironomidae larvae only).

- A report summarizing the results and comparing the upstream and downstream benthic populations shall be submitted by the following January 15 as an electronic attachment to the DMR.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on Federal agencies regarding species of fish, wildlife, or plants that have been federally listed as endangered or threatened (listed species) and regarding habitat of such species that has been designated as critical (critical habitat).

Section 7(a)(2) of the ESA requires every federal agency, in consultation with and with the assistance of the Secretary of Interior and/or the Secretary of Commerce, as appropriate, to ensure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) within the Department of Interior administers section 7 consultations for terrestrial and freshwater organisms, while the National Oceanic and Atmospheric Administration's National Marine Fisheries Service within the Department of Commerce (NOAA Fisheries) administers section 7 consultations for listed species of marine organisms (including marine mammals and marine reptiles), as well as for anadromous fish species.

The federal action being considered in this case is EPA's proposed reissuance of an NPDES permit for the Facility. The Draft Permit is intended to replace the 2009 Permit in governing the Facility. As the federal agency charged with authorizing the Facility's pollutant discharges, EPA assesses potential impacts to federally listed species and critical habitat and initiates consultation to the extent required under Section 7(a)(2) of the ESA.

EPA has reviewed available information to identify if any federal endangered or threatened species of fish, wildlife, and plants are expected in the action area of the outfalls and to determine if EPA's proposed NPDES permit could potentially impact any such listed species in this segment of the Chicopee River.

For protected species under the jurisdiction of the USFWS, one ESA listed species, the tricolored bat (*Perimyotis subflavus*) listed as proposed endangered, was identified as potentially occurring in the action area of the Facility's discharge. The monarch butterfly (*Danaus plexippus*) also appears on the USFWS Official Species List[55], but as a candidate species. Under the ESA, EPA is not required to evaluate candidate species at this time.

Regarding the proposed endangered tricolored bat, the protected status of the tricolored bat was only recently included in the USFWS IPaC System. A Determination Key for the tricolored bat has not yet been included in the IPaC System. A second IPaC System option that is routinely used to determine the effect status of the federal action on the tricolored bat, the Northeast Protected Species Determination Key, does not include the tricolored bat at this time. Because the habitat of the tricolored bat is generally similar to the NLE bat, (overwintering - caves or mines; spring/summer/fall – deciduous live or dead hardwood trees), and the NLE bat Determination Key consistently finds that the actions consistent with stormwater discharge have "no effect" on the NLE bat, EPA has determined that reissuance of this NPDES permit for this Facility will also have "no effect" on the proposed endangered tricolored bat. No ESA section 7 consultation is required with USFWS for the Solutia facility.

For protected species under the jurisdiction of the NOAA Fisheries, a number of anadromous and marine species and life stages are present in Massachusetts coastal waters, bays and rivers. Various life stages of protected anadromous fish, sea turtles and whales have been documented in Massachusetts waters, either seasonally or year-round. Adult and subadult life stages of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) and adult shortnose sturgeon (*Acipenser brevirostrom*) are found in some river systems in Massachusetts, along with early life stages and juvenile shortnose sturgeon.

In the case of this permit action on the Chicopee River, approximately six miles upstream from the mouth of the Connecticut River, the presence of protected species under the jurisdiction of NOAA Fisheries was determined using the NOAA Fisheries ESA Mapper website.[56] According to the NOAA Fisheries Species List generated for the Solutia action area, no protected species are present.[57] ESA consultation with NOAA Fisheries is not required for this federal action.

At the beginning of the public comment period, EPA notified USFWS and NOAA Fisheries Protected Resources Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

While ESA section 7 consultation is not required, initiation of consultation shall be requested by EPA or by USFWS/NOAA Fisheries where discretionary federal involvement or control over the action has been retained or is authorized by law and if: 1) new information reveals that the action may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; 2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the previous analysis; 3) a new species is listed or critical

[55] USFWS Official Species List, Project Code: 2025-0001613; October 3, 2024.
[56] https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper
[57] NOAA Fisheries Species List for Solutia Action Area; October 3, 2024.

habitat designated that may be affected by the identified action; or 4) there is any incidental taking of a listed species that is not covered by an incidental take statement.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801, *et seq*., EPA is required to consult with NOAA Fisheries if proposed actions that EPA funds, permits, or undertakes, "may adversely impact any essential fish habitat." *See* 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH. 50 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. A New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment in 2017 updated the descriptions. The information is included on the NOAA Fisheries website at: https://www.fisheries.noaa.gov/action/omnibus-essential-fish-habitat-amendment-2. In some cases, a narrative identifies rivers and other waterways that should be considered EFH due to present or historic use by federally managed species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Solutia facility, which discharges via ten outfalls to the Chicopee River segment MA36-24, in Springfield, Massachusetts. The Connecticut River and its tributaries, including the Chicopee River, are designated EFH for Atlantic salmon (*Salmo salar*). EPA's review of available EFH information indicated that this water body is not designated EFH for any other federally managed species. EPA has determined that the operation of this Facility, as governed by this permit action, may adversely affect the EFH for Atlantic salmon. The Draft Permit has been conditioned in the following way to minimize any impacts that reduce the quality and/or quantity of EFH:

6.2.1 EPA's Finding of all Potential Impacts to EFH Species

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The Facility withdraws no water from the Chicopee River, so no life stages of EFH species are vulnerable to impingement or entrainment;
- Acute and/or chronic toxicity tests will be conducted at least once a year to ensure that the discharge does not present toxicity problems and subject to numeric limits at six of ten outfalls;

- Total suspended solids, *E. coli*, pH, temperature, total residual chlorine, and total recoverable aluminum, cadmium, copper, lead, and zinc, are limited by the Draft Permit to meet water quality standards;
- The Draft Permit prohibits the discharge of process wastewaters.
- EPA expects that the State will provide Section 401 certification that the permit meets State WQSs; and
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life.

EPA believes that the conditions and limitations contained in the Draft Permit adequately protects all aquatic life, including EFH designated for Atlantic salmon in the receiving water. Further mitigation is not warranted. Should adverse impacts to EFH be detected as a result of this permit action, or if new information is received that changes EPA's conclusions, NOAA Fisheries Habitat and Ecosystem Services Division will be contacted and an EFH consultation will be re-initiated.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat and Ecosystem Services Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents. In addition to this Fact Sheet and the Draft Permit, information to support EPA's finding was included in a letter under separate cover that will be sent to the NOAA Fisheries Habitat and Ecosystem Services Division during the public comment period.

7.0 Public Comments, Hearing Requests, and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the permit writer, Shauna Little at the following email address: little.shauna@epa.gov.

Prior to the close of the public comment period, any person may submit a written request to EPA for a public hearing to consider the Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

If for any reason, comments on the Draft Permit and/or a request for a public hearing cannot be emailed to the permit writer specified above, please contact them at telephone number: (617) 918-1989.

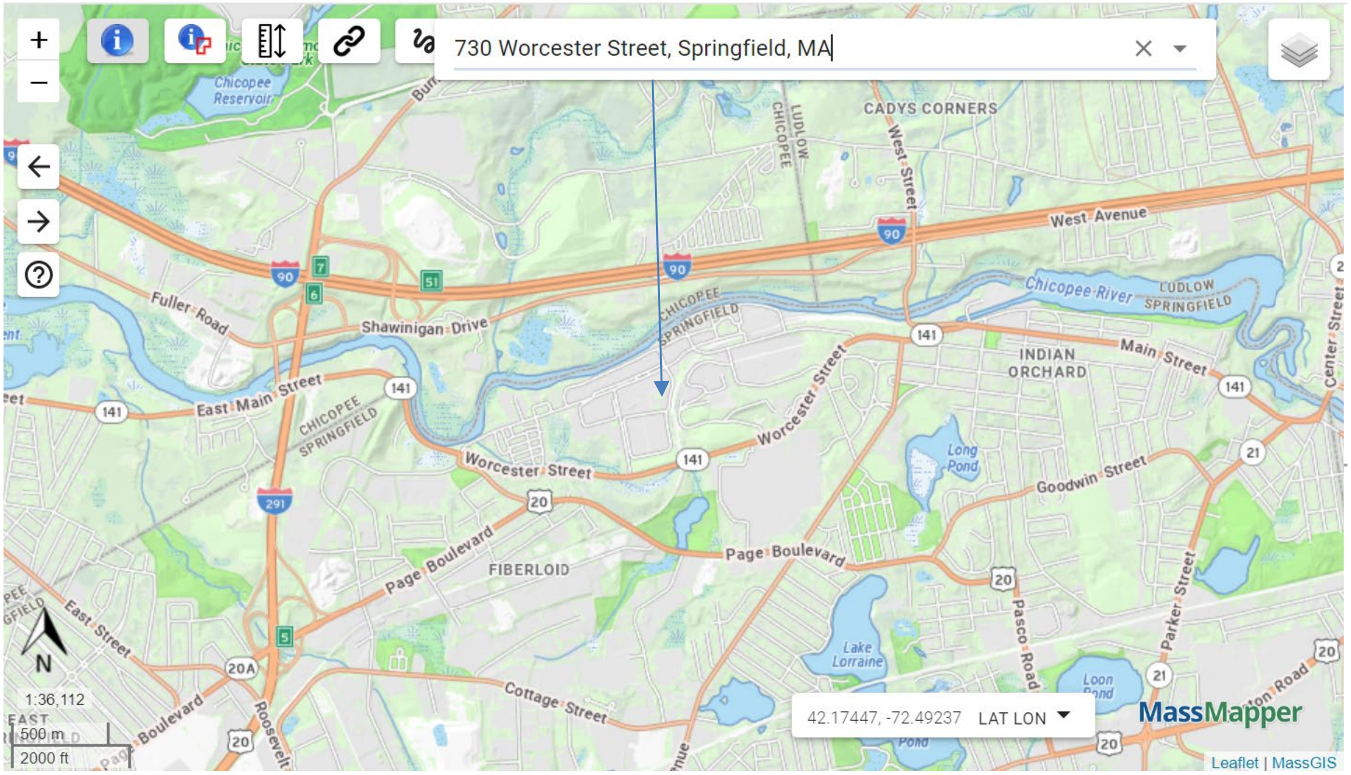
8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed by contacting Shauna Little at 617-918-1989 or via email to little.shauna@epa.gov.

1/16/2025

Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency

Figure 1: Location Map



Source: https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html

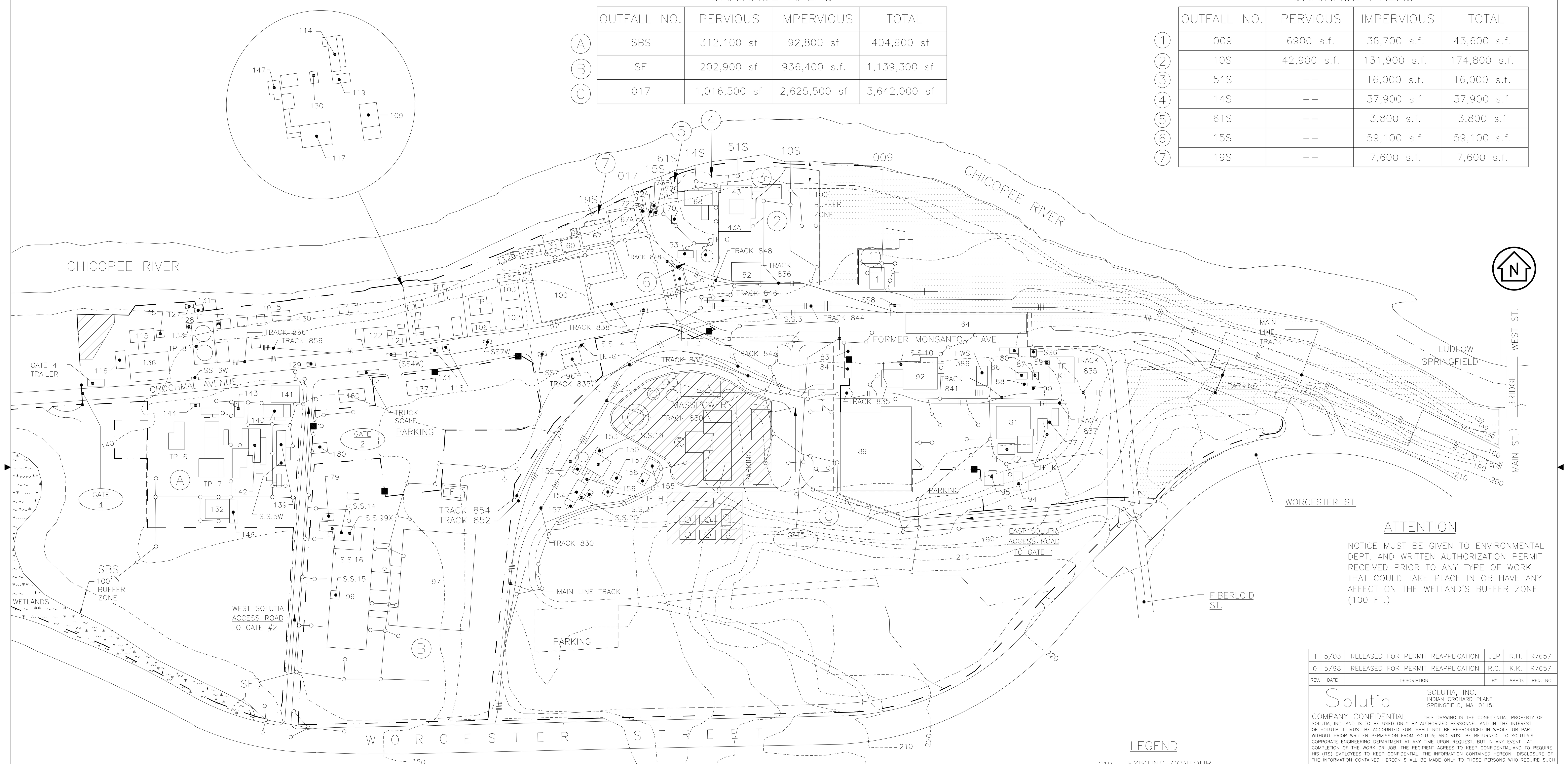
Figure 2: Site Plan

DRAINAGE AREAS

OUTFALL NO.		PERVIOUS	IMPERVIOUS	TOTAL
A	SBS	312,100 sf	92,800 sf	404,900 sf
B	SF	202,900 sf	936,400 s.f.	1,139,300 sf
C	017	1,016,500 sf	2,625,500 sf	3,642,000 sf

DRAINAGE AREAS

OUTFALL NO.		PERVIOUS	IMPERVIOUS	TOTAL
1	009	6900 s.f.	36,700 s.f.	43,600 s.f.
2	10S	42,900 s.f.	131,900 s.f.	174,800 s.f.
3	51S	--	16,000 s.f.	16,000 s.f.
4	14S	--	37,900 s.f.	37,900 s.f.
5	61S	--	3,800 s.f.	3,800 s.f
6	15S	--	59,100 s.f.	59,100 s.f.
7	19S	--	7,600 s.f.	7,600 s.f.



ATTENTION

NOTICE MUST BE GIVEN TO ENVIRONMENTAL DEPT. AND WRITTEN AUTHORIZATION PERMIT RECEIVED PRIOR TO ANY TYPE OF WORK THAT COULD TAKE PLACE IN OR HAVE ANY AFFECT ON THE WETLAND'S BUFFER ZONE (100 FT.)

LEGEND

- --210-- EXISTING CONTOUR
- DRAINAGE AREA BOUNDARY
- TURNSTYLE
- FENCE
- MASSPOWER
- NOVA (FOR ACTUAL NOVA BOUNDARIES SEE DWG. D 900-0272)
- STORM SEWER AND CATCH BASIN

1"=200' 200 0 200 400

BUILDING KEY

1. ADMINISTRATION
11. MIS. TRAINING & TELEPHONE
43. RESEARCH & DEVELOPMENT
52. HEALTH & FITNESS CENTER
53. HAZARDOUS MATERIALS DISPENSING FACILITY
58. AIR COND. FOR B.67
59. VALVE HOUSE
60. YARD/UTILITY
61. FORK TRUCK REPAIR
64. WAREHOUSE
67. TECHNOLOGY
68. PILOT PLANT
70. ELECTRICAL SUPPLY STATION
72. ENVIRONMENTAL SHEDS
77. MF RECOVERY VALVE HOUSE
78. MOTOR STORAGE BLDG.
79. WEST SUB-STATION
80. MAIN SUB-STATION
81. RESIMENES
83. GATE HOUSE
84. CREDIT UNION
86. #1 KETTLE BLDG.
87. #1 HEINKEL FILTER BLDG.
88. #1 KETTLE MCC BLDG.
89. RAW MAT'L STORAGE
90. #1 KETTLE VALVE HOUSE
92. RB-9100 BUTVAR
94. EAST RESIN MAINTENANCE
95. RESIMENES OFFICE & LAB
96. FIRE STATION, ENVIRONMENTAL, SAFETY, & INDUSTRIAL HYGIENE
97. BUTVAR/SAFLEX WAREHOUSE
99. SAFLEX
100. MAINT./STORES, ACCOUNTING, ENGINEERING & MEDICAL
102. TRAINING, LOCKER & LUNCH ROOMS
103. W. RESINS MAINTENANCE
104. W. RESINS SYSTEMS
106. RESINS, MT., TRAINING
109. W. RESIN SHIPPING OFFICE & FORK TRUCK STORAGE
114. BUTVAR BULK BLENDING
115. STORAGE FACILITY
116. REFRIGERATED WAREHOUSE
117. GELVA
118. PROD. SUPER CONF. RM.
119. ELECTRICAL SUPPLY STATION
120. SUB STATION #4W
121. GELVA PRODUCTS
122. SHIPPING
127. PEROXIDE STORAGE
128. FG CATALYST STG. FACILITY
129. ELECTRICAL SUPPLY STATION
130. STORAGE
131. W.W.E. CONTROL BLDG.
132. MAINTENANCE FACILITY
133. W.W.E. MCC. BLDG.
134. W. RESINS CONTROL RM.
136. WEST PILOT PLANT
137. MARKETING & TECH CTR.
138. STORAGE/MAINT.
139. S. BUTVAR CONT. RM.
140. S. BUTVAR DRYING
141. S. BUTVAR BIOFILTER
142. S. BUTVAR PROCESS
143. S. BUTVAR H2O TREATMENT
144. S. BUTVAR FOAM HOUSE
146. STORAGE BUILDING
147. EMPTY DRUM STORAGE
148. RESEARCH STORAGE
150. POWER PLANT
151. BAG HOUSE
152. H2O SOFTENING BLDG.
153. THAWING SHED & COAL HOPPER
154. COMPRESSOR BLDG.
155. NITROGEN GENERATING PLANT
156. #9 BOILER HOUSE
157. DIESEL GEN. BUILDING
158. STORAGE BUILDING
160. WEST CONTROL LAB
180. WEST GATE HOUSE

REV.	DATE	DESCRIPTION	BY	APP'D.	REQ. NO.
1	5/03	RELEASED FOR PERMIT REAPPLICATION	JEP	R.H.	R7657
0	5/98	RELEASED FOR PERMIT REAPPLICATION	R.G.	K.K.	R7657

Solutia

SOLUTIA, INC.
INDIAN ORCHARD PLANT
SPRINGFIELD, MA. 01151

DWG. LIST NO. | ASS'Y.

DESIGN REQ. NO. R 6757 | DEPT. | PROJ./JOB NO.

SITE TOPOGRAPHY AND DRAINAGE AREAS

	BY	DATE	ENGINEER	APP'D.	DATE
DRAWN	R.GREENE	4/98	KELVIN KWONG	K.K.	5/98
CHECKED					
SCALE	1"=200'-0"APPROX.		DESIGN DEPT.	R.A.G.	5/98

PLANT	TYPE	SIZE	NUMBER	REV.
1870	MD	D	901 - 0002	1

THIS DRAWING PRODUCED BY C.A.D. SHEET- 1 OF 1

Appendix A: Discharge Monitoring Data

Outfall - Monitoring Location - Limit Set: D009 - 1 - A

Parameter	Flow	Flow	pH	pH	TRC	TRC	Temperature, water deg. fahrenheit
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max
Units	MGD	MGD	SU	SU	mg/L	mg/L	deg F
Effluent Limit	0.15	0.2	6.5	8.3	Report	Report	83
Minimum	0.027393	0.027393	6.78	6.78	0	0	49.28
Maximum	0.092181	0.092181	7.77	7.77	0.18	0.18	80.42
Median	0.092181	0.092181	7.05	7.05	0.04	0.04	66.02
No. of Violations	0	0	0	0	N/A	N/A	0
Monitoring Period End Date							
3/31/2019	0.092181	0.092181	7.05	7.05	0.05	0.05	50.54
4/30/2019	0.092181	0.092181	7.02	7.02	0.08	0.08	60.08
5/31/2019	0.092181	0.092181	7.07	7.07	0.07	0.07	56.12
6/30/2019	0.092181	0.092181	7	7	0.013	0.013	67.1
7/31/2019	0.092181	0.092181	7.03	7.03	0.09	0.09	68
8/31/2019	0.092181	0.092181	7.31	7.31	0.14	0.14	66.02
9/30/2019	0.092181	0.092181	7.06	7.06	0.15	0.15	63.5
10/31/2019	0.092181	0.092181	7.54	7.54	0.12	0.12	64.58
11/30/2019	0.027393	0.027393	7.77	7.77	0.07	0.07	56.84
3/31/2020	0.092181	0.092181	7.31	7.31	0.16	0.16	49.28
4/30/2020	0.092181	0.092181	6.79	6.79	0.03	0.03	60.62
5/31/2020	0.077407	0.077407	6.9	6.9	0	0	64.94
6/30/2020	0.092181	0.092181	7.06	7.06	0.11	0.11	71.6
7/31/2020	0.092181	0.092181	6.96	6.96	0.06	0.06	73.22
8/31/2020	0.092181	0.092181	7.07	7.07	0.03	0.03	69.26
9/30/2020	0.092181	0.092181	7.27	7.27	0.17	0.17	68.54
10/31/2020	0.092181	0.092181	7.26	7.26	0.07	0.07	64.22
11/30/2020	0.092181	0.092181	7.23	7.23	0.06	0.06	62.6
3/31/2021	0.092181	0.092181	6.89	6.89	0.05	0.05	53.96
4/30/2021	0.092181	0.092181	6.78	6.78	0.03	0.03	61.88
5/31/2021	0.092181	0.092181	6.79	6.79	0.03	0.03	62.24
6/30/2021	0.092181	0.092181	7.04	7.04	0.02	0.02	66.38
7/31/2021	0.092181	0.092181	7.47	7.47	0.05	0.05	68.18
8/31/2021	0.092181	0.092181	7.14	7.14	0.07	0.07	66.92
9/30/2021	0.092181	0.092181	6.99	6.99	0.05	0.05	69.26
10/31/2021	0.092181	0.092181	6.89	6.89	0.14	0.14	67.28
11/30/2021	0.092181	0.092181	7.11	7.11	0.18	0.18	62.24
3/31/2022	0.092181	0.092181	6.85	6.85	0.05	0.05	59
4/30/2022	0.092181	0.092181	6.91	6.91	0.05	0.05	54.14
5/31/2022	0.092181	0.092181	7.2	7.2	0.16	0.16	61.16

Outfall - Monitoring Location - Limit Set: D009 - 1 - A

Parameter	Flow	Flow	pH	pH	TRC	TRC	Temperature, water deg. fahrenheit
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max
Units	**MGD**	**MGD**	**SU**	**SU**	**mg/L**	**mg/L**	**deg F**
Effluent Limit	**0.15**	**0.2**	**6.5**	**8.3**	**Report**	**Report**	**83**
Minimum	**0.027393**	**0.027393**	**6.78**	**6.78**	**0**	**0**	**49.28**
6/30/2022	0.092181	0.092181	7.01	7.01	0.01	0.01	73.76
7/31/2022	0.092181	0.092181	6.98	6.98	0	0	80.42
8/31/2022	0.027393	0.027393	6.98	6.98	0.04	0.04	73.94
9/30/2022	0.027393	0.027393	6.98	6.98	0.05	0.05	71.24
10/31/2022	0.092181	0.092181	7.5	7.5	0.03	0.03	73.04
11/30/2022	0.027393	0.027393	7.02	7.02	0.01	0.01	62.24
3/31/2023	0.092181	0.092181	6.97	6.97	0.03	0.03	62.6
4/30/2023	0.092181	0.092181	7.2	7.2	0.02	0.02	63.3
5/31/2023	0.077407	0.077407	7.05	7.05	0.01	0.01	67.46
6/30/2023	0.077407	0.077407	7.04	7.04	0.02	0.02	77
7/31/2023	0.077407	0.077407	6.9	6.9	0	0	80.42
8/31/2023	0.077407	0.077407	7.25	7.25	0.02	0.02	78.44
9/30/2023	0.077407	0.077407	7.06	7.06	0.03	0.03	73.76
10/31/2023	0.077407	0.077407	7.07	7.07	0.02	0.02	73.04
11/30/2023	0.027393	0.027393	7.15	7.15	0.02	0.02	65.3
3/31/2024	0.077407	0.077407	6.84	6.84	0	0	56.12
4/30/2024	0.077407	0.077407	7.07	7.07	0.02	0.02	61.34
5/31/2024	0.077407	0.077407	7.08	7.08	0.02	0.02	66.4
6/30/2024	0.077407	0.077407	7.13	7.13	0.02	0.02	75.09

Outfall - Monitoring Location - Limit Set: D009 - 1 - Y

Parameter	Copper	Zinc	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	1.3	0	0	0	0
Maximum	0	0	0	12.5	0	2.3	0	0
Median	0	0	0	11	0	1.6	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	0	0	0	12.5	0	2.3	0	0
8/31/2020	0	0	0	11	0	1.6	0	0
8/31/2021	0	0	0	12	0	1.8	0	0
8/31/2022	0	0	0	1.3	0	0	0	0
8/31/2023	0	0	0	2.3	0	0	0	0

Outfall - Monitoring Location - Limit Set: D009 - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0.126	0	0	0	0
Median	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	0	0.126	0	0	0	0
8/31/2020	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: D017 - 1 - A

Parameter	Flow	Flow	pH	pH	TRC	TRC	Temperature, water deg. fahrenheit
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max
Units	**MGD**	**MGD**	**SU**	**SU**	**mg/L**	**mg/L**	**deg F**
Effluent Limit	**4**	**6**	**6.5**	**8.3**	**Report**	**Report**	**85**
Minimum	**0.06**	**0.06**	**6.76**	**6.76**	**0**	**0**	**50.9**
Maximum	**2.59**	**3.27**	**7.72**	**7.72**	**0.3**	**0.3**	**81.32**
Median	**1.04**	**2.115**	**7.095**	**7.095**	**0.06**	**0.06**	**64.94**
No. of Violations	**0**	**0**	**0**	**0**	**N/A**	**N/A**	**0**
Monitoring Period End Date							
1/31/2019	0.17	0.17	6.95	6.95	0.11	0.11	64.04
2/28/2019	0.4	0.4	7.04	7.04	0.12	0.12	66.38
3/31/2019	1.23	2.27	7.12	7.12	0.07	0.07	64.4
4/30/2019	1.51	2.59	7.03	7.03	0.11	0.11	58.82
5/31/2019	1.08	2.59	7.04	7.04	0.08	0.08	60.44
6/30/2019	0.94	2.59	7.12	7.12	0.09	0.09	66.56
7/31/2019	0.11	0.24	7.1	7.1	0.03	0.03	66.74
8/31/2019	1.24	1.67	7.56	7.56	0	0	71.96
9/30/2019	0.19	0.24	7.05	7.05	0.12	0.12	73.76
10/31/2019	0.41	0.79	7.28	7.28	0.08	0.08	70.52
11/30/2019	1.19	2.27	7.72	7.72	0.05	0.05	59.18
12/31/2019	2.59	2.59	7.49	7.49	0.14	0.14	50.9
1/31/2020	0.17	0.17	7.11	7.11	0.04	0.04	62.78
2/29/2020	0.06	0.06	6.86	6.86	0.06	0.06	56.84
3/31/2020	1.05	1.96	7.37	7.37	0.04	0.04	51.8
4/30/2020	0.19	0.24	6.91	6.91	0	0	58.82
5/31/2020	0.36	0.58	6.88	6.88	0.04	0.04	61.16
6/30/2020	0.1	0.17	6.78	6.78	0.03	0.03	73.58
7/31/2020	0.2	0.49	7.13	7.13	0.08	0.08	68.36
8/31/2020	0.24	0.49	6.88	6.88	0.05	0.05	70.52
9/30/2020	1.3	1.96	7.19	7.19	0.09	0.09	78.26
10/31/2020	0.08	0.17	7.21	7.21	0.08	0.08	65.12
11/30/2020	0.84	1.96	7.31	7.31	0.1	0.1	71.42
12/31/2020	0.68	0.68	6.93	6.93	0.06	0.06	57.38
1/31/2021	2.59	2.59	6.96	6.96	0.3	0.3	60.62
2/28/2021	0.31	0.31	6.89	6.89	0.02	0.02	58.28
3/31/2021	1.24	2.27	7.03	7.03	0.01	0.01	54.86
4/30/2021	0.97	2.27	6.89	6.89	0.06	0.06	69.08
5/31/2021	2.48	2.59	6.99	6.99	0.05	0.05	73.4
6/30/2021	1.08	2.75	7.09	7.09	0.04	0.04	64.94

Outfall - Monitoring Location - Limit Set: D017 - 1 - A

Parameter	Flow	Flow	pH	pH	TRC	TRC	Temperature, water deg. fahrenheit
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max
Units	**MGD**	**MGD**	**SU**	**SU**	**mg/L**	**mg/L**	**deg F**
Effluent Limit	**4**	**6**	**6.5**	**8.3**	**Report**	**Report**	**85**
Minimum	**0.06**	**0.06**	**6.76**	**6.76**	**0**	**0**	**50.9**
7/31/2021	2.59	2.59	7.55	7.55	0.06	0.06	71.42
8/31/2021	1.21	3.27	7.24	7.24	0.08	0.08	68.54
9/30/2021	1.39	2.59	7.02	7.02	0.13	0.13	74.3
10/31/2021	0.63	1.67	7.01	7.01	0.19	0.19	70.16
11/30/2021	0.63	1.4	6.98	6.98	0.03	0.03	61.7
12/31/2021	2.59	2.59	7.3	7.3	0.06	0.06	54.14
1/31/2022	2.59	2.59	7.17	7.17	0.1	0.1	64.94
2/28/2022	0.9	0.9	7.1	7.1	0.08	0.08	60.8
3/31/2022	0.38	0.49	7.05	7.05	0.07	0.07	59.72
4/30/2022	0.83	1.27	7.06	7.06	0.03	0.03	56.3
5/31/2022	1.04	2.59	7.11	7.11	0.05	0.05	75.2
6/30/2022	1.04	2.59	6.76	6.76	0.1	0.1	66.74
7/31/2022	1.15	2.59	7.1	7.1	0.09	0.09	81.32
8/31/2022	1.04	2.59	7.01	7.01	0.08	0.08	66.56
9/30/2022	2.59	2.59	7.16	7.16	0.15	0.15	70.7
10/31/2022	1.1	3.27	7.08	7.08	0.11	0.11	68.9
11/30/2022	1.1	2.59	6.99	6.99	0.06	0.06	71.6
12/31/2022	2.59	2.59	7.26	7.26	0.22	0.22	57.56
1/31/2023	1.96	1.96	7.17	7.17	0.09	0.09	54.77
2/28/2023	0.17	0.17	6.81	6.81	0.02	0.02	54.41
3/31/2023	1.84	2.75	6.87	6.87	0.03	0.03	64.31
4/30/2023	1.41	2.59	7.06	7.06	0	0	69.19
5/31/2023	0.49	0.9	6.94	6.94	0.04	0.04	68
6/30/2023	1.26	2.59	6.98	6.98	0.06	0.06	69.8
7/31/2023	0.67	1.14	7.04	7.04	0.06	0.06	81.32
8/31/2023	0.68	1.4	7.22	7.22	0.07	0.07	69.98
9/30/2023	0.24	0.49	7.37	7.37	0.09	0.09	62.42
10/31/2023	2.59	2.59	7.32	7.32	0.16	0.16	71.78
11/30/2023	0.43	0.49	7.29	7.29	0.08	0.08	59.9
12/31/2023	0.49	0.49	7.23	7.23	0.02	0.02	60.26
1/31/2024	2.59	2.59	7.15	7.15	0.12	0.12	54.32
2/29/2024	2.59	2.59	7.36	7.36	0.06	0.06	50.9
3/31/2024	1.33	2.59	7.13	7.13	0.03	0.03	54.32
4/30/2024	1.98	2.59	7.1	7.1	0.01	0.01	58.46
5/31/2024	0.69	0.9	7.02	7.02	0.01	0.01	58.2

Outfall - Monitoring Location - Limit Set: D017 - 1 - A

Parameter	Flow	Flow	pH	pH	TRC	TRC	Temperature, water deg. fahrenheit
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max
Units	**MGD**	**MGD**	**SU**	**SU**	**mg/L**	**mg/L**	**deg F**
Effluent Limit	**4**	**6**	**6.5**	**8.3**	**Report**	**Report**	**85**
Minimum	**0.06**	**0.06**	**6.76**	**6.76**	**0**	**0**	**50.9**
6/30/2024	1.61	3.27	7.36	7.36	0.03	0.03	71.51

Outfall - Monitoring Location - Limit Set: D017 - 1 - Y

Parameter	Copper	Zinc	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	14	0	1.6	0	0
Maximum	0	0.013	0	46	0.018	4.03	0	0
Median	0	0	0	37.6	0	3.6	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	0	0	0	37.6	0	4.03	0	0
8/31/2020	0	0.013	0	14	0	1.6	0	0
8/31/2021	0	0.011	0	46	0	3.9	0	0
8/31/2022	0	0	0	44	0.013	3.6	0	0
8/31/2023	0	0	0	26	0.018	3.3	0	0

Outfall - Monitoring Location - Limit Set: D017 - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: D21S - 1 - A

Parameter	Flow	Flow	pH	pH	TRC	TRC
	Monthly Avg	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max
Units	MGD	MGD	SU	SU	mg/L	mg/L
Effluent Limit	0.15	0.2	6.5	8.3	Report	Report
Minimum	0.000374	0.000374	6.84	6.84	0	0
Maximum	0.004565	0.004565	7.42	7.42	0.2	0.2
Median	0.0015264	0.0015264	7.23	7.23	0.05	0.05
No. of Violations	0	0	0	0	N/A	N/A
Monitoring Period End Date						
5/31/2019	0.0015264	0.0015264	7.1	7.1	0.12	0.12
8/31/2019	0.000763	0.000763	7.32	7.32	0.05	0.05
5/31/2020	0.0045648	0.0045648	7.42	7.42	0.2	0.2
8/31/2020	0.001526	0.001526	7.07	7.07	0.04	0.04
5/31/2021	0.0045648	0.0045648	7.23	7.23	0.03	0.03
8/31/2021	0.004565	0.004565	7.36	7.36	0.05	0.05
5/31/2022	0.0045648	0.0045648	7.3	7.3	0.15	0.15
8/31/2022	0.000374	0.000374	6.84	6.84	0	0
5/31/2023	0.0015264	0.0015264	7.32	7.32	0.03	0.03
8/31/2023	0.000374	0.000374	7.21	7.21	0.05	0.05
5/31/2024	0.0015264	0.0015264	6.95	6.95	0.1	0.1

Outfall - Monitoring Location - Limit Set: D21S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Cadmium
	Daily Max	Daily Max	Daily Max	Daily Max	MO MIN	MO MIN	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	%	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Maximum	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Median	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
5/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
5/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
5/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: D21S - 1 - T

Parameter	Chromium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Maximum	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Median	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
5/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
5/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
5/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: D21S - 1 - T

Parameter	Specific Conductance	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max	Daily Max
Units	umho/cm	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	No Data	No Data	No Data	No Data
Maximum	No Data	No Data	No Data	No Data
Median	No Data	No Data	No Data	No Data
No. of Violations	N/A	N/A	N/A	N/A
Monitoring Period End Date				
5/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2019	NODI: A	NODI: A	NODI: A	NODI: A
5/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: A	NODI: A	NODI: A	NODI: A
5/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9
5/31/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: D21S - 1 - Y

Parameter	Copper	Zinc	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0
Maximum	0	0.034	0	22	0.022	2	0	0
Median	0	0	0	5.1	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
5/31/2019	0	0	0	4.3	0	0	0	< .2
8/31/2019	0	0	0	9.05	0	1.08	0	0
5/31/2020	0	0	0	0	0	0	0	0
8/31/2020	0	0.034	0	8	0	1	0	0
5/31/2021	0	0.019	0	22	0	1.7	0	0
8/31/2021	0	0.021	0	14	0	1.4	0	0
5/31/2022	0	0	0	21	0	2	0	0
8/31/2022	0	0	0	0	0	0	0	0
5/31/2023	0	0.021	0	5.1	0.022	0	0	0
8/31/2023	0	0	0	0	0	0	0	0
5/31/2024	0	0	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: D21S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0.252	0	0
Median	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
5/31/2019	< .2	< .2	< .2	0.252	< .2	< .2
8/31/2019	0	0	0	0	0	0
5/31/2020	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0
5/31/2021	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0
5/31/2022	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0
5/31/2023	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0
5/31/2024	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W017 - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	**MGD**	**MGD**	**mg/L**	**SU**	**SU**	**mg/L**
Effluent Limit	**Report**	**Report**	**Report**	**6.5**	**8.3**	**Report**
Minimum	**0.31**	**0.31**	**0**	**6.79**	**6.79**	**0**
Maximum	**3.27**	**3.27**	**33**	**7.44**	**7.44**	**0.19**
Median	**0.7905**	**0.7905**	**0**	**7.09**	**7.09**	**0.054**
No. of Violations	**N/A**	**N/A**	**N/A**	**0**	**0**	**N/A**
Monitoring Period End Date						
3/31/2019	0.58	0.58	0	7.11	7.11	0.11
6/30/2019	0.79	0.79	4.8	7.09	7.09	0.054
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	0.791	0.791	11	7.4	7.4	0.013
3/31/2020	0.49	0.49	0	7.19	7.19	0.038
6/30/2020	0.9	0.9	33	7.1	7.1	0.12
9/30/2020	0.49	0.49	0	7.11	7.11	0.18
12/31/2020	0.791	0.791	0	6.9	6.9	0.054
3/31/2021	0.49	0.49	0	6.85	6.85	0.096
6/30/2021	0.68	0.68	20	6.83	6.83	0.19
9/30/2021	1.4	1.4	0	7.44	7.44	0
12/31/2021	0.684	0.684	0	7.01	7.01	0.029
3/31/2022	1.96	1.96	9.3	7.09	7.09	0.054
6/30/2022	2.59	2.59	0	7.26	7.26	0
9/30/2022	1.14	1.14	18	7.03	7.03	0.11
12/31/2022	0.488	0.488	5	6.94	6.94	0.058
3/31/2023	1.96	1.96	0	7.07	7.07	0
6/30/2023	0.31	0.31	18	6.79	6.79	0.14
9/30/2023	1.14	1.14	0	7.14	7.14	0.034
12/31/2023	2.587	2.587	0	7.34	7.34	0
3/31/2024	0.68	0.68	0	7.15	7.15	0.046
6/30/2024	3.27	3.27	29	6.84	6.84	0.058

Outfall - Monitoring Location - Limit Set: W017 - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0
Maximum	325.5	0	0.11	42	0	3.8	0	0
Median	27.5	0	0	3.4	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	325.5	0	0.11	0.48	0	0	0	0
8/31/2020	27.5	0	0	0	0	0	0	0
8/31/2021	< 1	0	0	42	0	3.8	0	0
8/31/2022	135	0	0	3.4	0	0	0	0
8/31/2023	0	0	0	18	0	2.5	0	0

Outfall - Monitoring Location - Limit Set: W017 - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W10S - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	SU	SU	mg/L
Effluent Limit	Report	Report	Report	6.5	8.3	Report
Minimum	0.000763	0.000763	0	7.08	7.08	0
Maximum	0.0007632	0.0007632	32	7.32	7.32	0.047
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	0	0	N/A
Monitoring Period End Date						
3/31/2019	0.0007632	0.0007632	32	7.08	7.08	0.047
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2022	0.0007632	0.0007632	0	7.12	7.12	0.029
6/30/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	0.000763	0.000763	0	7.26	7.26	0
3/31/2024	0.0007632	0.0007632	29	7.32	7.32	0.032
6/30/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W10S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Cadmium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Min	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	%	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	30	6.94	0.02	8.28	100	100	0.12	0
Maximum	30	6.94	0.02	8.28	100	100	0.12	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	30	6.94	0.02	8.28	100	100	0.12	0
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W10S - 1 - T

Parameter	Chromium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0.0029	0	0.0019	0.085	28	18	3.8
Maximum	0	0.0029	0	0.0019	0.085	28	18	3.8
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	0	0.0029	0	0.0019	0.085	28	18	3.8
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W10S - 1 - T

Parameter	Specific Conductance	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max	Daily Max
Units	umho/cm	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	190	0	8.6	1.6
Maximum	190	0	8.6	1.6
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A
Monitoring Period End Date				
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	190	0	8.6	1.6
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W10S - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	579.4	0.0029	0	0	0	0	0	0
Maximum	579.4	0.0029	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	579.4	0.0029	0	0	0	0	0	0
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W10S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	0	0	0	0	0	0
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W14S - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	**MGD**	**MGD**	**mg/L**	**SU**	**SU**	**mg/L**
Effluent Limit	**Report**	**Report**	**Report**	**6.5**	**8.3**	**Report**
Minimum	**0.000763**	**0.000763**	**0**	**6.87**	**6.87**	**0**
Maximum	**0.0022752**	**0.0022752**	**0**	**7.05**	**7.05**	**0.36**
Median	**Non-Detect**	**Non-Detect**	**Non-Detect**	**Non-Detect**	**Non-Detect**	**Non-Detect**
No. of Violations	**N/A**	**N/A**	**N/A**	**0**	**0**	**N/A**
Monitoring Period End Date						
3/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2021	0.0022752	0.0022752	0	7.05	7.05	0.36
6/30/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	0.000763	0.000763	0	6.87	6.87	0
3/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W14S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Cadmium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Min	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	%	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	93	7.15	0.07	7.8	100	100	0.063	0
Maximum	93	7.15	0.07	7.8	100	100	0.063	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	93	7.15	0.07	7.8	100	100	0.063	0
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W14S - 1 - T

Parameter	Chromium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0.022	26	17	3.9
Maximum	0	0	0	0	0.022	26	17	3.9
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	0	0	0	0	0.022	26	17	3.9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W14S - 1 - T

Parameter	Specific Conductance	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max	Daily Max
Units	umho/cm	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	170	0	7.3	1.8
Maximum	170	0	7.3	1.8
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A
Monitoring Period End Date				
8/31/2019	170	0	7.3	1.8
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W14S - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	579.4	0	0	0.16	0	0	0	0
Maximum	579.4	0	0	0.16	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	579.4	0	0	0.16	0	0	0	0
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W14S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	0	0	0	0	0	0
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W15S - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	SU	SU	mg/L
Effluent Limit	Report	Report	Report	6.5	8.3	Report
Minimum	0.0003744	0.0003744	0	7.08	7.08	0
Maximum	0.0007632	0.0007632	0	7.23	7.23	0.016
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	0	0	N/A
Monitoring Period End Date						
3/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020	0.0007632	0.0007632	0	7.23	7.23	0.016
6/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2023	0.0003744	0.0003744	0	7.08	7.08	0
6/30/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W15S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Pimephales	Ammonia	Cadmium	Chromium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Max	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	12	7.27	0.07	8.67	100	0.028	0	0.0025
Maximum	12	7.27	0.07	8.67	100	0.028	0	0.0025
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	12	7.27	0.07	8.67	100	0.028	0	0.0025
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W15S - 1 - T

Parameter	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC	Specific Conductance
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	umho/cm
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0.0025	0.00062	0.0018	0.025	13	14	3.5	120
Maximum	0.0025	0.00062	0.0018	0.025	13	14	3.5	120
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	0.0025	0.00062	0.0018	0.025	13	14	3.5	120
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W15S - 1 - T

Parameter	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report
Minimum	0.029	3.3	1.1
Maximum	0.029	3.3	1.1
Median	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A
Monitoring Period End Date			
8/31/2019	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9
8/31/2021	0.029	3.3	1.1
8/31/2022	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W15S - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	No Data	0.0025	0	27	0.016	2.7	0	0
Maximum	No Data	0.0025	0	27	0.016	2.7	0	0
Median	No Data	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	< 1	0.0025	0	27	0.016	2.7	0	0
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W15S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	0	0	0	0	0	0
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W19S - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	SU	SU	mg/L
Effluent Limit	Report	Report	Report	6.5	8.3	Report
Minimum	0.000389	0.000389	0	6.88	6.88	0.01
Maximum	0.000763	0.000763	24	7.09	7.09	0.044
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	0	0	N/A
Monitoring Period End Date						
3/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2020	0.000389	0.000389	11	6.9	6.9	0.044
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	0.000763	0.000763	0	7.09	7.09	0.01
3/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2023	0.000763	0.000763	24	6.88	6.88	0.033
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W19S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Cadmium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Min	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	%	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	120	7.18	0.04	8.81	100	100	0.028	0
Maximum	120	7.18	0.04	8.81	100	100	0.028	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	120	7.18	0.04	8.81	100	100	0.028	0

Outfall - Monitoring Location - Limit Set: W19S - 1 - T

Parameter	Chromium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	20	14	6.5
Maximum	0	0	0	0	0	20	14	6.5
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	0	0	0	0	0	20	14	6.5

Outfall - Monitoring Location - Limit Set: W19S - 1 - T

Parameter	Specific Conductance	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max	Daily Max
Units	umho/cm	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	130	0.068	6	1.4
Maximum	130	0.068	6	1.4
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A
Monitoring Period End Date				
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	130	0.068	6	1.4

Outfall - Monitoring Location - Limit Set: W19S - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	10	0	0	0	0	0	0	0
Maximum	10	0	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	10	0	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W19S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W20S - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	SU	SU	mg/L
Effluent Limit	Report	Report	Report	6.5	8.3	Report
Minimum	0.001138	0.001138	0	6.85	6.85	0.031
Maximum	0.0227952	0.0227952	94	7.45	7.45	0.27
Median	0.0019007	0.0019007	8.5	7.055	7.055	0.0805
No. of Violations	N/A	N/A	N/A	0	0	N/A
Monitoring Period End Date						
3/31/2019	0.0015264	0.0015264	0	7.05	7.05	0.031
6/30/2019	0.004565	0.004565	5	7.07	7.07	0.15
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	0.002275	0.002275	13	7.36	7.36	0.12
3/31/2020	0.0015264	0.0015264	0	7.33	7.33	0.059
6/30/2020	0.022795	0.022795	72	7.03	7.03	0.22
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	0.0045648	0.0045648	16	7.16	7.16	0.074
3/31/2021	0.0045648	0.0045648	77	7.01	7.01	0.27
6/30/2021	0.022795	0.022795	94	6.89	6.89	0.24
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	0.001526	0.001526	4	7.21	7.21	0.089
3/31/2022	0.0045648	0.0045648	41	7.34	7.34	0.11
6/30/2022	0.001138	0.001138	0	7.14	7.14	0.078
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	0.001526	0.001526	0	7.06	7.06	0.054
3/31/2023	0.0227952	0.0227952	12	7.07	7.07	0.069
6/30/2023	0.022795	0.022795	68	6.85	6.85	0.27
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	0.022795	0.022795	34	7.45	7.45	0.11
3/31/2024	0.0015264	0.0015264	15	7.28	7.28	0.088
6/30/2024	0.022795	0.022795	24	6.99	6.99	0.083

Outfall - Monitoring Location - Limit Set: W20S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Pimephales	Ammonia	Cadmium	Chromium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Max	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	6.86	0.02	7.1	66.2	0.026	0	0
Maximum	180	7.28	0.12	8.85	100	0.23	0	0.0028
Median	0	7.15	0.1	8.42	100	0.13	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	0	7.28	0.12	7.1	66.2	0.13	0	0
8/31/2020	0	7.09	0.1	8.42	100	0.23	0	0
8/31/2021	4	7.15	0.03	8.54	100	0.026	0	0.0028
8/31/2022	0	6.86	0.02	8.02	100	0.2	0	0
8/31/2023	180	7.22	0.1	8.85	100	0.1	0	0

Outfall - Monitoring Location - Limit Set: W20S - 1 - T

Parameter	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC	Specific Conductance
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**umho/cm**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0.0041**	**0**	**0**	**0.039**	**7.5**	**0**	**3.2**	**31**
Maximum	**0.012**	**0.0069**	**0.0015**	**0.13**	**40**	**33**	**14**	**290**
Median	**0.0056**	**0.0013**	**0**	**0.086**	**13**	**21**	**6.6**	**110**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date								
8/31/2019	0.006	0	0	0.13	7.5	5.8	3.2	31
8/31/2020	0.0056	0.0018	0	0.1	11	0	6.6	61
8/31/2021	0.0041	0.00094	0.0015	0.039	13	21	3.7	130
8/31/2022	0.012	0.0069	0	0.086	16	21	14	110
8/31/2023	0.005	0.0013	0	0.073	40	33	8	290

Outfall - Monitoring Location - Limit Set: W20S - 1 - T

Parameter	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report
Minimum	0	2.6	0.26
Maximum	0.24	11	2.2
Median	0.085	3.4	1
No. of Violations	N/A	N/A	N/A
Monitoring Period End Date			
8/31/2019	0	2.6	0.26
8/31/2020	0	3.3	0.56
8/31/2021	0.085	3.4	1.1
8/31/2022	0.24	4.6	1
8/31/2023	0.15	11	2.2

Outfall - Monitoring Location - Limit Set: W20S - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0.0041	0	0	0	0	0	0
Maximum	816.4	0.012	0	37	0	3.4	0	0
Median	368	0.0056	0	2.7	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	727	0.006	0	0	0	0	0	0
8/31/2020	47.3	0.0056	0	2.7	0	0	0	0
8/31/2021	816.4	0.0041	0	37	0	3.4	0	0
8/31/2022	0	0.012	0	4.6	0	0	0	0
8/31/2023	368	0.005	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W20S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W21S - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	SU	SU	mg/L
Effluent Limit	Report	Report	Report	6.5	8.3	Report
Minimum	0.001526	0.001526	0	6.87	6.87	0.01
Maximum	0.0227952	0.0227952	73	7.49	7.49	0.68
Median	0.004565	0.004565	6.2	7.08	7.08	0.05
No. of Violations	N/A	N/A	N/A	0	0	N/A
Monitoring Period End Date						
3/31/2019	0.0015264	0.0015264	11	7.11	7.11	0.23
6/30/2019	0.004565	0.004565	2.7	7.11	7.11	0.04
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	0.004565	0.004565	0	7.42	7.42	0.011
3/31/2020	0.0015264	0.0015264	0	7.46	7.46	0.01
6/30/2020	0.022795	0.022795	73	7.18	7.18	0.058
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	0.0227952	0.0227952	0	6.99	6.99	0.68
3/31/2021	0.0022752	0.0022752	22	7.16	7.16	0.036
6/30/2021	0.022795	0.022795	45	7.05	7.05	0.045
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	0.004565	0.004565	0	7.36	7.36	0.13
3/31/2022	0.0227952	0.0227952	7.7	7.41	7.41	0.055
6/30/2022	0.001526	0.001526	4.7	6.95	6.95	0.28
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	0.022795	0.022795	8	7.04	7.04	0.3
3/31/2023	0.0227952	0.0227952	9.5	7.16	7.16	0.033
6/30/2023	0.022795	0.022795	15	6.87	6.87	0.11
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	0.022795	0.022795	14	7.49	7.49	0.1
3/31/2024	0.0045648	0.0045648	17	7.2	7.2	0.32
6/30/2024	0.022795	0.022795	52	6.95	6.95	0.087

Outfall - Monitoring Location - Limit Set: W21S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Pimephales	Ammonia	Cadmium	Chromium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Max	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	6.9	0.02	7.66	44.2	0.058	0	0
Maximum	100	7.3	0.1	8.84	100	0.48	0.00025	0.0075
Median	41	7.12	0.07	8.38	100	0.21	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	100	7.12	0.1	7.66	100	0.48	0	0.0075
8/31/2020	0	7.3	0.08	8.39	100	0.12	0	0
8/31/2021	17	7.23	0.02	8.38	100	0.44	0.00025	0.0042
8/31/2022	80	6.9	0.07	7.96	44.2	0.058	0	0
8/31/2023	41	7.08	0.03	8.84	100	0.21	0	0

Outfall - Monitoring Location - Limit Set: W21S - 1 - T

Parameter	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC	Specific Conductance
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	umho/cm
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0.0037	0	0	0.036	2.1	0	2.4	35
Maximum	0.034	0.0036	0.0027	2	27	22	27	220
Median	0.022	0.0017	0	0.21	19	9.6	14	52
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	0.0063	0	0	0.036	27	22	3	220
8/31/2020	0.0037	0.0017	0	0.038	2.1	0	2.4	35
8/31/2021	0.024	0.0025	0.0027	0.21	23	12	23	130
8/31/2022	0.034	0.0036	0	2	19	8.6	27	52
8/31/2023	0.022	0.0014	0	0.54	16	9.6	14	46

Outfall - Monitoring Location - Limit Set: W21S - 1 - T

Parameter	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report
Minimum	0	0.86	0
Maximum	0.56	8.1	2.4
Median	0.26	3.4	1.4
No. of Violations	N/A	N/A	N/A
Monitoring Period End Date			
8/31/2019	0	8.1	1.6
8/31/2020	0.26	0.86	0
8/31/2021	0.56	7.5	0.99
8/31/2022	0.35	3.4	2.4
8/31/2023	0.18	3.1	1.4

Outfall - Monitoring Location - Limit Set: W21S - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0.0037	0	0	0	0	0	0
Maximum	2419.6	0.034	0	4.35	0	0.53	0	0
Median	62	0.022	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	38.9	0.0063	0	4.35	0	0.53	0	0
8/31/2020	980.4	0.0037	0	0	0	0	0	0
8/31/2021	2419.6	0.024	0	0	0	0	0	0
8/31/2022	0	0.034	0	0	0	0	0	0
8/31/2023	62	0.022	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W21S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W51S - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	SU	SU	mg/L
Effluent Limit	Report	Report	Report	6.5	8.3	Report
Minimum	0.000389	0.000389	0	6.66	6.66	0
Maximum	0.001526	0.001526	42	7.2	7.2	0.12
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	0	0	N/A
Monitoring Period End Date						
3/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2019	0.000389	0.000389	5.6	7.08	7.08	0.026
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	0.0007632	0.0007632	0	7.06	7.06	0.018
3/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2022	0.000763	0.000763	0	7.2	7.2	0
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2024	0.001526	0.001526	42	6.66	6.66	0.12

Outfall - Monitoring Location - Limit Set: W51S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Cadmium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Min	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	%	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	110	7.12	0.06	8.76	100	100	0.05	0
Maximum	110	7.12	0.06	8.76	100	100	0.05	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	110	7.12	0.06	8.76	100	100	0.05	0

Outfall - Monitoring Location - Limit Set: W51S - 1 - T

Parameter	Chromium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0.02	20	14	5.5
Maximum	0	0	0	0	0.02	20	14	5.5
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	0	0	0	0	0.02	20	14	5.5

Outfall - Monitoring Location - Limit Set: W51S - 1 - T

Parameter	Specific Conductance	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max	Daily Max
Units	umho/cm	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	130	0.075	5.8	1.3
Maximum	130	0.075	5.8	1.3
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A
Monitoring Period End Date				
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	130	0.075	5.8	1.3

Outfall - Monitoring Location - Limit Set: W51S - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	85	0	0	4.4	0	0	0	0
Maximum	85	0	0	4.4	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	85	0	0	4.4	0	0	0	0

Outfall - Monitoring Location - Limit Set: W51S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W561 - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	SU	SU	mg/L
Effluent Limit	Report	Report	Report	6.5	8.3	Report
Minimum	0.000187	0.000187	0	6.81	6.81	0
Maximum	0.004565	0.004565	48	7.54	7.54	0.033
Median	0.0007615	0.0007615	5.5	7.065	7.065	0.0205
No. of Violations	N/A	N/A	N/A	0	0	N/A
Monitoring Period End Date						
3/31/2019	0.0015264	0.0015264	0	6.97	6.97	0.015
6/30/2019	0.00076	0.00076	17	7.04	7.04	0
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	0.001526	0.001526	14	7.54	7.54	0.026
3/31/2020	0.0003888	0.0003888	0	7.39	7.39	0.023
6/30/2020	0.004565	0.004565	48	7.2	7.2	0.029
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	0.0015264	0.0015264	8	7.21	7.21	0.021
3/31/2021	0.0003888	0.0003888	0	7.08	7.08	0.027
6/30/2021	0.000763	0.000763	19	6.82	6.82	0.014
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	0.00038	0.00038	0	7.34	7.34	0.023
3/31/2022	0.0007632	0.0007632	5	7.33	7.33	0.016
6/30/2022	0.000763	0.000763	26	7.08	7.08	0.026
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	0.000187	0.000187	6	7.07	7.07	0.033
3/31/2023	0.0007632	0.0007632	8.5	7.19	7.19	0.011
6/30/2023	0.001526	0.001526	20	6.81	6.81	0.026
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	0.001526	0.001526	0	7.51	7.51	0.02
3/31/2024	0.0003744	0.0003744	11	7.06	7.06	0.021
6/30/2024	0.004565	0.004565	40	6.99	6.99	0.027

Outfall - Monitoring Location - Limit Set: W561 - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Cadmium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Min	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	%	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	6.83	0.02	7.47	100	100	0.14	0
Maximum	260	7.41	0.08	8.42	100	100	0.24	0
Median	20	7.02	0.07	8.03	100	100	0.21	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	260	7.19	0.08	7.47	100	100	0.21	0
8/31/2020	0	7	0.07	7.82	100	100	0.21	0
8/31/2021	0	7.41	0.02	8.28	100	100	0.14	0
8/31/2022	20	6.83	0.05	8.42	100	100	0.24	0
8/31/2023	43	7.02	0.07	8.03	100	100	0.21	0

Outfall - Monitoring Location - Limit Set: W561 - 1 - T

Parameter	Chromium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0.0043	0.0016	0	0.023	12	7.7	3.2
Maximum	0.0028	0.0058	0.0052	0.0046	0.058	22	26	5.5
Median	0	0.0058	0.0026	0	0.05	16	16	4.7
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	0	0.0058	0.0032	0	0.05	12	7.7	3.2
8/31/2020	0	0.0058	0.0016	0	0.023	16	16	4.7
8/31/2021	0.0028	0.0051	0.0023	0.0046	0.034	17	19	4.9
8/31/2022	0	0.0058	0.0026	0	0.058	22	26	5.5
8/31/2023	0	0.0043	0.0052	0	0.05	12	8.6	3.6

Outfall - Monitoring Location - Limit Set: W561 - 1 - T

Parameter	Specific Conductance	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max	Daily Max
Units	umho/cm	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	29	0	3.2	0.21
Maximum	120	0.19	7.9	0.9
Median	72	0	5.2	0.72
No. of Violations	N/A	N/A	N/A	N/A
Monitoring Period End Date				
8/31/2019	72	0	3.7	0.72
8/31/2020	88	0	5.3	0.73
8/31/2021	120	0.19	5.2	0.9
8/31/2022	69	0	7.9	0.63
8/31/2023	29	0.097	3.2	0.21

Outfall - Monitoring Location - Limit Set: W561 - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	10	0.0043	0	0	0	0	0	0
Maximum	2419.6	0.0058	0	12	0	1.1	0	0
Median	48	0.0058	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	214.3	0.0058	0	0.21	0	0	0	0
8/31/2020	48	0.0058	0	0	0	0	0	0
8/31/2021	2419.6	0.0051	0	12	0	1.1	0	0
8/31/2022	10	0.0058	0	0	0	0	0	0
8/31/2023	20	0.0043	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W561 - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W573 - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Daily Max	Minimum	Daily Max
Units	**MGD**	**MGD**	**mg/L**	**SU**	**SU**	**mg/L**
Effluent Limit	**Report**	**Report**	**Report**	**8.3**	**6.5**	**Report**
Minimum	**0.000187**	**0.000187**	**0**	**6.72**	**6.72**	**0**
Maximum	**0.004565**	**0.004565**	**93**	**7.62**	**7.62**	**0.043**
Median	**0.000576**	**0.000576**	**1.25**	**7.055**	**7.055**	**0.018**
No. of Violations	**N/A**	**N/A**	**N/A**	**0**	**0**	**N/A**
Monitoring Period End Date						
3/31/2019	0.0007632	0.0007632	4	7.02	7.02	0.015
6/30/2019	0.000389	0.000389	2.5	7.07	7.07	0
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	0.001526	0.001526	15	7.51	7.51	0.014
3/31/2020	0.0003888	0.0003888	0	7.43	7.43	0.026
6/30/2020	0.000763	0.000763	42	7.12	7.12	0.038
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	0.0015264	0.0015264	0	7.18	7.18	0.014
3/31/2021	0.0003888	0.0003888	17	7.04	7.04	0.028
6/30/2021	0.000763	0.000763	40	6.76	6.76	0.023
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	0.00038	0.00038	0	7.19	7.19	0.025
3/31/2022	0.0007632	0.0007632	8	7.24	7.24	0.024
6/30/2022	0.000763	0.000763	24	7.16	7.16	0.034
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	0.000187	0.000187	0	7.02	7.02	0.031
3/31/2023	0.0007632	0.0007632	0	7.24	7.24	0.011
6/30/2023	0.001526	0.001526	20	6.75	6.75	0.043
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	0.001526	0.001526	0	7.62	7.62	0
3/31/2024	0.0003744	0.0003744	93	7.11	7.11	0.021
6/30/2024	0.004565	0.004565	20	6.72	6.72	0.027

Outfall - Monitoring Location - Limit Set: W573 - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Cadmium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Min	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	%	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	6.92	0.01	7.46	100	100	0.18	0
Maximum	38	7.29	0.11	8.44	100	100	0.24	0
Median	11	7.06	0.04	7.75	100	100	0.21	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	38	7.14	0.11	7.52	100	100	0.2	0
8/31/2020	4.4	7.04	0.05	7.75	100	100	0.23	0
8/31/2021	13	7.29	0.04	7.46	100	100	0.18	0
8/31/2022	0	6.92	0.01	8.11	100	100	0.24	0
8/31/2023	11	7.06	0.04	8.44	100	100	0.21	0

Outfall - Monitoring Location - Limit Set: W573 - 1 - T

Parameter	Chromium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0.019	11	8.2	3.4
Maximum	0.0025	0.0068	0.0061	0.0024	0.064	24	26	5.5
Median	0	0.005	0.0019	0	0.03	16	10	3.6
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	0	0.0068	0.0033	0	0.064	14	8.2	3.4
8/31/2020	0	0.005	0.0015	0	0.021	16	11	4.8
8/31/2021	0.0025	0.004	0.0019	0.0024	0.019	11	9.6	3.4
8/31/2022	0	0.005	0	0	0.035	24	26	5.5
8/31/2023	0	0	0.0061	0	0.03	16	10	3.6

Outfall - Monitoring Location - Limit Set: W573 - 1 - T

Parameter	Specific Conductance	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max	Daily Max
Units	umho/cm	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	28	0	3.5	0.22
Maximum	120	0.082	8.4	0.85
Median	75	0	4.3	0.71
No. of Violations	N/A	N/A	N/A	N/A
Monitoring Period End Date				
8/31/2019	80	0	4.3	0.85
8/31/2020	120	0	5.3	0.77
8/31/2021	49	0.077	4	0.34
8/31/2022	75	0	8.4	0.71
8/31/2023	28	0.082	3.5	0.22

Outfall - Monitoring Location - Limit Set: W573 - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0	0
Maximum	2419.6	0.0068	0	2.2	0	0	0	0
Median	62.4	0.005	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	98.8	0.0068	0	0.19	0	0	0	0
8/31/2020	62.4	0.005	0	0	0	0	0	0
8/31/2021	2419.6	0.004	0	2.2	0	0	0	0
8/31/2022	0	0.005	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W573 - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	0	0	0	0	0	0
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	0	0	0	0	0	0
8/31/2020	0	0	0	0	0	0
8/31/2021	0	0	0	0	0	0
8/31/2022	0	0	0	0	0	0
8/31/2023	0	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: W61S - 1 - Q

Parameter	Flow	Flow	TSS	pH	pH	Zinc
	Monthly Avg	Daily Max	Daily Max	Minimum	Maximum	Daily Max
Units	MGD	MGD	mg/L	SU	SU	mg/L
Effluent Limit	Report	Report	Report	6.5	8.3	Report
Minimum	0.001526	0.001526	0	6.74	6.74	0
Maximum	0.001526	0.001526	120	7.31	7.31	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	0	0	N/A
Monitoring Period End Date						
3/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2019	0.001526	0.001526	120	7.31	7.31	0
3/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2020	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2021	0.001526	0.001526	0	6.74	6.74	0
9/30/2021	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2022	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2023	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A	NODI: A
12/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2024	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W61S - 1 - T

Parameter	Total Solids	pH	TRC	DO	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Cadmium
	Daily Max	Maximum	Daily Max	Daily Max	Daily Min	Daily Min	Daily Max	Daily Max
Units	mg/L	SU	mg/L	mg/L	%	%	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	64	6.9	0.01	8.1	100	100	0.22	0
Maximum	64	6.9	0.01	8.1	100	100	0.22	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	64	6.9	0.01	8.1	100	100	0.22	0
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W61S - 1 - T

Parameter	Chromium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0.0079	0	0	0.06	20	21	12
Maximum	0	0.0079	0	0	0.06	20	21	12
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	0	0.0079	0	0	0.06	20	21	12
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W61S - 1 - T

Parameter	Specific Conductance	Aluminum, total (as Al)	Calcium, total (as Ca)	Magnesium, total (as Mg)
	Daily Max	Daily Max	Daily Max	Daily Max
Units	umho/cm	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	120	0.23	6.3	0.97
Maximum	120	0.23	6.3	0.97
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A
Monitoring Period End Date				
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	120	0.23	6.3	0.97
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W61S - 1 - Y

Parameter	E. coli	Copper	Chlorobenzene	Chloroform	Cyanide, total (as CN)	Dichlorobromomethane	Methanol, total	PCB-1016
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	209	0.0079	0	0	0	0	0	0
Maximum	209	0.0079	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	209	0.0079	0	0	0	0	0	0
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Outfall - Monitoring Location - Limit Set: W61S - 1 - Y

Parameter	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	0	0	0
Maximum	0	0	0	0	0	0
Median	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date						
8/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
8/31/2022	0	0	0	0	0	0
8/31/2023	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Appendix B: Ambient Data

Diluent River Water

WET (Whole Effluent Toxicology)	2023	2022	2021	2020	2019	2018
Aluminum mg/l	0.057	0.14	0.38	0	0	0.18
Cadmium mg/l	0	0	0	0	0	0
Chromium mg/l	0	0	0.0035	0	0	0
Copper mg/l	0	0	0.0029	0.0014	0	0
Lead mg/l	0	0.0034	0.0016	0	0	0
Nickel mg/l	0	0	0.0015	0	0	0
Zinc mg/l	0	0.047	0.025	0.011	0	0
Magnesium mg/l	1.4	1.2	0.64	1.7	2.4	1.6
Calcium mg/l	6.2	7.7	3.6	8.4	8.6	8
Ammonia mg/l	0	0.09	0.03	0	0.051	0.022
Alkalinity mg/l	12	21	8.6	19	22	15
Total Solids mg/l	70	58	74	93	75	91
Total Organic Carbon mg/l	6.3	4.3	9.3	3.5	3	7.1
Hardness as Calcium Carbonate mg/l	24	24	12	28	31	27
Specific Conductance	120	110	68	160	160	160

Appendix C: Reasonable Potential Analysis

Methodology

A reasonable potential analysis is completed using a set of critical conditions for flow and pollutant concentrations that will ensure the protection of water quality standards. To determine the critical condition of a discharge, EPA projects an upper bound of the discharge concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of the *Technical Support Document for Water Quality-based Toxics Control* (TSD)[1] to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., sample results in which a parameter is not detected above laboratory minimum levels). In stormwater, which is typically a non-continuous discharge with high variability, EPA used this methodology to calculate the 95th percentile to calculate the upper bound discharge concentrations.

When dilution applies, EPA uses the calculated upper bound of the discharge monitoring data, along with the water quality criteria applicable to the parameter in the receiving water, the critical discharge flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$Q_sC_s + Q_eC_e = Q_dC_d$$

Where:

C_d = downstream concentration
C_s = upstream concentration (refer to Appendix B, ambient data)
C_e = discharge concentration (calculated upper bound concentration)
Q_s = upstream flow (7Q10 flow upstream of the outfall)
Q_e = discharge flow of the Facility (permitted or actual maximum flow)
Q_d = downstream flow (Q_s + Q_e)

Solving for the receiving water concentration downstream of the discharge (C_d) yields:

$$C_d = \frac{C_sQ_s + C_eQ_e}{Q_d}$$

When there is no available dilution (i.e., DF = 1:1), the receiving water concentration downstream of the discharge (C_d) is equal to the effluent concentration.

When the downstream concentration exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above WQSs. *See* 40 CFR § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. The limitation is calculated by rearranging the above mass balance equation to solve for the effluent concentration using the

[1] USEPA, *Technical Support Document for Water Quality-Based Toxics Control*, Office of Water, Washington, D.C., March 1991.

applicable criterion as the downstream concentration. The resulting effluent concentration then becomes the basis for the effluent limit. *See* 40 CFR § 122.44(d)(1)(iii).

Determination of Applicable Criteria

State water quality criteria are found at 314 CMR 4.00 and have generally been summarized for each parameter in Section 5 of this Fact Sheet. The applicable criteria for this facility are the acute and chronic aquatic life criteria, which apply to continuous discharges; acute aquatic life criteria, which apply to non-continuous discharges and human health criteria values for fish and shellfish consumption only, for all discharges, based on the designated uses for the Class B receiving waters.

Freshwater aquatic life criteria for aluminum, cadmium, copper, lead, nickel and zinc are established in terms of dissolved metals and are converted to total recoverable using published conversion factors. Additionally, the criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent. EPA calculated hardness-dependent acute criteria for metals detected in the effluent using the hardness values measured in the Facility's discharge (Appendix A) and the hardness values measured in the receiving water in the vicinity of the discharge (Appendix B). Coefficients and conversion factors for freshwater metals criteria are found in State water quality standards at 314 CMR 4.00.

Ammonia criteria, which are pH and temperature-dependent, are calculated in accordance with the formulas found in State water quality standards at 314 CMR 4.00.

Calculation of Reasonable Potential

To determine reasonable potential, EPA first calculated the upper bound of expected discharge concentrations for each parameter at each outfall. Values represent the 95th percentile concentration calculated using the monitoring data reported by the Facility (*See* Appendix A). EPA then used the calculated upper bound, the representative value of the parameter in the receiving water from available ambient data, the permitted or maximum flow, and the upstream 7Q10 flow (for aquatic life criteria) or harmonic mean flow (for human health criteria) to project the in-stream concentration downstream from the discharge. Upstream values are generally the median value calculated using monitoring data for the receiving water reported by the Facility (see Appendix B). When this resultant in-stream concentration (C) exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above water quality standards. "Y" is indicated if downstream concentration exceeds the acute criterion. The results are summarized for each of the outfalls in the tables below.

Calculation of Effluent Limitations

Finally, EPA calculated the effluent limitations for the parameters that have a reasonable potential to cause or contribute to an excursion above water quality standards by setting the maximum allowable downstream concentration equal to the applicable criterion and solving for the discharge concentration, adjusted for available dilution, if any. The results are summarized for each of the outfalls in the tables below.

Outfall 009 (wet weather sampling locations catchbasin 561 and 573)

Pollutant	Conc. Units	Upstream Flow (MGD)	Upstream Conc.	Discharge Flow	Discharge Conc.	Downstream Flow (MGD)	Downstream Conc.	Criteria		Reasonable Potential		Limits	
								Acute	Chronic	Acute	Chronic	Acute	Chronic
TRC	µg/L	82.73	0.0	0.2	164.9	82.93	0.4	19.0	11.0	N	N	N/A	N/A
Ammonia (Warm)	mg/L	82.73	0	0.2	0.266	82.93	0.0006	9.1	1.2	N	N	N/A	N/A
Copper	µg/L	82.73	0.0	0.2	6.8	82.93	0.016	3.9	2.9	N	N	N/A	N/A
Lead	µg/L	82.73	0.0	0.2	6.0	82.93	0.015	14.3	0.6	N	N	N/A	N/A
Nickel	µg/L	82.73	0.0	0.2	28.2	82.93	0.068	147.5	16.4	N	N	N/A	N/A
Zinc	µg/L	82.73	0.0	0.2	38.9	82.93	0.099	37.6	37.6	N	N	N/A	N/A
PCBs (aquatic life)	µg/L	82.73	0.0	0.2	0.2898	82.93	0.0007	0.014	N/A	N	N	N/A	N/A
Chloroform	µg/L	297.95	0	0.15	28.8	298.1	0.014	N/A	2000	N	N	N/A	N/A
Dichlorobromomethane	µg/L	297.95	0	0.15	5.3	298.1	0.003	N/A	27.0	N	N	N/A	N/A
PCBs (human health)	µg/L	297.95	0	0.15	0.2898	298.1	0.00015	N/A	0.000064	N	**Y**	N/A	**0.1272**

Outfall 017

Pollutant	Conc. Units	Upstream Flow (MGD)	Upstream Conc.	Discharge Flow	Discharge Conc.	Downstream Flow (MGD)	Downstream Conc.	Criteria		Reasonable Potential		Limits	
								Acute	Chronic	Acute	Chronic	Acute	Chronic
TRC	µg/L	82.73	0	6	194.1	88.73	13.1	19.0	11.0	N	**Y**	N/A	**162.7**
Cyanide	µg/L	82.73	0	6	41.4	88.73	2.8	22.0	5.2	N	N	N/A	N/A
Zinc	µg/L	82.73	5.5	6	196.0	88.73	18.4	120.0	120.0	N	N	N/A	N/A
Chloroform	µg/L	297.95	0	4	105.8	301.95	1.4	N/A	2000	N	N	N/A	N/A
Dichlorobromomethane	µg/L	297.95	0	4	9.3	301.95	0.1	N/A	27.0	N	N	N/A	N/A
Chlorobenzene	µg/L	297.95	0	4	0.25	301.95	0.003	N/A	800.0	N	N	N/A	N/A

Outfalls 10S, 14S, 15S, 19S, 51S, and 61S

Pollutant	Conc. Units	Upstream Flow (MGD)	Upstream Conc.	Discharge Flow	Discharge Conc.	Downstream Flow (MGD)	Downstream Conc.	Criteria		Reasonable Potential		Limits	
								Acute	Chronic	Acute	Chronic	Acute	Chronic
Aluminum	µg/L	82.73	90.0	0.00228	483.0	82.732	90.01	290.0	170.0	N	N	N/A	N/A
Cadmium	µg/L	82.73	0.0	0.00228	5.3	82.732	0.00014	0.5	0.3	N	N	N/A	N/A
Copper	µg/L	82.73	0.7	0.00228	16.6	82.732	0.700	3.9	2.9	N	N	N/A	N/A
Lead	µg/L	82.73	0.0	0.00228	1.4	82.732	0.00004	14.3	0.6	N	N	N/A	N/A
Nickel	µg/L	82.73	0.0	0.00228	4.4	82.732	0.0056	147.7	16.4	N	N	N/A	N/A

Zinc	µg/L	82.73	0.6	0.00228	150.7	82.732	0.5541	37.6	37.6	N	N	N/A	N/A
Ammonia (Warm)	mg/L	82.73	0.026	0.00228	0.462	82.732	0.0260	9.1	1.2	N	N	N/A	N/A
TRC	mg/L	82.73	0	0.00228	0.147	82.732	0.000004	0.019	0.011	N	N	N/A	N/A
Cyanide	mg/L	82.73	0	0.00228	0.034	82.732	0.000001	0.022	0.005	N	N	N/A	N/A
Chloroform	µg/L	297.95	0	0.00228	56.7	297.9523	0.0004	N/A	2000	N	N	N/A	N/A

Outfall 20S

Pollutant	Conc. Units	Upstream Flow (MGD)	Upstream Conc.	Discharge Flow	Discharge Conc.	Downstream Flow (MGD)	Downstream Conc.	Criteria		Reasonable Potential		Limits	
								Acute	Chronic	Acute	Chronic	Acute	Chronic
Aluminum	µg/L	0	98.5	0.0228	552.0	0.022795	552.0	290.0	170.0	**Y**	N/A	**290.0**	N/A
Copper	µg/L	0	0	0.0228	27.6	0.022795	27.6	2.3	1.8	**Y**	N/A	**2.27**	N/A
Lead	µg/L	0	0	0.0228	15.9	0.022795	15.9	7.0	0.3	**Y**	N/A	**6.99**	N/A
Nickel	µg/L	0	0	0.0228	3.5	0.022795	3.5	91.6	10.2	N	N/A	N/A	N/A
Zinc	µg/L	0	5.5	0.0228	254.6	0.022795	254.6	23.3	23.3	**Y**	N/A	**23.3**	N/A
TRC	µg/L	0	0	0.0228	276.0	0.022795	276.0	19.0	11.0	**Y**	N/A	**19.0**	N/A
Ammonia (Warm)	mg/L	0	0	0.0228	0.5	0.022795	0.5	9.1	1.2	N	N/A	N/A	N/A
Chloroform	mg/L	0	0	0.0228	85.1	0.022795	85.1	N/A	2000	N/A	N/A	N/A	N/A
Dichlorobromomethane	mg/L	0	0	0.0228	7.8	0.022795	7.8	N/A	27.0	N	N/A	N/A	N/A

Outfall 21S

Pollutant	Conc. Units	Upstream Flow (MGD)	Upstream Conc.	Discharge Flow	Discharge Conc.	Downstream Flow (MGD)	Downstream Conc.	Criteria		Reasonable Potential		Limits	
								Acute	Chronic	Acute	Chronic	Acute	Chronic
Aluminum	µg/L	0	98.5	0.0228	1288.0	0.022795	1288.0	290.0	170.0	**Y**	N/A	**290.0**	N/A
Cadmium	µg/L	0	0	0.0228	0.6	0.022795	0.6	0.374	0.210	**Y**	N/A	**0.374**	N/A
Copper	µg/L	0	0	0.0228	78.2	0.022795	78.2	2.9	2.3	**Y**	N/A	**2.93**	N/A
Lead	µg/L	0	0	0.0228	8.3	0.022795	8.3	9.9	0.4	N	N/A	N/A	N/A
Nickel	µg/L	0	0	0.0228	6.2	0.022795	6.2	115.1	12.8	N	N/A	N/A	N/A
Zinc	µg/L	0	5.5	0.0228	570.0	0.022795	570.0	29.3	29.3	**Y**	N/A	**29.3**	N/A
Ammonia (Warm)	mg/L	0	0	0.0228	1.1	0.022795	1.1	9.1	1.2	N	N/A	N/A	N/A
TRC	mg/L	0	0	0.0228	0.2	0.022795	0.2	0.019	0.011	**Y**	N/A	**0.019**	N/A
Cyanide	mg/L	0	0	0.0228	0.037	0.022795	0.0374	0.0220	0.0052	**Y**	N/A	**0.0220**	N/A
PCBs	µg/L	0	0	0.0228	0.4284	0.022795	0.4	0.014	0.000064	**Y**	**Y**	**0.014**	**0.000064**
Chloroform	µg/L	0	0	0.0228	25.066	0.022795	25.1	N/A	80.0	N	N	N/A	N/A

Dichlorobromomethane	µg/L	0	0	0.0228	1.998	0.022795	2.00	N/A	20.0	N	N	N/A	N/A

Appendix D: Whole Effluent Toxicity Analysis

In accordance with current EPA guidance and State policy,[1] whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the LC_{50}. The *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) specifies an acute criterion of 0.3 toxic units (T.U.) and for discharges with dilution factors less than 10 (i.e., 20S and 21S), both acute and chronic end points must be limited as follows: 1) the chronic test should result in a No Observed Effect Concentration greater than or equal to the Receiving Water Concentration (NOEC > RWC); and 2) the acute level should be less than or equal to 1.0 Toxic Unit (an LC50 > 100%). For discharges with dilution factors greater than 20, the chronic end point is not required (acute-only) and for discharges with dilution factors above 100 (i.e., catchbasin 561 and 563, Outfalls 10S, 14S, and 61S) the acute end point is limited to 2.0 Toxic Units (an LC50 > 50%). For this analysis, the following

Outfall Number	Dilution Factor	Criteria
009, at catchbasin 561 and catchbasin 573	414.65	Instream 0.3 T.U. End-of-pipe 2.0 T.U.
10S, 14S, 61S	36,365.84	Instream 0.3 T.U. End-of-pipe 2.0 T.U.
20S	No dilution	Instream 0.3 T.U. End-of-pipe 1.0 T.U.
21S	No dilution	Instream 0.3 T.U. End-of-pipe 1.0 T.U.

To determine whether discharges from the Facility have reasonable potential to cause or contribute to an excursion above this level of toxicity, EPA converted the LC_{50} results for the Facility to toxic units, defined as 100 divided by the LC_{50}.

Next, EPA used the toxic unit equivalents to determine the 95th percentile projected effluent concentration following the methodology described in Appendix C, above. The projected downstream toxicity was calculated by multiplying the 95th percentile by the percent effluent at the edge of the mixing zone (or dividing the 95th percentile by the dilution factor for each outfall, above). The 95th percentiles and downstream concentrations in toxic units (T.U.) for each outfall are as follows:

Outfall Number	95th percentile	Downstream concentration

[1] *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters*. February 23, 1990.

009, at catchbasin 561 Ceriodaphnia	3.9544	0.00954
009, at catchbasin 561 Pimphales	1.2035	0.00290
009, at catchbasin 573 Ceriodaphnia	3.9128	0.00944
009, at catchbasin 573 Pimphales	1.0549	0.00254
10S Ceriodaphnia	4.243	0.000117
10S Pimphales	4.190	0.000115
14SCeriodaphnia	8.523	0.000234
14S Pimphales	6.479	0.000178
61S Ceriodaphnia	48	0.00132
20S Pimphales	1.29	1.29
21S Ceriodaphnia	2.032	2.032
21S Pimphales	2.644	2.644

For Outfall 009 at catchbasin 561 and 573, and Outfalls 10S, 14S and 61S, the estimated downstream toxicity does not 0.3 T.U. However, the projected effluent toxicity exceeds 2.0 T.U. for at least one test species. Therefore, these discharges cause, have a reasonable potential to cause, or contribute to an excursion above State WQSs and limitations for acute toxicity are required.

For Outfalls 20S and 21S, both the estimated downstream toxicity exceeds 0.3 T.U. and the projected effluent toxicity exceeds 1.0 T.U. Therefore, discharges from the Facility have a reasonable potential to cause, or contribute to an excursion above State WQSs and limitations for acute and chronic toxicity are required.

The *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) specifies that the end-of-pipe acute (i.e., LC_{50}) and chronic (i.e., NOEC) limits and requirements as follows:

Outfall Number	Test Type	Limit(s)	Frequency	Species
009, at catchbasin 561 and catchbasin 573	Acute	2.0 T.U.	2/year	Ceriodaphnia
10S, 14S	Acute	2.0 T.U.	2/year	Ceriodaphnia and Pimphales
61S	Acute	2.0 T.U.	2/year	Ceriodaphnia
20S	Acute and chronic	1.0 T.U. NOEC≥RWC	4/year	Pimphales
21S	Acute and chronic	1.0 T.U. NOEC≥RWC	4/year	Pimphales

Appendix E: Derivation of Technology-Based Effluent Limitations for Total Suspended Solids

EPA is required, pursuant to the CWA and its implementing regulations, to assess and apply the appropriate technology-based and water quality-based effluent requirements for this individual NPDES permit. As such, TSS limits included in the Draft Permit are site-specific technology-based effluent limits (TBELs) established using EPA's best professional judgment (BPJ); they are not a strict application of national effluent limitations guidelines or benchmarks from a general permit like the MSGP. As discussed in the Fact Sheet (pp. 10-11), TBELs represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA to meet best practicable control technology currently available (BPT) for conventional and nonconventional pollutants, best available technology economically available (BAT) for toxic and nonconventional pollutants, and best conventional pollutant control technology (BCT) for conventional pollutants. Fact Sheet, p. 5.

Total Suspended Solids (TSS) is a broad, low-cost indicator of stormwater pollution that measures suspended particulate matter in a water sample. As described in the 2019 study that informed revisions to EPA's Multi-Sector General Permit (MSGP): Particulate matter can result from erosion of industrial soils, deposited particulate matter on the drainage area, erosion/corrosion of materials present on the site, and general overall site cleanliness.[2] TSS is a conventional pollutant, and often functions as a primary transport mechanism of other non-conventional and toxic pollutants through adsorption. Thusly, TSS provides information about possible concentrations of other pollutants that will partition onto particulate matter, including metals, and hydrophobic organic pollutants. Control of TSS discharges is thus expected to control of these toxic pollutants. Therefore, discharges of TSS must meet the best available technology economically achievable (BAT) technology standard. While national technology-based effluent limitation guidelines (ELGs) have been promulgated for the types of industrial activities at the site, no ELGs are applicable for the type of discharges from the Facility. Therefore, in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2), EPA is authorized to establish technology-based effluent limitations on a case-by-case basis using its BPJ by applying the appropriate factors listed in 40 CFR § 125.3(d). See Fact Sheet, p. 5. As a result, determining BAT and then developing a TBEL for TSS based on BPJ is appropriate at this Facility.

The BPJ-based, site-specific BAT conditions proposed in the Draft Permit for TSS consist of daily maximum concentration-based limit of 100 mg/L for stormwater discharges, and a daily maximum concentration-based limit of 30 mg/L for groundwater, based on the management of the effluent through best management practices pertaining to solids minimization by implementing a stormwater pollution prevention plan (SWPPP). These conditions and limitations are based on aspects of EPA's 2021 MSGP for Stormwater Discharges Associated with Industrial Activity for Industrial Sectors C, Y, and AD (non-classified facilities), aspects of EPA's 2022 DRGP for Dewatering and Remediation Activity Discharges for wastewaters consisting of groundwater, and/or potable water (i.e., potable water is used for non-contact cooling water at the Facility) resulting from infrastructure dewatering, as well as an assessment of current discharge characteristics. EPA's 2021 MSGP requires that control of total suspended solids through BMPs achieve a benchmark value of 100 mg/L for multiple sectors, and EPA's

[2] *Improving the EPA Multi-Sector General Permit for Industrial Stormwater Discharges.* National Academies of Sciences, Engineering, and Medicine's National Research Council (NRC), 2019: p. 28.

DRGP imposes a numeric limit of 30 mg/L for all wastewaters and activities, above which review and revisions to BMPs and additional monitoring are triggered.
The MSGP benchmark value was derived from the National Urban Runoff Program (NURP) median event mean concentrations for TSS[3] is therefore expected to be the maximum long-term average TSS value of water discharged absent any specific additional treatment. Monitoring data for TSS at this Facility indicates that the maximum TSS concentration has not exceeded 100 mg/L on any occasion at the outfalls that would be subject to this proposed limit (all outfalls except Outfall 21S), except one sampling event at one outfall (Outfall 61S). In other words, 105 of 106 samples analyzed across 8 outfalls and 2 internal sampling locations are expected to already meet the proposed daily maximum limit of 100 mg/L for stormwater.

The DRGP limit was derived based on the application of EPA-promulgated BPT/BCT limitations contained in numerous industrial point source categories and the information in the supporting documentation for those ELGs. As the DRGP Fact Sheet explains, source water consisting of groundwater are generally expected to be lower in TSS than surface waters, particularly surface waters generated during activities where soils and organic materials are being disturbed and comingle with groundwater and/or stormwater. Additional pollutants may also occur in association with TSS when adsorbed to the suspended solids.

Assessment of BAT Based on EPA's BPJ To determine site-specific BAT limitations for TSS, as an indicator pollutant for other toxic pollutants including metals, and toxic organic pollutants such as PCBs, EPA must use its BPJ and consider the following factors: (i) age of the equipment and facilities involved; (ii) process employed; (iii) engineering aspects of the application of various types of control techniques; (iv) process changes; (v) the cost of achieving such effluent reductions; and (vi) non-water quality environmental impacts (including energy requirements). See CWA § 304(b)(2) and 40 CFR § 125.3(d)(3). In establishing a BAT TBEL for TSS, EPA must determine limits based on use of the most effective pollution control technologies that are technologically and economically achievable, and that will result in reasonable progress toward eliminating discharges of the toxic pollutant(s). Ultimately, when setting BAT limits, EPA's consideration of the required factors and determination of BAT is governed by a reasonableness standard.[4]

According to 40 CFR § 125.3(c)(2), in determining BAT requirements, EPA should consider the "appropriate technology for the category of point sources of which the applicant is a member, based on all available information," and also "any unique factors relating to the applicant." EPA is reviewing

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[3] https://www3.epa.gov/npdes/pubs/sw_nurp_vol_1_finalreport.pdf TSS concentrations were considered by land use among all study sites (i.e., residential, mixed use, commercial, and open/non-urban), and the median event mean concentrations for TSS ranged from 67 mg/L to 101 mg/L.

[4] BP Exploration & Oil, Inc. v. EPA, 66 F.3d 784, 796 (6th Cir. 1995), citing American Iron & Steel Institute v. EPA, 526 F.2d 1027, 1051 (3d Cir. 1975), modified in other part, 560 F.2d 589 (3d Cir. 1977), cert. denied, 435 U.S. 914 (1978); Chemical Manufacturers Ass'n v. EPA, 870 F.2d 177, 250 n.320 (5th Cir. 1989) (citing Congressional Research Service, A Legislative History of the Water Pollution Control Act Amendments of 1972 (1973), at 170) (in determining BAT, "[t]he Administrator will be bound by a test of reasonableness."). As one court summarized it, "[s]o long as the required technology reduces the discharge of pollutants, our inquiry will be limited to whether the Agency considered the cost of technology, along with other statutory factors, and whether its conclusion is reasonable." Ass'n of Pacific Fisheries v. EPA, 615 F.2d 794, 818 (9th Cir. 1980).

use of the Facility's existing BMPs included in a SWPPP taking into account site-specific information in its consideration of the six BAT factors below. To review other, different technologies that address TSS (e.g., Adsorption/Absorption, ion exchange, precipitation, sedimentation/filtration), descriptions of these treatment technologies can be found in the Federal Remediation Technology Roundtable Remediation Technologies Screening Matrix and Reference Guide, Version 4.0 (2007).

Outfalls 009 (including catchbasin 561 and 573), 017, 10S, 14S, 15S, 19S, 20S, 51S, and 61S
Treatment: SWPPP, site-specific BMPs
Basis: EPA's 2021 MSGP

EPA's MGSP requires control of total suspended solids through a stormwater pollution prevention plan (SWPPP), including best management practices (BMPs) that achieve a benchmark value of 100 mg/L, and applies to all sectors. Properly designed and implemented BMPs can readily remove TSS to concentrations at or below the proposed TBEL.[5]

Discharge monitoring data included in Appendix A show that concentrations of certain metals and toxic organic pollutants such as PCBs exceed the Massachusetts Surface WQSs numeric criteria under both dry weather and wet weather conditions. As a result, EPA has determined that limitations and conditions in this NPDES permit must control discharges sufficiently to minimize impacts from discharges of solids that act as a mode of transport for these pollutants, to avoid exceedances of State water quality standards, and protect aquatic life and human health. The daily maximum limit of 100 mg/L will be considered for outfalls at the Facility where stormwater is discharged and the BAT is a SWPPP/BMPs, consistent with the 2021 MSGP SWPPP and Control Measure requirements.

1) Age of the equipment and facilities involved

In setting requirements for the development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs, EPA took into consideration the age of equipment and the facilities involved by not directly or immediately requiring that the Permittee make changes to the Facility or install new treatment systems. Further, both the requirement for a SWPPP, and site-specific BMPs pertaining to pollutant control are not new requirements. However, in implementing these BMPs explicitly in the permit, rather than indirectly referencing EPA's regulations and 2021 MSGP, it is contemplated that the Permittee will satisfy the statutory duty to mitigate, including making any changes necessary to properly operate and maintain the stormwater collection system, or taking corrective action where pollutant limits cannot be met through past practices alone, including treatment, if necessary. The Permittee may consider new technologies or plan new systems to be consistent with the goal of overall reduction in the sources of pollutants in accordance with the corrective action process consistent with EPA's 2021 MSGP.

2) Process(es) employed

[5] For reference, the DL for EPA Method 160.2 is 4 mg/L. Where TSS is non-detect, EPA assumes the concentrations are at or below this level.

In setting requirements for the development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs, EPA took into consideration the processes employed. All BMPs to be implemented pursuant to the SWPPP are directly related to processes at the Facility which pose the potential for introduction of pollutant sources into the discharges. Also, the EPA has taken into consideration other requirements relating to the processes employed. For example, the current processes employed at the site include general BMPs pertaining to solids that involve routine operation and maintenance and inspection of the stormwater collection system where solids can accumulate. Again, these requirements are not new or unique to this Facility, and the Permittee has implemented these practices through the SWPPP required in the 2009 Permit. Further BMP (and SWPPP) implementation consistent with the additional BMPs from the MSGP would not interfere with current processes at the property. The BMPs required to be implemented through the SWPPP are designed to give the Permittee flexibility to establish site-specific measures to meet BAT standards required by the Clean Water Act. Providing this flexibility helps to ensure there is minimal interference with processes at the Facility.

3) *Engineering aspects of the application of various types of control techniques*

In setting requirements for the development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs, EPA took into consideration the engineering aspects related to the application of the BMPs. The final permit does not specify in advance that the Permittee must perform specific engineering tasks in order to implement the BMPs required under the SWPPP. Rather, the permit leaves the implementation of site-specific BMPs to the Permittee. As stated above, the pollution prevention plan approach required by EPA gives the Facility flexibility to identify specific stormwater control measures within general constructs and then choose where and how to implement these measures to meet the BAT standards required by the Clean Water Act. This approach is employed instead of imposing prescriptive implementation. Of course, for the BMP framework established by the permit requirements to be effective, selection, design, implementation and operation and maintenance of BMPs must be fully implemented to meet BAT standards.[6] And while the SWPPP provisions in the permit require the Permittee to develop site-specific BMPs, the permit generally does not require specific engineering measures to achieve these goals.

From an engineering standpoint, the Facility is expected to achieve reductions in TSS by maintaining the stormwater collection system and focusing BMPs on source reduction. Finally, implementation of the BMPs will not entail engineered actions or installation of new infrastructure given that they Facility has already demonstrated compliance with the proposed limits at the applicable outfalls in greater than 99% of the TSS samples collected over the previous five years.

Requiring the Permittee to install different treatment technology other than BMPs would involve engineering changes and may interfere with use of the site.

4) Process changes

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[6] *See* Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92-006.

In setting requirements for the development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs, EPA took into consideration process changes. As discussed above, the Facility's stormwater and comingled potable water discharges are currently managed through development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs. Because the Permittee currently engages in a variety of industrial processes, continued implementation of the BMPs would not interfere with current use of the Facility, and likely will not interfere with similar future uses of the property.

While in this permit EPA does not require process changes, this permit does include specific permit requirements that may result in process changes, the extent of which will be determined by the Permittee upon implementation. As stated above, new technologies not currently in use may require process changes and interfere with current or future use of the property.

5) Cost of achieving effluent reductions

The costs associated with development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs, including installation, operation, and maintenance of pollution control technologies, if necessary, are expected to be reasonable compared to the benefits of reducing TSS and related metals and toxic organic pollutants in the discharges from the Facility for the reasons explained below.

This permit borrows from the BAT analysis determinations used when developing the original regulatory requirements for stormwater discharges associated with industrial activities under EPA's General Permits. In a 1992 determination EPA stated that "EPA has determined that all the components of the storm water pollution prevention plan required under today's permits are necessary to reflect BAT/BCT."[7] Additionally, in 1995, EPA made a similar determination when promulgating the Multi-Sector General Permit for Industrial Activities (See 60 FR 50804, Sept. 29, 1995) ("MSGP 1995"). EPA stated that, "EPA believes the pollution prevention approach is the most environmentally sound and cost-effective way to control the discharge of pollutants in storm water runoff from industrial facilities."[8] As noted by EPA, "This position is supported by the results of a comprehensive technical survey EPA completed in 1979."[9] The survey found that two classes of management practices are generally employed at industries to control the non-routine discharge of pollutants from sources such as storm water runoff, drainage from raw material storage and waste disposal areas, and discharges from places where spills or leaks have occurred. The first class of management practices are those that are low in costs, applicable to a broad class of industries and substances, and widely considered essential to a good pollution control program. Some examples of practices in this class are good housekeeping, employee training, and spill response and prevention procedures. The second class includes management practices that provide additional assurance against the introduction of pollutants to discharges. This class addresses containment, mitigation, and cleanup.

[7] *See* 57 FR 41265, Sept. 9, 1992.
[8] See 60 FR 50815, Sept. 29, 1995.
[9] Storm Water Management for Industrial Activities, EPA, September 1992, EPA 832-R-92-006.

Since publication of the 1979 survey, EPA has imposed management practices and controls in NPDES permits on a case-by-case basis. EPA continues to review the appropriateness and effectiveness of such practices, as well as the techniques used to prevent and contain spills of oil and hazardous materials. Although limits are derived on a site-specific basis, these practices and controls have been used extensively in stormwater permits throughout Region 1 and to reduce pollutants in stormwater discharges in a cost-effective manner. In keeping with both the past and present objective to attain environmental goals through pollution prevention, pollution prevention "has been and continues to be the cornerstone for the NPDES Permitting program for storm water." Id. at 50815.

Based on the 1979 survey and other information developed and analysis done in connection with the General Permits, the similar approach being taken in this permit imposes requirements that are cost-effective, and reasonable in terms of the relationship between the cost of attaining a reduction in pollutant discharges and the discharge reduction benefits derived.

In the Preamble Notice for the 1995 Final National Pollutant Discharge Elimination System Storm Water Multi-Sector General Permit for Industrial Activities, 60 Fed. Reg. 50804 (1995) (1995 MSGP), EPA estimated the costs of developing and implementing baseline storm water pollution prevention plans. The high-cost estimates are applicable to development of baseline SWPPPs for larger, more complex facilities with more potential sources of pollutants, such as the Facility. The high-end costs for developing and implementing a plan were estimated to be approximately $120,000 (in 1992 dollars) for the first year. High-end annual costs for implementation were estimated to be approximately $18,000 (in 1992 dollars). Adjusting for inflation using the inflation calculator from the Bureau of Labor Statistics,[10] the cost estimate for developing and implementing a SWPPP in 2023 is approximately $230,565 for the first year and an additional $34,600 for each subsequent year. In addition, since the MSGP estimation did not include the costs of solids-related BMPs for discharges to sediment cleanup sites, an additional 15% was added to the estimate for this permit. The final cost estimate for developing and implementing a storm water pollution prevention plan at the Facility is thus estimated at $265,200 for the first year and about $39,800 for each subsequent year.

Requiring any additional or different treatment technology beyond the current treatment systems as BAT for TSS would result in additional and potentially significant installation fees and capital costs.

6) Non-water quality environmental impacts (including energy requirements)

Finally, EPA considers the non-water quality environmental impacts associated with the treatment of wastewater, including energy consumption, air emissions, noise, and visual impacts. The Permittee has not indicated or provided any information to suggest that development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs result in an increase in energy usage, air emissions and noise as compared to the existing practices prior to this permitting action. EPA does not expect any non-water quality environmental impacts associated with continuing to operate and maintain the stormwater collection system, which conveys groundwater discharges.

[10] CPI Inflation Calculator accessed at: https://www.bls.gov/data/inflation_calculator.htm.

Furthermore, any impacts of implementing the SWPPP and/or BMPs would be minor and will be negligible in considering the activities across the site as a whole.

Outfall 21S
Treatment: General BMP Plan (BMPP), site-specific BMPs
Basis: EPA's 2022 DRGP

EPA's DRGP requires compliance with a numeric TSS limit of 30 mg/L (a daily maximum). See EPA's 2022 DRGP, Part 2.1.1, Table 1-3. The DRGP also requires a best management practices plan (BMP Plan) and includes treatment technologies for pollution control. More specifically, the DRGP applies a daily maximum TSS limit of 30 mg/L for discharges of groundwater, stormwater, potable water and surface waters where the treatment technology consists of one or more of the following: adsorption/absorption, advanced oxidation processes, air stripping, granulated activated carbon (GAC)/liquid phase carbon adsorption, ion exchange, precipitation/coagulation/flocculation, separation/filtration. The 2022 DRGP does not require use of any of these treatment technologies unless necessary to meet the effluent limitations in the permit.

This TBEL was established using BPJ as authorized by §402(a)(1) of the CWA. EPA selected the TSS limitation based on the application of EPA-promulgated BPT/BCT limitations contained in numerous industrial point source categories and the information in the supporting documentation for those ELGs. These examples are based on levels attainable by TSS treatment technologies for wastewaters that include materials and/or wastewaters from that point source category, such as pollutants added through exposure to precipitation or runoff; potable water; groundwater infiltration; or comingling within a collection system. EPA also considered TSS limitations included in NPDES permits for similar dewatering discharges covered under individual permits in Region 1. Examples of effluent limitations for TSS based on similar types of discharges to the Facility are:

- Secondary treatment technology standards at 40 CFR §133 for POTW discharges (including any accepted under a Facility's pretreatment program), 30 mg/L monthly average, and 45 mg/L weekly average;
- Promulgated ELGs at §414.41 for process wastewaters in Thermoplastic Resins, Subpart D, and Commodity Organic Chemical, Subpart E, for example, 40 mg/L monthly average and 130 mg/L daily maximum, and 46 mg/L monthly average and 149 mg/L daily maximum, respectively, based on BPT/BCT;
- Promulgated ELGs at 40 CFR §463.12 for Contact Cooling and Heating Water, Subpart A, 19 mg/L daily maximum, based on BPT;
- EPA Region 1 individual permits for facilities utilizing potable water to conduct hydrostatic testing of pipelines and tanks, 30 mg/L monthly average and 100 mg/L daily maximum based on levels achievable using sedimentation, and based on BPJ; and
- EPA Region 1's Potable Water Treatment Facility General Permit (PWTFGP), 30 mg/L monthly average and 50 mg/L daily maximum based on levels achievable using sedimentation, based on BPJ.

Sites to be covered under the 2005 RGP were consistent with the discharges for which a daily maximum limit of 30 mg/L for TSS could be achieved using existing technology, including BMPs. This informed the issuance of EPA's DRGP (which combined EPA's DGP with EPA's RGP). EPA maintained the daily maximum effluent limitation (30 mg/L) originally established in the 2005 RGP for discharges of groundwater, stormwater, potable water and surface waters.

In consideration of the range of applicability of this TBEL, and the technical factors supporting this limitation, EPA has determined that discharges of groundwater, stormwater, potable water and other wastewaters from this Facility, is most similar to sites "where soils and organic materials are being disturbed and mixed with ground waters or storm waters," as originally considered in the 2005 RGP. Properly designed and implemented BMPs can readily remove TSS to concentrations at or below the proposed TBEL.

Assessment of BAT Based on EPA's BPJ

1) Age of the equipment and facilities involved

In setting requirements for the development of BMPs, including operation and maintenance of the stormwater collection system, EPA took into consideration the age of equipment and the facilities involved by not directly or immediately requiring that the permittees make changes to the systems currently in place or install new treatment systems. However, as noted above, in developing BMPs, it is required that the Permittee will properly operate and maintain the collection systems, including any equipment changes necessary to provide treatment to the wastewaters generated at the site, and consider new technologies or plan new systems to be consistent with the goal of overall reduction in the sources of pollutants. See Part II.B.1.

There is nothing about the age of the equipment and facilities involved that would prevent the ongoing use of the same or similar development and implementation of a SWPPP and BMPs as described above for Outfall 21S.

2) Process(es) employed

In setting requirements for the development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs, EPA took into consideration the processes employed. All BMPs to be implemented pursuant to the SWPPP are directly related to processes at the Facility which pose the potential for introduction of pollutant sources into the discharges through groundwater infiltration. Also, the EPA has taken into consideration other requirements relating to the processes employed. For example, the current processes employed at the site include general BMPs pertaining to solids that involve routine operation and maintenance and inspection of the stormwater collection system where groundwater can contribute solids that accumulate. Again, these requirements are not new or unique to this Facility, and the Permittee has implemented these practices through the SWPPP required in the 2009 Permit. Further BMP (and SWPPP) implementation consistent with the additional BMPs from the DRGP and based on site-specific factors (i.e., non-stormwater discharge detection and elimination activities) would not interfere with current processes at the property.

The BMPs required to be implemented through the SWPPP are designed to give the Permittee flexibility to establish site-specific measures to meet BAT standards required by the Clean Water Act. Providing this flexibility helps to ensure there is minimal interference with processes at the Facility.

3) *Engineering aspects of the application of various types of control techniques*

From an engineering standpoint, the Facility is expected to achieve reductions in TSS by maintaining the stormwater collection system and focusing BMPs on source reduction, including the non-stormwater discharge detection and elimination activities. Finally, implementation of the BMPs will not necessarily entail engineered actions or installation of new infrastructure given that they Facility has already demonstrated compliance with the proposed limit at Outfall 21S in greater than 80% of the TSS samples (i.e., 14 of 17) collected over the previous five years.

The site-specific BMP related to groundwater infiltration, the non-stormwater discharge detection and elimination requirements, primarily focus on incorporating additional observations into the existing inspection requirements and relies on targeted pollutant sampling that is already otherwise routinely conducted under the 2009 Permit.

Requiring the Permittee to install different treatment technology would involve engineering changes and may interfere with use of the site.

4) Process changes

In setting requirements for the development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs that address groundwater infiltration, EPA took into consideration process changes. As discussed above, the Facility's comingled groundwater discharges are currently managed through development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs. Because the Permittee currently engages in a variety of industrial processes, continued implementation of the BMPs would not interfere with current use of the Facility, and likely will not interfere with similar future uses of the property.

While in this permit EPA does not require process changes, this permit does include specific permit requirements that may result in process changes, the extent of which will be determined by the Permittee upon implementation. As stated above, new technologies not currently in use may require process changes and interfere with current or future use of the property.

5) Cost of achieving effluent reductions

The costs associated with development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs, including installation, operation, and maintenance of pollution control technologies, if necessary, are expected to be reasonable compared to the benefits of reducing TSS and related metals and toxic organic pollutants in the discharges from the Facility for the reasons explained below.

This permit borrows from the BAT analysis determinations used when developing EPA's 2022 DRGP, which borrows from the original regulatory requirements for stormwater discharges associated with industrial activities under EPA's General Permits for its BMP Plan and BMP requirements. EPA's DRGP does not require specific pollution control technologies beyond a BMP Plan unless a Permittee elects to employ a specific technology based on site-specific pollutants. Given the similarity between the BMP Plan process and the SWPPP process described above for promulgation of EPA's Multi-Sector General Permit for Industrial Activities (See 60 FR 50804, Sept. 29, 1995) ("MSGP 1995"), EPA believes the pollution prevention approach is the most environmentally sound and cost-effective way to control the discharge of pollutants in groundwater that co-mingles with these same stormwater discharges.

Based on the above-described information provided for the costs associated with the stormwater BMPs developed in connection with the MSGP, and the similar approach being taken in EPA's DRGP, and therefore, this permit, requirements are cost-effective, and reasonable in terms of the relationship between the cost of attaining a reduction in pollutant discharges and the discharge reduction benefits derived.

The final cost estimate for developing and implementing a BMP Plan for co-mingled groundwater and stormwater discharges from Outfall 21S are not expected to differ significantly from the costs of developing and implementing a storm water pollution prevention plan for co-mingled potable water and stormwater at the Facility and is thus estimated at $265,200 for the first year and about $39,800 for each subsequent year.

Requiring any additional or different treatment technology beyond the current treatment systems as BAT for TSS would result in additional and potentially significant installation fees and capital costs.

6) Non-water quality environmental impacts (including energy requirements)

Finally, EPA considers the non-water quality environmental impacts associated with the treatment of wastewater, including energy consumption, air emissions, noise, and visual impacts. The Permittee has not indicated or provided any information to suggest that development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs result in an increase in energy usage, air emissions and noise as compared to the existing practices prior to this permitting action. EPA does not expect any non-water quality environmental impacts associated with continuing to operate and maintain the stormwater collection system, which conveys groundwater discharges. Furthermore, any impacts of implementing the SWPPP and/or BMPs would be minor and will be negligible in considering the activities across the site as a whole.

EPA's Finding

EPA has considered the factors set forth in 40 CFR § 125.3(h)(2)(ii) and finds that the TSS limitations reflects BAT-level control of discharges of TSS, and toxic pollutants present in the waste streams at this Facility.

As required by 40 CFR § 124.56 EPA finds that compliance with the TSS limitations will result in BAT-level control of the toxic pollutant discharges as well and that it would be economically or technically infeasible to directly limit all potential toxic pollutant(s) at these outfalls. The technical infeasibility is both that continuous, ongoing, and complete chemical characterization of the discharges presents significant structural challenges and significant analytical testing costs; further, many State numeric water quality criteria for the protection of human health that apply to toxic organic pollutants that are or may be present in the discharges (e.g., PCBs) cannot be quantified using the sufficiently sensitive test method required in 40 CFR Part 136.

Based on consideration of the appropriate factors above and its best professional judgment, EPA has determined that performance of the existing treatment technologies (i.e., development of a SWPPP, including selection, design, implementation and operation and maintenance of BMPs for all outfalls) is BAT for treatment of TSS at the Facility and minimization of TSS will also reduce other limited toxic pollutants such as metals and toxic organic pollutants such as PCBs. EPA further concludes that the current SWPPP/BMP approach for the discharge of TSS from this site is consistent with technology addressing stormwater and other non-stormwater discharges under EPA's 2021 MSGP and groundwater and stormwater discharges under EPA's 2022 DRGP. While the Facility's discharges are not currently covered by these general permits, the presence of TSS contamination in the Facility's discharges as well as the Facility's existing pollution control is similar with respect to the technology and type of discharges evaluated in these permits.

With respect to benefits, the Region has made a qualitative judgment, in accordance with agency policy and applicable law. The Region's judgment is that the benefits to be expected from this permit are reasonably related to the relatively modest level of costs required to develop the SWPPP and BMPs, which are consistent with similar requirements imposed in prior permits. Also, it is the Region's further preliminary judgment that the benefits to be expected from this permit do appear to be reasonably related to the potential costs for implementation of BMPs, which may be required pursuant to the SWPPP to be developed by the Permittee.

The Region's determinations regarding benefits are consistent with the many determinations that EPA Headquarters has made with respect to the general permits, which have consistently found that similar levels of costs associated with similar required pollution prevention measures meet technology requirements of the Clean Water Act.

In further judging benefits, the Region has made the conservative assumption that the Facility's discharges will meet State water quality standards and anticipates that MassDEP will affirm this assumption in its CWA § 401 certification and include any additional requirements necessary to ensure State water quality standards are met. This does not necessarily mean that discharges of pollutants have been eliminated, and thusly, further reducing discharges of pollutants would have further benefit. Indeed, the Clean Water Act contains the goal of eliminating the discharge of pollutants into waters of the United States. This reflects the judgment of the Congress that any amount of pollution may cause environmental harm.

Finally, the benefits of preventing addition of toxic pollutants that adsorb to solids such as metals and organic pollutants such as PCBs to the receiving water is of benefit. As described previously, the Chicopee River is a Category 5 waterbody for which one or more designated uses are currently impaired. Protecting surface waters from further degradation (or reversing improvements) is therefore reasonable at the projected levels of costs.

Attachment 1: Chemical and Additive Disclosure

Significant Materials Stored Outside on Site & Control Measures

Chemical/ Raw Material/ Product	Form	Storage Container	Quantity	Location	Potential Area/Outfall Impacted	Secondary Containment Y/N	Secondary Containment Type
2-Ethyl Hexyl Acrylate	L	Rail Car	-	Track 836	Process sewer	N	-
	L	Rail Car	-	Track 844	C (017)	N	-
	L	Rail Car	-	Track 846	C (017)	N	-
	L	Rail Car	-	Track 856	Process sewer	N	-
	L	Tank	50,000 gal	T.P. # 5	Process sewer	Y	Concrete Containment Pit
2-Hydroxethyl Acrylate	L	Drum	-	West Drum Storage Lot	Process sewer	Y	Dike + Process Sewer Drain
Glacial Acrylic Acid	L	Carboy	-	Bldg 117	Process sewer	Y	Dike + Process Sewer Drain
A-Crude (*)	L	Tank	74,000 gal	T.P. #7	A (SBS)	Y	Concrete Containment Pit
B-Crude (**)	L	Tank	100,000 gal	T.P. #7	A (SBS)	Y	Concrete Containment Pit
n-Butanol	L	Tank	51,600 gal	T.P. K	C (017)	Y	Concrete Containment Pit
	L	Rail Car	-	Track 835	C (017)	N	-
	L	Rail Car	-	Track 836	C (017) + 2 (10S)	N	-
	L	Rail Car	-	Track 837	C (017)	N	-
	L	Rail Car	-	Track 844	C (017)	N	-
	L	Rail Car	-	Track 852	B (SF)	N	-
	L	Rail Car	-	Track 856	Process sewer	N	-
	L	Rail Car	-	Track 846	C (017)	N	-
	L	Rail Car	-	Track 854	B (SF)	N	-
	L	Drum	-	West Drum Storage Lot	Process sewer	Y	Dike + Process Sewer Drain
Butyl Acrylate	L	Rail Car	-	Track 844	C (017)	N	-
	L	Rail Car	-	Track 846	C (017)	N	-
	L	Rail Car	-	Track 856	Process sewer	N	-
	L	Tank	50,000 gal	T.P. #5	Process sewer	Y	Concrete Containment Pit
Butyraldehyde	L	Rail Car	-	Track 835	C (017)	N	-
	L	Rail Car	-	Track 836	C (017) + 2 (10S)	N	-
	L	Rail Car	-	Track 844	C (017)	N	-
	L	Rail Car	-	Track 846	C (017)	N	-
	L	Tank	35,000 gal	T.P.# 7	A (SBS)	Y	Concrete Containment Pit
	L	Tank	70,000 gal	T.P. K-1	C (017)	Y	Concrete Containment Pit
Calcium Hydroxide (Hydrated	Semi -L	Tank	100,000 gal	T.P. #5	Process sewer	Y	Concrete Containment Pit

Lime)							
Coal (Ash & Particulates)	Solid	Rail Car	-	Building 150	C017	N	-
Dibutyl Maleate	L	Drum		West Drum Storage Lot	Process sewer	Y	Dike + Process Sewer Drain
Diesel Fuel	L	Tank	1,000 gal	T.P. C	C (017)	Y	Concrete Containment Pit
	L	Tank	2,000 gal	South of Bldg 157	C (017)	Y	Concrete Containment Pit
Ethanol	L	Rail Car	-	Track 836	C (017) + 2 (10S)	N	-
	L	Rail Car	-	Track 844	C (017)	N	-
	L	Rail Car	-	Track 846	C (017)	N	-
	L	Tank	75,000 gal	T.P #6	A (SBS)	Y	Concrete Containment Pit
	L	Tank	90,000 gal	T.P. #7	A (SBS)	Y	Concrete Containment Pit
	L	Tank	9,684 gal	T.P. #1	Process sewer	Y	Concrete Containment Pit
Ethyl Acetate	L	Rail Car		Track 844	C (017)	N	-
	L	Rail Car		Track 846	C (017)	N	-
	L	Tank	200,000 gal	T.P. #5	Process sewer	Y	Concrete Containment Pit
	L	Tank	150,000 gal	T.P. #6	A (SBS)	Y	Concrete Containment Pit
	L	Tank	40,000 gal	T.P. #7	A (SBS)	Y	Concrete Containment Pit
	L	Drum	-	West Drum Storage Lot	Process sewer	Y	Dike + Process Sewer Drain
Ethyl Acrylate	L	Tank	10,173 gal	T.P. #1	Process sewer	Y	Concrete Containment Pit
Formalin Solution (44-56%)	L	Tank (Tanks 4,16)	-	T.P. K	C (017)	Y	Concrete Containment Pit
	L	Tank (Tanks 17,18,19,22,23)	-	T.P. K-1	C (017)	Y	Concrete Containment Pit
Gelva Family Products	L	Drum	-	Bldg 117	Process sewer	N	-
	L	Drum	-	West Drum Storage Lot	Process sewer	Y	Dike + Process Sewer Drain
Heptane	L	Tank	9,684 gal	T.P. #1	Process sewer	Y	Concrete Containment Pit
Hexane	L	Tank	10,791 gal	T.P. #1	Process sewer	Y	Concrete Containment Pit
Isobutanol	L	Tank	-	T.P. K	C (017)	Y	Concrete

							Containment Pit
Isopropanol	**L**	**Tank**	**10,221 gal**	**T.P #1**	**C (017)**	**Y**	**Concrete Containment Pit**
		Drum	**-**	**West Drum Storage Lot**	**Process sewer**	**Y**	**Dike + Process Sewer Drain**
	L	**Tank**	**-**	**T.P. K**	**C (017)**	**Y**	**Concrete Containment Pit**
Isopropyl Acetate	**L**	**Drum**	**-**	**West Drum Storage Lot**	**Process sewer**	**Y**	**Dike + Process Sewer Drain**
Methanol	**L**	**Tank**	**79,335 gal**	**T.P. K**	**C (017)**	**Y**	**Concrete Containment Pit**
	L	**Tanks (4,16,5,7,14,21, 24,17,18,19)**	**-**	**T.P. K**	**C (017)**	**Y**	**Concrete Containment Pit**
	L	**Rail Car**	**-**	**Track 835**	**C (017)**	**N**	**-**
	L	**Rail Car**	**-**	**Track 837**	**C (017)**	**N**	**-**
	L	**Rail Car**	**-**	**Track 844**	**C (017)**	**N**	**-**
	L	**Rail Car**	**-**	**Track 846**	**C (017)**	**N**	**-**
	L	**Rail Car**	**-**	**Track 852**	**C (017)**	**N**	**-**
	L	**Rail Car**	**-**	**Track 854**	**C (017)**	**N**	**-**
Methyl Acrylate	**L**	**Tank**	**10,262 gal**	**T.P. #1**	**Process sewer**	**Y**	**Concrete Containment Pit**
Methyl Ethyl Ketone	**L**	**Drum**	**-**	**West Drum Storage Lot**	**Process sewer**	**Y**	**Dike + Process Sewer Drain**
Methyl Methacylate	**L**	**Tank**	**10,173 gal**	**T.P. #1**	**Process sewer**	**Y**	**Concrete Containment Pit**
Nitric Acid	**L**	**Tank**	**9,500 gal**	**T.P. K-1**	**C (017)**	**Y**	**Concrete Containment Pit**
Nitrogen (liquefied)	**L**	**Tank**	**-**	**Building 150**	**C (017)**	**Y**	**Concrete Containment Pit**
Polyvinyl Alcohol	**L**	**Rail Car**	**-**	**Track 835**	**C (017)**	**N**	**-**
	L	**Rail Car**	**-**	**Track 836**	**C (017) + 2 (10S)**	**N**	**-**
	S	**Silo**	**-**	**Bldg 92**	**C (017)**	**N**	**-**
Polyvinyl Butyral – Butvar Resin	**S**	**Bag**	**-**	**Bldg 142**	**A (SBS)**	**N**	**-**
	S	**Silo**	**-**	**Bldg 114**	**Process sewer**	**N**	**-**
	S	**Silo**	**-**	**Bldg 99**	**B (SF)**	**N**	**-**
	S	**Silo**	**-**	**Bldg 92**	**C (017)**	**N**	**-**
	S	**Rail Car**	**-**	**Track 835**	**C (017)**	**N**	**-**
Potassium Hydroxide	**L**	**Tank**	**7,673 gal**	**T.P. #1**	**Process sewer**	**Y**	**Concrete Containment Pit**
Potassium Hydroxide	**L**	**Tank**	**15,000 gal**	**T.P. #7**	**A (SBS)**	**Y**	**Concrete Containment Pit**
Resimene Family of Products	**L**	**Tank**	**94,000 gal**	**T.P. K-2**	**C (017)**	**Y**	**Concrete Containment Pit**

	L	Rail Car	-	Track 837	C (017)	N	-
	L	Rail Car	-	Track 852	B (SF)	N	-
	L	Rail Car	-	Track 854	B (SF)	N	-
S-2075 Plasticizer	L	Tank	50,000 gal	T.P. N	B (SF)	Y	Concrete Containment Pit
	L	Tank	50,000 gal	T.P. N	B (SF)	Y	Concrete Containment Pit
	L	Drums	~100 drums		B (SF)	Y	Concrete Containment Spill Pad
Sodium Hydroxide	L	Tank	-	T.P. K	C (017)	Y	Concrete Containment Pit
Sodium Hypochlorite	L	Tote Bin	-	Bldg 92	C (017)	Y	Containment Pallet
Sulfuric Acid	L	Tank	6,500 gal	T.P. #7	A (SBS)	Y	Concrete Containment Pit
	L	Tote Bin	-	Bldg 131	Process sewer	N	-
Toluene	L	Tank	12,389 gal	T.P. #1	Process sewer	Y	Concrete Containment Pit
Vinyl Acetate	L	Tank	200,000 gal	T.P. #5	Process sewer	Y	Concrete Containment Pit
	L	Tank	5,155 gal	T.P. #1	Process sewer	Y	Concrete Containment Pit
	L	Rail Car	-	Track 836	C (017) + 2 (10S)	N	-
	L	Rail Car	-	Track 844	C (017)	N	-
	L	Rail Car	-	Track 846	C (017)	N	-
	L	Rail Car	-	Track 856	Process sewer	N	-
Wastewater (Process)	L	Tanks	2,000,000 gal	T.P. #8	Process sewer	Y	Concrete Containment Pit
Ammonia	L	Tank	30,000 gal	MassPower	C (017)	Y	Concrete Containment Pit
Fuel Oil #2	L	Tank	1,500,000 gal	MassPower	C (017)	Y	Concrete Containment Pit
Fuel Oil #4	L	Tank	40,000 gal	MassPower	C (017)	Y	Concrete Containment Pit
Gasoline	L	Tank	940 gal	T.P. C	C (017)	Y	Concrete Containment Pit
Propane	G	Cylinder	> 1	E of Bldg 96		N	
Waste Plasticizer	L	Drums	~100 drums	W of Bldg 99	B (SF)	Y	Concrete Containment Spill Pad
GMS Hazardous Waste	L	Tank	7,000 gal	T.P. #4	Process sewer	Y	Concrete Containment Pit

(*) Contains Ethanol, Ethyl Acetate, and Sulfuric Acid

(**)Contains Ethanol, Ethyl Acetate, Sulfuric Acid and Butyraldehyde

1. No material has been treated, or disposed of in a manner to allow exposure to stormwater.
2. There is no treatment of stormwater.
3. Any material meeting the definition of RCRA hazardous waste, non-hazardous waste or solid waste is managed by approved vendors to offsite TSDF, recycle centers or approved landfills.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1 (EPA)
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

EPA PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED.

PUBLIC NOTICE PERIOD: January 21, 2025 – February 20, 2025

PERMIT NUMBER: MA0001147

NAME AND MAILING ADDRESS OF APPLICANT:

Solutia, Inc., A Subsidiary of Eastman Chemical Company
730 Worcester Street
Springfield, MA 01151

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Indian Orchard Plant
730 Worcester Street
Springfield, MA

RECEIVING WATER AND CLASSIFICATION:

Chicopee River (Class B)
Bircham Bend Brook (Class B)

PREPARATION OF THE DRAFT PERMIT:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Solutia, Inc. facility, which discharges non-contact cooling water, stormwater and groundwater. The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice their CWA § 401 certification and a separate state Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits or by contacting:

Shauna Little
Telephone: (617) 918-1989
Email: little.shauna@epa.gov

Any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by **February 20, 2025,** which is the close of the public comment period. Comments should be submitted to the EPA contact at the email listed above. If you prefer to submit comments by mail, please call or email the EPA contact above to make arrangements for that. Upon the close of the public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (*i.e.*, the separate state permit and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities.

Any person, prior to the close of the EPA public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit under 40 CFR § 124.10. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the Regional Administrator finds that response to this notice indicates significant public interest.

In reaching a final decision on this Draft Permit, the Regional Administrator will respond to all significant comments and make the responses available to the public.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and notify the applicant and each person who has submitted written comments or requested notice.

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. EPA – REGION 1