



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Permit No.: VA0005291
Effective Date:
Expiration Date:

AUTHORIZATION TO DISCHARGE UNDER THE
VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM
AND
THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the information submitted with the permit application, and with this permit cover page, Part I - Effluent Limitations and Monitoring Requirements, Part II — Conditions Applicable To All VPDES Permits, and Part III – Industrial Stormwater Management Conditions and Requirements, as set forth herein.

Owner: AdvanSix Resins and Chemicals LLC
Facility Name: AdvanSix Resins and Chemicals LLC — Hopewell
City: Hopewell
County: NA
Facility Location: 905 East Randolph Road, Hopewell, VA 23860

The owner is authorized to discharge to the following receiving stream:

Stream: Gravelly Run, Poythress Run, and James River
River Basin: James River
River Subbasin: Lower James River
Section: 1
Class: II
Special Standards: bb

Deputy Regional Director, Piedmont Regional Office

Date

A. Limitations and Monitoring Requirements – Outfall 999 (Combined Outfalls 001, 002, 003 and 005)

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from Outfalls 001, 002, 003, and 005 combined (Outfall 999).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
159 Five Day Carbonaceous Biochemical Oxygen Demand (cBOD ₅) (kg/d)	NL	NA	NA	NL	Monitoring requirements are specified in Parts I.A.3, I.A.7, I.A.8. and I.A.20 for Outfalls 001, 002, 003, and 005 respectively.	
429 cBOD ₅ – Intake (kg/d)	NL	NA	NA	NL	1 per Month	24 Hour Composite

“NL” means no limitation is established. Monitoring and reporting however are required.
 “NA” means not applicable.

A. Limitations and Monitoring Requirements – Outfall 998 (Combined Outfalls 001 and 002)

2. During the period beginning with the permit's effective date and lasting until the permit's expiration date, whichever is first, the permittee is authorized to discharge from Outfalls 001 and 002 combined.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS		
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
630 Heat (BTU/Day X 10 ¹⁰) (2)	NA		NA	NA	14.5		Monitoring requirements are specified in Parts I.A.3 and I.A.7 for Outfalls 001 and 002, respectively.	
039 Ammonia (as N) Interim (1)(3)	1.72	516	NA	NA	2.87	1001		
039 Ammonia (as N) Final (1)(3)	0.746	382	NA	NA	1.02	523		

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“Interim” limitation is effective at the date of permit issuance.

“Final” limitation is effective per Part I.D Milestone 3

(1) These limitations are expressed in three (3) significant figures.

(2) See Part I.C.12 for more information regarding heat and ammonia calculations for this outfall

(3) See Part I.D.1 for Extended Schedule of Compliance for Ammonia.

A. Limitations and Monitoring Requirements – Outfall 001

3. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall serial number 001 (once through, non-contact cooling water; Outfalls 101, 102, 103 and 901).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
001 Flow (MGD)	NL		NA	NA	NL		Continuous ⁽³⁾	Recorded ⁽³⁾
002 pH (standard units) ⁽¹⁾	NA		NA	6.0	9.0			
630 Heat (BTU/Day x10 ¹⁰) ⁽²⁾	NA		NA	NA	NL			
159 cBOD ₅	NL	NL	NA	NA	NL	NL	1 per Month	24 HC
224 Total Organic Carbon (TOC) (net)	NL	NL	NA	NA	10 ⁽⁴⁾	NL	1 per Day	Calculated ⁽⁵⁾
039 Ammonia (as N)	NL	NL	NA	NA	NL	NL	1 per Week	24 HC
865 Dissolved Oxygen (DO) ⁽⁶⁾	6.1 mg/L (minimum)		NA	NA	NA	NA	1 per Day	Grab
012 Total Phosphorus	2.0	NA	NA	NA	NA	NA	1 per Month	Grab
720 Toxicity, Chronic 3-Brood C. <i>dubia</i> Static Renewal 48 hour (TUc)	NL		NA	NA	NA		1 per Year	24 HC

"NL" means no limitation is established. Monitoring and reporting however are required.

"NA" means not applicable.

"24 HC" means 24 hour composite sample.

"1 per Year" means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

(1) See Part I.C.7 for pH excursion allowances.

(2) See Part I.C.12 for additional heat calculation instructions.

(3) The heat calculation requires information on effluent flow and temperature. Those values shall be continuously measured and recorded.

(4) This permit limitation is expressed in two (2) significant figures.

(5) TOC samples shall be 24 HC. See Part I.C.11 for additional calculation and reporting requirements.

(6) See Part I.C.10 for additional DO requirements.

b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

c. Effluent samples shall be taken at Outfall 001.

- d. In addition to any Total Nitrogen or Total Phosphorus concentration limits (or monitoring requirements without associated limits) listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040082, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Dischargers and Nutrient Trading in the Chesapeake Watershed in Virginia.

A. Limitations and Monitoring Requirements – Outfall 101

- 4a. During the period beginning with the permit's effective date and lasting until notification of condenser shutdown per Part I.C.27, or until the permit's expiration date, whichever is first, the permittee is authorized to discharge from Outfall 101* (contact cooling water from ammonium fertilizer manufacturing).

* Outfall 101 consists of the discharge from two barometric condensers. Each condenser discharge shall be sampled in accordance with these requirements and the samples combined to form the sample from outfall 101.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
001 Flow (MGD)	NL		NA	NA	NL		1 per Day	Estimate
002 pH (S.U.)	NL		NA	6.0	9.0		1 per Week	Grab
039 Ammonia (as N)	NL	NL	NA	NA	NL	NL	1 per Week	24 HC
159 cBOD ₅	NL	1,247	NA	NA	NL	6,700 ⁽¹⁾	1 per Week	24 HC
004 Total Suspended Solids (TSS)	NL	4,300 ⁽¹⁾	NA	NA	NL	14,000 ⁽¹⁾	1 per Week	24 HC
273 Acenaphthene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
274 Acenaphthylene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
204 Acrylonitrile	NL	8.3	NA	NA	NL	20.4	1 per Year	Grab
275 Anthracene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
216 Benzene	NL	5.0 ⁽¹⁾	NA	NA	NL	11.8	1 per Year	Grab
276 Benzo(a)anthracene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
271 3,4-Benzofluoranthene	NL	1.8	NA	NA	NL	4.2	1 per Year	Grab
278 Benzo(k)fluoranthene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
277 Benzo(a)pyrene	NL	1.8	NA	NA	NL	4.2	1 per Year	Grab
170 Bis(2-ethylhexyl) phthalate	NL	8.3	NA	NA	NL	22.7	1 per Year	Grab
236 Carbon Tetrachloride	NL	12.5	NA	NA	NL	33.4	1 per Year	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
280 Chlorobenzene	NL	12.5	NA	NA	NL	33.4	1 per Year	Grab
281 Chloroethane	NL	9.7	NA	NA	NL	25.9	1 per Year	Grab
223 Chloroform	NL	9.7	NA	NA	NL	28.5	1 per Year	Grab
282 Chrysene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
206 Di-n-butyl phthalate	NL	1.8	NA	NA	NL	3.8	1 per Year	Grab
259 1,2-Dichlorobenzene	NL	17.2	NA	NA	NL	69.7	1 per Year	Grab
264 1,3-Dichlorobenzene	NL	12.5	NA	NA	NL	33.4	1 per Year	Grab
266 1,4-Dichlorobenzene	NL	12.5	NA	NA	NL	33.4	1 per Year	Grab
378 1,1-Dichloroethane	NL	1.9	NA	NA	NL	5.2	1 per Year	Grab
260 1,2-Dichloroethane	NL	15.8	NA	NA	NL	50.4	1 per Year	Grab
258 1,1-Dichloroethylene	NL	1.9	NA	NA	NL	5.3	1 per Year	Grab
262 1,2-trans-Dichloroethylene	NL	2.2	NA	NA	NL	5.8	1 per Year	Grab
261 1,2-Dichloropropane	NL	17.2	NA	NA	NL	69.7	1 per Year	Grab
265 1,3-Dichloropropylene	NL	17.2	NA	NA	NL	69.7	1 per Year	Grab
285 Diethyl phthalate	NL	4.0 ⁽¹⁾	NA	NA	NL	9.9	1 per Year	Grab
269 2,4-Dimethylphenol	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
286 Dimethyl phthalate	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
208 4,6-Dinitro-o-creosol	NL	6.8	NA	NA	NL	24.3	1 per Year	Grab
270 2,4-Dinitrophenol	NL	106.0 ⁽²⁾	NA	NA	NL	376.8	1 per Year	Grab
172 Ethylbenzene	NL	12.5	NA	NA	NL	33.4	1 per Year	Grab
287 Fluoranthene	NL	1.9	NA	NA	NL	4.7	1 per Year	Grab
288 Fluorene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
289 Hexachlorobenzene	NL	17.2	NA	NA	NL	69.7	1 per Year	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
290 Hexachlorobutadiene	NL	12.5	NA	NA	NL	33.4	1 per Year	Grab
291 Hexachloroethane	NL	17.2	NA	NA	NL	69.7	1 per Year	Grab
292 Methyl Chloride	NL	9.7	NA	NA	NL	25.9	1 per Year	Grab
205 Methylene Chloride	NL	3.2	NA	NA	NL	14.9	1 per Year	Grab
293 Naphthalene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
294 Nitrobenzene	NL	196.4	NA	NA	NL	562.2	1 per Year	Grab
209 2-Nitrophenol	NL	5.7	NA	NA	NL	20.3	1 per Year	Grab
272 4-Nitrophenol	NL	14.2	NA	NA	NL	50.6	1 per Year	Grab
295 Phenanthrene	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
017 Phenol	NL	1.7	NA	NA	NL	4.1	1 per Year	Grab
296 Pyrene	NL	1.8	NA	NA	NL	4.2	1 per Year	Grab
220 Tetrachloroethylene	NL	4.6	NA	NA	NL	14.4	1 per Year	Grab
222 Toluene	NL	2.5	NA	NA	NL	6.5	1 per Year	Grab
263 1,2,4-Trichlorobenzene	NL	17.2	NA	NA	NL	69.7	1 per Year	Grab
218 1,1,1-Trichloroethane	NL	1.9	NA	NA	NL	5.2	1 per Year	Grab
373 1,1,2-Trichloroethane	NL	2.8	NA	NA	NL	11.2	1 per Year	Grab
155 Trichloroethylene	NL	2.3	NA	NA	NL	6.1	1 per Year	Grab
173 Vinyl Chloride	NL	8.5	NA	NA	NL	15.1	1 per Year	Grab

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“24 HC” means 24 hour composite sample

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

- (1) These limitations are expressed in two (2) significant digits.
- (2) This limitation is expressed in four (4) significant digits.

A. Limitations and Monitoring Requirements – Outfall 101

4b. During the period beginning with the notification of condenser shutdown per Part I.C.27, and lasting until the permit's expiration date, the permittee is authorized to discharge from Outfall 101* (contact cooling water from ammonium fertilizer manufacturing).

* Outfall 101 is the discharge from the barometric condenser.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
001 Flow (MGD)	NL		NA	NA	NL		1 per Day	Estimate
002 pH (S.U.)	NL		NA	6.0	9.0		1 per Week	Grab
039 Ammonia (as N)	NL	NL	NA	NA	NL	NL	1 per Week	24 HC
159 cBOD ₅	NL	1,247	NA	NA	NL	4,000 ⁽¹⁾	1 per Week	24 HC
004 Total Suspended Solids (TSS)	NL	2,600	NA	NA	NL	8,400	1 per Week	24 HC
273 Acenaphthene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
274 Acenaphthylene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
204 Acrylonitrile	NL	4.9	NA	NA	NL	12.2	1 per Year	Grab
275 Anthracene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
216 Benzene	NL	3.0	NA	NA	NL	7.0	1 per Year	Grab
276 Benzo(a)anthracene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
271 3,4-Benzofluoranthene	NL	1.1	NA	NA	NL	2.5	1 per Year	Grab
278 Benzo(k)fluoranthene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
277 Benzo(a)pyrene	NL	1.1	NA	NA	NL	2.5	1 per Year	Grab
170 Bis(2-ethylhexyl) phthalate	NL	5.0	NA	NA	NL	13.6	1 per Year	Grab
236 Carbon Tetrachloride	NL	7.5	NA	NA	NL	20.0	1 per Year	Grab
280 Chlorobenzene	NL	7.5	NA	NA	NL	20.0	1 per Year	Grab
281 Chloroethane	NL	5.8	NA	NA	NL	15.5	1 per Year	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
223 Chloroform	NL	5.8	NA	NA	NL	17.1	1 per Year	Grab
282 Chrysene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
206 Di-n-butyl phthalate	NL	1.1	NA	NA	NL	2.3	1 per Year	Grab
259 1,2-Dichlorobenzene	NL	10.3	NA	NA	NL	41.8	1 per Year	Grab
264 1,3-Dichlorobenzene	NL	7.5	NA	NA	NL	20.0	1 per Year	Grab
266 1,4-Dichlorobenzene	NL	7.5	NA	NA	NL	20.0	1 per Year	Grab
378 1,1-Dichloroethane	NL	1.2	NA	NA	NL	3.1	1 per Year	Grab
260 1,2-Dichloroethane	NL	9.5	NA	NA	NL	30.2	1 per Year	Grab
258 1,1-Dichloroethylene	NL	1.2	NA	NA	NL	3.2	1 per Year	Grab
262 1,2-trans-Dichloroethylene	NL	1.3	NA	NA	NL	3.5	1 per Year	Grab
261 1,2-Dichloropropane	NL	10.3	NA	NA	NL	41.8	1 per Year	Grab
265 1,3-Dichloropropylene	NL	10.3	NA	NA	NL	41.8	1 per Year	Grab
285 Diethyl phthalate	NL	2.4	NA	NA	NL	5.9	1 per Year	Grab
269 2,4-Dimethylphenol	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
286 Dimethyl phthalate	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
208 4,6-Dinitro-o-creosol	NL	4.1	NA	NA	NL	14.6	1 per Year	Grab
270 2,4-Dinitrophenol	NL	63.5	NA	NA	NL	225.8	1 per Year	Grab
172 Ethylbenzene	NL	7.5	NA	NA	NL	20.0	1 per Year	Grab
287 Fluoranthene	NL	1.2	NA	NA	NL	2.8	1 per Year	Grab
288 Fluorene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
289 Hexachlorobenzene	NL	10.3	NA	NA	NL	41.8	1 per Year	Grab
290 Hexachlorobutadiene	NL	7.5	NA	NA	NL	20.0	1 per Year	Grab
291 Hexachloroethane	NL	10.3	NA	NA	NL	41.8	1 per Year	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
292 Methyl Chloride	NL	5.8	NA	NA	NL	15.5	1 per Year	Grab
205 Methylene Chloride	NL	1.9	NA	NA	NL	8.9	1 per Year	Grab
293 Naphthalene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
294 Nitrobenzene	NL	117.7	NA	NA	NL	336.8	1 per Year	Grab
209 2-Nitrophenol	NL	3.4	NA	NA	NL	12.2	1 per Year	Grab
272 4-Nitrophenol	NL	8.5	NA	NA	NL	30.3	1 per Year	Grab
295 Phenanthrene	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
017 Phenol	NL	1.0	NA	NA	NL	2.5	1 per Year	Grab
296 Pyrene	NL	1.1	NA	NA	NL	2.5	1 per Year	Grab
220 Tetrachloroethylene	NL	2.7	NA	NA	NL	8.6	1 per Year	Grab
222 Toluene	NL	1.5	NA	NA	NL	3.9	1 per Year	Grab
263 1,2,4-Trichlorobenzene	NL	10.3	NA	NA	NL	41.8	1 per Year	Grab
218 1,1,1-Trichloroethane	NL	1.2	NA	NA	NL	3.1	1 per Year	Grab
373 1,1,2-Trichloroethane	NL	1.7	NA	NA	NL	6.7	1 per Year	Grab
155 Trichloroethylene	NL	1.4	NA	NA	NL	3.6	1 per Year	Grab
173 Vinyl Chloride	NL	5.1	NA	NA	NL	9.0	1 per Year	Grab

"NL" means no limitation is established. Monitoring and reporting however are required.

"NA" means not applicable.

"24 HC" means 24 hour composite sample

"1 per Year" means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

(1) These limitations are expressed in two (2) significant digits.

A. Limitations and Monitoring Requirements – Outfall 302

5. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 302 (oil/water separator at the Kellogg Unit).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
001 Flow (MGD)	NL		NA	NA	NL		1 per Month	Estimate
257 Total Petroleum Hydrocarbons – Diesel Range Organics (TPH - DRO) ⁽¹⁾	NL	NA	NA	NA	15	NA	1 per Month	Grab

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

⁽¹⁾ (TPH) diesel range organics (TPH-DRO) shall be measured by EPA SW 846 Method 8015, or by EPA SW 846 Methods 8260 Extended and 8270 Extended.

b. Effluent samples shall be taken at Outfall 302.

A. Limitations and Monitoring Requirements – Outfall 103

6. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 103 (discharge from the oil/water separator for the floor drain system in the Power House).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
001 Flow (MGD)	NL		NA	NA	NL		1 per Month	Estimate
257 Total Petroleum Hydrocarbons – Diesel Range Organics (TPH - DRO) ⁽¹⁾	NL	NA	NA	NA	15	NA	1 per Month	Grab
004 Total Suspended Solids (TSS) ⁽²⁾	30	NL	NA	NA	100	NL	1 per Month	Grab

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

(1) TPH diesel range organics (TPH-DRO) shall be measured by EPA SW 846 Method 8015 or by EPA SW 846 Methods 8260 Extended and 8270 Extended.

(2) All limitations are expressed in two (2) significant digits.

b. Effluent samples shall be taken at Outfall 103.

A. Limitations and Monitoring Requirements – Outfall 002

7. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall serial number 002 (once through, non-contact cooling water; cooling tower blowdown; emergency deluge system⁽⁷⁾; and Outfall 902).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
001 Flow (MGD)	NL		NA	NA	NL		Continuous ⁽³⁾	Recorded ⁽³⁾
002 pH (standard units) ⁽¹⁾	NA		NA	6.0	9.0			
630 Heat (BTU/Day X 10 ¹⁰) ⁽²⁾	NA		NA	NA	NL			
159 cBOD ₅	NL	NL	NA	NA	NL	NL	1 per Month	24 HC
224 Total Organic Carbon (TOC) (net)	NL	NL	NA	NA	10 ⁽⁴⁾	NL	1 per Day	Calculated ⁽⁵⁾
039 Ammonia (as N)	NL	NL	NA	NA	NL	NL	1 per Week	24 HC
865 Dissolved Oxygen (DO) ⁽⁶⁾	6.1 mg/L (minimum)		NA	NA	NA	NA	1 per Day	Grab
012 Total Phosphorus	2.0	NA	NA	NA	NA	NA	1 per Month	Grab
720 Toxicity, Chronic 3-Brood C. <i>dubia</i> Static Renewal 48 hour (TUc)	NL		NA	NA	NA		1 per Year	24 HC

"NL" means no limitation is established. Monitoring and reporting however are required.

"NA" means not applicable.

"1 per Year" means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

(1) See Part I.C.7 for pH excursion allowances.

(2) See Part I.C.12 for additional heat calculation instructions.

(3) The heat calculation requires information on effluent flow and temperature. Those values shall be continuously measured and recorded.

(4) This permit limitation is expressed in two (2) significant figures.

(5) TOC samples shall be 24 HC. See Part I.C.11 for additional calculation and reporting requirements.

(6) See Part I.C.10 for additional DO requirements.

(7) See Special Condition Part I.C.9

- b. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- c. See Special Condition Part I.C.9 regarding emergency deluge system.
- d. Effluent samples shall be taken at Outfall 002.

In addition to any Total Nitrogen or Total Phosphorus concentration limits (or monitoring requirements without associated limits) listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040082, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Dischargers and Nutrient Trading in the Chesapeake Watershed in Virginia.

A. Limitations and Monitoring Requirements – Outfall 003

8. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall serial number 003 (once through, non-contact cooling water; cooling tower blowdown; regeneration wastewater from ion exchange units; and Outfall 903).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS		
	MONTHLY AVERAGE		WEEKLY AVERAGE	MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d			mg/L	kg/d		
001 Flow (MGD)	NL		NA	NA	NL		Continuous ⁽³⁾	Recorded ⁽³⁾
002 pH (standard units) ⁽¹⁾	NA		NA	6.0	9.0			
630 Heat (BTU/Day X 10 ¹⁰) ⁽²⁾	NA		NA	NA	1.5			
159 cBOD ₅	NL		NA	NA	NL		1 per Month	24 HC
224 Total Organic Carbon (TOC) (net)	NL		NA	NA	10 ⁽⁴⁾ mg/L		1 per Day	Calculated ⁽⁵⁾
039 Ammonia (as N)	NL	719	NA	NA	NL	1,438	1 per Week	24 HC
865 Dissolved Oxygen (DO) ⁽⁶⁾	6.1 mg/L (minimum)		NA	NA	NA	NA	1 per Day	Grab
012 Total Phosphorus	2.0 mg/L		NA	NA	NA	NA	1 per Month	Grab
720 Toxicity, Chronic 3-Brood <i>C. dubia</i> Static Renewal 48 hour (TUc)	NL		NA	NA	NA		1 per Year	24 HC

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

(1) See Part I.C.7 for pH excursion allowances.

(2) See Part I.C.12 for additional heat calculation instructions.

(3) The heat calculation requires information on effluent flow and temperature. Those values shall be continuously measured and recorded.

(4) This permit limitation is expressed in two (2) significant figures.

(5) TOC samples shall be 24 HC. See Part I.C.11 for additional calculation and reporting requirements.

(6) See Part I.C.10 for additional DO requirements.

b. There shall be no discharge of floating solids or visible foam in other than trace amounts.

c. Effluent samples shall be taken at Outfall 003.

In addition to any Total Nitrogen or Total Phosphorus concentration limits (or monitoring requirements without associated limits) listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040082, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Dischargers and Nutrient Trading in the Chesapeake Watershed in Virginia.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfalls 901 and 902

9. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall numbers 901 (stormwater to Outfall 001) and 902 (stormwater to Outfall 002).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾⁽⁶⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
004 Total Suspended Solids (TSS) (mg/L)	NA	NL	1 per 6 Months for 2 Years	Grab ⁽²⁾
068 Total Kjeldahl Nitrogen (TKN) (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months for 2 Years	Grab ⁽²⁾
389 Nitrite + Nitrate ⁽⁴⁾	NA	NL	1 per 6 Months for 2 Years	Grab ⁽²⁾
137 Hardness as CaCO ₃ (mg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
410 Total Recoverable Aluminum (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> Static 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾

"NL" means no limitation is established. Monitoring and reporting however are required.

"NA" means not applicable.

"1 per 3 Months" means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

"1 per 6 Months" means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year)

"1 per Year" means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year).

- (1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating "No Discharge." See Part II.B.2 for additional requirements.
 - (2) See monitoring requirements in Part III.B.1.
 - (3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests
 - (4) See Part I.C.17 for nutrient reporting requirements
 - (5) Each annual test for Toxicity shall be conducted from the same sample as the quarterly Ammonia, Total Recoverable Zinc, and Dissolved Copper for that reporting period.
-
- b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).
 - c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.
 - d. Outfall 901 is the designated stormwater sampling point for the 34.52 industrial acres that drain to the process/cooling water Outfall 001. Outfall 902 is the designated stormwater sampling point for the 2.45 industrial acres that drain to non-contact cooling water Outfall 002. See Special Condition I.C.21 regarding the identification of the designated sampling point, and annual testing and reporting requirements.
 - e. The drainage point ID number used as the designated sampling point shall be noted on the DMR.
 - f. Drainage point ID 1038 shall be used as the sample point for 901 until it is superseded by the approved Adaptive Management Plan. Drainage point ID 2027 shall be used as the sample point for 902 until it is superseded by the approved Adaptive Management Plan.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfall 903

10. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 903 (stormwater to Outfall 003).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
004 Total Suspended Solids (TSS) (mg/L)	NA	NL	1 per 6 Months for 2 Years	Grab ⁽²⁾
068 Total Kjeldahl Nitrogen (TKN) (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months for 2 Years	Grab ⁽²⁾
389 Nitrite + Nitrate ⁽⁴⁾	NA	NL	1 per 6 Months for 2 Years	Grab ⁽²⁾
137 Hardness as CaCO ₃ (mg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> Static 48 hour (TUa)	NA	NL	1 per Year	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per Year	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

- (1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating "No Discharge." See Part II.B.2 for additional requirements.
 - (2) See monitoring requirements in Part III.B.1.
 - (3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests
 - (4) See Part I.C.17 for nutrient reporting requirements
-
- b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).
 - c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.
 - d. Outfall 903 is the designated stormwater sampling point for the 8.25 industrial acres that drain to Outfall 003. See Special Condition I.C.21 regarding the identification of the designated sampling point, and annual testing and reporting requirements.
 - e. The drainage point ID number used as the designated sample point shall be noted on the DMR.
 - f. Drainage point ID 3050 shall be used as the sample point for 909 until it is superseded by the approved Adaptive Management Plan.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfalls 904

11. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 904.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

(1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating “No Discharge.” See Part II.B.2 for additional requirements.

(2) See monitoring requirements in Part III.B.1.

(3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests

(4) See Part I.C.17 for nutrient reporting requirements

(5) Each annual test for Toxicity shall be conducted from the same sample as the quarterly Ammonia, Total Recoverable Zinc, and Dissolved Copper for that reporting period.

b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).

c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfalls 905 and 906

12. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall numbers 905 and 906.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
410 Total Recoverable Aluminum (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

(1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating “No Discharge.” See Part II.B.2 for additional requirements.

(2) See monitoring requirements in Part III.B.1.

(3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests

(4) See Part I.C.17 for nutrient reporting requirements

(5) Each annual test for Toxicity shall be conducted from the same sample as the quarterly Ammonia, Total Recoverable Zinc, and Dissolved Copper for that reporting period.

b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).

c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfalls 907

13. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall numbers 907.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

(1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating “No Discharge.” See Part II.B.2 for additional requirements.

(2) See monitoring requirements in Part III.B.1.

(3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests

(4) See Part I.C.17 for nutrient reporting requirements

(5) Each annual test for Toxicity shall be conducted from the same sample as the quarterly Ammonia, Total Recoverable Zinc, and Dissolved Copper for that reporting period.

- b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).
- c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfall 908

14. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 908.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
137 Hardness as CaCO ₃ (mg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> 48 hour (TUa)	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

(1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating “No Discharge.” See Part II.B.2 for additional requirements.

(2) See monitoring requirements in Part III.B.1.

(3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests

(4) See Part I.C.17 for nutrient reporting requirements

(5) Each semi-annual test for Toxicity shall be conducted from the same sample as the quarterly Ammonia, Total Recoverable Zinc, and Dissolved Copper for that reporting period.

- b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).
- c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfall 909

15. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 909.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
137 Hardness as CaCO ₃ (mg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
410 Total Recoverable Aluminum (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> 48 hour (TUa)	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

(1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating “No Discharge.” See Part II.B.2 for additional requirements.

(2) See monitoring requirements in Part III.B.1.

(3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests

(4) See Part I.C.17 for nutrient reporting requirements

(5) Each semi-annual test for Toxicity shall be conducted from the same sample as the quarterly Ammonia, Total Recoverable Zinc, and Dissolved Copper for that reporting period.

b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).

c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfall 910

16. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 910.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
004 Total Suspended Solids (TSS) (mg/L)	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months ⁽⁵⁾	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
068 Total Kjeldahl Nitrogen (TKN) (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾
389 Nitrite + Nitrate ⁽⁴⁾	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾
137 Hardness as CaCO ₃ (mg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
448 Dissolved Zinc (µg/L)	NA	NL	1 per 3 Months	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
410 Total Recoverable Aluminum (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> 48 hour (TUa)	NA	NL	1 per Year	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per Year	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1–September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year).

(1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating "No Discharge." See Part II.B.2 for additional requirements.

(2) See monitoring requirements in Part III.B.1.

(3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests

(4) See Part I.C.17 for nutrient reporting requirements

(5) A total of 3 sample are required for TKN, Nitrate+Nitrite, Total Nitrogen, and Total Phosphorus

b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).

c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfall 911

17. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 911.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 6 Months ⁽⁵⁾	Grab ⁽²⁾
410 Total Recoverable Aluminum (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year).

- (1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating “No Discharge.” See Part II.B.2 for additional requirements.
- (2) See monitoring requirements in Part III.B.1.
- (3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests
- (4) See Part I.C.17 for nutrient reporting requirements

- (5) Each annual test for Toxicity shall be conducted from the same sample as the quarterly Ammonia, Total Recoverable Zinc, and Dissolved Copper for that reporting period.
- b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).
- c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfall 912

18. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall number 912.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 3 Months	Estimate
002 pH (standard units)	NL	NL	1 per 3 Months	Grab ⁽²⁾
004 Total Suspended Solids (TSS) (mg/L)	NA	NL	1 per 6 Months ⁽⁶⁾	Grab ⁽²⁾
012 Total Phosphorus (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Grab ⁽²⁾
013 Total Nitrogen (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months	Calculated ⁽³⁾
039 Ammonia (as N) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
068 Total Kjeldahl Nitrogen (TKN) (mg/L) ⁽⁴⁾	NA	NL	1 per 6 Months ⁽⁶⁾	Grab ⁽²⁾
389 Nitrite + Nitrate ⁽⁴⁾ (mg/L)	NA	NL	1 per 6 Months ⁽⁶⁾	Grab ⁽²⁾
137 Hardness as CaCO ₃ (mg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
158, Total Residual Chlorine (TRC) (mg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
196 Total Recoverable Zinc (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
442 Dissolved Copper (µg/L)	NA	NL	1 per 3 Months ⁽⁵⁾	Grab ⁽²⁾
361 Total Recoverable Iron (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
410 Total Recoverable Aluminum (µg/L)	NA	NL	1 per 6 Months	Grab ⁽²⁾
711 Toxicity, Final Acute <i>C. dubia</i> 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾
712 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour (TUa)	NA	NL	1 per Year ⁽⁵⁾	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (Jan 1–March 31, April 1–June 30, July 1–September 30, and October 1 – December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1– June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1–December 31, to be reported on the DMR due January 10 following each applicable half year).

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year).

(1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating “No Discharge.” See Part II.B.2 for additional requirements.

(2) See monitoring requirements in Part III.B.1.

(3) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests

(4) See Part I.C.17 for nutrient reporting requirements

(5) Each annual test for Toxicity shall be conducted from the same sample as the quarterly Ammonia, Total Recoverable Zinc, and Dissolved Copper for that reporting period.

b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).

c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Storm Event Monitoring for Outfall 913

19. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall numbers 913, stormwater from the former City Point Energy Center.

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
199 Flow (MG) ⁽¹⁾	NA	NL	1 per 6 Months	Estimate
002 pH (standard units)	NL	NL	1 per 6 Months	Grab ⁽²⁾
004 Total Suspended Solids (TSS) (mg/L)	NL	NL	1 per 6 Months	Grab ⁽²⁾

“NL” means no limitation is established. Monitoring and reporting however are required.

“NA” means not applicable.

“1 per 6 Months” means once per complete calendar half with the following schedule: 1st half (January 1 – June 30, to be reported on the DMR due July 10 following each applicable half year); 2nd half (July 1 – December 31, to be reported on the DMR due January 10 following each applicable half year).

(1) If no discharge occurs during the monitoring period, then the DMR shall be submitted indicating “No Discharge.” See Part II.B.2 for additional requirements.

(2) See monitoring requirements in Part III.B.1.

b. In addition to the analytical results, the permittee shall provide the date and duration (in hours) of the storm event(s) sampled; rainfall total (in inches) of the storm event that generated the sampled runoff; and the duration between the storm event sampled and the end of the previous measurable storm event (a "measurable storm event" is defined as a storm event that results in an actual discharge from the site).

c. There shall be no discharge of waste, garbage, floating debris, or foam in other than trace amounts.

A. Limitations and Monitoring Requirements – Outfall 005

20. Upon commencement of discharge and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall serial number 005 (Marine Operations water treatment system).

a. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/L	kg/d		mg/L	kg/d		
001 Flow (MGD)	NL		NA	NL		Continuous	Recorded
002 pH (standard units)	NA		6.0	9.0		Continuous	Recorded
004 TSS mg/L	30 ⁽¹⁾	82	NA	45	120	1 per Month	24 HC
007 Dissolved Oxygen (DO) (mg/L)	6.1 (minimum)		NA	NA		1 per Day	Grab
039 Ammonia (as N)	9.26	25.2	NA	17.0	46.3	3 per Week	24 HC
159 cBOD ₅	NL		NA	NL	NA	1 per Month	24 HC
137 Hardness as CaCO ₃ (mg/L)	NL		NA	NA	NA	1 per Month	24 HC
196 Total Recoverable Zinc (µg/L)	904		NA	904	NA	1 per Month	24 HC
203 Total Recoverable Copper (µg/L)	98.6		NA	98.6	NA	1 per Month	24 HC
361 Total Recoverable Iron (µg/L)	NL		NA	NL	NA	1 per 3 Months	24 HC
410 Total Recoverable Aluminum (µg/L)	NL		NA	NL	NA	1 per 3 Months	24 HC
704 Toxicity, Final Acute <i>C. dubia</i> Static 48 hour, NOAEC	NL		NA	NL		1 per 3 Months	24 HC
705 Toxicity, Final Acute <i>P. promelas</i> Static 48 hour, NOAEC	NL		NA	NL		1 per 3 Months	24 HC
720 Toxicity, Chronic 3-Brood <i>C. dubia</i> Static Renewal, TUc	NL		NA	NL		1 per 3 Months	24 HC
721 Toxicity, Chronic 7-day <i>P. promelas</i> Static Renewal, TUc	NL		NA	NL		1 per 3 Months	24 HC
792 Total Nitrogen Annual Average (mg/L) ⁽²⁾⁽³⁾⁽⁴⁾	12 mg/L		NA	NA	NA	1 per Year	Calc
805 Total Nitrogen Year-to-Date (mg/L) ⁽²⁾⁽³⁾⁽⁴⁾	NL		NA	NA	NA	1 per Month	Calc

“NL” means no limitation is established. Monitoring and reporting; however, are required.

“NA” means not applicable.

“1 per 3 Months” means once per complete calendar quarter (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 - December 31) with DMR due no later than the 10th of the month following the end of each calendar quarter.

“1 per Year” means one sample collected each complete calendar year (January 1 – December 31) with DMR due no later than January 10 of the following year.

- (1) This permit limitation is expressed in two (2) significant figures.
 - (2) Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests.
 - (3) See Part I.C.3 for nutrient reporting requirements.
 - (4) In addition to any Total Nitrogen or Total Phosphorus concentration limits (or monitoring requirements without associated limits) listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040082, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Dischargers and Nutrient Trading in the Chesapeake Watershed in Virginia.
- a. See Part I.B.2 for monitoring requirements for Whole Effluent Toxicity.
 - b. There shall be no discharge of floating solids or visible foam in other than trace amounts.
 - c. Effluent samples shall be taken at Outfall 005.

B. Whole Effluent Toxicity

1. Biological Monitoring Outfalls 001, 002, 003

- a. In accordance with the schedule below, the permittee shall perform annual toxicity testing on Outfall 001, 002, and 003 using 24-hour flow-proportioned composite samples for the duration of the permit. The chronic test to use is:

Chronic 3-Brood Survival and Reproduction Static Renewal Test with *Ceriodaphnia dubia*

These chronic tests shall be conducted in such a manner and at sufficient dilutions (minimum of five dilutions, derived geometrically) to determine the “No Observed Effect Concentration” (NOEC) for survival and reproduction or growth. Results which cannot be quantified (i.e., a “less than” NOEC value) are not acceptable, and a retest will have to be performed. A retest of a non-acceptable test must be performed during the same compliance period as the test it is replacing. Express the test NOEC as TU_c (Chronic Toxic Units), by dividing 100/NOEC. Report the LC₅₀ at 48 hours and the IC₂₅ with the NOEC’s in the test report.

The permittee may provide additional samples to address data variability. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3

- b. The test dilutions should be able to determine compliance with the following endpoints:

Outfall 001

Chronic NOEC of ≥ 7%, equivalent to a TU_c of ≤ 14.28

Outfall 002

Chronic NOEC of ≥ 7%, equivalent to a TU_c of ≤ 14.28

Outfall 003

Chronic NOEC of ≥ 17%, equivalent to a TU_c of ≤ 5.88

- c. The test data will be evaluated statistically for reasonable potential at the conclusion of the permit term. The data may be evaluated sooner if requested by the permittee or toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests in Part I.B.1.a shall be discontinued.
- d. The permit may be modified or revoked and reissued to include pollutant specific limits in lieu of a WET limit should it be demonstrated that toxicity is due to specific parameters. The pollutant specific limits must control the toxicity of the effluent.

- e. Reporting Schedule:

The permittee shall submit a copy of each toxicity test report in accordance with the following schedule:

<u>Period</u>	<u>Compliance Date</u>	<u>Submittal Date</u>
Annual 1	By 12/31/2023	By 01/10/2024
Annual 2	By 12/31/2024	By 01/10/2025
Annual 3	By 12/31/2025	By 01/10/2026
Annual 4	By 12/31/2026	By 01/10/2027

2. Biological Monitoring Outfall 005

- a. Commencing within 3 months from the initiation of the discharge, and in accordance with the schedule below, the permittee shall perform quarterly toxicity testing on Outfall 005 using 24-hour flow-proportioned composite samples until there are a minimum of 10 for each species. The acute tests to use are:

48 Hour Static Acute Test with *Ceriodaphnia dubia*

48 Hour Static Acute Test with *Pimephales promelas*

These acute tests are to be conducted using 5 geometric dilutions of effluent with a minimum of 4 replicates, with 5 organisms in each. The NOAEC (No Observed Adverse Effect Concentration), as determined by hypothesis testing, shall be reported on the DMR. The LC50 should also be determined and noted on the submitted report. Tests in which control survival is less than 90% are not acceptable. A retest of a non-acceptable test must be performed during the same compliance period as the test it is replacing.

The chronic tests to use are:

Chronic 3-Brood Survival and Reproduction Static Renewal Test with *Ceriodaphnia dubia*

Chronic 7-day Survival and Growth Static Renewal Test with *Pimephales promelas*

These chronic tests shall be conducted in such a manner and at sufficient dilutions (minimum of five dilutions, derived geometrically) to determine the "No Observed Effect Concentration" (NOEC) for survival and reproduction or growth. Results which cannot be quantified (i.e., a "less than" NOEC value) are not acceptable, and a retest will have to be performed. A retest of a non-acceptable test must be performed during the same compliance period as the test it is replacing. Express the test NOEC as TU_c (Chronic Toxic Units), by dividing 100/NOEC. Report the LC₅₀ at 48 hours and the IC₂₅ with the NOEC's in the test report.

The permittee may provide additional samples to address data variability. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3

- b. The test dilutions should be able to determine compliance with the following endpoints:

Outfall 005

Acute LC₅₀ of 29%, equivalent to a TUA of 3.44

Chronic NOEC of ≥ 3%, equivalent to a TUC of 33.3

- c. The test data will be evaluated by STATS.EXE for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests of 1.a. may be discontinued. If after evaluating the data, it is determined that no limit is needed, the permittee shall continue acute and chronic toxicity testing (both species) of the outfall annually, as shown on the reporting schedule in f.
- d. The permit may be modified or revoked and reissued to include pollutant specific limits in lieu of a WET limit should it be demonstrated that toxicity is due to specific parameters. The pollutant specific limits must control the toxicity of the effluent.
- e. Reporting Schedule
WET testing will begin with the first complete calendar quarter after the commencement of discharge from Outfall 005. The permittee shall report the results

on the DMR and submit a copy of each toxicity test report in accordance with the following schedule:

<u>Period</u>	<u>Submittal Date</u>
January 1 st - March 31 st	By April 10 th
April 1 st – June 30 th	By July 10 th
July 1 st – September 30 th	By October 10 th
October 1 st – December 31 st	By January 10 th of the following year

- f. Upon written notification by DEQ, WET testing will be decreased to an annual frequency of once per calendar year. The permittee shall report the results on the January 10th DMR of the year following the testing and shall submit a copy of each toxicity test report with the DMR.

C. Other Requirements or Special Conditions

1. Notification Levels

The permittee shall notify the Department as soon as they know or have reason to believe:

- 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 this permit, if that discharge will exceed the highest of the following notification levels:
- (1) One hundred micrograms per liter;
 - (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
 - (3) Five times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Department.
- b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
- (1) Five hundred micrograms per liter;
 - (2) One milligram per liter for antimony;
 - (3) Ten times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Department.

2. Operation and Maintenance Manual Requirement

The permittee shall maintain a current Operations and Maintenance (O&M) Manual for the treatment works that is in accordance with Virginia Pollutant Discharge Elimination System Regulations, 9VAC25-31.

The O&M Manual and subsequent revisions shall include the manual effective date and meet Part II.K.2 and Part II.K.4 Signatory Requirements of the permit. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M manual available to Department personnel for review during facility inspections. Within 30 days of a request by DEQ, the current O&M Manual shall be submitted to the DEQ Regional Office for review and approval.

The O&M manual shall detail the practices and procedures which will be followed to ensure compliance with the requirements of this permit. This manual shall include, but not necessarily be limited to, the following items, as appropriate:

- a. Permitted outfall locations and techniques to be employed in the collection, preservation, and analysis of effluent samples;

- b. Procedures for measuring and recording the duration and volume of treated wastewater discharged;
- c. Procedures for reporting any gaps in continuous pH data monitoring at the permitted outfalls;
- d. Documentation of known underground sewer integrity (infiltration/exfiltration) issues;
- e. Description of pretreatment activities (process sewer ponds and wet well);
- f. Discussion of Best Management Practices, if applicable;
- g. Procedures for handling, storing, and disposing of all wastes, fluids, and pollutants characterized in Part I.C.15 that will prevent these materials from reaching state waters. List type and quantity of wastes, fluids, and pollutants (e.g. chemicals) stored at this facility;
- h. Discussion of treatment works design, treatment works operation, routine preventative maintenance of units within the treatment works, critical spare parts inventory and record keeping;
- i. Plan for the management and/or disposal of waste solids and residues;
- j. Hours of operation and staffing requirements for the plant to ensure effective operation of the treatment works and maintain permit compliance;
- k. List of facility, local and state emergency contacts; and,
- l. Procedures for reporting and responding to any spills/overflows/treatment works upsets.

3. Compliance Reporting

- a. The quantification levels (QL) shall be less than or equal to the following concentrations:

<u>Effluent Characteristic</u>	<u>Quantification Level</u>
Ammonia-N	0.20 mg/L
Total Kjeldahl Nitrogen	0.50 mg/L
Nitrite+Nitrate	0.2 mg/L
cBOD ₅	2 mg/L
TSS	1.0 mg/L
Total Recoverable Zinc	40.0 µg/L
Dissolved Copper	3.0 µg/L
Dissolved Zinc	38 µg/L
Chlorine	0.10 mg/L

The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method. It is the responsibility of the permittee to ensure that proper quality assurance/quality control (QA/QC) protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QLs have been attained. The permittee shall use any method in accordance with Part II.A of this permit.

- b. Reporting

Monthly Average -- Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in subsection a. of this permit condition shall be determined as follows: All concentration data below the QL used for the analysis (QL must be less than or equal to the QL listed in a. above) shall be treated as zero. All concentration data equal to or above the QL used for the analysis shall be treated as it is reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the Discharge Monitoring Report (DMR) as calculated. If all data are below the QL used for the analysis, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported monthly average concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported concentration data (including the defined zeros) and flow data for each sample day to determine the daily quantity and report the monthly average of the calculated daily quantities. For

monitoring frequencies encompassing multiple months, the monthly average value to be reported on the DMR shall be the maximum of the arithmetic monthly averages calculated for each calendar month during the monitoring period.

Daily Maximum -- Compliance with the daily maximum limitations and/or reporting requirements for the parameters listed in subsection a. of this permit condition shall be determined as follows: All concentration data below the QL used for the analysis (QL must be less than or equal to the QL listed in a. above) shall be treated as zero. All concentration data equal to or above the QL used for the analysis (QL must be less than or equal to the QL listed in a. above) shall be treated as reported. An arithmetic average shall be calculated using all reported data, including the defined zeros, collected within each day during the reporting month. The maximum value of these daily averages thus determined shall be reported on the DMR as the Daily Maximum. If all data are below the QL used for the analysis, then the maximum value of the daily averages shall be reported as "<QL". If reporting for quantity is required on the DMR and the reported daily maximum concentration is <QL, then report "<QL" for the quantity. Otherwise use the reported daily average concentrations (including the defined zeros) and corresponding daily flows to determine daily average quantities and report the maximum of the daily average quantities during the reporting month. For monitoring frequencies encompassing multiple months, the daily maximum value to be reported on the DMR shall be the maximum of the arithmetic daily averages calculated for each calendar day during the monitoring period.

Single Datum – Any single datum required shall be reported as "<QL" if it is less than the QL used for the analysis (QL must be less than or equal to the QL listed in a. above). Otherwise the numerical value shall be reported.

- c. **Significant Digits** -- The permittee shall report at least the same number of significant digits as the permit limit for a given parameter. Regardless of the rounding convention used by the permittee (i.e., 5 always rounding up or to the nearest even number), the permittee shall use the convention consistently, and shall ensure that consulting laboratories employed by the permittee use the same convention.
- d. **Nutrient Monitoring**

For Phosphorus, all daily concentration data below the quantification level (QL) for the analytical method used should be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method used shall be treated as it is reported.

For Total Nitrogen (TN), if none of the daily concentration data for the respective species (i.e., TKN, Nitrates/Nitrites) are equal to or above the QL for the respective analytical methods used, the daily TN concentration value reported shall equal one half of the largest QL used for the respective species. If one of the data is equal to or above the QL, the daily TN concentration value shall be treated as that data point is reported. If more than one of the data is above the QL, the daily TN concentration value shall equal the sum of the data points as reported.

- e. **Nutrient Reporting Calculations**

For each calendar month, the DMR shall show the calendar year-to-date average concentration (mg/L) calculated in accordance with the following formulae:

$$AC_{avg-YTD} = (\sum(\text{Jan-current month})MC_{avg}) \div (\# \text{ of months})$$

where:

$AC_{avg-YTD}$ = calendar year-to-date average concentration (mg/L) (parameter codes 805 and 806)

MC_{avg} = monthly average concentration (mg/L) as reported on the Nutrient General Permit DMR

The total nitrogen and total phosphorus average concentration (mg/L) for each calendar year (AC) shall be shown on the December DMR due January 10th of the following year. These values shall be calculated in accordance with the following formulae:

$$AC_{avg} = (\sum(\text{Jan-Dec}) MC_{avg}) \div 12$$

where:

AC_{avg} = calendar year average concentration (mg/L) (parameter codes 792 and 794)

MC_{avg} = monthly average concentration (mg/L) as reported on the Nutrient General Permit DMR

4. Reopeners

This permit may be modified or, alternatively, revoked and reissued:

- a. If any approved wasteload allocation procedure, pursuant to Section 303(d) of the Clean Water Act, imposes wasteload allocations, limits or conditions on the facility that are not consistent with the permit requirements;
- b. To incorporate technology-based effluent concentration limitations for nutrients in conjunction with the installation of nutrient control technology, whether by new construction, expansion or upgrade; or
- c. To incorporate alternative nutrient limitations and/or monitoring requirements, should:
 - (1) the State Water Control Board adopt new nutrient standards for the water body receiving the discharge, including the Chesapeake Bay or its tributaries, or
 - (2) a future water quality regulation or statute require new or alternative nutrient control.

5. Closure Plan

If the permittee plans an expansion or upgrade to replace the existing treatment works, or if facilities are permanently closed, the permittee shall submit to the DEQ Regional Office a closure plan for the existing treatment works. The plan shall address the following information as a minimum: Verification of elimination of sources and/or alternate treatment scheme; treatment, removal and final disposition of residual wastewater and solids; removal/ demolition/disposal of structures, equipment, piping and appurtenances; site grading, and erosion and sediment control; restoration of site vegetation; access control; fill materials; and proposed land use (post-closure) of the site. The plan should contain proposed dates for beginning and completion of the work. The plan must be approved by the DEQ prior to implementation. Once approved, the plan shall become an enforceable part of this permit and closure shall be implemented in accordance with the approved plan. No later than 14 calendar days following closure completion, the permittee shall submit to the DEQ Piedmont Regional Office written notification of the closure completion date and a certification of closure in accordance with the approved plan.

6. Water Quality Criteria Reopener

Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

7. pH Excursions

The pH shall be maintained between 6.0 and 9.0 standard units at Outfalls 001, 002 and 003 except as follows:

- a. The total time that the pH values are outside the range of 6.0 to 9.0 standard units shall not exceed 7 hours and 26 minutes in any calendar month.
- b. No individual excursion outside the range of 6.0 to 9.0 standard units shall exceed 60 minutes.
- c. During periods in which the pH probes at any of the external outfalls are out of service, pH data shall be collected from the probes installed at the outlets upstream of the respective outfalls, as follows:

Outfall	Outlets/Upstream Monitoring
Outfall 001	Outlet 1, Outlet 2 and Outlet 3
Outfall 002	Outlet 4 and Outlet 5
Outfall 003	N CTWR and G Exit

- d. When reporting pH values from the outlet probes, the minimum pH value and the maximum pH value among the probes for a respective outfall shall be reported. pH values outside the range of 6.0 to 9.0 S.U. at any of the outlets during a period when the outfall probe is out of service, shall be considered a limit exceedance at the respective outfall. Exceedance times and alternate probe times shall be reported with the eDMR. If all outlet pH probes for a respective outfall are in compliance, then the outfall is considered in compliance.

8. Process Wet Well Operations

There shall be no discharge from the process wastewater wet well except in the case of a storm event that exceeds the 10 year/1 hour event. Even when the 10 year/1 hour storm event is exceeded, this exception does not apply unless:

- a. All equipment associated with the collection and pumping of the process wastewater sewer system is operating as designed.
- b. There are no unusual or extraordinary discharges occurring to the process wastewater sewer system at the time of discharge.
- c. There are no violations of the Water Quality Standards, as amended and adopted by the Board, as a result of the discharge.
- d. There are no impacts on the receiving stream(s) as a result of the discharge that contravene the maintenance of all reasonable, beneficial uses of the receiving stream(s), and the propagation and growth of aquatic life which might reasonably be expected to inhabit the receiving stream(s).

At all times, the effluent limitations at Outfall 001 shall apply.

9. Emergency Deluge System Monitoring

Area 6 (phenol purification and hydrogenation) is equipped with an emergency deluge system that drenches the area with water in the event of an explosive condition or fire. Each discharge from the emergency system shall be monitored by grab sample for TOC and pH unless sampling is not possible without endangering the health or safety of plant personnel. If the actual discharge from the deluge system cannot be sampled, samples shall be collected at the Gravelly Run foot bridge to include the deluge water. The results of the monitoring shall be reported in accordance with Part II.H of the permit and with the Discharge Monitoring Report for that month in which the discharge occurred. The report shall include an explanation of why the actual discharge from the deluge system could not be sampled.

10. Dissolved Oxygen Requirements

The dissolved oxygen limitations established in this permit are defined to be minimal monthly average. That is, the dissolved oxygen concentrations must be at or above the effluent limitation in order to be in compliance with the limitation.

If more than one dissolved oxygen analysis is made during the 24-hour period that represents a monitoring day, only the minimum value from that day's sampling shall be used in calculating the monthly average minimums.

11. TOC Reporting

The net daily TOC concentrations shall be calculated by subtracting the concentration of TOC in the intake water from the concentration of TOC in the discharge from each Outfall 001, 002 and 003. The net mass values for each outfall shall be calculated by multiplying the net TOC concentration of each outfall by the respective total daily flow for each outfall and the appropriate conversion factor.

The same analytical method shall be used for influent and effluent sampling. All concentration data below the quantification level (QL) used for the analysis shall be treated as equal to the QL. All concentration data equal to or above the QL used for the analysis shall be treated as reported. Compliance with net daily maximum and monthly average TOC limitations listed in Part I.A.3, 7, and 8 of this permit shall be determined as follows:

24-hour composite samples shall be collected at Outfalls 001, 002 and 003.

Net Daily Maximum – Net daily concentrations are to be calculated by subtracting the concentration of TOC in the intake water from the concentration of TOC in the discharge. If more than one influent and/or effluent sample is collected within one day, the net daily maximum concentration shall be calculated using the pair of influent and effluent samples with the smallest time interval from the time of influent sampling to the time of effluent sampling. Any net daily TOC concentrations that result in a negative number shall be treated as zero. The maximum value of these daily net concentrations thus determined shall be reported on the Discharge Monitoring Report (DMR) as the Daily Maximum. If all net daily TOC concentration calculations result in defined zeros, the Daily Maximum shall be reported as <QL on the DMR.

Monthly Average – Compliance with the reporting requirements for TOC shall be determined by calculating the arithmetic average using the daily net TOC concentrations, including defined zeros. This arithmetic average shall be reported on the DMR as calculated. If all net daily TOC concentrations are calculated as defined zeros, the Monthly Average shall be reported as <QL on the DMR.

If calculation of the net TOC concentration exceeds the limitations as listed in Part I.A.3, Part I.A.7, or Part I.A.8 of this permit, the permittee shall follow the notification and reporting requirements as listed in Part II.H of this permit.

12. Heat and Ammonia Calculations

The parameter identified as "heat" in Part I.A. shall be calculated as follows: Daily effluent flow in gallons multiplied by 8.34 pounds per gallon multiplied by the daily maximum effluent temperature in degrees Fahrenheit. The result of this equation is expressed in BTU/day.

The measurements used for the heat calculations will be the totalized daily recorded flow for each outfall, and the maximum daily temperature from the continuous temperature monitoring at each outfall. The heat in Btu/day will be calculated for each outfall. The heat reported for Outfall 998 will be the sum of the heat reported for Outfall 001 plus the heat reported for Outfall 002.

The ammonia concentration for Outfall 998 will be the flow-weighted average of the ammonia concentrations at Outfalls 001 and 002, using the equation:

$$\frac{(\text{concentration 001}) * (\text{flow 001}) + (\text{concentration 002}) * (\text{flow 002})}{(\text{flow 001} + \text{flow 002})}$$

Where flow is the daily totalized flow in MGD, and concentration is the 24-hour composite ammonia result from the same day.

13. Best Management Practices

The permittee shall comply with the following best management practices (BMP):

- a. For vessels in which sanitary waste tanks (holding tanks) are installed, all sewage from the vessels shall be removed and disposed of by a commercial waste disposal company or discharged into the AdvanSix's sanitary waste system.
- b. For vessels without sanitary waste holding tanks installed, the vessel's sanitary systems shall not be permitted to discharge sewage to surface waters. Vessels without holding tanks shall be connected to a holding tank or shoreside system in compliance with Virginia Department of Health Regulations.

14. Concept Engineering Report

Prior to constructing any wastewater treatment works, the permittee shall submit a Concept Engineering Report (CER) to the DEQ Piedmont Regional Office. DEQ written approval shall be secured prior to constructing any wastewater treatment works. The permittee shall construct the wastewater treatment works in accordance with the approved CER. No later than 14 days following completion of construction of any project for which a CER has been approved, written notification shall be submitted to the DEQ Piedmont Regional Office certifying that, based on an inspection of the project, construction was completed in accordance with the approved CER. The written notification shall be certified by a professional engineer licensed in the Commonwealth of Virginia or signed in accordance with Part II.K of this permit. The installed wastewater treatment works shall be operated to achieve design treatment and effluent concentrations. Approval by the Department of Environmental Quality does not relieve the owner of the responsibility for the correction of design and/or operational deficiencies. Noncompliance with the CER shall be deemed a violation of this permit.

Upon approval of a CER for the installation of nutrient removal technology, DEQ staff shall initiate modification, or alternatively, revocation and reissuance, of this permit, to include annual concentration limits based on the technology proposed in the CER.

15. Materials Handling / Storage

Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner and consistent with Best Management Practices, so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized.

16. Form 2F Sampling

The completed Part VII of Form 2F for Outfall 910 shall be submitted as soon as a representative sample can be taken.

17. Seep Response Plan

No later than 90 days following the effective date of this permit, the permittee shall submit to the DEQ Piedmont Regional Office for approval a Seep Response Plan for the Marine Operations industrial footprint to characterize and mitigate liquids flowing from the ground that could potentially impact State waters. Upon approval, the Seep Response Plan is incorporated by reference into the permit.

The response plan shall address the following issues:

- a. A comprehensive plan to document and inventory areas where liquids are seeping from the ground that could potentially impact State Waters.
- b. A plan to monitor, characterize, and provide any necessary mitigation of documented seeps, which may include repair, replacement, or corrective action activities, as appropriate.
- c. A response plan documenting how new seeps and dry weather flows will be reported and mitigated. The permittee shall notify the DEQ no later than 24 hours following discovery of any potential or actual seeps.
- d. The permittee shall submit a written plan and schedule to the DEQ Piedmont Regional Office for necessary mitigation of any newly identified seeps, which may include repair, replacement, or corrective action activities, no later than 30-days following discovery.

18. Stormwater Conveyance System Study

No later than June 30, 2027 the permittee shall submit to the DEQ Piedmont Regional Office an approvable plan for a comprehensive conveyance system study in the Outfall 901, 902, 903 stormwater drainage areas. The investigation shall address all conveyances to identify potential and actual cross connections, bypasses, and inflow or outflow that could result in an unauthorized discharge. Such investigation requirements may be satisfied by video camera, visual/field inspection, smoke/dye testing, dye tracing, dry weather confirmation sampling, or other methods as reasonable and appropriate. The plan shall define a prioritization process to address risks and define a schedule, not to exceed two years from DEQ written approval of the plan, to complete the investigation and to submit a final report.

19. Groundwater Monitoring for the Marine Operations Area

a. Ground Water Quality Monitoring Plan

No later than 12 months following the effective date of this permit, the permittee shall submit to the Regional Office a Marine Operations Area Groundwater Quality Monitoring (GQM) Plan for review and approval. Once approved, the plan shall be incorporated by reference as an enforceable part of this permit. Any changes to the approved plan shall be submitted for review and approval to the Regional Office prior to implementation. The GQM Plan shall be amended or updated if requested by the DEQ or in cases where new information or data warrants changes to the plan.

The GQM Plan shall, at a minimum, include:

- (1) Geologic information;
- (2) Site aquifer characterization, including a potentiometric map indicating the direction of groundwater flow and methods for calculating flow rate;
- (3) Network description including the location, installation and construction (completion logs) of all proposed wells with a proposed schedule for completion, identification of the upgradient and downgradient well(s), and the location of all monitored units on the site;
- (4) A constituent list including but not limited to the following pollutant:

Sampling Constituent
Ammonia Nitrogen

The plan shall identify applicable Virginia groundwater quality standards, federal maximum contaminant levels (MCLs), and risk-based targets for all monitored constituents. In addition, background concentrations shall be calculated for each constituent based on the sampling results from upgradient well(s) utilizing the initial four **quarterly** sampling events completed following plan approval. The methodology for determining site background shall meet the technical criteria

defined in EPA's March 2009 **Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance** (EPA 530/R-09-007) and the August 2010 **Errata Sheet** (EPA 530/R-09-007a). The permittee shall submit the site's natural background concentrations with the first annual report submittal following completion of the first four sampling events. The background concentrations shall be updated annually following initial calculation and included in the annual report;

(5) Monitoring frequency and sampling methodology

i. Monitoring of all wells in the GQM Plan shall be conducted on a calendar **quarter** basis following well installation and in accordance with the approved GQM Plan.

ii. Prior to sampling, groundwater elevation measurements to the nearest 0.01 feet shall be obtained in order to calculate groundwater flow direction and rate for each groundwater sampling event, and the wells shall be properly purged to ensure collection of representative groundwater samples.

iii. Any time it is recognized that a monitoring well on site does not contain a sufficient volume of groundwater for sampling purposes, the Regional Office shall be notified no later than 30 days following the sampling event with a description of the problem. The DEQ may require a proposal and schedule to replace or relocate the well.

(6) A data evaluation method to be performed by the permittee, including a method to determine site background that meets the technical criteria defined in EPA's March 2009 **Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance** (EPA 530/R-09-007) and the August 2010 **Errata Sheet** (EPA 530/R-09-007a). The data reported in the annual report shall be consistent with the evaluation method.

(7) Content of the annual report, which shall include, at a minimum, a site map and site location map, a copy of the analytical data from each sampling event, a summary of the concentrations of all detected constituents in each monitoring well per sampling event during the year, a short discussion of the groundwater flow rate and direction as determined during the calendar year, at least one potentiometric map, and (once background has been calculated) a demonstration, including the evaluation required in Part I.C.19.a.6 of whether the sampling results exceed background concentration.

(8) Closure procedures for any wells proposed to be abandoned or replaced.

b. Reporting

No later than March 31st of each year, an annual groundwater monitoring report shall be submitted to the DEQ Piedmont Regional Office. The report will include the monitoring results for the previous calendar year and statistical analysis in accordance with the GQM Plan.

20. Enhanced Inspections and Housekeeping in Ammonium Sulfate Storage/Handling/Transport Areas

No later than 30 days following the effective date of this permit, the permittee shall begin enhanced daily inspection and cleaning activities in areas where ammonium sulfate is stored, handled or transported, and in any areas where the product can be reasonably expected to be present. The permittee shall maintain a map showing the areas that are subject to this special condition and shall provide the map to facility personnel performing the inspections. The daily inspections shall be documented for this purpose and shall be maintained as a permit record in accordance with Part II.B of this permit.

During the first 30 daily inspections, all areas where ammonium sulfate is stored, handled or transported shall be visually inspected for ammonium sulfate product residue. After 30 days, the areas where ammonium sulfate or its residue has not been observed and documented may be inspected on a weekly basis. Following three months of weekly inspections, if these areas still have no documented visual ammonium sulfate residue, then the permittee may request those areas be eliminated from the visual inspections required by this special condition. If changes to the material handling areas are made, then daily visual inspection will resume in the affected areas. DEQ can request the resumption of daily inspections if residue is observed in areas with reduced inspection frequency.

The visual inspection record shall include the following:

- (a.) The inspection date;
- (b.) The name(s) of the inspector(s);
- (c.) Weather information
- (d.) List of facility's areas inspected
- (e.) List of facility's areas where presence of ammonium sulfate product was observed

(f.) Any additional control measures implemented to address the areas noted in Part I.C.20(e.) above

The permittee shall perform enhanced daily cleaning activities by sweeping, vacuuming, or washing to a process sewer conveyed to the Hopewell Water Renewal plant. All areas identified to contain presence of ammonium sulfate during the visual inspection shall be cleaned daily by the chosen method. The collected material and other pollutants shall be disposed of in accordance with Part II.R of the permit. Wash waters are not authorized to be discharged to surface water through stormwater or process water conveyance systems or outfalls.

Enhanced inspections and cleaning activities shall continue until capital infrastructure is installed to capture and treat discharges prior to reaching State waters or benchmark concentrations are met in the associated drainage area. At that time, AdvanSix may request permission to discontinue or alter these activities,

All documentation relating to the enhanced visual inspections, or the inability to safely conduct such inspections due to adverse weather conditions, shall be signed by the personnel responsible for the inspection, and shall be made available to DEQ personnel for review during facility inspections or no later than 30 days following receipt of a request by DEQ.

21. Adaptive Management Plan for Stormwater and Annual Report

Within 120 days of the effective date of this permit, the permittee shall submit the DEQ Piedmont Regional Office an approvable Adaptive Management Plan for Stormwater to determine a designated sampling point for compliance sampling for each of the Outfall 901, 902, and 903 drainage areas. The plan shall include, at a minimum: drainage area maps showing all drainage points and corresponding drainage point identification (ID) numbers; a complete list of drainage points noting which points have not been sampled and why; a complete list of the drainage points that have been sampled, including ammonia tests results and the ranking given to each. Once approved, the Adaptive Management Plan is incorporated by reference into the permit and may be amended as required in writing by DEQ.

Following approval of the Adaptive Management Plan, an annual stormwater report for the period of January 1 through December 31 shall be submitted to the DEQ Piedmont Regional Office no later than March 31st of each year, and shall include, at a minimum: corrective actions taken in the previous year to reduce pollutants from the 901/902/903 drainage areas; any changes in land use, or planned changes in land use within the 901/902/903 drainage areas; any corrective actions planned for the upcoming year; and any field investigations conducted or planned to further delineate drainage areas. DEQ may require changes to the Adaptive Management Plan after review of this annual report. Any necessary revisions to the original approved plan shall be submitted to DEQ for review and approval.

This special condition is a major component of the Chesapeake Bay TMDL Action Plan in Part I.D.2.

22. Gravelly Run Field Study

The permittee may elect to conduct a field study to determine the current conditions in and around the Gravelly Run mixing zone, in order to inform more accurate calculation of ammonia limits. If the permittee elects to conduct a field study, an approvable study plan must be submitted to the DEQ Piedmont Regional Office for approval prior to commencing the study. The permittee may request a modification of the permit if the field study determines that the ammonia allocation assigned to Gravelly Run is overly restrictive. This special condition is completely voluntary and does not provide any basis of defense for exceedance of ammonia limitations.

23. Licensed Operator Requirement

The permittee shall employ or contract at least one Class 2 licensed wastewater works operator when this facility is treating wastewater and discharging through Outfall 005. The license shall be issued in accordance with Title 54.1 of the Code of Virginia and the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations. The permittee shall notify the DEQ in writing whenever he is not complying or has grounds for anticipating he will not comply with this requirement. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.

24. Water Quality Criteria Monitoring and EPA Form 2C

The permittee shall monitor the effluent at Outfall 005 for the substances noted in Attachment A, "Water Quality Criteria Monitoring" according to the indicated analysis number, quantification level, sample type and frequency. Using Attachment A as the reporting form, the data shall be submitted no later than 90 days following the commencement of discharge from Outfall 005. Monitoring and analysis shall be conducted in accordance with 40 CFR Part 136 or alternative EPA approved methods. It is the responsibility of the permittee to ensure that proper QA/QC protocols are followed during the sample gathering and analytical procedures. The DEQ will use these data for making specific permit decisions in the future. This permit may be modified or, alternatively, revoked and reissued to incorporate limits for any of the substances listed in Attachment A.

Within 90 days following the commencement of discharge from Outfall 005, the permittee shall submit a completed EPA Form 2C.

25. Marine Operations Area Improvements

The permittee shall continue to engineer a system to collect, treat, and discharge/dispose of the stormwater runoff and groundwater seeps from the Marine Operations area, and any future groundwater remediation flows that may be required by Part I.C.19 of the permit. The treatment system shall be designed to hold and treat a 10-year, 24-hour storm, and will treat seeps and groundwater remediation flows during dry weather periods. The Marine Operations area consists of the areas draining to stormwater outfalls 904, 905, 906, 907, and 911. The approved Concept Engineering Report will become an enforceable provision of this permit.

The collection and conveyance system design and construction shall adhere to the following schedule:

	Milestone	Due Date
1	Continue the engineering and construction of collection and conveyance system, Phases 5, 6, and 7. Provide annual progress reports by March 31 of each year.	Begin Immediately after permit effective date. Report Annually
2	Submit either: 1.) An approvable Concept Engineering Report for the Marine Operations area treatment system, or 2.) An approvable Concept Engineering Report for conveyance of the Marine Operations area stormwater to the Hopewell Water Renewal WWTP.	Before 12/31/2024
3	Complete construction of collection and conveyance system for Phase 5* and eliminate the discharge from Outfalls 906 and 907.	Before 12/31/2026
4	Complete construction of treatment system or the conveyance system to Hopewell Water Renewal.	Before 12/31/2026
5	Complete construction of the collection and conveyance system for Phase 6* and eliminate the discharge from Outfalls 904 and 905.	Before 12/31/2028
6	Complete construction of the collection and conveyance system for Phase 7* and eliminate the discharge from Outfall 911.	Before 12/31/2028

Annual progress reports shall be submitted to the department no later than March 31st of each year for the period of January 1 through December 31. The first annual reporting period begins January 1, 2024. The annual report shall include the progress in meeting the milestones specified in this permit condition and specific actions taken to date.

*The Marine Operations Area construction phases are defined as:

Phase 5: Collection of Outfalls 906 and 907, and conveyance to a treatment system.

Phase 6: Collection of Outfalls 904 and 905, and conveyance to a treatment system.

Phase 7: Collection of Outfall 911 and conveyance to a treatment system.

This special condition is a major component of the Chesapeake Bay TMDL Action Plan in Part I.D.2.

26. Building 12 Stormwater Elimination

No later than June 30, 2027, the permittee shall submit to the DEQ Piedmont Regional Office an approvable plan to eliminate or minimize to the extent achievable using control measures that are technologically available and economically practicable and achievable, in light of best industry practice, the discharge of ammonium sulfate into Outfall 001 in the area of Building 12 (ammonium sulfate storage building). At a minimum, the plan shall include: the timeline, materials, and methods needed to convey the stormwater in the Building 12 area to the Hopewell Water Renewal treatment plant, maps of the Building 12 area, indicating which areas drain to Outfall 001, and may provide testing results for ammonia in order to prioritize the work. The plan shall also include reporting annual requirements including but not limited to: the progress for implementation including actions taken in accordance with an approved plan, and any anticipated actions necessary to ensure compliance with this condition. The first progress report shall be submitted to the department no later than March 31, 2028. Once approved, the plan will become an enforceable part of this permit. Following DEQ approval of the plan, the permittee shall eliminate the stormwater discharge to Outfall 001 from drainage points 1023, 1024, and 1038 by June 1, 2028. This special condition is a major component of the Chesapeake Bay TMDL Action Plan in Part I.D.2.

27. Notification of Barometric Condenser Removal

No later than 10 days prior to the final shutdown of one direct contact barometric condenser in the Area 11 process, the permittee shall submit written notification to DEQ Piedmont Regional Office stating when the condenser will be taken out of service. Upon the date of condenser shutdown, DEQ shall provide written confirmation that the limitations in Part I.4.b have superseded Part I.4.a for Outfall 998.

28. Stormwater Contaminant Elimination Plan

The permittee shall develop a stormwater contaminant elimination plan for all storage, handling and transport areas, excluding the Marine Operations area. The plan shall be submitted to the DEQ Piedmont Regional Office no later than June 30, 2027. The approvable study plan shall eliminate or minimize to the extent achievable using control measures that are technologically available and economically practicable and achievable, in light of best industry practice, the discharge of ammonium sulfate through the stormwater system from areas not addressed by Special Conditions 25 or 26, including Outfalls 908, 909, and in any areas where the product can reasonably be expected to be present, or where testing confirms the product's presence. At a minimum, the study plan shall address the following:

- The feasibility and cost to capture stormwater contaminated with ammonium sulfate and to convey that stormwater to Hopewell Water Renewal for treatment
- The feasibility and cost to capture all potentially contaminated stormwater and to convey, treat, and/or reuse that stormwater on site
- The feasibility and cost to reduce the concentration of potential pollutants through best management practices in the stormwater to a maximum of the screening criteria set forth in Part III.A.1 of this permit.

After DEQ approval, the study shall be completed and submitted to DEQ within 240 days of the study plan approval date.

29. Kellogg Cooling Tower Drainage to Poythress Run

The permittee is authorized to discharge cooling tower water to Outfall 003 when the Kellogg cooling tower system is drained for maintenance needs. The permittee shall notify the DEQ Piedmont Regional Office at least five days prior to a planned discharge event, or as soon as possible if the event is an emergency. Within five days following the discharge, the permittee shall submit to the DEQ Piedmont Regional Office a letter documenting the duration of the flow, and certifying that the discharged water as it enters the sewer system conforms to each of the following conditions:

Outfall 003 Flow > 4.4 MGD
Wastewater from Kellogg Cooling Tower system:
Flow: <460 gpm
pH: 6.0 – 9.0 S.U.
Ammonia (NH₃N): <1.8 mg/L
Total Organic Compounds (TOC): <10 mg/L
Dissolved Oxygen: >6.1 mg/L
Zinc: <300 ug/L
Copper: <20 ug/L

Chloride: <500 mg/L
 Total Residual Chlorine (TRC): <20 µg/L
 Sulfate: <400 mg/L

D.1 Extended Schedule of Compliance for Ammonia

Compliance with Ammonia Limits

The permittee shall achieve compliance with the final ammonia limitations and monitoring requirements at Outfall 998, as specified in Parts I.A.2a and I.A.2b in this permit, in accordance with the following schedule:

Milestone	Due Date
1. Begin engineering for removal of one direct contact barometric condenser in Area 11.	Immediately upon permit effective date.
2. Begin detailed engineering design for the Marine Operations collection system.	8/31/2024
3. Submit either: 1.) An approvable Concept Engineering Report for the Marine Operations area treatment system, or 2.) An approvable Concept Engineering Report for conveyance of the Marine Operations area stormwater to the Hopewell Water Renewal WWTP.	12/31/2024
4. Begin construction of barometric condenser removal project.	10/31/2025
5. Remove one direct contact barometric condenser in Area 11 process from service permanently.	10/31/2026
5. Complete construction of collection and conveyance system for Phase 5* and eliminate the discharge from Outfalls 906 and 907.	12/31/2026
7. Begin construction of collection and conveyance system for Phase 6*.	1/1/2027
8. Submit an approvable plan to eliminate or minimize to the extent practicable the discharge of ammonium sulfate into Outfall 001 in the areas surrounding Building 12.	6/30/2027
9. Begin construction of collection and conveyance system for Phase 7*.	6/30/2028
10. Complete construction of the collection and conveyance system for Phase 6* and eliminate the discharge from Outfalls 904 and 905.	12/31/2028
11. Complete construction of the collection and conveyance system for Phase 7* and eliminate the discharge from Outfall 911.	12/31/2028
12. Eliminate the stormwater discharge to Outfall 001 from draining points 1023, 1024, and 1038.	6/1/2028

Milestone	Due Date
13. Complete engineering of final ammonia solution to achieve compliance with ammonia limitations.	12/31/2029
14. Achieve compliance with final ammonia limitations.	Within 96 months of permit effective date
15. Submit annual reports.	By March 31 of each year

*See Part I.C.25 for description of Phases

No later than 14 calendar days following the completion of any milestone, the permittee shall submit to the DEQ Piedmont Regional Office, either a report of progress or, in the case of specific actions being required by identified dates, a written report of compliance or noncompliance. In the latter case, the notice shall include the cause of the noncompliance, and remedial action taken, and the probability of meeting the next scheduled requirement.

D.2 Schedule of Compliance for Chesapeake Bay TMDL Action Plan

The permittee shall achieve compliance with the stormwater loading requirements in Part III.C in accordance with the schedule below. This schedule is a combined compliance schedule for the major components of the Chesapeake Bay TMDL Action Plan. Those components are found in Part I.C.25, I.C.26, and I.C.21.

Milestone	Due Date
1. Begin enhanced inspection and housekeeping as required by Part I.C.20.	Within 30 days of the effective date of this permit
2. Submit an approvable Adaptive Management Plan for stormwater in the 901, 902 and 903, as required by Part I.C.21.	Within 120 days of the effective date of this permit
3. Begin detailed engineering design for the Marine Operations collection system.	8/31/2024
4. Submit either: 1.) An approvable Concept Engineering Report for the Marine Operations area treatment system, or 2.) An approvable Concept Engineering Report for conveyance of the Marine Operations area stormwater to the Hopewell Water Renewal WWTP.	12/31/2024
5. Begin construction of collection and conveyance system for Phase 5*.	3/31/2025
6. Begin construction of barometric condenser removal project.	10/31/2025
7. Remove one barometric condenser from service.	10/31/2026
8. Complete construction of collection and conveyance system for Phase 5* and eliminate the discharge from Outfalls 906 and 907.	12/31/2026
9. Complete construction of treatment system or the conveyance system to Hopewell Water Renewal.	12/31/2026

Milestone	Due Date
10. Begin construction of collection and conveyance system for Phase 6*.	1/1/2027
11. Submit an approvable plan to eliminate or minimize to the extent practicable the discharge of ammonium sulfate into Outfall 001 in the areas surrounding Building 12.	6/30/2027
12. Begin construction of collection and conveyance system for Phase 7*.	6/30/2028
13. Complete construction of the collection and conveyance system for Phase 6* and eliminate the discharge from Outfalls 904 and 905.	12/31/2028
14. Complete construction of the collection and conveyance system for Phase 7* and eliminate the discharge from Outfall 911.	12/31/2028
15. Eliminate the stormwater discharge to Outfall 001 from draining points 1023, 1024, and 1038.	6/1/2028
16. Complete engineering of final ammonia solution to achieve compliance with ammonia limitations.	12/31/2029
17. Achieve the stormwater nitrogen load reductions required by the Chesapeake Bay TMDL Action Plan, per Part III.C.2.c.	6/30/2029

*See Part I.C.25 for description of Phases

No later than 14 days following the completion of any milestone, the permittee shall submit written notification of completion to the DEQ Piedmont Regional Office. The permittee shall also provide written notification if any milestone is not achieved as required, and the notice shall include the cause of noncompliance, any corrective action taken, and the probability of meeting the next scheduled milestone. Annual progress reports shall be submitted to the department no later than March 31st of each year for the period of January 1 through December 31. The first annual reporting period begins XXXXX (INSERT effective date of the permit). See Part III.C.2.d and Part III.C.2.e for additional reporting requirements.

E. Special Conditions for Cooling Water Intake Structures per Section 316b of the Clean Water Act

1. Interim §316(b) Best Technology Available (BTA)

The permittee shall implement interim Best Technology Available (BTA) measures to minimize impingement and entrainment (I&E) mortality and adverse impacts. The following interim BTA measures are to be employed throughout the term of this permit:

- a. Maintain adequate trash racks around applicable cooling water intakes.
- b. Cooling water withdrawals shall be minimized during low-flow river conditions and sensitive spawning periods.
- c. Operation and maintenance of traveling screens with an opening size of 0.56-inch or less.

2. Impingement and Entrainment Control Technology Preventative Maintenance

The Operations and Maintenance manual for the permitted facility shall include a description of procedures and a regular schedule for preventative maintenance of all impingement and entrainment (I&E) control technologies and measures, and shall include a description of mitigation protocols and practices to implement should water withdrawal occur while an I&E technology or measure is off-line. All I&E control technologies and measures shall be maintained in effective operating condition. The permittee shall maintain documentation of maintenance and repairs of I&E control technologies and measures, including but not limited to: the date(s) of regular maintenance, date(s) of repair or replacement discovery needs, date(s) for repairs, and date(s) the control technologies return to full function.

3. Monitoring Requirements

Visual or Remote Inspections

The permittee shall conduct visual inspections or employ remote monitoring devices during the period any cooling water intake structure is in operation. Inspections shall be conducted no less frequently than **daily** to ensure that any technologies operated to comply with impingement mortality and entrainment requirements, any additional measures necessary to protect listed threatened and endangered species and designated critical habitat, and other standards for minimizing adverse environmental impact as established in this permit, are maintained and operated to function as designed.

Inspection documentation shall include at a minimum:

- (i) Date, time, and location of the inspection or remote monitoring period;
- (ii) The name(s) and signature(s) of the inspector(s);
- (iii) Weather information and a description of water withdrawal volumes or rates occurring at the time of inspection;
- (iv) Where available, head loss across the intake screen(s);
- (v) Any technologies needing maintenance, repair, or replacement;
- (vi) Any additional measures needed to comply with the permit requirements.

The requirement to conduct visual or remote inspections is waived when no water is withdrawn through all cooling water intake structures during an entire inspection period. For each cooling water intake structure, the permittee shall document the date(s) when no water is withdrawn through the respective intake structure.

When adverse weather conditions prevent visual inspections or remote monitoring from being safely conducted during a given inspection period, the visual inspection or remote monitoring requirements may be waived provided the permittee prepares documentation explaining the reasons why a visual inspection or remote monitoring could not be safely conducted. Adverse weather conditions are those that are dangerous or create inaccessibility for personnel, and may include such events as local flooding, high winds, electrical storms, or situations that otherwise make an inspection impracticable, such as drought or extended frozen conditions.

Any deficiencies found during a visual inspection or remote monitoring event shall be corrected as soon as possible, but no later than 30 days following discovery, unless permission for a later date is granted by DEQ in writing.

All documentation relating to visual inspections or remote monitoring, or the inability to safely conduct such monitoring due to adverse weather conditions, shall be signed and certified in accordance with Part II.K of this permit and shall be made available to DEQ personnel for review during facility inspections or no later than 30 days following receipt of a request by DEQ.

4. Annual Certification Statement Requirements

The permittee shall prepare a written statement annually certifying either: a) operations of any unit at the permitted facility that impacts cooling water withdrawals or operation of any cooling water intake structure have been substantially modified, or b) no substantial changes have occurred in the operations of any unit at the permitted facility that impacts cooling water withdrawals or operation of any cooling water intake structure.

If substantial modifications to operations have occurred, the permittee must provide a summary of those changes with the annual certification statement. In addition, the permittee must submit revisions to the information required at 40 CFR §122.21(r) with the next application for reissuance of this permit.

Certification statements shall be signed in accordance with Part II.K of this permit and submitted to the DEQ Piedmont Office no later than each January 10 for the period covering the preceding calendar year.

5. Measures to Protect Federally-listed Threatened or Endangered (T&E) Species, Designated Critical Habitat, and Fragile Species or Shellfish

The permittee shall operate each cooling water intake structure and cooling system in a manner designed to minimize incidental take, reduce or remove more than minor detrimental effects to Federally-listed threatened, endangered, or fragile species and designated critical habitat, including prey base.

The permittee shall prepare, on a calendar year basis, a report providing an assessment of the efficiency/effectiveness of the facility's control measures. The report shall include a compilation of all federally-listed threatened or endangered species found to have been taken by a cooling water intake structure during the reporting year. For each federally-listed species taken, the report shall include the following data at a minimum:

- a. Species name (to include both the Latin and common name);
- b. Federal listed status (e.g., threatened, endangered, or other);
- c. Total number of organisms taken by life stage cycle (egg, larva, juvenile, adult);
- d. Method of take (impingement, entrainment, or other);
- e. Results of the take (death, injury, or other); and
- f. The take estimated by the federal Fishery Services when a federal incidental take authorization was granted.

The assessments and compiled data shall be submitted to the DEQ-Regional Office by no later than each February 10 for the preceding calendar year.

6. Federal Endangered Species Act Compliance

Nothing in this permit authorizes take for the purposes of the facility's compliance with the Endangered Species Act.

7. Compliance with §316(b) BTA for Impingement and Entrainment

The Best Technology Available (BTA) for minimizing adverse environmental impact associated with the use of cooling water intake structure for this facility has been determined to be 1.0 mm fine screens with a maximum approach velocity of 0.25 fps (measured at 6 inches or closer to the screen) and a sweeping velocity exceeding 0.25 fps as often as possible (measured across the entire screen at 6 inches or closer to the screen). The permittee has requested, and DEQ has approved, a pilot study to provide additional information to assess the technical feasibility of the BTA determined with this permit, including evaluating a system of technology for impingement mortality compliance. The permittee shall achieve compliance with the BTA in accordance with the following schedule:

Schedule Milestone	Due Date
<p>1) <u>Pilot Study Plan</u>: Submit an approvable study plan to the DEQ Piedmont Regional Office for pilot testing of new screens to inform the replacement of existing cooling water intake screens. The study plan will be developed in collaboration with the Virginia Department of Wildlife Resources (DWR), and will include, at a minimum, testing for the parameters of screen mesh sizes, approach velocity, sweeping velocity, and associated mortality rates. At a minimum, the study will evaluate 1.0 mm fine screens with a maximum approach velocity of 0.25 fps. The plan may also include other screen designs at the</p>	<p>Submit plan within 6 months of the effective date of the permit.</p>

Schedule Milestone	Due Date
<p>discretion of the permittee. Provisions for cleaning the screens will be included with the plan. The sampling frequency, sampling method, and method of data analysis will be included in the study plan. The plan will also contain provisions for makeup sampling in case of equipment malfunction, adverse weather, or other unforeseen circumstances.</p>	
<p>2) <u>Conduct</u> 2 years of pilot study.</p>	<p>The study shall not commence until written approval is granted by DEQ, and no later than 90 days after written approval of the pilot study (Milestone 1).</p>
<p>3) <u>Submit study report</u>. The report will include a preliminary design of the static fine screens and include justifications for 1) the proposed slot size based on consideration of the ability to reduce mortality, avoid screen clogging, fouling or other maintenance issues, and any other relevant considerations; 2) the proposed materials alloy choice for the equipment in order to reduce biofouling; 3) the proposed optimal screen orientation in the river in order to reduce entrainment and impingement mortality. The design will be subject to DEQ approval.</p>	<p>The report will be submitted within 120 days of the final sampling event in Milestone 2.</p>
<p>4) Submit the final design, as defined as 90% design or "issued for construction" based on the study report that will be approved by DEQ in Milestone 3. A system to clean the screens will be included in the design. A system to monitor the screens, either visually or remotely will be included in the design.</p>	<p>Within 180 days of written approval of the pilot study report submitted in Milestone 3.</p>
<p>5) <u>Permitting</u> - Commence the process to obtain all necessary permits and approvals for installation and construction of the fine mesh static screens, including those required by U.S. Army Corps of Engineers (ACOE), National Marine Fisheries Service (NMFS), DEQ, local conservation commissions, and others as necessary. This shall include the engineering to support the permitting, the permit applications, and all necessary supplementary data</p>	<p>Within 30 days of written approval of the final design submitted in Milestone 4.</p>
<p>6) <u>Permitting</u> - Complete submission of all necessary permit applications and notices necessary to install the final design.</p>	<p>Within 240 days of commencement of Milestone 5.</p>
<p>7) <u>Construction</u> – The permittee shall enter into Procurement and Construction agreements with the permittee's screen</p>	<p>Within 180 days of written approval of the final design submitted in Milestone 4.</p>

Schedule Milestone	Due Date
supplier and construction contractor, respectively	
8) <u>Construction</u> – Complete site preparation for the installation of the final design. The permittee shall minimize environmental and navigational impacts during construction and installation.	Within 180 days of obtaining all permits and approvals in Milestone 5.
9) <u>Construction</u> – Complete installation, operational modifications, testing, startup and commissioning of the fine mesh screens	Within 24 months of obtaining all permits and approvals in Milestone 5. If Time-of-Year restrictions exceed 9 months per year for any construction permit required by Milestone 5, then the permittee may request in writing, an extension to this due date. The due date shall not exceed 36 months from obtaining all permits and approvals in Milestone 5. Upon written approval by DEQ, the new due date shall become an enforceable part of this permit.
10) <u>Impingement Technology Performance Optimization Study</u> : Submit an approvable monitoring plan to conduct 2 years of biological monitoring to begin when the new screens are put into service. The biological monitoring will be conducted at least monthly, or more often if required by the Director. The study plan shall meet the requirements of 40 CFR 122.21(r)(6)(ii).	Study plan to be submitted to DEQ at least 6 months prior to the commissioning of the new screens
11) Conduct 2 years of biological monitoring per approved Impingement Technology Performance Optimization Study Plan.	Biological monitoring will begin immediately upon commissioning of the new screens.
12) Submit Impingement Technology Performance Optimization Study results.	Within 60 days of the final biological monitoring event for the Impingement Technology Performance Optimization Study.
13) Meet the Impingement Mortality BTA with a system of technologies per §125.94(c)(6).	24 months after commissioning of the new screens.

No later than 14 days following the completion of any milestone, the permittee shall submit written notification of completion to the DEQ Piedmont Regional Office. The permittee shall also provide written notification if any milestone date is not achieved as required, and shall also submit a progress report with a recovery schedule.

8. BTA Reopener

If conditions associated with any of the overall BTA elements subsequently change, this permit may be re-opened and modified, or alternatively revoked and reissued, to re-evaluate the §316(b) final BTA finding.

CONDITIONS APPLICABLE TO ALL VPDES PERMITS

A. Monitoring

1. Samples and measurements required by this permit shall be taken at the permit designated or approved location and be representative of the monitored activity.
 - a. Monitoring shall be conducted according to procedures approved under Title 40 Code of Federal Regulations Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this permit.
 - b. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will insure accuracy of measurements.
 - c. Samples taken shall be analyzed by a laboratory certified under 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.
2. Any pollutant specifically addressed by this permit that is sampled or measured at the permit designated or approved location more frequently than required by this permit shall meet the requirements in A 1 a through c above and the results of this monitoring shall be included in the calculations and reporting required by this permit.
3. Operational or process control samples or measurements shall not be taken at the designated permit sampling or measurement locations. Operational or process control samples or measurements do not need to follow procedures approved under Title 40 Code of Federal Regulations Part 136 or be analyzed in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

B. Records

1. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) and time(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
2. 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 five years, the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all 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 of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

C. Reporting Monitoring Results

1. The permittee shall submit the results of the monitoring required by this permit not later than the 10th day of the month after the monitoring period, unless another reporting schedule is specified elsewhere in this permit. Monitoring results sent by hard copy shall be submitted to:

DEQ - Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

2. Monitoring results shall be reported on a Discharge Monitoring Report (DMR) or on forms provided, approved, or specified by the Department.
3. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

D. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Department may require the permittee to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of state waters, or such other information as may be necessary to accomplish the purposes of the State Water Control Law. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

E. Compliance Schedule Reports

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.

F. Unauthorized Discharges

Except in compliance with this permit, or another permit issued by the Department, it shall be unlawful for any person to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances; or
2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses.

G. Reports of Unauthorized Discharges.

Any permittee who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance into or upon state waters in violation of Part II F; or who discharges or causes or allows a discharge that may reasonably be expected to enter state waters in violation of Part II F, shall notify the Department of the discharge immediately upon discovery of the discharge, but in no case later than 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the Department, within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;
2. The cause of the discharge;
3. The date on which the discharge occurred;
4. The length of time that the discharge continued;
5. The volume of the discharge;
6. If the discharge is continuing, how long it is expected to continue;
7. If the discharge is continuing, what the expected total volume of the discharge will be; and
8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this permit. Discharges reportable to the Department under the immediate reporting requirements of other regulations are exempted from this requirement.

H. Reports of Unusual or Extraordinary Discharges

If any unusual or extraordinary discharge including a bypass or upset should occur from a treatment works and the discharge enters or could be expected to enter state waters, the permittee shall promptly notify, in no case later than 24 hours, the Department by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse effects on aquatic life and the known number of fish killed. The permittee shall reduce the report to writing and shall submit it to the Department within five days of discovery of the discharge in accordance with Part II I 2. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:

1. Unusual spillage of materials resulting directly or indirectly from processing operations;
2. Breakdown of processing or accessory equipment;
3. Failure or taking out of service some or all of the treatment works; and
4. Flooding or other acts of nature.

I. Reports of Noncompliance

The permittee shall report any noncompliance which may adversely affect state waters or may endanger public health.

1. An oral report shall be provided within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which shall be reported within 24 hours under this paragraph:
 - a. Any unanticipated bypass; and
 - b. Any upset which causes a discharge to surface waters.
2. A written report shall be submitted within 5 days and shall contain:
 - a. A description of the noncompliance and its cause;
 - b. 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
 - c. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The Department may waive the written report on a case-by-case basis for reports of noncompliance under Part II I. if the oral report has been received within 24 hours and no adverse impact on state waters has been reported.

3. The permittee shall report all instances of noncompliance not reported under Parts II I.1 or 2, in writing, at the time the next monitoring reports are submitted. The reports shall contain the information listed in Part II I.2.

NOTE: The immediate (within 24 hours) reports required in Parts II G, H and I shall be made to the Department's Regional Office at pro.SSO-UD@deq.virginia.gov or (804) 527-5020. For telephone reports outside normal working hours (before 8:30 am and after 5:00 pm Monday through Friday and anytime Saturday through Sunday), follow the instructions on the voicemail to reach the appropriate staff. For emergencies, the Virginia Department of Emergency Management maintains a 24 hour telephone service at 1-800-468-8892.

J. Notice of Planned Changes

1. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - a. The permittee plans alteration or addition to any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction

of which commenced:

- (1) After promulgation of standards of performance under Section 306 of Clean Water Act which are applicable to such source; or
 - (2) After proposal of standards of performance in accordance with Section 306 of Clean Water Act which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal;
- b. 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 nor to notification requirements specified elsewhere in this permit; or
 - c. 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.
2. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

K. Signatory Requirements

1. Applications. All permit applications shall be signed as follows:
 - a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
 - c. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes: (i) The chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
2. Reports, etc. All reports required by permits, and other information requested by the Department shall be signed by a person described in Part II K 1, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Part II K 1;
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for

environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

c. The written authorization is submitted to the Department.

3. Changes to authorization. If an authorization under Part II K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part II K 2 shall be submitted to the Department prior to or together with any reports, or information to be signed by an authorized representative.

4. Certification. Any person signing a document under Parts II K 1 or 2 shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the State Water Control Law and the Clean Water Act, except that noncompliance with certain provisions of this permit may constitute a violation of the State Water Control Law but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

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 Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if this permit has not yet been modified to incorporate the requirement.

M. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. All permittees with a currently effective permit 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 Department. The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.

N. Effect of a Permit

This permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

O. State Law

Nothing in this permit shall be construed to preclude the institution of any legal action under, or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by Section 510 of the Clean Water Act. Except as provided in permit conditions on "bypassing" (Part II U), and "upset" (Part II V) nothing in this permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

P. 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 any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Sections 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

Q. 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 effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

R. Disposal of Solids or Sludges

Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering state waters.

S. 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.

T. Need to Halt or Reduce Activity 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.

U. Bypass

1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. 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 Parts II U 2 and U 3.
2. Notice
 - a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, prior notice shall be submitted, if possible at least ten days before the date of the bypass.
 - b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part II I.
3. Prohibition of bypass.
 - a. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 - (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (2) 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 preventive maintenance; and
 - (3) The permittee submitted notices as required under Part II U 2.
 - b. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in Part II U 3 a.

V. Upset

1. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of Part II V 2 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.
2. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - b. The permitted facility was at the time being properly operated;
 - c. The permittee submitted notice of the upset as required in Part II I 2; and
 - d. The permittee complied with any remedial measures required under Part II S.
3. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

W. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:

1. 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;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act and the State Water Control Law, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

X. Permit Actions

Permits 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.

Y. Transfer of Permits

1. Permits are not transferable to any person except after notice to the Department. Except as provided in Part II Y 2, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made, to identify the new permittee and incorporate such other requirements as may be necessary under the State Water Control Law and the Clean Water Act.
2. As an alternative to transfers under Part II Y 1, this permit may be automatically transferred to a new permittee if:
 - a. The current permittee notifies the Department at least 30 days in advance of the proposed transfer of the title to the facility or property;
 - b. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

- c. The Department does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part II Y 2 b.

Z. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

Part III. Industrial Stormwater Management Conditions and Requirements

A. Stormwater Monitoring Requirements

The permittee shall conduct all stormwater monitoring in accordance with Part I.A.9 through Part I.A.19 and Part III.B.1 (Sample Type) of this permit.

1. Stormwater Management Evaluation

The Stormwater Pollution Prevention Plan (SWPPP), which is to be developed and maintained in accordance with Part III.D below, shall have a goal to reduce or eliminate, to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice, pollutants discharged from all the regulated industrial activity stormwater outfalls.

a. Pollutant Specific Screening.

One goal of the SWPPP shall place emphasis on reducing, to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice, the following pollutants in the outfalls noted below.

Outfall Number	Parameter*	Screening Criteria
901	Copper, dissolved	18 µg/L
	Zinc, total	156 µg/L
	Ammonia	3.60 mg/L
902	Copper, dissolved	18 µg/L
	Zinc, total	156 µg/L
	Ammonia	3.60 mg/L
903	Copper, dissolved	17 µg/L
	Ammonia	0.784 mg/L
904	Copper, dissolved	34 µg/L
	Zinc, total	290 µg/L
	Ammonia	8.27 mg/L
905	Copper, dissolved	18 µg/L
	Zinc, total	167 µg/L
	Ammonia	16.6 mg/L
906	Copper, dissolved	65 µg/L
	Zinc, total	520 µg/L
	Ammonia	12.2 mg/L
907	Copper, dissolved	17 µg/L
	Zinc, total	156 µg/L
	Ammonia	0.784 mg/L
908	Copper, dissolved	18 µg/L
	Zinc, total	156 µg/L
	Ammonia	3.60 mg/L
909	Copper, dissolved	18 µg/L
	Zinc, total	156 µg/L
	Ammonia	3.60 mg/L
910	Copper, dissolved	18 µg/L
	Zinc, dissolved	156 µg/L
911	Copper, dissolved	33 µg/L
	Ammonia	19.2 mg/L
912	Copper, dissolved	17 µg/L
	Ammonia	0.784 mg/L
	Zinc, total	156 µg/L
	TRC	0.04 mg/L

*The screening criteria for metals is expressed in dissolved form. The benchmark values for metals are expressed in total recoverable form. In all cases the benchmark for zinc was more limiting than the screening criteria, with the

exception of Outfall 910. Therefore, monitoring for zinc is required as total recoverable (except for Outfall 910) to compare to the benchmark value and monitoring for copper is required as dissolved to compare to the screening criteria.

b. Whole Effluent Toxicity Testing

With the exception noted in Part III.A.1.d below, the permittee shall conduct acute toxicity tests on the outfalls noted in Part III.A.1.a above using grab samples of the discharge from the stormwater outfall, and at the frequency described in Part I.A for each outfall. These acute screening tests shall be 48-hour static tests using *Ceriodaphnia dubia* and *Pimephales promelas*, conducted in such a manner and at sufficient dilutions for calculation of a valid LC50. One copy of all results and all supporting information shall be submitted with an annual report no later than February 10th of each year. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3. Additional technical assistance in developing the procedures for these tests will be provided by the Department of Environmental Quality (DEQ), if requested by the permittee. If any of the biological tests are invalidated, an additional test shall be conducted within thirty (30) days of notification. If there is no discharge during this 30-day period, a sample must be taken during the first qualifying discharge.

c. The permittee shall submit the following information with the results of the toxicity tests.

- (1) The actual or estimated effluent flow at the time of the sampling.
- (2) The time at which the discharge event began, the time at which the effluent was sampled, and the duration of the discharge event.
- (3) All sampling results for ammonia, total recoverable zinc, and total recoverable copper that were required for paired sampling with the toxicity tests.

d. Waiver of Toxicity Screening

The permittee may request the department to waive, or reduce the frequency of, acute toxicity tests and reporting required by paragraph Part III.A.1.b. above when the quarterly monitoring results for all parameters listed for each outfall in Part III.A.1.a above, and as required by Part I.A of this permit, are below the screening criteria noted in Part III.A.1.a. above for four consecutive quarters. If quarterly monitoring results for any of these parameters are detected at or above the screening criteria noted in Part III.A.1.a. after the waiver is granted, the permittee shall resume acute toxicity testing and reporting required by Part III.A.1.b at the start of the calendar quarter following the date of sample collection. Testing and reporting requirements shall then continue in accordance with Part III.A.1.b for the duration of the permit term.

e. The effectiveness of the SWPPP will be evaluated via the required monitoring for all parameters listed in Part I.A of this permit for the regulated stormwater outfalls, including the specific pollutants noted in a. above and the toxicity screening required by this special condition. Monitoring results that are above the screening criteria for the specific pollutants in a. above or, in the case of toxicity, result in an LC50 of less than 100% effluent, will justify the need to reexamine the SWPPP and any best management practices (BMPs) being utilized for the affected outfalls. In addition, the permittee shall amend the SWPPP whenever there is a change in the facility or its operation which materially increases the potential for activities to result in a discharge of significant amounts of pollutants.

No later than February 10th of each year, the permittee shall submit to the DEQ regional office Regional Office an annual report which includes the pollutant-specific and biological monitoring data from the outfalls included in this condition along with a summary of any steps taken to modify either the SWPPP or any BMPs based on the monitoring data.

2. Benchmark Concentrations.

Should the stormwater monitoring results for a given parameter exceed the benchmark concentration(s) below, the permittee shall implement corrective action(s) in accordance with Part III.B.8 (Corrective Actions). Stormwater monitoring data submitted by the permittee that is above an established benchmark concentration does not constitute a violation of this permit.

Parameter	Benchmark Concentration
Iron, total	1,000 µg/L
Aluminum, total	750 µg/L
Zinc, total	120 µg/L
Total Nitrogen	2.2 mg/L
Total Phosphorus	2.0 mg/L

B. Stormwater Management Conditions

1. Sample Type.

For all stormwater monitoring required in Parts I.A.9 through I.A.17, or other applicable sections of this permit, a minimum of one grab sample shall be taken. Unless otherwise specified, all samples (except snowmelt samples) shall be collected from the discharge resulting from a storm event that results in a discharge from the site (defined as a "measurable storm event"), providing the interval from the preceding measurable storm event is at least 72 hours. The 72-hour storm interval is waived if the permittee is able to document that less than a 72-hour interval is representative for local storm events during the sampling period. In the case of snowmelt, the monitoring shall be performed at a time when a measurable discharge occurs at the site. For discharges from a stormwater management structure, the monitoring shall be performed at a time when a measurable discharge occurs from the structure.

The grab sample shall be taken during the first 30 minutes of the discharge. If it is not practicable to take the sample during the first 30 minutes, the sample may be taken during the first three hours of the discharge, provided that the permittee explains why a grab sample during the first 30 minutes was impracticable. This information shall be submitted in the department's electronic discharge monitoring report (e-DMR) system, and maintained with the Stormwater Pollution Prevention Plan (SWPPP). If the sampled discharge commingles with process or non-process water, the permittee shall attempt to sample the stormwater discharge before it mixes with the non-stormwater.

2. Recording of Results.

For each storm event monitored under Parts I.A.9 through I.A.19 of this permit, the permittee shall identify:

- a. The date and duration (in hours) of the storm events sampled;
- b. The rainfall total (in inches) of the storm event that generated the sampled runoff; and
- c. The duration between the storm event sampled and the end of the previous measurable storm event.
- d. For snowmelt or controlled discharges from a stormwater management structure, the permittee shall identify the date of the sampling event.

Documentation explaining a facility's inability to obtain a sample (including dates and times the outfalls were viewed or sampling was attempted), of no rain event, or of deviation from the "measurable" storm event requirements shall be maintained with the SWPPP. Acceptable documentation includes National Climatic Data Center (NCDC) weather station data, local weather station data, facility rainfall logs, and other appropriate supporting data.

3. Representative Outfalls (Substantially Identical Discharges).

If the facility has two or more outfalls that discharge substantially identical effluents, based on similarities of the industrial activities, significant materials, size of drainage areas, and stormwater management practices occurring within the drainage areas of the outfalls, frequency of discharges, and stormwater management practices occurring within the drainage areas of the outfalls, the permittee may conduct monitoring on the effluent of just one of the outfalls and report that the observations also apply to the substantially identical outfall or outfalls. The substantially identical outfall monitoring provisions are not available for numeric effluent limits monitoring.

The permittee shall include the following in the SWPPP:

- a. The locations of the outfalls;
- b. An evaluation, including available monitoring data, indicating the outfalls are expected to discharge substantially identical effluents, including evaluation of monitoring data where available; and
- c. An estimate of the size of each outfall's drainage area in acres.

4. Quarterly Visual Examination of Stormwater Quality.

The permittee shall perform and document a quarterly visual examination of a stormwater discharge associated with industrial activity from each outfall, except discharges exempted below in Part III.B.4.d. The examinations shall be made at least once in each of the following three-month periods: January through March, April through June, July through September, and October through December. The visual examination shall be made during normal working hours, where practicable, and when considerations for safety and feasibility allow. If no storm event resulted in runoff from the facility during a monitoring quarter, the permittee is excused from visual monitoring for that quarter provided that documentation is included with the monitoring records indicating that no runoff occurred. The documentation shall be signed and certified in accordance with Part II.K (Signatory Requirements) of this permit.

- a. Samples shall be collected in accordance with Part III.B.1. Sample examination shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution. The visual examination of the sample shall be conducted in a well-lit area. No analytical tests are required to be performed on the samples.
- b. The visual examination reports shall be maintained on-site with the SWPPP. The report shall include the outfall location, the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the stormwater discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution), and probable sources of any observed stormwater contamination.
- c. If the facility has two or more outfalls that discharge substantially identical effluents, the permittee may conduct visual monitoring in accordance with Part III.B.3 (Stormwater Management Conditions – Representative Outfalls) of the permit.
- d. When the permittee is unable to conduct the visual examination due to adverse climatic conditions, the permittee shall document the reason for not performing the visual examination and retain this documentation onsite with the records of the visual examinations. Adverse weather conditions are those that are dangerous or create inaccessibility for personnel, and may include such things as local flooding, high winds, electrical storms, or situations that otherwise make sampling impracticable, such as drought or extended frozen conditions.

5. Authorized Non-Stormwater Discharges.

- a. The following non-stormwater discharges are authorized by this permit:
 - (1) Discharges from emergency firefighting activities
 - (2) Fire hydrant flushings, managed in a manner to avoid an instream impact;
 - (3) Potable water, including water line flushings, managed in a manner to avoid an instream impact;
 - (4) Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
 - (5) Irrigation drainage;
 - (6) Landscape watering provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling;
 - (7) Routine external building washdown that does not use detergents or hazardous cleaning products;
 - (8) Pavement wash waters where no detergents or hazardous cleaning products are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed). Pavement wash waters shall be managed in a manner to avoid an instream impact;
 - (9) Uncontaminated groundwater or spring water;
 - (10) Foundation or footing drains where flows are not contaminated with process materials; and

- (11) 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 or drains).
- b. All other non-stormwater discharges not specifically identified above or in Part I.A of this permit are not authorized and shall either be eliminated or covered under a separate VPDES permit.

6. Releases of Hazardous Substances or Oil in Excess of Reportable Quantities.

The discharge of hazardous substances or oil in the stormwater discharges from the facility shall be prevented or minimized in accordance with the SWPPP for the facility. This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill. This permit does not relieve the permittee of the reporting requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 or § 62.1-44.34:19 of the Code of Virginia.

Where a 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:

- a. The permittee is required to notify the Department in accordance with the requirements of Part II.G (Reports of Unauthorized Discharges) of this permit as soon as he has knowledge of the discharge;
- b. Where a release enters a MS4, the permittee shall also notify the owner of the MS4; and
- c. The SWPPP required by this permit shall be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the SWPPP shall be modified where appropriate.

7. Water Quality Protection.

The discharges authorized by this permit shall be controlled as necessary to meet applicable water quality standards. DEQ expects that compliance with the conditions in this permit will control discharges as necessary to meet applicable water quality standards.

8. Corrective Actions.

- a. For Data Exceeding Benchmark Concentration Values. If the benchmark concentration result exceeds the benchmark concentration value for that parameter established in Part III.A.2 of this permit, the permittee shall review the SWPPP and modify it as necessary to address any deficiencies that caused the exceedance. Revisions to the SWPPP shall be completed within 60 days after an exceedance is discovered.

When control measures need to be modified or added (distinct from regular preventive maintenance of existing control measures described in Part III.D.2.f), implementation shall be completed before the next anticipated storm event if possible, but no later than 60 days after the exceedance is discovered, or as otherwise provided or approved by the DEQ Piedmont Regional Office. In cases where construction is necessary to implement control measures, the permittee shall include a schedule in the SWPPP that provides for the completion of the control measures as expeditiously as practicable, but no later than three years after the exceedance is discovered. Where a construction compliance schedule is included in the SWPPP, the SWPPP shall include appropriate nonstructural and temporary controls to be implemented in the affected portions of the facility prior to completion of the permanent control measure. Any control measure modifications shall be documented and dated, and retained with the SWPPP, along with the amount of time taken to modify the applicable control measure or implement additional control measures.

- b. Natural Background Pollutant Levels. If the concentration of a pollutant exceeds a benchmark concentration, and the permittee determines that exceedance of the benchmark concentration is attributable solely to the presence of that pollutant in the natural background, corrective action is not required provided that:

- (1) The concentration of the benchmark concentration is less than or equal to the concentration of that pollutant in the natural background;
- (2) The permittee documents and maintains with the SWPPP the supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. The supporting rationale shall include any data previously collected by the facility or others (including literature studies) that describe the levels of natural background pollutants in the facility's stormwater discharges; and
- (3) The permittee notifies the DEQ Piedmont Regional Office on the DMR that the benchmark exceedances are attributable solely to natural background pollutant levels.

Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on the facility's site, or pollutants in run-on from neighboring sources which are not naturally occurring.

c. Additional Corrective Actions. The permittee shall take corrective action whenever:

- (1) Routine facility inspections, visual monitoring, inspections by local, state or federal officials, or any other process, observation or event result in a determination that modifications to the stormwater control measures are necessary to meet the permit requirements;
- (2) There is any exceedance of an effluent limitation, Total Maximum Daily Load (TMDL) wasteload allocation, or a reduction required by a local ordinance established by a municipality to meet Chesapeake Bay TMDL requirements; or
- (3) DEQ determines, or the permittee becomes aware, that the stormwater control measures are not stringent enough for the discharge to meet applicable water quality standards.

The permittee shall review the SWPPP and modify it as necessary to address any deficiencies. Revisions to the SWPPP shall be completed within 60 days following the discovery of the deficiency. When control measures need to be modified or added (distinct from regular preventive maintenance of existing control measures described in Part III D.2.f), implementation shall be completed before the next anticipated storm event if possible, but no later than 60 days after the deficiency is discovered, or as otherwise provided or approved by the department. In cases where construction is necessary to implement control measures, the permittee shall include a schedule in the SWPPP that provides for the completion of the control measures as expeditiously as practicable, but no later than three years after the deficiency is discovered. Where a construction compliance schedule is included in the SWPPP, the SWPPP shall include appropriate nonstructural and temporary controls to be implemented in the affected portion of the facility prior to completion of the permanent control measure. The amount of time taken to modify a control measure or implement additional control measures shall be documented in the SWPPP. Any corrective actions taken shall be documented and retained with the SWPPP. Reports of corrective actions shall be signed in accordance with Part II K.

C. Discharges of Industrial Stormwater to Waters Subject to the Chesapeake Bay TMDL

1. Facilities in the Chesapeake Bay Watershed.

For the new stormwater outfalls identified (Outfalls 901, 902, and 903) and existing outfalls not adequately monitored (Outfalls 910, 912, 913): Owners of facilities in the Chesapeake Bay watershed shall monitor their discharges for Total Suspended Solids (TSS), Total Nitrogen (TN) and Total Phosphorus (TP) to characterize the contributions from their facility's specific industrial sector for these parameters. Total Nitrogen is the sum of Total Kjeldahl Nitrogen (TKN) and Nitrite + Nitrate and shall be derived from the results of those tests. Monitoring periods are specified in Part I.A. Samples shall be collected and analyzed in accordance with Part II A and Part III.B.1. Monitoring results shall be reported in accordance with Part I.A and Part II.C.3, and retained in accordance with Part II.B. The permittee shall utilize the procedures in Part III.C.2.b to calculate their facility stormwater loads based on the four samples for TSS, TN, and TP. The permittee shall submit a copy of the calculations and the Chesapeake Bay TMDL action plan, if required under Part III C.2.c, to the DEQ regional office within 90 days following the completion of the fourth monitoring period.

2. Chesapeake Bay TMDL Wasteload Allocations and Chesapeake Bay TMDL Action Plans.

- a. EPA's Chesapeake Bay TMDL (December 29, 2010) includes wasteload allocations for VPDES permitted industrial stormwater facilities as part of the regulated stormwater aggregate load. EPA used data submitted by Virginia with the Phase I Chesapeake Bay TMDL Watershed Implementation Plan, including the number of industrial stormwater permits per county and the number of urban acres regulated by industrial stormwater permits, as part of their development of the aggregate load. Aggregate loads for industrial stormwater facilities were appropriate because actual facility loading data were not available to develop individual facility wasteload allocations.

Virginia estimated the loadings from industrial stormwater facilities using actual and estimated facility acreage information and TP, TN, and TSS loading rates from the Northern Virginia Planning District Commission (NVPDC) Guidebook for Screening Urban Nonpoint Pollution Management Strategies (Annandale, VA November 1979), prepared for the Metropolitan Washington Council of Governments. The loading rates used were as follows:

TP - High (80%) imperviousness industrial; 1.5 lb/ac/yr
TN - High (80%) imperviousness industrial; 12.3 lb/ac/yr
TSS - High (80%) imperviousness industrial; 440 lb/ac/yr

The actual facility area information and the TP, TN, and TSS data collected for this permit will be used by the department to quantify the nutrient and sediment loads from VPDES permitted industrial stormwater facilities.

b. Calculation of Facility Loads.

- (1) The permittee shall analyze the nutrient and sediment data collected in accordance with Part I.A to determine if pollution reductions are required for this permit term. The permittee shall average the data collected at the facility for each of the pollutants of concern (POC) (e.g., TP, TN, and TSS) and compare the results to the loading rates for TP, TN, and TSS presented in Part III.C.2.a.

The following formula may be used to determine the loading rate:

$$L = 0.226 \times P \times P_j \times (0.05 + (0.9 \times I_a)) \times C$$

where:

L = the POC loading rate (lb/acre/year)

P = the annual rainfall (inches/year) - The permittee may use either actual annual average rainfall data for the facility location (in inches/year), the Virginia annual average rainfall of 44.3 inches/year, or another method approved by the department.

P_j = the fraction of annual events that produce runoff - The permittee shall use 0.9 unless the department approves another rate.

I_a = the impervious fraction of the facility impervious area of industrial activity to the facility industrial activity area

C = the POC average concentration of all facility samples (mg/L) - Facilities with multiple outfalls shall calculate a weighted average concentration for each outfall using the drainage area of each outfall.

For Total Phosphorus and Total Suspended Solids, all daily concentration data below the quantitation level (QL) for the analytical method used shall be treated as half the QL. All daily concentration data equal to or above the QL for the analytical method used shall be treated as it is reported.

For Total Nitrogen, if none of the daily concentration data for the respective species (i.e., TKN, nitrate, or nitrite) are equal to or above the QL for the respective analytical methods used, the daily TN concentration value reported shall equal one half of the largest QL used for the respective species. If one of the data is equal to or above the QL, the daily TN concentration value shall be treated as that data point is reported. If more than one of the data is above the QL, the daily TN concentration value shall equal the sum of the data points as reported.

- (2) Any modification to the facility's industrial acreage or impervious industrial acreage shall require the facility to recalculate facility loading rates. This may require the facility to modify the facility's Chesapeake Bay TMDL action plan or submit a Chesapeake Bay TMDL action plan as appropriate. Any recalculation of facility loading rates or modifications to a Chesapeake Bay TMDL action plan shall be submitted to the department within 90 days of the date on which the permittee completes a site modification. If previous monitoring is no longer representative of the modified facility, monitoring in accordance with Part I.A shall commence within 90 days of the modification and the revised calculations and Chesapeake Bay TMDL action plan if required under Part III.C.2.c shall be submitted no later than 90 days following completion of the fourth monitoring period.

c. Chesapeake Bay TMDL Action Plans.

- (1) If the calculated facility loading rate for TP, TN, or TSS is above the loading rates for TP, TN, or TSS presented in Part III.C.2.a, then the permittee shall develop and submit a Chesapeake Bay TMDL action plan to the department. The Chesapeake Bay TMDL action plan shall be submitted on a form provided by the department to the regional office. A copy of the current Chesapeake Bay TMDL action plan and all facility loading rate calculations shall be maintained with the facility's SWPPP. The Chesapeake Bay TMDL action plan shall include:
 - (a) A determination of the total pollutant load reductions for TP, TN, and TSS (as appropriate) necessary to reduce the annual loads from industrial activities. This shall be determined by multiplying the industrial acreage times the difference between the TMDL loading rates listed in Part III.C.2.a and the actual facility loading rates calculated in accordance with Part III.C.2.b. The reduction applies to the total difference calculated for each pollutant of concern;
 - (b) The means and methods, such as management practices and retrofit programs that will be utilized to meet the required reductions determined in Part III.C.2.c.(1)(a) and a schedule to achieve those reductions by June 30, 2029. The schedule shall include milestones to demonstrate the ongoing progress in meeting those reductions, as specified in the following permit special conditions: Part I.C.21 Adaptive Management Plan for Stormwater, Part I.C.25 Marine Operations Area Improvements, and Part I.C.26 Building 12 Stormwater Elimination; and
 - (c) The permittee may consider utilization of any pollutant trading or offset program in accordance with §§ 62.1-44.19:20 through 62.1-44.19:23 of the Code of Virginia, governing trading and offsetting, to meet the required reductions.

d. Chesapeake Bay TMDL Action Plan Annual Report

The permittee shall submit an annual report to the department by March 31st of each year that includes the progress in meeting the milestones specified in the permit special conditions Part I.C.21 Adaptive Management Plan for Stormwater, Part I.C.25 Marine Operations Area Improvements, and Part I.C.26 Building 12 Stormwater Elimination. The annual report shall describe the progress in meeting the required reductions and shall include all annual reporting required by special conditions Part I.C.21 Adaptive Management Plan for Stormwater, Part I.C.25 Marine Operations Area Improvements, and Part I.C.26 Building 12 Stormwater Elimination.

e. Chesapeake Bay TMDL Action Plan Annual Reporting Waiver

Upon implementation of the facility's Chesapeake Bay TMDL action plan, the permittee may submit a waiver for the annual reporting requirements. The waiver request shall be submitted for department approval to the DEQ regional office on a form provided by the department. Annual reporting requirements will be in effect until the permittee receives notice from the department that the waiver has been approved. A copy of the waiver approval shall be maintained with the SWPPP. The waiver may be revoked for cause by the department. A waiver request may be approved by the department once the permittee demonstrates that they have achieved all of the required pollutant reductions calculated under Part III.C.2.c.(1)(a). Pollutant reductions may be achieved using a combination of the following alternatives:

- (1) Reductions provided by one or more of the BMPs from the Virginia Stormwater BMP Clearinghouse listed in 9VAC25-870-65, approved BMPs found on the Virginia Stormwater Clearinghouse website, or BMPs approved by the Chesapeake Bay Program. Any BMPs implemented to provide the required

pollutant reductions shall be incorporated in the SWPPP and be permanently maintained by the permittee;

- (2) Implementation of site-specific BMPs followed by a minimum of four stormwater samples collected in accordance with sampling requirements in Part III.B.1 that demonstrate pollutant loadings have been reduced below those calculated under Part III.C.2.c. (1)(a). Any BMPs implemented to provide the required pollutant reductions shall be incorporated in the SWPPP and be permanently maintained by the permittee; or
- (3) Acquisition of nonpoint source credits certified by the department as perpetual in accordance with § 62.1-44.19:20 of the Code of Virginia.

3. Discharges Through a Regulated MS4 to Waters Subject to the Chesapeake Bay TMDL.

In addition to the requirements of this permit, any facility with industrial activity stormwater discharges through a regulated MS4 that is notified by the MS4 operator that the locality has adopted ordinances to meet the Chesapeake Bay TMDL shall incorporate measures and controls into their SWPPP to comply with applicable local TMDL ordinance requirements.

4. Expansion of Facilities That Discharge to Waters Subject to the Chesapeake Bay TMDL.

Virginia's Phase I Chesapeake Bay TMDL Watershed Implementation Plan (November 29, 2010), states that the wasteloads from any expansion of an existing permitted facility discharging stormwater in the Chesapeake Bay watershed cannot exceed the nutrient and sediment loadings that were discharged from the expanded portion of the land prior to the land being developed for the expanded industrial activity.

- a. For any industrial activity area expansions (i.e., construction activities, including clearing, grading and excavation activities) that commence on or after the effective date of this permit, the permittee shall document in the SWPPP the information and calculations used to determine the nutrient and sediment loadings discharged from the expanded land area prior to the land being developed, and the measures and controls that were employed to meet the no net increase of stormwater nutrient and sediment load as a result of the expansion of the industrial activity. Any land disturbance that is exempt from permitting under the VPDES construction stormwater general permit regulation (9VAC25-880) is exempt from this requirement.
- b. The permittee may use the Virginia Stormwater Management Program (VSMP) water quality design criteria to meet the requirements of subdivision "a" of this subsection. Under this criteria, the Total Phosphorus load shall not exceed the greater of:
 - (1) the Total Phosphorus load that was discharged from the expanded portion of the land prior to the land being developed for the industrial activity; or
 - (2) 0.41 pounds per acre per year.Compliance with the water quality design criteria may be determined utilizing the Virginia Runoff Reduction Method or another equivalent methodology approved by the Department. Design specifications and pollutant removal efficiencies for specific BMPs may be found on the Virginia Stormwater BMP Clearinghouse website.
- c. The permittee may consider utilization of any pollutant trading or offset program in accordance with §§ 62.1-44.19:20 through 62.1-44.19:23 of the Code of Virginia, governing trading and offsetting, to meet the no net increase requirement.

D. Stormwater Pollution Prevention Plan (SWPPP)

A SWPPP for the facility was required to be developed and implemented under the previous permit. The existing SWPPP shall be reviewed and modified, as appropriate, to conform to the requirements of this section. Permittees shall implement the provisions of the SWPPP as a condition of this permit.

The SWPPP requirements of this permit may be fulfilled, in part, by incorporating by reference other plans or documents such as a spill prevention control and countermeasure (SPCC) plan developed for the facility under Section 311 of the Clean Water Act, or best management practices (BMP) programs otherwise required for the facility, provided that the incorporated plan meets or exceeds the plan requirements of Part III.D.2 (Contents of the SWPPP). All plans incorporated by reference into the SWPPP become enforceable

under this permit. If a plan incorporated by reference does not contain all of the required elements of the SWPPP (Part III.D.2 – Contents of the SWPPP), the permittee shall develop the missing SWPPP elements and include them in the required plan.

1. Deadlines for SWPPP Preparation and Compliance.

- a. The facility shall update and implement any revisions to the SWPPP as expeditiously as practicable, but not later than 90 days from the effective date of this permit.
- b. Measures That Require Construction: In cases where construction is necessary to implement measures required by the plan, the plan shall contain a schedule that provides compliance with the plan as expeditiously as practicable, but no later than 3 years after the effective date of this permit. Where a construction compliance schedule is included in the plan, the schedule shall include appropriate nonstructural and/or temporary controls to be implemented in the affected portion(s) of the facility prior to completion of the permanent control measure.

2. Contents of the SWPPP.

The contents of the SWPPP shall comply with the requirements listed below. The SWPPP shall include, at a minimum, the following items:

- a. Pollution Prevention Team. The SWPPP shall identify the staff individuals by name or title who comprise the facility's stormwater pollution prevention team. The pollution prevention team is responsible for assisting the facility or plant manager in developing, implementing, maintaining, revising and ensuring compliance with the facility's SWPPP. Specific responsibilities of each staff individual on the team shall be identified and listed.
- b. Site Description. The SWPPP shall include the following:
 - (1) A description of the industrial activities at the facility.
 - (2) Site Map. A site map identifying the following:
 - (a) The boundaries of the property and the size of the property in acres;
 - (b) The location and extent of significant structures and impervious surfaces;
 - (c) Locations of all stormwater conveyances including ditches, pipes, swales and inlets and the directions of stormwater flow using arrows to indicate which direction stormwater will flow;
 - (d) Locations of all stormwater control measures, including BMPs;
 - (e) Locations of all surface water bodies, including wetlands;
 - (f) Locations of potential pollutant sources identified under Part III.D.2.c (Summary of Potential Pollutant Sources);
 - (g) Locations where significant spills or leaks identified under Part III.D.2.c.(3) (Summary of Potential Pollutant Sources – Spills and Leaks) have occurred;
 - (h) Locations of stormwater outfalls.
 - (1) An approximate outline of the area draining to each outfall;
 - (2) The drainage area of each outfall in acres;
 - (3) The longitude and latitude of each outfall;
 - (4) The location of any MS4 conveyance receiving discharge from the facility; and
 - (5) Each outfall shall be identified with a unique numerical identification code.
 - (i) Location and description of all nonstormwater discharges;
 - (j) Location of any storage piles containing salt;
 - (k) Locations and sources of run-on to the site from an adjacent property, if the run-on is suspected of containing significant quantities of pollutants; and
 - (l) Locations of all stormwater monitoring points.
 - (3) Receiving Waters and Wetlands. The name of all surface waters receiving discharges from the site, including intermittent streams, dry sloughs and arroyos. Provide a description of wetland sites that may receive discharges from the facility. If the facility discharges through a MS4, identify the MS4 operator and the receiving water to which the MS4 discharges.

- c. Summary of Potential Pollutant Sources. The SWPPP shall identify each separate area at the facility where industrial materials or activities are exposed to stormwater. Industrial materials or activities include material handling equipment or activities, industrial machinery, raw materials, industrial production and processes, intermediate products, byproducts, final products and waste products. Material handling activities include the storage, loading and unloading, transportation, disposal or conveyance of any raw material, intermediate product, final product or waste product. For each separate area identified, the description shall include:
- (1) Activities in Area. A list of the industrial activities exposed to stormwater.
 - (2) Pollutants. A list of the pollutants, pollutant constituents, or industrial chemicals associated with each industrial activity that could potentially be exposed to stormwater. The pollutant list shall include all significant materials handled, treated, stored or disposed that have been exposed to stormwater in the three years prior to the date the SWPPP was prepared or amended. The list shall include any hazardous substances or oil at the facility.
 - (3) Spills and Leaks. The SWPPP shall clearly identify areas where potential spills and leaks that can contribute pollutants to stormwater discharges can occur and their corresponding outfalls. The SWPPP shall include a list of significant spills and leaks of toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance during the three-year period prior to the date the SWPPP was prepared or amended. The list shall be updated within 60 days of the incident if significant spills or leaks occur in exposed areas of the facility during the term of the permit.
 - (4) Sampling Data. The SWPPP shall include a summary of existing stormwater discharge sampling data taken at the facility. The summary shall include, at a minimum, any data collected during the previous permit term.
- d. Stormwater Controls.
- (1) Control measures shall be implemented for all the areas identified in Part III.D.2.c (Summary of Potential Pollutant Sources) to prevent or control pollutants in stormwater discharges from the facility. Regulated stormwater discharges from the facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at the facility. The SWPPP shall describe the type, location and implementation of all control measures for each area where industrial materials or activities are exposed to stormwater. Selection of control measures shall take into consideration:
 - (a) That preventing stormwater from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from stormwater;
 - (b) Control measures generally shall be used in combination with each other for the most effective water quality protection;
 - (c) Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures;
 - (d) That minimizing impervious areas at the facility can reduce runoff and improve groundwater recharge and stream base flows in local streams (however, care must be taken to avoid groundwater contamination);
 - (e) Flow attenuation by use of open vegetated swales and natural depressions can reduce instream impacts of erosive flows;
 - (f) Conservation or restoration of riparian buffers will help protect streams from stormwater runoff and improve water quality; and
 - (g) Treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.
 - (2) Non-numeric technology-based effluent limits. The permittee shall implement the following types of control measures to prevent and control pollutants in the stormwater discharges from the facility, unless it can be demonstrated and documented that such controls are not relevant to the discharges.

- (a) Good Housekeeping. The permittee shall keep clean all exposed areas of the facility that are potential sources of pollutants to stormwater discharges. The permittee shall perform the following good housekeeping measures to minimize pollutant discharges:
- i. The SWPPP shall include a schedule for regular pickup and disposal of waste materials, along with routine inspections for leaks and conditions of drums, tanks and containers;
 - ii. As feasible, the facility shall sweep or vacuum;
 - iii. Store materials in containers constructed of appropriate materials;
 - iv. Manage all waste containers to prevent a discharge of pollutants;
 - v. Minimize the potential for waste, garbage, and floatable debris to be discharged by keeping areas exposed to stormwater free of such materials or by intercepting materials prior to discharge; and
 - vi. Facilities that handle pre-production plastic or plastic waste shall implement BMPs to eliminate stormwater discharges of plastics.
- (b) Eliminating and Minimizing Exposure. To the extent practicable, manufacturing, processing and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) shall be located inside, or protected by a storm-resistant covering to prevent exposure to rain, snow, snowmelt, and runoff. Unless infeasible, facilities shall implement the following:
- i. Use grading, berming, or curbing to prevent runoff of contaminated flows and divert runoff away from potential sources of pollutants;
 - ii. Locate materials, equipment, and activities so that potential leaks and spills are contained, or able to be contained, or diverted before discharge;
 - iii. Clean up spills and leaks immediately, upon discovery of the spills or leaks, using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
 - iv. Store leaking vehicles and equipment indoors or, if stored outdoors, use drip pans and adsorbents;
 - v. Utilize appropriate spill or overflow protections equipment;
 - vi. Perform all vehicle maintenance or equipment cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also capture any overspray; and
 - vii. Drain fluids from equipment and vehicles that will be decommissioned, and for any equipment and vehicles that remain unused for extended periods of time, inspect at least monthly for leaks.
- (c) Preventive Maintenance. The permittee shall have a preventive maintenance program that includes regular inspection, testing, maintenance and repairing of all industrial equipment and systems to avoid situations that could result in leaks, spills and other releases of pollutants in stormwater discharge from the facility. This program is in addition to the specific control measure maintenance required under Part III.D.2.f (Maintenance).
- (d) Spill Prevention and Response Procedures. The SWPPP shall describe the procedures that will be followed for preventing and responding to spills and leaks, including:
- i. Preventive measures, such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;
 - ii. Response procedures, including notification of appropriate facility personnel, emergency agencies, and regulatory agencies, and procedures for stopping, containing and cleaning up spills. Measures for cleaning up hazardous material spills or leaks shall be consistent with applicable Resource Conservation and Recovery Act (RCRA) regulations at 40 CFR Part 264 and 40 CFR Part 265. Employees who may cause, detect or respond to a spill or leak shall be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals shall be a member of the Pollution Prevention Team;
 - iii. Procedures for plainly labeling containers (e.g., "used oil," "spent solvents," "fertilizers and pesticides," etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur; and

- iv. Contact information for individuals and agencies that must be notified in the event of a spill shall be included in the SWPPP, and in other locations where it will be readily available.
- (e) Salt Storage Piles or Piles Containing Salt. Storage piles of salt or piles containing salt used for deicing or other commercial or industrial purposes shall be enclosed or covered to prevent exposure to precipitation. The permittee shall implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. All salt storage piles shall be located on an impervious surface. All runoff from the pile, and runoff that comes in contact with salt, including under drain systems, shall be collected and contained within a bermed basin lined with concrete or other impermeable materials, or within an underground storage tank or tanks, or within an above ground storage tank or tanks, or disposed of through a sanitary sewer (with the permission of the owner of the treatment facility). A combination of any or all of these methods may be used. In no case shall salt contaminated stormwater be allowed to discharge directly to the ground or to surface waters.
- (f) Employee Training. The permittee shall implement a stormwater employee training program for the facility. The SWPPP shall include a schedule for all types of necessary training, and shall document all training sessions and the employees who received the training. Training shall be provided at least annually for all employees who work in areas where industrial materials or activities are exposed to stormwater, and for employees who are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance personnel, etc.). The training shall cover the components and goals of the SWPPP, and include such topics as spill response, good housekeeping, material management practices, control measure operation and maintenance, etc. The SWPPP shall include a summary of any training performed.
- (g) Sediment and Erosion Control. The SWPPP shall identify areas at the facility that, due to topography, land disturbance (e.g., construction, landscaping, site grading), or other factors, have a potential for soil erosion. The permittee shall identify and implement structural, vegetative, and stabilization control measures to prevent or control on-site and off-site erosion and sedimentation. Flow velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel if the flows would otherwise create erosive conditions.
- (h) Management of Runoff. The SWPPP shall describe the stormwater runoff management practices (i.e., permanent structural control measures) for the facility. These types of control measures shall be used to divert, infiltrate, reuse, or otherwise reduce pollutants in stormwater discharges from the site.

Structural control measures may require a separate permit under § 404 of the Clean Water Act (CWA) and the Virginia Water Protection Permit Program Regulation (9VAC25-210) before installation begins.
- (i) Dust Suppression and Vehicle Tracking of Industrial Materials. The permittee shall implement control measures to minimize the generation of dust and off-site tracking of raw, final, or waste materials. Stormwater collected on-site may be used for the purposes of dust suppression or for spraying stockpiles. Potable water, well water, and uncontaminated reuse water may also be used for this purpose. There shall be no direct discharge to surface waters from dust suppression activities or as a result of spraying stockpiles.

e. Routine Facility Inspections.

Personnel who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility and who can also evaluate the effectiveness of control measures shall regularly inspect all areas of the facility where industrial materials or activities are exposed to stormwater, areas where spills or leaks have occurred in the past three years, discharge points, and control measures. At least one member of the pollution prevention team shall participate in the routine facility inspections.

The inspection frequency shall be specified in the SWPPP based upon a consideration of the level of industrial activity at the facility, but shall be a minimum of once per calendar quarter unless more frequent intervals are specified elsewhere in the permit or written approval is received from the Department for less frequent intervals. Inspections shall be performed during operating hours. At least once each calendar year, the routine facility inspection shall be conducted during a period when a stormwater discharge is occurring.

The requirement for routine facility inspections is waived for facilities that have maintained an active Virginia Environmental Excellence Program (VEEP) E3/E4 status. This waiver does not apply to additional sector specific requirements unless specified in Part III.E.

Any deficiencies in the implementation of the SWPPP that are found shall be corrected as soon as practicable, but no later than 60 days following the inspection, unless permission for a later date is granted in writing by the Director. The results of the inspections shall be documented in the SWPPP, and shall include at a minimum:

- (1) The inspection date;
- (2) The names of the inspectors;
- (3) Weather information and a description of any discharges occurring at the time of the inspection;
- (4) Any previously unidentified discharges of pollutants from the site;
- (5) Any control measures needing maintenance or repairs;
- (6) Any failed control measures that need replacement;
- (7) Any incidents of noncompliance observed; and
- (8) Any additional control measures needed to comply with the permit requirements.

f. Maintenance.

The SWPPP shall include a description of procedures and a regular schedule for preventive maintenance of all control measures, and shall include a description of the back-up practices that are in place should a runoff event occur while a control measure is off-line. The effectiveness of nonstructural control measures shall also be maintained by appropriate means (e.g., spill response supplies available and personnel trained, etc.).

All control measures identified in the SWPPP shall be maintained in effective operating condition and shall be observed at least annually when a stormwater discharge is occurring to ensure that they are functioning correctly. Where discharge locations are inaccessible, nearby downstream locations shall be observed. The observations shall be documented in the SWPPP.

If routine facility inspections required by Part III.D.2.e (Routine Facility Inspections) identify control measures that are not operating effectively, repairs or maintenance shall be performed before the next anticipated storm event. If maintenance prior to the next anticipated storm event is not possible, maintenance shall be scheduled and accomplished as soon as practicable. In the interim, back-up measures shall be employed and documented in the SWPPP until repairs or maintenance is complete. Documentation shall be kept with the SWPPP of maintenance and repairs of control measures, including the dates of regular maintenance, dates of discovery of areas in need of repair or replacement, dates for repairs, dates that the control measures returned to full function, and the justification for any extended maintenance or repair schedules.

g. Non-Stormwater Discharges.

- (1) Discharges of certain sources of non-stormwater are allowable discharges under this permit (Part III.B.5 – Allowable Non-Stormwater Discharges). All other non-stormwater discharges are not authorized and shall be either eliminated or covered under a separate VPDES permit.
- (2) Annual outfall evaluation for unauthorized discharges.

- (a) The SWPPP shall include documentation that all stormwater outfalls associated with industrial activity have been evaluated annually for the presence of unauthorized discharges. The documentation shall include:
 - i. The date of the evaluation;
 - ii. A description of the evaluation criteria used;
 - iii. A list of the outfalls or on-site drainage points that were directly observed during the evaluation;
 - iv. A description of the results of the evaluation for the presence of unauthorized discharges; and
 - v. The actions taken to eliminate unauthorized discharges if any were identified.
- (b) The permittee may request in writing to the Department that the facility be allowed to conduct annual outfall evaluations at 20% of the outfalls. If approved, the permittee shall evaluate at least 20% of the facility outfalls each year on a rotating basis such that all facility outfalls will be evaluated during the period of coverage under this permit.

h. Signature and SWPPP Review.

- (1) Signature and Location. The SWPPP, including revisions to the SWPPP to document any corrective actions taken as required by Part III.B.8 (Stormwater Management Conditions – Corrective Actions) shall be signed in accordance with Part II.K (Signatory Authority), dated, and retained on-site at the facility covered by this permit in accordance with Part III.B.8 Stormwater Management Conditions – Corrective Actions). All other changes to the SWPPP, and other permit compliance documentation, shall be signed and dated by the person preparing the change or documentation.
- (2) Availability. The permittee shall retain a copy of the current SWPPP required by this permit at the facility, and it shall be immediately available to the department, EPA, or the operator of a MS4 receiving discharges from the site at the time of an on-site inspection or upon request.
- (3) Required Modifications. The permittee shall modify the SWPPP whenever necessary to address all corrective actions required by Part III.B.8 (Stormwater Management Conditions- Corrective Actions). Changes to the SWPPP shall be made in accordance with the corrective action deadlines in Part III.B.8, and shall be signed and dated in accordance with Part II.K (Signatory Authority).

The Director may notify the permittee at any time that the SWPPP, control measures, or other components of the facility's stormwater program do not meet one or more of the requirements of this permit. The notification shall identify specific provisions of the permit that are not being met, and may include required modifications to the stormwater program, additional monitoring requirements, and special reporting requirements. The permittee shall make any required changes to the SWPPP within 60 days of receipt of such notification, unless permission for a later date is granted in writing by the Director, and shall submit a written certification to the Director that the requested changes have been made.

i. Maintaining an Updated SWPPP.

- (1) The permittee shall review and amend the SWPPP as appropriate whenever:
 - (a) There is construction or a change in design, operation, or maintenance at the facility that has a significant effect on the discharge, or the potential for the discharge, of pollutants from the facility;
 - (b) Routine inspections or compliance evaluations determine that there are deficiencies in the control measures, including BMPs;
 - (c) Inspections by local, state, or federal officials determine that modifications to the SWPPP are necessary;
 - (d) There is a spill, leak or other release at the facility;
 - (e) There is an unauthorized discharge from the facility; or

- (f) The department notifies the permittee that a TMDL has been developed and applies to the permitted facility, consistent with Part I.C.4
- (2) SWPPP modifications shall be made within 60 calendar days after discovery, observation or event requiring a SWPPP modification. Implementation of new or modified control measures (distinct from regular preventive maintenance of existing control measures described in Part III.D.2.f) shall be initiated before the next storm event if possible, but no later than 60 days after discovery, or as otherwise provided or approved by the Director. The amount of time taken to modify a control measure or implement additional control measures shall be documented in the SWPPP.
- (3) If the SWPPP modification is based on a significant spill, leak, release, or unauthorized discharge, include a description and date of the incident, the circumstances leading to the incident, actions taken in response to the incident, and measures to prevent the recurrence of such releases. Unauthorized discharges are subject to the reporting requirements of Part II.G (Reports of Unauthorized Discharges) of this permit.

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

All analyses shall be in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

A listing of Virginia Environmental Laboratory Accreditation Program (VELAP) certified and/or accredited laboratories can be found at the following website:

<http://dgs.virginia.gov/DivisionofConsolidatedLaboratoryServices/Services/EnvironmentalLaboratoryCertification2/tabid/1503/Default.aspx>

A specific analytical method is not specified; however, an appropriate method to meet the QL shall be selected from (i) any approved method presented in 40 CFR Part 136 or (ii) any alternative EPA approved method, provided that all analyses are in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

Units for the quantification level are micrograms/liter unless otherwise specified.

Quality control and quality assurance information (i.e. laboratory certificates of analysis) shall be submitted to document that the required quantification level has been attained.

Please be advised that additional water quality analyses may be necessary and/or required for permitting purposes.

CASRN	PARAMETER	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS ⁽²⁾	RESULTS UNIT	SAMPLE TYPE ⁽³⁾
METALS					
7440-36-0	Antimony, Dissolved	6,400			C
7440-38-2	Arsenic, Dissolved	650			C
7440-43-9	Cadmium, Dissolved	2.0			C
16065-83-1	Chromium III, Dissolved ⁽⁵⁾	240			C
18540-29-9	Chromium VI, Dissolved ⁽⁵⁾	30			C
7440-50-8	Copper, Dissolved	15			C
7439-92-1	Lead, Dissolved	29			C
7439-97-6	Mercury, Dissolved	2.5			C
7440-02-0	Nickel, Dissolved	64			C
7782-49-2	Selenium, Total Recoverable	25			C
7440-22-4	Silver, Dissolved	2.5			C
7440-28-0	Thallium, Dissolved	4.7			C
7440-66-6	Zinc, Dissolved	140			C
PESTICIDES/PCBs					
309-00-2	Aldrin	0.05 ug/L			G or C
63-25-2	Carbaryl ⁽⁹⁾	(4)			G or C
57-74-9	Chlordane	0.2 ug/L			G or C
2921-88-2	Chlorpyrifos (synonym = Dursban)	(4)			G or C
72-54-8	DDD	0.1 ug/L			G or C

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

CASRN	PARAMETER	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS ⁽²⁾	RESULTS UNIT	SAMPLE TYPE ⁽³⁾
72-55-9	DDE	0.1 ug/L			G or C
50-29-3	DDT	0.1 ug/L			G or C
8065-48-3	Demeton (synonym = Dementon-O,S)	(4)			G or C
333-41-5	Diazinon	(4)			G or C
60-57-1	Dieldrin	0.1 ug/L			G or C
959-98-8	Alpha-Endosulfan (synonym = Endosulfan I)	0.1 ug/L			G or C
33213-65-9	Beta-Endosulfan (synonym = Endosulfan II)	0.1 ug/L			G or C
1031-07-8	Endosulfan Sulfate	0.1 ug/L			G or C
72-20-8	Endrin	0.1 ug/L			G or C
7421-93-4	Endrin Aldehyde	(4)			G or C
86-50-0	Guthion (synonym = Azinphos Methyl)	(4)			G or C
76-44-8	Heptachlor	0.05 ug/L			G or C
1024-57-3	Heptachlor Epoxide	(4)			G or C
319-84-6	Hexachlorocyclohexane Alpha-BHC	(4)			G or C
319-85-7	Hexachlorocyclohexane Beta-BHC	(4)			G or C
58-89-9	Hexachlorocyclohexane Gamma-BHC (syn. = Lindane)	(4)			G or C
608-73-1	Hexachlorocyclohexane (HCH) – Technical	(4)			G or C
143-50-0	Kepone	(4)			G or C
121-75-5	Malathion	(4)			G or C
72-43-5	Methoxychlor	(4)			G or C
2385-85-5	Mirex	(4)			G or C
56-38-2	Parathion (synonym = Parathion Ethyl)	(4)			G or C
1336-36-3	PCB, total	7.0 ug/L			G or C
8001-35-2	Toxaphene	5.0 ug/L			G or C
BASE NEUTRAL EXTRACTABLES					
83-32-9	Acenaphthene	10.0 ug/L			C
120-12-7	Anthracene	10.0 ug/L			C
92-87-5	Benzidine	(4)			C
56-55-3	Benzo(a)anthracene	10.0 ug/L			C
205-99-2	Benzo (b) fluoranthene (synonym = 3,4-Benzofluoranthene)	10.0 ug/L			C

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

CASRN	PARAMETER	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS ⁽²⁾	RESULTS UNIT	SAMPLE TYPE ⁽³⁾
207-08-9	Benzo(k)fluoranthene	10.0 ug/L			C
50-32-8	Benzo(a)pyrene	10.0 ug/L			C
542-88-1	Bis (chloromethyl) Ether	(4)			C
111-44-4	Bis 2-Chloroethyl Ether	(4)			C
108-60-1	Bis 2-Chloroisopropyl Ether	(4)			C
117-81-7	Bis 2-Ethylhexyl Phthalate (syn. = Di-2-Ethylhexyl Phthalate)	10.0 ug/L			C
85-68-7	Butyl Benzyl Phthalate	10.0 ug/L			C
91-58-7	2-Chloronaphthalene	(4)			C
218-01-9	Chrysene	10.0 ug/L			C
53-70-3	Dibenzo(a,h)anthracene	20.0 ug/L			C
95-50-1	1,2-Dichlorobenzene	10.0 ug/L			C
541-73-1	1,3-Dichlorobenzene	10.0 ug/L			C
106-46-7	1,4-Dichlorobenzene	10.0 ug/L			C
91-94-1	3,3-Dichlorobenzidine	(4)			C
84-66-2	Diethyl Phthalate	10.0 ug/L			C
131-11-3	Dimethyl Phthalate	(4)			C
84-74-2	Di-n-butyl Phthalate (synonym = Dibutyl Phthalate)	10.0 ug/L			C
121-14-2	2,4-Dinitrotoluene	10.0 ug/L			C
122-66-7	1,2-Diphenylhydrazine	(4)			C
206-44-0	Fluoranthene	10.0 ug/L			C
86-73-7	Fluorene	10.0 ug/L			C
118-74-1	Hexachlorobenzene	(4)			C
87-68-3	Hexachlorobutadiene	(4)			C
77-47-4	Hexachlorocyclopentadiene	(4)			C
67-72-1	Hexachloroethane	(4)			C
193-39-5	Indeno(1,2,3-cd)pyrene	20.0 ug/L			C
78-59-1	Isophorone	10.0 ug/L			C
98-95-3	Nitrobenzene	10.0 ug/L			C
62-75-9	N-Nitrosodimethylamine	(4)			C
86-30-6	N-Nitrosodiphenylamine	(4)			C

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

CASRN	PARAMETER	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS ⁽²⁾	RESULTS UNIT	SAMPLE TYPE ⁽³⁾
621-64-7	N-Nitrosodi-n-propylamine	(4)			C
608-93-5	Pentachlorobenzene	(4)			C
129-00-0	Pyrene	10.0 ug/L			C
95-94-3	1,2,4,5-Tetrachlorobenzene	(4)			C
120-82-1	1,2,4-Trichlorobenzene	10.0 ug/L			C
VOLATILES					
107-02-8	Acrolein	(4)			G
107-13-1	Acrylonitrile	(4)			G
71-43-2	Benzene	10.0 ug/L			G
75-25-2	Bromoform	10.0 ug/L			G
56-23-5	Carbon Tetrachloride	10.0 ug/L			G
108-90-7	Chlorobenzene (synonym = Monochlorobenzene)	50.0 ug/L			G
124-48-1	Chlorodibromomethane	10.0 ug/L			G
67-66-3	Chloroform	10.0 ug/L			G
75-27-4	Dichlorobromomethane	10.0 ug/L			G
107-06-2	1,2-Dichloroethane	10.0 ug/L			G
75-35-4	1,1-Dichloroethylene	10.0 ug/L			G
156-60-5	1,2-trans-dichloroethylene	(4)			G
78-87-5	1,2-Dichloropropane	(4)			G
542-75-6	1,3-Dichloropropene	(4)			G
100-41-4	Ethylbenzene	10.0 ug/L			G
74-83-9	Methyl Bromide (synonym = Bromomethane)	(4)			G
75-09-2	Methylene Chloride (synonym = Dichloromethane)	20.0 ug/L			G
79-34-5	1,1,2,2-Tetrachloroethane	(4)			G
127-18-4	Tetrachloroethylene (synonym = Tetrachloroethene)	10.0 ug/L			G
10-88-3	Toluene	10.0 ug/L			G
71-55-6	1,1,1-Trichloroethane	(4)			G
79-00-5	1,1,2-Trichloroethane	(4)			G
79-01-6	Trichloroethylene (synonym = Trichloroethene)	10.0 ug/L			G
75-01-4	Vinyl Chloride	10.0 ug/L			G

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

CASRN	PARAMETER	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS ⁽²⁾	RESULTS UNIT	SAMPLE TYPE ⁽³⁾
ACID EXTRACTABLES					
95-57-8	2-Chlorophenol	10.0 ug/L			G or C
120-83-2	2,4 Dichlorophenol	10.0 ug/L			G or C
105-67-9	2,4 Dimethylphenol	10.0 ug/L			G or C
51-28-5	2,4-Dinitrophenol	(4)			G or C
25550-58-7	Dinitrophenols	(4)			G or C
534-52-1	2-Methyl-4,6-Dinitrophenol (synonym = 4,6-Dinitro-o-cresol)	(4)			G or C
59-50-7	3-Methyl-4-Chlorophenol	(4)			G or C
84852-15-3	Nonylphenol	(4)			G or C
87-86-5	Pentachlorophenol	50.0 ug/L			G or C
108-95-2	Phenol	10.0 ug/L			G or C
95-95-4	2,4,5-Trichlorophenol	(4)			G or C
88-06-2	2,4,6-Trichlorophenol	10.0 ug/L			G or C
MISCELLANEOUS					
16887-00-6	Chloride (mg/L)	(4)			C
57-12-5	Total Cyanide ⁽⁶⁾	10.0 ug/L			G
94-75-7	2,4-Dichlorophenoxy acetic acid (synonym = 2,4-D) (PWS)	(4)			G or C
1746-01-6	Dioxin (synonym = 2,3,7,8 tetrachlorodibenzo-p-dioxin) (ppq) (Paper Mills & Oil Refineries)	0.00001			G or C
18496-25-8	Total Sulfide ⁽⁷⁾	100 ug/L			G or C
60-10-5	Tributyltin	(4)			G or C
471-34-1	Hardness (mg/L as CaCO ₃)	(4)			C

Name of Principal Executive Officer or Authorized Agent/Title

Signature of Principal Executive Officer or Authorized Agent/Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)

Footnotes to Water Quality Monitoring

- (1) Quantification level (QL) means the minimum levels, concentrations, or quantities of a target variable (e.g. target analyte) that can be reported with a specified degree of confidence in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

The quantification levels indicated for the metals are actually Specific Target Values developed for this permit. The Specific Target Value is the approximate value that may initiate a wasteload allocation analysis. Target values are not wasteload allocations or effluent limitations. The Specific Target Values are subject to change based on additional information such as hardness data, receiving stream flow, and design flows.

- (2) If the reporting result is greater than or equal to the QL, then include the reporting result. If the reporting result is less than the QL, then report "< [lab QL]". For example, if the reporting result is below the QL with a QL of 25 micrograms/liter, then report "<25".
- (3) Sample Type

G = Grab = An individual sample collected in less than 15 minutes. Substances specified with "grab" sample type shall only be collected as grabs. The permittee may analyze multiple grabs and report the average results provided that the individual grab results are also reported. For dissolved metals samples, the samples shall be filtered and preserved immediately upon collection.

C = Composite = A 24-hour composite unless otherwise specified. The composite shall be a combination of individual samples, taken proportional to flow, obtained at hourly or smaller time intervals. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period. For dissolved metals, the sample must be filtered within 15 minutes after completion of collection and before adding preservatives. If it is known or suspected that dissolved sample integrity will be compromised during collection of a composite sample collected automatically over time (e.g., by interchange of a metal between dissolved and suspended forms), collect and filter grab samples to be composited in place of a composite sample collected automatically.

- (4) The QL is at the discretion of the permittee.
- (5) Both Chromium III and Chromium VI may be measured by the total chromium analysis. The total chromium analytical test QL shall be less than or equal to the lesser of the Chromium III or Chromium VI method QL listed above. If the result of the total chromium analysis is less than the analytical test QL, both Chromium III and Chromium VI can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].
- (6) The total cyanide analytical test QL shall be less than or equal to the QL listed above. If the result of the total cyanide analysis is greater than the analytical test QL, then the effluent must be retested for free cyanide with an analytical test QL less than or equal to the total cyanide QL listed above.
- (7) The total sulfide analytical test QL shall be less than or equal to the QL listed above. If the result of the total sulfide analysis is greater than the analytical test QL, then the effluent must be retested for dissolved sulfide with an analytical test QL less than or equal to the total sulfide QL listed above.
- (8) Analytical Methods: Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, dated November 1996 (currently the only Virginia Environmental Laboratory Accreditation Program (VELAP) accredited method).
- (9) If a VELAP certified laboratory does not exist for a required parameter or method, then the responsible party should consider use of an alternative method under the regulatory requirements if applicable and they should request that a laboratory obtain VELAP accreditation for the required parameter or method, but can continue to use a non-VELAP certified laboratory until a laboratory is certified for the required parameter or method. The responsible party should ensure prior to each sampling event that a VELAP-certified laboratory is not available prior to using a non-VELAP certified laboratory.