Fact Sheet
National Pollutant Discharge Elimination System (NPDES)
Permit Reissuance

SECTION 1 FACILITY SUMMARY

APPLICANT	Ahlstrom Nonwovens LLC
PERMIT NO.	CT0000434
APPLICATION NO.	201402656
DATE APPLICATION RECEIVED	March 26, 2014
LOCATION ADDRESS	26 Canal Bank Road, Windsor Locks, CT 06096
FACILITY CONTACT	Gary A. Jackson, 2 Elm Street, Windsor Locks, CT 06096, Gary.jackson@ahlstrom.com, Phone No.: (860) 654-8556
MAILING ADDRESS	2 Elm Street, Windsor Locks, CT 06096
DMR CONTACT	Gary A. Jackson, 26 Canal Bank Road, Windsor Locks, CT 06096
PERMIT TERM	5 Years
PERMIT TYPE	Reissuance
PERMIT CATEGORY	NPDES MAJOR
PRIMARY STANDARD INDUSTRIAL CLASSIFICATION SIC & NAICS CODES	2621 & 322110 (Paper Mills)
SECRETARY OF STATE BUSINESS ID	0655809
APPLICABLE EFFLUENT GUIDELINE(S)	40 CFR 430(The Pulp, Paper, and Paperboard Point Source Category)
OWNERSHIP	Private
COMPLIANCE ISSUES AND RECENT ENFORCEMENT HISTORY	None
RECEIVING WATERBODIES AND WATERBODY SEGMENT IDs	Connecticut River (CT4000-00_03) Windsor Locks Canal (Man-made canal that is a diverted from Connecticut River) Kettle Brook (CT4000-09_01)

WATER QUALITY CLASSIFICATIONS	CT4000-00_03 is class B and CT4000-09_01 is class A
DISCHARGE LOCATIONS (LAT, LONG)	DSN 008-1: 41° 55′ 38", -72° 37’ 30" DSN 013-1: 41° 55′ 37", -72° 37’ 37" DSN 014-1: 41° 55′ 40", -72° 37’ 33" DSN 015-1: 41° 55′ 32", -72° 37’ 36" DSN 08A: 41° 55′ 36", -72° 37’ 37" DSN 08B: 41° 55′ 34", -72° 37’ 35" DSN 08C: 41° 55′ 32", -72° 37’ 35"
DEEP STAFF ENGINEER	Oluwatoyin Fakilede (860-418-5986) Oluwatoyin.fakilede@ct.gov
TENTATIVE DECISION FACT SHEET DATE	XXXXXX

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1.1 PERMIT FEES

Application Filing Fee: $ 1,300 (Paid on March 26, 2014)
Application Processing Fee: $34,712.50 (Paid Invoice No. DEP 234524 on July 1, 2014)
Annual Fee:

DISCHARGE CODE	WASTEWATER CATEGORY (per 22a-430-7)	MAXIMUM FLOW (GALLONS PER DAY)	DSNs	ANNUAL FEE (per 22a-430-7)
101054Z	Pulp and Paper Mills	5,760,000	008-1, 08F	$8,425.00
102000b	Non-contact cooling water	5,747,000	001-1/08A, 002-1/08B, 003-1/08C, 08D, 08E	$2,290.00
121000a	Hydrostatic pressure testing wastewater	1,500	013-1, 014-1, 015-1	$660.00
1060000	Water production wastewater	128,000	08F	$660.00
1170000	Blowdown from heating/cooling	12,000	08F	$4,337.50
TOTAL AMOUNT				$16,372.50

1.2 APPLICANT

Ahlstrom Nonwovens LLC ("Ahlstrom", "Permittee", or "facility") is seeking reissuance of its NPDES permit (CT0000434) for the discharge of process wastewaters, non-contact cooling water ("NCCW"), fire suppression system testing water, water production wastewater, and boiler blowdown to the Connecticut River ("River"). The Permittee is also seeking reissuance of its NPDES permit (CT0000434) for the discharge of fire suppression system testing water to Windsor Locks Canal ("Canal"), and the discharge of NCCW and fire suppression water to Kettle Brook ("Brook"). The notice of permit application was published in the Hartford Courant on February 6, 2014. On July 14, 2014, the permit application was determined to be sufficient.

The applicant seeks authorization and is authorized for the following:

DSN	PROPOSED AVERAGE MONTHLY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
DSN 008-1	6,000,000	9,000,000	Combined NCCW, raw Windsor Locks canal water used for cooling and Krofta dissolved air flotation clarifier effluent are discharged through a diffuser pipe, i.e. DSN 08A + DSN 08B + DSN 08C + DSN 08D + DSN 08E and DSN 08F. The combined wastewater is discharged from the diffuser aggregate collection tank through 16 diffuser ports to the Connecticut River.	Equalization	Connecticut River
DSN 08A Formerly DSN 001-1			NCCW from paper mill (North). Cooling water is distributed from the water plant or from the city water, passes once through the mill, and discharged through DSN 008-1 diffuser.	No treatment	DSN 008-1 (Internal waste stream)
Special condition discharge of DSN 08A	---	---	DSN 08A NCCW is authorized to discharge into the Windsor Locks Canal bypassing the diffuser, only in the event of a dual pump failure. When the discharge occurs, it is not expected to last longer than 24 hours.	No treatment	Windsor Locks Canal
DSN 08B Formerly DSN 002-1			NCCW from the paper mill (Middle). Cooling water is distributed from the water plant or from the city water, passed once through the mill, and discharged through DSN 008-1 diffuser.	No treatment	DSN 008-1 (Internal waste stream)
Special condition discharge of DSN 08B	---	---	DSN 08B NCCW is authorized to discharge into the Connecticut River bypassing the diffuser, only in the event of a dual pump failure. When the discharge occurs, it is not expected to last longer than 24 hours.	No treatment	Connecticut River
DSN 08C Formerly DSN 003-1			Excess hot water from paper machine NCCW processes (South). This is discharged through DSN 008-1 diffuser.	No treatment	DSN 008-1 (Internal waste stream)
Special condition discharge of DSN 08C	---	---	DSN 08C overflow is authorized to discharge to Kettle Brook, only when the Connecticut River level rises above the DSN 08C tank. The overflow ceases when the river level drops below tank level.	No treatment	Kettle Brook
DSN 08D Formerly DSN 004-1			Cooling water used for cooling process rolls and equipment at the paper machines through a heat	No treatment	DSN 008-1 (Internal waste stream)

DSN	PROPOSED AVERAGE MONTHLY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
			exchanger. This is a once through cooling system. Water is taken from the Windsor Locks canal, passed through the chest heat exchanger, and discharged through DSN008-1 diffuser.		
DSN 08E Formerly DSN 005-1			Cooling water for cooling in the fiber recovery system. This flow is a once through system in which the cooling water is taken from the Windsor Locks canal, passed through fiber recovery, and discharged through the diffuser, DSN008-1.	No treatment	DSN 008-1 (Internal waste stream)
DSN 08A-E Formerly DSN 009-1			This is not an actual combined internal wastestream. It is a mathematical summation of the NCCW flows in DSNs 08A, DSN 08B, DSN 08C, DSN 08D and 08E.		
DSN 08F Formerly DSN 006-1	4,525,800	5,760,000	DSN 08F has contributory internal waste streams from condensate, paper machines, and production related rinse water. These wastewaters enter the wastewater sump where it is treated with polymers and aerated, allowing the solids to rise to the top and skimmed off. The solids go to the screw press for water removal and clarified effluent is discharged through the diffuser at DSN 008-1. The internal wastestreams of DSN 08F are: 1) Dechlorinated, neutralized wastewater from bleachout of the wet end of paper machine #4 (formerly DSN 06C-1). 2) Dechlorinated, neutralized wastewater from bleachout of the wet end of paper machine #10 (formerly DSN 06E-1). 3) Dechlorinated, neutralized wastewater from bleachout of the wet end of paper machine #11 (formerly DSN 06F-1).	Krofta treatment system: Coagulation, aeration and clarification Some of the internal wastestreams undergo dechlorination and neutralization (as noted)	DSN 008-1

DSN	PROPOSED AVERAGE MONTHLY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
			4) Dechlorinated, neutralized wastewater from bleachout of the wet end of paper machine #12 (formerly DSN 06G-1). 5) Dechlorinated, neutralized wastewater from bleachout of the wet end of paper machine #15 (formerly DSN 06P-1). 6) Wastewater from boilout (cleaning) of paper machine #4 by using caustic. This water is neutralized to pH 6-9 with carbon dioxide as it enters the Krofta (formerly DSN 06I-1). 7) Wastewater from boilout (cleaning) of paper machine #10 by using caustic. This water is neutralized to pH 6-9 with carbon dioxide as it enters the Krofta (formerly DSN 06K-1). 8) Wastewater from boilout (cleaning) of paper machine #11 by using caustic. This water is neutralized to pH 6-9 with carbon dioxide as it enters the Krofta (formerly DSN 06E-1). 9) Wastewater from boilout (cleaning) of paper machine #12 by using caustic. This water is neutralized to pH 6-9 with carbon dioxide as it enters the Krofta (formerly DSN 06M-1). 10) Wastewater from the boilout (cleaning) of paper machine #15 by using caustic. This water is neutralized to pH 6-9 with carbon dioxide as it enters the Krofta (formerly DSN 06Q-1).		

DSN	PROPOSED AVERAGE MONTHLY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
			11) Boiler blowdown, demineralizer regeneration, steam condensate, chemical area drains, acidic and basic discharges from the chemical tanks' containment areas and truck connectors. All wastewaters are neutralized to pH 6-9 prior to discharge into DSN 08F. The primary source of this waste stream is demineralizer regeneration wastewater (formerly DSN 06N-1). 12) Neutralized, dechlorinated wastewater resulting from the cleaning of equipment in the fiber recovery area by bleaching. Discharge directed to the Krofta treatment system (formerly DSN 07A-1). 13) Wastewater resulting from the cleaning of fiber recovery equipment by using caustic. pH is neutralized to 5.5 - 9.5 using citric acid, prior to discharge to the Krofta treatment system (formerly DSN 07B-1).		
Monitoring is no longer required for the following internal waste streams (see Section 3 of this fact sheet): DSN 06C-1, DSN 06E-1, DSN 06F-1, DSN 06G-1, DSN 06P-1, DSN 06I-1, DSN 06K-1, DSN 06L-1, DSN 06M-1, DSN 06Q-1, DSN 06N-1, DSN 07A-1 and DSN 07B-1. However, the Permittee shall implement the facility's standard operating procedure ("Form: Wet end bleach-out 411/F020" and "Form: Paper machine bleach-out neutralization 400/F003"), including but not limited to treatment and proper record keeping, prior to batch discharging boiler blowdown, demineralizer regeneration wastewater, steam condensate, boilouts and bleachouts to DSN 08F collection and treatment system. Proper record such as description, frequency and volume of discharge, and details of wastewater treatment, shall be available for the DEEP's review upon request.					
DSN 013-1		2,000 gpd quarterly	Fire suppression system test water	No treatment is necessary	Windsor Locks Canal
DSN 014-1			Fire suppression system test water	No treatment is necessary	Connecticut River
DSN 015-1			Fire suppression system test water	No treatment is necessary	Kettle Brook

1.3 BACKGROUND/PERMIT HISTORY

Ahlstrom has been in operations since the 1850s and has maintained a NPDES permit with the State of Connecticut since before 1982.

1.4 NATURE OF THE BUSINESS GENERATING THE DISCHARGE

Ahlstrom operates a specialty papermill that produces a variety of non-woven products including but not limited to teabags, wipes, casing paper, medical wraps, vacuum cleaner bag, and food packaging from cellulose, synthetic and blend of fibers. Four production paper machines (PM No. 10, 11, 12 and 15) and one pilot paper machine (PM No. 4) are currently in use, with ancillary equipment including pulpers, machine chests, production chemical feed systems, fiber recovery save-alls and heat exchangers. Water for production is supplied from Windsor Locks Canal and the city. Water from the canal is treated in an on-site water treatment system utilizing coagulation, settling, sand filtration and disinfection before use.

1.5 WASTEWATER COLLECTION AND TREATMENT SYSTEM

Raw Water Treatment System

Water used at the facility is from the Windsor Locks Canal, which is fed by the Connecticut River or water is provided by the city from Connecticut Water Company. Poly-aluminum chloride (coagulant) and 15% sodium hypochlorite (disinfectant) are added to water pumped from the canal before it gets to the settling basin. The water from the settling basin goes through filtration for further treatment before it is pumped into the mill where it is used at the paper machines (PM No. 4, 10, 11, 12, and 15). Backwash from the filters is pumped back to the settling basin or to the Krofta Waste Treatment plant.

Krofta Wastewater Treatment System ("Krofta") (DSN 08F (Formerly DSN 006)) – This is the treatment system for the paper mills process wastewater. The Krofta uses a two-part polymer system to coagulate and flocculate solids. Air is then introduced into the wastestream before being discharged out of the back of the Krofta carriage. As the Krofta rotates around the disc shaped cell, solids are taken off the top and off the bottom of the cell. Concurrently, the clear portion of the water (the middle phase) is extracted. The solids go to the Krofta Sludge Chest where it is dewatered and sent off-site for disposal by a waste disposal contractor. In addition to the solids removal, carbon dioxide (CO_2) is injected into the waste stream for pH adjustment. The wastewater then flows to the diffuser aggregate head tank for equalization with other waste streams prior to discharge through a diffuser at DSN 008.

Diffuser System (DSN 008) – The diffuser is comprised of a 24" pipe extending into the Connecticut River. The pipe terminates and pre-treated effluent is discharged through 16 six-inch ports spaced eight feet apart throughout the length of the diffuser. All wastewaters (except stormwater and fire test water) are collected in the diffuser head tank and discharged to the river through DSN 008.

1.6 OTHER PERMITS

Ahlstrom has other water discharges that are covered under different permitting mechanisms as follows:

- Stormwater from the site is permitted under the general permit for stormwater activity associated with industrial activities (GSI001384).

- Miscellaneous wastewaters from the site, such as air compressor condensate and blowdown, building maintenance wastewater and laboratory wastewaters were covered under the general permit for miscellaneous discharges for sewer compatible wastewater (CTMIU0083). Ahlstrom has applied for the renewal of this general permit.

The Permittee also has diversion permits. Diversion Permit No. 4000-085-IND-RI authorizes the diversion of Connecticut River to Windsor Locks Canal, Diversion Permit No. 4000-083-IND-RI authorizes the withdrawal of water from Windsor Locks Canal, and Diversion Permit No. 4000-084-IND-RI authorizes the withdrawal of water from Kettle Brook.

1.7 COMPLIANCE HISTORY

The Permittee has no outstanding enforcement action. Based on DMR data evaluated from April 2018 to March 2023, the Permittee reported the following effluent violations.

EFFLUENT VIOLATIONS IN THE PAST 5 YEARS					
MONTH/ YEAR	**DSN**	**PARAMETER**	**TYPE OF LIMIT**	**PERMITTED LIMIT**	**EXCEEDENCE**
12/2018	DSN 08F (Formerly DSN 006-1)	Flow, Instantaneous	Instantaneous limit	3200 gpd	3456 gpd
6/2019	Same as above	Total Suspended Solids	Maximum daily limit	60.9 mg/l	83mg/l
6/2019	Same as above	Total Suspended Solids	Maximum daily limit	933.7kg/d	1456 kg/d
10/2020	Same as above	pH	Instantaneous limit	5.5 S.U.	5.4 S.U.
2/2021	Same as above	Flow rate	Instantaneous limit	3200 gpd	3468 gpd
2/2022	Same as above	Flow	Maximum daily limit	5.419 MGD	5.5216 MGD
1/2023	Same as above	pH	Instantaneous minimum limit	≥ 5.5	5.2
3/2023	Former DSN 06N	pH	Instantaneous minimum limit	≥ 6.0	5.3
6/2020	DSN 008-1	LC50 Static 48Hr Acute D. Pulex	Maximum daily limit	≥ 42%	13.9%
6/2020	Same as above	LC50 Static 48Hr Acute Pimephales	Maximum daily limit	≥ 42%	13.2%
12/2020	Same as above	LC50 Static 48Hr Acute D. Pulex	Maximum daily limit	≥ 42%	7.7%
12/2020	Same as above	LC50 Static 48Hr Acute Pimephales	Maximum daily limit	≥ 42%	11.6%
12/2022	Same as above	LC50 Static 48Hr Acute Pimephales	Maximum daily limit	≥ 42%	29.3%
1/2023	Same as above	pH	Instantaneous minimum limit	≥ 6.0	5.5

The above exceedances have been addressed.

Section 10 of the previous permit required the Permittee to conduct a comprehensive investigation into the potential sources of aquatic toxicity in DSN 008. The Permittee submitted reports in compliance with Section 10 of the previous permit.

1.8 SPILL HISTORY

The facility reported a spill on January 26, 2019, at 7:37 p.m. The unpermitted discharge was comprised of about 1,100 gallons (approx. 85 gpm) of boiler condensate (consisting of polished (ion removal) water with residuals of boiler chemicals added), oxygen scavengers and alkalinity agents. The adjoining Algonquin Power Windsor Locks shut a valve on the boiler condensate return system which caused the transfer tank to overfill and discharge through piping to the Kettle Brook. There has been no reoccurrence.

1.9 FACILITY CHANGES

There has been no permit modification since the last permit renewal but there have been facility and treatment system modifications performed in accordance with section 22a-430-3(i) of the RCSA as follows:

Application No. 201411436: Approval to install a "cooling water recycle manifold" to facilitate the reuse of NCCW as supplemental source process water, and approval to temporarily discharge North end NCCW into Windsor Locks Canal because the "cooling water recycle manifold" installation would result in a piping cut–in which may take up to 8 hours, was issued on December 5, 2014.

Application No. 201602720: Approval to use alternative flocculation polymers in the waste fiber/mud dewatering system, which is a contributory flow into DSN 006 was issued on March 9, 2016. Specifically, Ahlstrom requested trial replacements of Drewfloc 2422 and Drewfloc 2270 with CE 814 and AE 853 respectively.

Application No. 201603699: Approval to trial a belt press, BDP Industries 1.0 meter Model 3DP and related equipment, to be used in the processing of settled canal mud removal from the facility's settling basin was issued on April 6, 2016. The purpose of the trial was to determine if more efficient solids removal can be achieved.

Application No. 201604228: Approval to use "Spectrum XD3899 Bromide activated Chloroamine (BAC)" for controlling wet-end organic (algae and biological) growth was issued on May 19, 2016.

Application No. 202103637: Approval to use Carboxy-methyl cellulose (CMC) as an additive in the wet-end of the facility's nonwovens manufacturing machines was issued on March 10, 2021.

Application No. 202206064: Approval to use "FennoStrength XO" or "ParaStrength 265" as alternative wet strength agents to "Kymene 821 wet strength resin" was issued on May 12, 2022.

Application No. 202300273: Approval to replace an existing un-used belt press with a screw press was issued on July 18, 2023.

1.10 GENERAL ISSUES RELATED TO THE APPLICATION

1.10.1 FEDERALLY RECOGNIZED INDIAN LAND

As provided in the permit application, the site is not located on federally recognized Indian land.

1.10.2 COASTAL BOUNDARY

The activity is not located within a coastal boundary as defined in CGS 22a-94(b).

1.10.3 ENDANGERED OR THREATENED SPECIES

Based on the letter dated July 15, 2022, from the DEEP's Bureau of Natural Resources, extant populations of federal or state Endangered, Threatened or Special-Concern Species that occur in the vicinity of the site were identified as follows:

1) Riverine Clubtail (Stylurus amnicola)
2) Atlantic sturgeon (Acipenser oxyrinchus)
3) Shortnose sturgeon (Acipenser brevirostrum)
4) Blueback herring (Alosa aestivalis)
5) Tidewater mucket (Leptodea achracea)
6) Yellow lampmussel (Lampsilis cariosa)

It was determined by DEEP's Fisheries Division that the permitted discharge will not significantly impact any fisheries and/or habitat of the species listed above (see Attachment 1).

1.10.4 AQUIFER PROTECTION AREAS

As provided in the permit application, the site is not located within a protected area identified on a Level A or B map.

1.10.5 CONSERVATION OR PRESERVATION RESTRICTION

As provided in the permit application, the property is not subject to a conservation or preservation restriction.

1.10.6 PUBLIC WATER SUPPLY WATERSHED

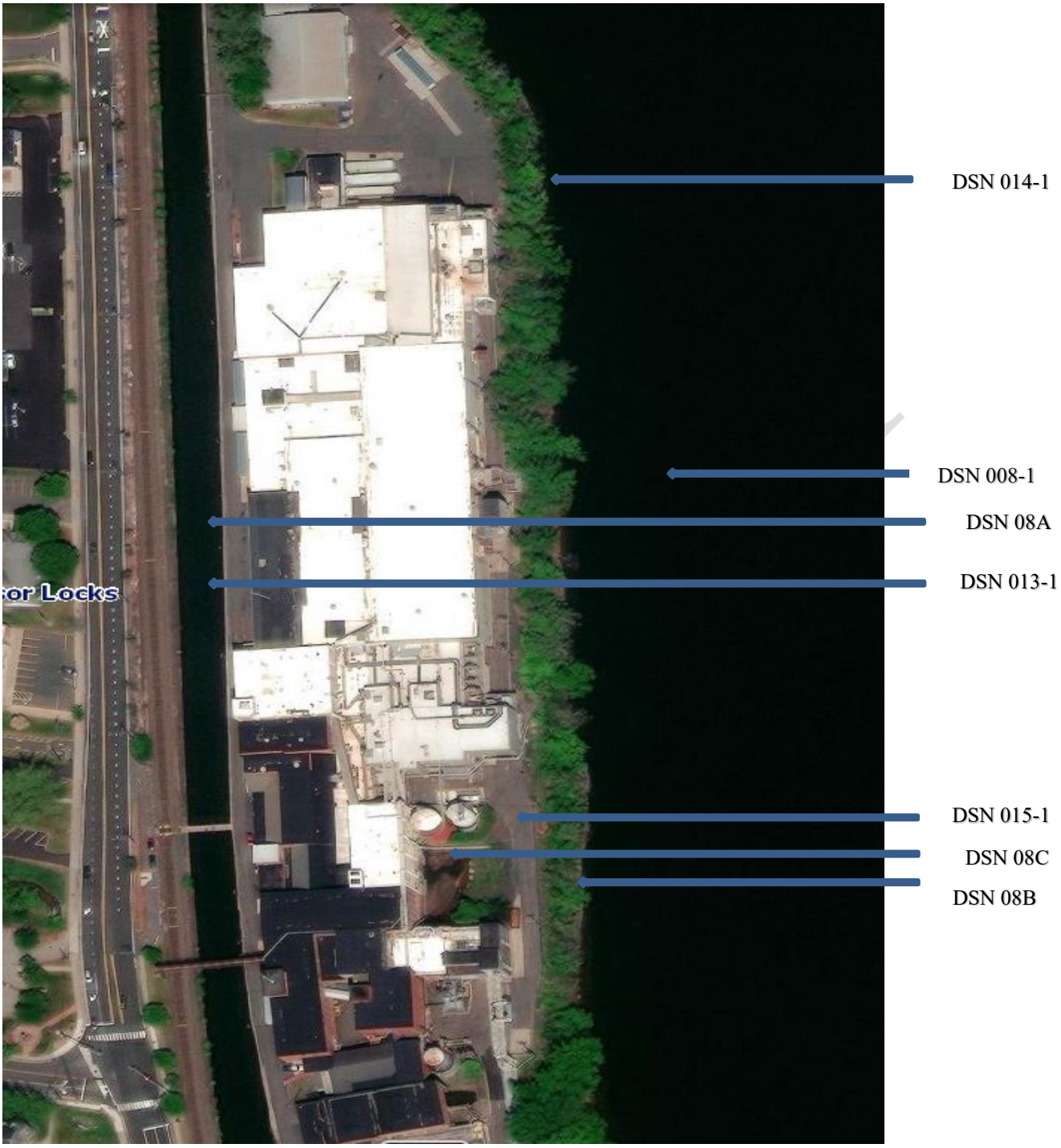
As provided in the permit application, the site is not located within a public water supply watershed.

SECTION 2 RECEIVING WATER BODIES

2.1 RECEIVING WATER BODIES INFORMATION

The receiving waterbody for DSN 008 and DSN 014, Connecticut River, is identified as CT4000-00_03 (FINAL-2022-IWQR-Appendix-A-1-Connecticut-305b-Assessment-Results-for-Rivers-and-Streams.pdf). The Connecticut River is listed on the State's 305(b) list of impaired waters, and the river is impaired for its designated use of fish consumption (FINAL-2022-IWQR-Appendix-B-1-List-of-Impaired-Waters-for-Connecticut-EPA-Category-5.pdf).

Figure 1. Discharge locations



The cause of impairment is polychlorinated biphenyls (PCBs) for fish consumption (FINAL-2022-IWQR-Appendix-A-4-Site-Specific-Fish-Consumption-Advisories.pdf (ct.gov)). Based on the criteria of Best Professional Judgment, a narrative requirement that "there shall be no discharge of polychlorinated biphenyl (PCB) compounds" was included as Section 4(D) of this permit.

The receiving waterbody for DSN 013 is Windsor Locks Canal. The Windsor Locks Canal is a man-made canal that was diverted from the Connecticut River and then rejoins the river, hence it does not have a unique identification.

There are also the following allowable discharges to the Kettle Brook: 1) in the event that the Connecticut River rises above the South NCCW at the South end of the site (DSN 08C), and 2) fire suppression system test water (DSN 015). The Kettle Brook is fully supporting of aquatic life and has not been assessed for recreation. Kettle Brook is a tributary of the Connecticut River.

2.2 APPLICABLE TOTAL MAXIMUM DAILY LOADS (TMDLS)

A TMDL for Escherichia coli (E. coli) has been established for CT4000-00_03. A review of Attachment O in the permit application revealed fecal coliform is not believed to be present. Sanitary wastewater is discharged to the sanitary sewer. Since E. coli is a subgroup of fecal coliform, and fecal coli is not associated with activities on site, it is not a pollutant of concern and monitoring requirements for E. coli are not included in this permit.

In addition, this segment is subject to the statewide mercury TMDL (Northeast Regional Mercury TMDL): https://portal.ct.gov/-/media/DEEP/water/tmdl/CTFinalTMDL/ne_hg_tmdl), and the entire state is subject to the Long Island Sound's TMDL for dissolved oxygen (December 2000) which is based on control of Total Nitrogen (https://portal.ct.gov/-/media/DEEP/water/lis_water_quality/nitrogen_control_program/tmdlpdf.pdf). A review of Attachment O in the permit application revealed mercury is not detected at 0.002 µg/l, hence it is not a pollutant of concern and monitoring requirements for mercury are not included in this permit. Monitoring requirements for ammonia, nitrites, nitrates, and total nitrogen have been included in the permit.

Figure 2. Applicable Section of 2022 Connecticut Integrated Water Quality Report

Connecticut 2022 305b Assessment Results RIVERS Appendix A-1

Waterbody Segment ID	Waterbody Name	Location	Miles	Aquatic Life	Recreation
CT4000-00_03	Connecticut River (Portland/Suffield)-03	Reservoir Brook confluence (adjacent to Gildersleeve Island), Portland, US to Suffield, MA border.	35.26	Insufficient Information	Not Supporting

Waterbody Segment ID	Waterbody Name	Location	Miles	Aquatic Life	Recreation
CT4000-09_01	Kettle Brook (Windsor Locks)-01	Mouth at Confluence Connecticut River DS Route 159/140 and RR crossing, US parallel on north side of Elm St (Route 140) to HW just west of Woodland St intersction with Elm St (Route 140), Windsor Locks.	2.43	Fully Supporting	Not Assessed

Figure 3. Applicable 2022 IWQR Waterbodies with impairments

2022 Appendix B-1. List of Impaired Waters for Connecticut (EPA Category 5)

Waterbody Segment ID	Waterbody Name	Cause	Impaired Designated Use
CT4000-00_03	Connecticut River (Portland/Suffield)-03	POLYCHLORINATED BIPHENYLS (PCBS)	Fish Consumption

Connecticut 2022 305b Assessment Results Site Specific Fish Consumption Advisories Appendix A-4

Waterbody Segment ID	Waterbody Name	Location	Water Size	Size Units	Water Type	Fish Consumption
CT4000-00_03	Connecticut River (Portland/Suffield)-03	Reservoir Brook confluence (adjacent to Gildersleeve Island), Portland, US to Suffield, MA border.	35.26	Miles	RIVER	Not Supporting

2.3 ANTIDEGRADATION EVALUATION

Implementation of the Antidegradation Policy follows a tiered approach pursuant to the federal regulations (40 CFR 131.12) and consistent with the Connecticut Antidegradation Policy included in the Connecticut Water Quality Standards (Section 22a-426-8(b-f) of the Regulations of Connecticut State Agencies). Tier 1 Antidegradation review applies to all permitted discharge activities to all waters of the state. Tiers 2 and 3 Antidegradation reviews apply to new or increased discharges to high quality waters and wetlands or outstanding national resource waters.

This discharge is an existing discharge, and the Permittee does not propose an increase in volume or concentration of constituents. Therefore, only the Tier 1 Antidegradation Evaluation and Implementation Review was conducted to ensure that existing and designated uses of surface waters and the water quality necessary for their protection are maintained and preserved, consistent with Connecticut Water Quality Standard, Sec.22a-426-8(a)(1). The review involved:

- An evaluation of narrative and numeric water quality standards, criteria and associated policies,
- the discharge activity both independently and in the context of other dischargers in the affected waterbodies, and
- consideration of any impairment listed pursuant to Section 303d of the federal Clean Water Act or any TMDL and other water-based plan established for the waterbody.

DEEP has determined that the discharges or activities are consistent with the maintenance, restoration, and protection of existing and designated uses assigned to the receiving water body by considering all relevant available data.

SECTION 3 PERMIT CONDITIONS AND EFFLUENT LIMITATIONS

DSN 008 is the discharge location for Ahlstrom's NCCW and process wastewaters; and DSN 013, DSN 014, and DSN 015 are the discharge locations for fire suppression system testing wastewaters. Under specific circumstances, as discussed in Section 1.2 of this fact sheet, DSNs 08A, 08B, and 08C may have alternative discharge locations.

Prior to the installation of the diffuser, the facility had several external outfalls (DSN 001, DSN 002, DSN 003, DSN 004, DSN 005, DSN 006, DSN 007, DSN 008 and DSN 012) all discharging directly into the Connecticut River. Once the diffuser was installed and operational, several of the external outfalls were retired and the associated waste streams were routed through DSN 008. DSN 001, DSN 002, DSN 003, DSN 004, DSN 005, DSN 006 and DSN 007 now discharge via DSN 008, making the previous permit's DSN 001, DSN 002, DSN 003, DSN 004, DSN 005, DSN 006 and DSN 007 internal waste streams of DSN 008. In the previous permit cycle, this nomenclature was retained even though these DSNs are internal waste streams. In this permit renewal, discharge serial numbers were renumbered for clarity and easier identification of internal waste streams. Below are the changes:

- The new DSN 08A was formerly DSN 001-1. The overflow of this wastewater is an allowed discharge via an alternative route in the event of dual pump failure.
- The new DSN 08B was formerly DSN 002-1. The overflow of this wastewater is an allowed discharge via an alternative route in the event of dual pump failure.
- The new DSN 08C was formerly DSN 003-1. The overflow of this wastewater is an allowed discharge via an alternative route in the event of dual pump failure.
- The new DSN 08D was formerly DSN 004-1
- The new DSN 08E was formerly DSN 005-1
- The new DSN 08A-E was formerly DSN 009-1
- The new DSN 08F was formerly DSN 006-1
- Former DSN 06C-1, DSN 06E-1, DSN 06F-1, DSN 06G-1, DSN 06P-1, DSN 06I-1, DSN 06K-1, DSN 06L-1, DSN 06M-1, DSN 06Q-1, DSN 06N-1, DSN 07A-1 and DSN 07B-1 were eliminated. These internal waste streams still exist but reported monitoring is no longer required. See the next paragraph for further explanation.
- The former DSN 012-1 (fire testing wastewater) was eliminated and replaced with DSNs 013-1, DSN 014-1 and DSN 015-1.
- DSN 013-1 is a new discharge location for fire suppression system testing wastewater.
- DSN 014-1 is a new discharge location for fire suppression system testing wastewater.
- DSN 015-1 is a new discharge location for fire suppression system testing wastewater.

In its application, Ahlstrom requested to have monitoring requirements removed for internal waste streams comprising of NCCW, process bleach outs and process boil-outs. Monitoring requirements for process bleach outs and process boil-outs prior to the DSN 08F collection system have been eliminated for the following reasons:

1) DSN 08F (comprising of process wastewater) is an internal waste stream of an external DSN 008. Monitoring requirements and effluent limitations are included for DSN 08F in addition to final monitoring requirements at DSN 008.
2) Special conditions prohibiting the direct discharge of internal waste streams of DSN 08F (comprising of former DSN 06C-1, DSN 06E-1, DSN 06F-1, DSN 06G-1, DSN 06P-1, DSN 06I-1, DSN 06K-1, DSN 06L-1, DSN 06M-1, DSN 06Q-1, DSN 06N-1, DSN 07A-1 and DSN 07B-1) to surface water and requiring the implementation of a standard operating procedure before discharging to the DSN 08F collection and treatment system have been included in Section 6 of Permit No. CT0000434.
3) A review of past monitoring data showed that with the exception of a pH exceedance at the former DSN 06N in March of 2023, there were no other exceedances of limits in the previous permit for the bleach outs and boil outs.

In the case of NCCW internal waste streams, monitoring requirements were not eliminated because of the large volume of these waste streams. Acquiring analytical data for these waste streams is beneficial in the assessment of pollutant source monitoring for the receiving streams.

3.1 POLLUTANTS OF CONCERN FOR DSNs

The following pollutants are included as monitoring pollutants for DSN 008 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total			✓	
Biochemical Oxygen Demand (5-day)			✓	
Bromine			✓	
Copper, Total			✓	
Dissolved Oxygen			✓	
Epichlorohydrin			✓	
Iron, Total			✓	
Lead, Total			✓	
Manganese, Total			✓	
Nickel, Total			✓	
Nitrogen, Ammonia, (total as N)			✓	
Nitrogen, Nitrite (total as N)			✓	
Nitrogen, Nitrate (total as N)			✓	
Nitrogen, Total			✓	
pH			✓	
Phosphorus, Total			✓	
Surfactants (MBAs)			✓	
Temperature			✓	

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Total Suspended Solids			✓	
Total Residual Chlorine			✓	
Zinc, Total			✓	

The following pollutants are included as monitoring pollutants for DSN 08A for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total			✓	
pH			✓	
Temperature			✓	
Total Residual Chlorine			✓	
Zinc, Total (only under special condition)			✓	

The following pollutants are included as monitoring pollutants for DSN 08B for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total			✓	
pH			✓	
Temperature			✓	
Total Residual Chlorine			✓	
Zinc, Total (only under special condition)			✓	

The following pollutants are included as monitoring pollutants for DSN 08C for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total			✓	
pH			✓	
Temperature			✓	
Total Residual Chlorine			✓	
Zinc, Total (only under special condition)			✓	

The following pollutants are included as monitoring pollutants for DSN 08D for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total			✓	
Iron, Total			✓	
pH			✓	
Temperature			✓	
Total Suspended Solids			✓	

The following pollutants are included as monitoring pollutants for DSN 08E for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total			✓	
Iron, Total			✓	
pH			✓	
Temperature			✓	
Total Suspended Solids			✓	

The following pollutants are included as monitoring pollutants for DSN 08F for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Aluminum, Total			✓	
Biochemical Oxygen Demand (5-day)	✓		✓	
Copper, Total			✓	
Epichlorohydrin			✓	
Pentachlorophenol	✓		✓	
pH			✓	
Oil and grease, Total			✓	
Total Residual Chlorine			✓	
Total Suspended Solids	✓		✓	
Trichlorophenol	✓			

The following pollutants are included as monitoring pollutants for DSNs 013, 014 and 015:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
pH				✓
Total Residual Chlorine				✓

3.2 EFFLUENT GUIDELINES

EPA promulgated initial Effluent Limit Guidelines and Standards for the Pulp, Paper and Paperboard category (40 CFR 430) in 1974 and 1977, amended the regulations in 1982 and 1986, and promulgated a major amendment covering toxic pollutants in 1998. 40 CFR 430 applies to any pulp, paper, or paperboard mill, that discharges or may discharge process wastewater pollutants to the waters of the United States. Specifically, 40 CFR 430 Subpart L applies to discharges resulting from the production of tissue papers at non-integrated mills, filter and non-woven papers at non-integrated mills, and paperboard at non-integrated mills.

Ahlstrom discharges wastewater (internal DSN 08F) from its operation of a specialty papermill that produces a variety of non-woven products such as teabags, wipes, casing paper, medical wraps, vacuum cleaner bag, food packaging etc., from cellulose, synthetic and blend of fibers. The discharge has been in existence since the 1960s. Therefore, 40 CFR 430 Subpart L is applicable to DSN 08F.

As stated above, DSN 08F is subject to federal categorical limitations. Below are the limitations:

PARAMETER	40 CFR 430.122 (BPT)		40 CFR 430.124 (BAT)	
	Average Monthly (Kg/kkg or lbs/1000lbs)	Maximum Daily (Kg/kkg or lbs/1000lbs)	Maximum Daily (Kg/kkg or lbs/1000lbs)	Maximum Daily (mg/L)
BOD5	16.3	29.6		
TSS	13.0	26.6		
Pentachlorophenol			0.0072	(0.029)(59.9)/y
Trichlorophenol			0.0025	(0.010)(59.9)/y
y = wastewater discharged in kgal per ton of product.				

pH range is 5.0 – 9.0

DSN 08F: Ahlstrom's production-based limit calculations

In the development of permit limits for biochemical oxygen demand, total suspended solids, pentachlorophenol and trichlorophenol, DEEP compared EPA's Pulp, Paper and Paperboard Categorical Limits (40 CFR Part 430, Subpart L) and limits in the previous permit. The limits in the previous permit were found to be more stringent and thus incorporated in the permit, in accordance with Section 22a-430-4(l)4(A)(xxiii) of the Regulations of Connecticut State Agencies. The sample type was changed from grab, to grab sample average, requiring both maximum daily limits and maximum instantaneous limits to be included in the permit for pentachlorophenol and trichlorophenol. In accordance with 40 CFR 430.124 (Pulp, Paper and Paperboard Category), the Permittee may, in lieu of analyzing for pentachlorophenol and trichlorophenol, include a statement on each DMR certifying that there has been no use of pentachlorophenol and trichlorophenol at the facility.

POLLUTANTS OF CONCERN	Federal Reg. Limits Based on 40 CFR 430, Subpart L (Kg/kkg or lbs/1000lbs)	Production based limits (in kg/day unless stated otherwise)	Current permit limits (in kg/day)	Current permit limits (in mg/l)
BPT effluent limitations for non-integrated mills where filter and non-woven papers are produced from purchased pulp				
BOD5	AML = 16.3 MDL = 29.6	AML = 16.3 X 295.5 = 4816.65 ÷ 2.2 = 2189.4 MDL = 29.6 X 295.5 = 8746.8 ÷ 2.2 = 3975.8 Using the combined wastestream formula, AML = ((2189.4 X 4.2458) + 0)/4.5258 = 2053.9 MDL = ((3975.8 X 4.2458) + 0)/4.5258 = 3719	AML = 404.3 MDL = 602	AML = 26.4 MDL = 39.3
TSS	AML = 13 MDL = 26.6	AML = 13 X 295.5 = 3841.5 ÷ 2.2 = 1746.1 MDL = 26.6 X 295.5 = 7860.3 ÷ 2.2 = 3572.9 Using the combined wastestream formula, AML = ((1746.1 X 4.2458) + 0)/4.5258 = 1638.1 MDL = ((3572.9 X 4.2458) + 0)/4.5258 = 3351.9	AML = 429.8 MDL = 933.7	AML = 28 MDL = 60.9

BAT effluent limitations for non-integrated mills where filter and non-woven papers are produced from purchased pulp				
Pentachlorophenol	MDL = .0072 Or (0.029) (59.9)/y (mg/L)	MDL = 0.0072 X 295.5 = 2.1276 ÷ 2.2 = 0.967 Concentration equivalent = MDL = $\frac{0.029 \text{ X } 59.9}{27.4} = 0.0634$ mg/l Using the combined waste stream formula, MDL = ((0.063 X 4.2458) + 0)/4.5258 = 0.059 mg/l	NA	MIL = 0.008
Trichlorophenol	MDL = .0025 Or (0.010) (59.9)/y (mg/L)	MDL = 0.0025 X 295.5 = 0.73875 ÷ 2.2 = 0.336 Concentration equivalent = MDL = $\frac{0.010 \text{ X } 59.9}{27.4} = 0.022$ mg/l Using the combined waste stream formula, MDL = ((0.022 X 4.2458) + 0)/4.5258 = 0.021 mg/l	NA	MIL = 0.006
Production per day = 295,500 lbs = 147.75 tons, lbs/1000 lbs = 295,500/1000 = 295.5 Average flow at DSN 08F = 4.5258 MGD, Boiler blowdown and demineralizer regeneration wastewater = 0.28 MGD, therefore process wastewater at DSN 08F = 4.5258 – 0.28 = 4.2458 MGD, y (kgal/ton) = 4245.8/147.75 = 28.74 †Combined wastestream formula: $C_T = \frac{\sum_{i=1}^{n} C_i F_i}{\sum_{i=1}^{n} F_i} \left\{\frac{F_T - F_D}{F_T}\right\}$ Where C_T = the alternative concentration limit, C_i = the categorical concentration limit for a pollutant in the regulated stream i, F_i = the average daily flow of stream i to the extent that it is regulated for such pollutant, F_D = the average daily flow of stream of dilute wastestream, F_T = the average daily flow of combined wastestream, and n = the total number of regulated streams. <u>Conclusion:</u> The existing permit limits (concentration and mass) identified in the last column, are more restrictive than the categorical production limits calculated. Therefore, based on best professional judgment and in accordance with Section 22a-430-4(l)4(A)(xxiii) of the Regulations of Connecticut State Agencies, limits at DSN 08F for BOD, TSS, pentachlorophenol and trichlorophenol are carried forward.				

AML:- Average Monthly Limit, MDL:- Maximum Daily Limit

3.3 WATER QUALITY BASED LIMITS

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

The need to include water quality-based discharge limitations in this permit was evaluated to be consistent with Connecticut Water Quality Standards (CT WQS) and criteria, pursuant to 40 CFR 122.44(d). Each parameter was evaluated for consistency with the available aquatic life criteria considering the zone of influence allocated to the facility where appropriate. The reasonable potential statistical procedures outlined in the EPA Technical Support Document for Water Quality Based Toxics Control (EPA/505/2 90 001) published in March of 1991 (TSD), were employed to calculate these limits. The calculated limits were then compared to the available effluent data. A comparison of monitoring data and its inherent variability with the calculated water quality-based limits indicates a low statistical probability of exceeding such limits for aluminum, chlorine, copper and zinc (See Section 3.3.2). Therefore, no water quality-based limits for aluminum, chloring, copper and zinc were included in the permit at this time.

3.3.1 ZONE OF INFLUENCE DETERMINATION

The previously allocated ZOI of 11,584,500 gph was carried forward.

3.3.2 RESONABLE POTENTIAL ANALYSIS

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

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

Consistent with the TSD, a reasonable potential analysis compared the projected concentration in the receiving waterbody after discharge with the applicable water quality criteria was conducted using the following information:

- Discharge monitoring data from March of 2018 to February of 2023 in Table A,
- Connecticut River water quality data,
- The Connecticut water quality criteria for freshwater in Table B,
- the allocated zone of influence in Section 3.3.1; and
- the statistical multiplier in Table 3-1 of the EPA/505/2 90 001 technical document.

When the projected maximum concentration in the receiving waterbody after discharge is lower than the water quality criteria, there is no potential for the discharge to exceed the water quality criteria. When the projected maximum concentration in the receiving waterbody is higher than the water quality criteria, there is a potential for the discharge to exceed the water quality criteria and therefore limits are needed in the permit. The results of the analysis indicate water quality based effluent limits are not required for aluminum, copper, chlorine, and zinc. (See Figures 4 and 5).
A reasonable potential analysis was not conducted for pentachlorophenol and trichlorophenol because the Permittee certifies that these pollutants are not used at the facility and always submitted in lieu of compliance with limits in the previous permit. In addition, a review of Attachment O in the permit renewal application showed they are non-detect.

TABLE A. DMR data for DSN 008 (Mar. 2018 – Feb. 2023))

Date	Aluminum (µg/l)	Copper (µg/l)	Chlorine (µg/l)	Lead (µg/l)	Nickel (µg/l)	Nitrogen (mg/l)	Phosphorus (mg/l)	Temperature °F	Zinc (µg/l)
03/31/2018	140	40	240				ND	91	
04/30/2018	120	31	300	ND	ND			97	50
05/31/2018	130	32	160	ND	ND			99	50
06/30/2018	110	10	160	ND	ND	0.47	0.06	102	40
07/31/2018	120	17	180	ND	ND			110	40
08/31/2018	70	18	190	ND	ND			106	80
09/30/2018	160	35	160	ND	ND	1.18	0.05	102	70
10/31/2018	50	14	220	ND	ND			96	60
11/30/2018	50	16	140	ND	ND			90	70
12/31/2018	100	ND	190	ND	ND	1.95	0.05	88	40
01/31/2019	90	26	190	ND	ND			87	70
02/28/2019	70	11	250	ND	ND			84	50
03/31/2019	150	12	220	ND	ND	1.77	0.03	89	40
04/30/2019	70	9	220	ND	ND			93	30
05/31/2019	90	4	240	ND	ND			97	30
06/30/2019	100	50	140	ND	ND	0.76	0.03	105	40
07/31/2019	100	11	220	ND	ND			110	30
08/31/2019	120	21	220	ND	ND			109	90
09/30/2019	90	8	130	ND	ND	0.33	0.03	104	50
10/31/2019	110	17	150	ND	ND			97	210
11/30/2019	50	18	310	ND	ND			93	150
12/31/2019	90	21	220	ND	ND	4.62	0.1	89	260
01/31/2020	50	11	200	ND	ND			90	150
02/29/2020	70	18	230	ND	ND			92	70
03/31/2020	70	9	260	ND	ND	1.02	0.15	90	40
04/30/2020	90	52	230	ND	ND			93	190
05/31/2020	30	6	210	ND	ND			99	120
06/30/2020	80	50	140	ND	ND	2.25	0.23	104	150
07/31/2020	70	11	150	ND	ND			109	70
08/31/2020	80	17	250	ND	ND			106	150
09/30/2020	60	15	190	ND	ND	0.61	0.12	101	70
10/31/2020	40	10	180	ND	ND			91	110
11/30/2020	40	16	210	ND	ND			89	90
12/31/2020	80	21	230	ND	ND	2.35	0.5	86	130
01/31/2021	10	5	230	ND	ND			86	60
02/28/2021	40	14	270	ND	ND			89	80
03/31/2021	60	9	220	ND	ND	2.15	0.07	88	50
04/30/2021	30	15	190	ND	ND			91	60
05/31/2021	40	31	200	ND	ND			98	160
06/30/2021	120	30	150	ND	ND	0.38	0.14	104	60
07/31/2021	220	37	190	ND	ND			110	100
08/31/2021	160	19	250	ND	ND			110	120
09/30/2021	60	27	180	ND	ND	0.92	0.36	98	110
10/31/2021	40	9	170	ND	ND			95	50
11/30/2021	110	29	210	ND	ND			88	110
12/31/2021	160	10	280	ND	ND	1.77	0.04	86	70
01/31/2022	70	5	230	ND	ND			92	30
02/29/2022	40	4	280	ND	ND			91	40
03/31/2022	100	24	240	ND	ND	0.37	0.01	89	80
04/30/2022	100	34	180	ND	ND			95	160
05/31/2022	170	10	360	ND	ND			97	120
06/30/2022	110	20	130	ND	ND	ND	0.07	101	120
07/31/2022	230	43	170	ND	ND			105	150
08/31/2022	370	32	230	ND	ND			112	190
09/30/2022	90	30	160	ND	ND	0.78	0.08	99	120
10/31/2022	30	15	210	ND	ND			92	10
11/30/2022	50	9	170	ND	ND			92	70

12/31/2022	*270*	*16*	*210*	*17∞*	*ND*	*2.41*	*0.08*	*91*	*180*
01/31/2023	*100*	*9*	*230*	*ND*	*ND*			*86*	*120*
02/28/2023	*170*	*46*	*340*	*7∞*	*ND*			*93*	*580*
$C_{v=\frac{SD}{Mean}}$	*≈ 0.63*	*≈ 0.63*	*≈ 0.23*						*≈ 0.82*
∞ Considered outliers and therefore not used									

TABLE B. Connecticut Water Quality Criteria (freshwater)

Pollutants	*Aquatic Life (Acute) (µg/l)*	*Aquatic Life (Chronic) (µg/l)*	*Human Health (µg/l)*
Aluminum	*750*	*87*	---
Copper	*14.3*	*4.8*	---
Chlorine	*19*	*11*	---
Lead	*30*	*1.2*	---
Nickel	*260.5*	*28.9*	*4,600*
Zinc	*65*	*65*	*26,000*

Figure 4. Screenshot of input data for Reasonable Potential Analysis

	A	B	C	D	E	F
1	Water Quality Based Permit Evaluations					
2	Discharger:	hIstrom-Munksjo Nonwover				
3	Permit Number:	CT0000434				
4	DSN:	DSN 008				
5	Receiving Water:	Connecticut River				
6	Average Flow per Day (gpd):	6,000,000				
7	Avg Hours of Discharge (hrs/d):	24				
8	Allocated ZOI (gph):	11,584,500				
9	Date of Analysis:	7/26/2023				
10						
11			Maximum Value	# of results >20=20	Coefficient of Variance	# Samples / Month for Permit Limit
12	**Metals & Inorganics**					
13	Aluminum	7429905	370	20	0.63	4
14	Ammonia (Salmonids)	7664417		1	0.60	4
15	Ammonia (No Salmonids)	7664417		1	0.60	4
16	Antimony	7440360		1	0.60	4
17	Arsenic	7440382		1	0.60	4
18	Barium	7440393		1	0.60	4
19	Beryllium	7440417		1	0.60	4
20	Boron	7440428		1	0.60	4
21	Cadmium	7440439		1	0.60	4
22	Chlorine	7782505	360	20	0.23	4
23	Chromium, hexavalent	18540299		1	0.60	4
24	Chromium, trivalent	16065831		1	0.60	4
25	Cobalt	7440484		1	0.60	4
26	Copper	7440508	52	20	0.63	4
27	Copper CT Specific	7440508		1	0.60	4
28	Cyanide	57125		1	0.60	4
29	Lead	7439921		1	0.60	4
30	Lithium	7439932		1	0.60	4
31	Manganese	7439965		1	0.60	4
32	Mercury - inorganic	7487947		1	0.60	4
33	Nickel	7440020		1	0.60	4
34	Selenium	7782492		1	0.60	4
35	Silver	7440224		1	0.60	4
36	Thallium	7791120		1	0.60	4
37	Tin	7440315		1	0.60	4
38	Uranium	7440611		1	0.60	4
39	Vanadium	1314621		1	0.60	4
40	Zinc	7440666	580	20	0.82	4

Figure 5. Results of Reasonable Potential Analysis

DSN:	DSN 008
Receiving Water:	Connecticut River
Average Flow per Day (gpd):	6,000,000
Avg Hours of Discharge (hrs/d):	24
Allocated ZOI (gph):	11,584,500
Date of Analysis:	7/26/2023

Ahlstrom-Munksjo Nonwovens	Estimated Maximum Concentration in Effluent	Waste Load Allocation	Limit Needed?	Governing WLA
Metals & Inorganics				
Aluminum	851	4118.406	No	chronic
Ammonia (Salmonids)	0	355035	No	chronic
Ammonia (No Salmonids)	0	355035	No	chronic
Antimony	0	8994.22	No	chronic
Arsenic	0	0.994098	No	health
Barium	0	10414.36	No	chronic
Beryllium	0	12.30788	No	health
Boron	0	44971.1	No	chronic
Cadmium	0	63.9063	No	chronic
Chlorine	468	520.718	No	chronic
Chromium, hexavalent	0	520.718	No	chronic
Chromium, trivalent	0	1988.196	No	chronic
Cobalt	0	1136.112	No	chronic
Copper	119.6	227.2224	No	chronic
Copper CT Specific	0	856.8178	No	chronic
Cyanide	0	246.1576	No	chronic
Lead	0	56.8056	No	chronic
Lithium	0	1631340.286	No	health
Manganese	0	1846.182	No	chronic
Mercury - inorganic	0	2.414238	No	health
Nickel	0	1368.0682	No	chronic
Selenium	0	236.69	No	chronic
Silver	0	2.84028	No	chronic
Thallium	0	703.158652	No	health
Tin	0	8520.84	No	chronic
Uranium	0	2447010.476	No	health
Vanadium	0	2082.872	No	chronic
Zinc	1682	3076.97	No	acute

3.3.3 WHOLE EFFLUENT TOXICITY

The permittee shall comply with effluent standards or prohibitions established by section 307(a) of the Federal Clean Water Act and may not discharge toxic pollutants in concentrations or combinations that are harmful to humans, animals, or aquatic life.

If toxicity is suspected in the effluent, DEEP may require the Permittee to perform acute or chronic whole effluent toxicity testing.

<u>DSN 008-1: Combined discharge of NCCW (DSNS 08A, 08B, 08C, 08D AND 08E) and Krofta dissolved flotation clarifier effluent.</u>

Ahlstrom's previous permit required quarterly acute toxicity testing using Daphnia pulex and Pimephales promelas and semi-annual chronic toxicity testing using Ceriodaphnia dubia and Pimephales promelas. The previous permit also had acute toxicity limits of $LC_{50} \geq 42\%$ and no chronic toxicity limit. During the last permit cycle, Ahlstrom had exceedances of its acute toxicity limits in June and December of 2020 and December of 2022. Based on the review of DMR data, the lowest LC_{50} result was 7.7%.

Reasonable Potential Analysis

Acute toxicity shall be assumed to occur at any discharge concentration which exceeds the LC50 concentration determined in an acute toxicity test multiplied by an application factor of 0.33. The projected maximum toxicity is determined by multiplying the maximum toxicity with the multiplier from Table 3-1 and the dilution factor. A default coefficient of variation of 0.6 is assumed.

Acute toxic unit (TU_a) = $100/LC_{50}$
$TU_a = 100/7.7 = 13TU_a$

Projected maximum toxicity = $13TU_a$ (highest observed toxicity data) X 2.6 (multiplier in Table 3-1) X 0.021 (dilution factor)

Projected maximum toxicity = $0.71TU_a$, which is higher than EPA's TSD recommended whole effluent toxicity criteria for protection against acute effects: $0.3TU_a$. Therefore, there is a reasonable potential of causing toxicity and a limit is thereby needed.

ZOI = 11,584,500 gph X 24 hours = 278,028,000 gpd = 278.028 MGD
Ahlstrom's Average cooling water flow (Table A of the permit) = 6 MGD = 250,000 gph

$$DF = \frac{AML + ZOI}{AML}$$

$$DF = \frac{11,584,500+250,000}{250,000} = 47.338$$

$$IWC = \frac{1}{DF} \text{ X } 100\% = 2.1\% \text{ for acute and chronic criteria}$$

The maximum daily limit for toxicity is based on the concentration that will prevent toxicity within the receiving stream as specified in section 22a-430-3(j)(7)(B)(i) of the RCSA.
Chronically toxic LC50 = Acceptable LC50 X 0.05
i.e. toxicity test LC50/0.05 = non-chronically toxic effluent % at ZOI border.
Therefore, the toxicity limit: LC50 = IWC X 20 = 2.1 X 20 = 42%.

3.4 THERMAL EVALUATION

Section 316(a) of the Federal Water Pollution Control Act, U.S.C. § 1326(a) provides that the thermal component of any discharge will assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the receiving water body.

Based on a previous thermal evaluation, the previous permit segmented the temperature limits into three categories: The effluent limit was 110°F in April – November (except August), 115°F in August, and 95°F in December – March. The limits are carried over in this permit based on the evaluation below.

Review of Connecticut River temperature data from USGS from Jan 2018 to Dec. 2022, showed the single day maximum temperatures (http://waterdata.usgs.gov/ct/nwis/) for different seasons stated in the previous permit are:

April – Nov: 30.3ºC (July 28, 2020) = 86.5ºF (since this temperature is already higher than 85ºF, the highest August temperature below will be used for mass balance thermal calculation).
December - March: 8.0ºC (December 1, 2020) = 46.4ºF

A mixing equation is used to verify if the previous temperature limits could cause non-compliance with the Connecticut Water Quality Standards (CTWQS).

Mixing equation (April – November)

$QT = Q_1T_1 + Q_2T_2$

Where Q is the summation of the ZOI and effluent flow rate, ($Q = Q_1+Q_2$)
T is the new river temperature after discharge
Q_1 is the ZOI
T_1 is the effluent temperature of the receiving stream prior to discharge
Q_2 is the effluent flowrate
T_2 is the effluent temperature

The ZOI is consistent with the CTWQS' recommended thermal ZOI because it is less than 25% of the volume of the receiving stream.

$$\text{New temperature of river after discharge (T)} = \frac{Q_1T_1 + Q_2T_2}{Q} = \frac{(11{,}584{,}500)(86.5)+(250{,}000)(115)}{11{,}834{,}500} = \frac{1002{,}059{,}250+28{,}750{,}000}{11{,}834{,}500} = \frac{1{,}030{,}809{,}250}{11{,}834{,}500} \approx 87.1°F$$

River temperature increase: 87.1 ºF – 86.5 ºF = +0.6 ºF

Mixing equation (December – March)

$QT = Q_1T_1 + Q_2T_2$

Where Q is the new river flow rate, ($Q = Q_1+Q_2$)
T is the new river temperature after discharge
Q_1 is the ZOI
T_1 is the temperature of the receiving stream prior to discharge
Q_2 is the effluent flowrate
T_2 is the effluent temperature

$$\text{New temperature of river after discharge (T)} = \frac{Q_1T_1 + Q_2T_2}{Q} = \frac{(11{,}584{,}500)(46.4)+(250{,}000)(95)}{11{,}834{,}500} = \frac{537{,}520{,}800+23{,}750{,}000}{11{,}834{,}500} = \frac{561{,}270{,}800}{11{,}834{,}500} \approx 47.4°F$$

River temperature increase: 47.4 ºF – 46.4 ºF = +1 ºF

The calculation above shows that after complete dilution of the discharge in the ZOI, there would be a maximum increase of 1ºF. The calculated difference in temperature complies with Section 22a-426-9(a)(1) of the CTWQS, which states that the discharge must not raise the temperature of the receiving stream more than 4ºF. Therefore, the previous permit limits of 110ºF in April – November (except August), 115ºF in August, and 95ºF in December – March, were carried forward.

In addition to the temperature limit, the permit has the following narrative temperature requirement "The temperature of any discharge shall not increase the temperature of the receiving stream above 85ºF, or, in any case, raise the normal temperature of the receiving stream more than 4ºF beyond the approved zone of influence."

3.5: EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
DSN 008-1	Aluminum, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Aquatic Toxicity, Daphnia pulex LC_{50}	MDL: $\geq$ 42% To meet in-stream water quality.	Quarterly
	Aquatic Toxicity, Pimephales promelas LC_{50}		Quarterly
	Biochemical Oxygen Demand (5-day)	Monitoring only requirement based on case-by-case determination using BPJ	Twice per month
	Bromine		Quarterly
	Copper, Total	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Monthly
	Dissolved Oxygen	MDL: $\geq$ 5.0 mg/l Water quality criteria	Weekly
	Epichlorohydrin	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Flow Rate (Average Daily)	6.0 MGD Permitted discharge volume per application.	Continuous/ Monthly
	Flow, Maximum during 24 hr period[1]	9.0 MGD Permitted discharge volume per application.	Continuous/ Monthly
	Iron, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Lead, Total		Monthly
	Manganese, Total		Semi-annual
	Nickel, Total		Monthly
	Nitrogen, Ammonia, (total as N)		Quarterly
	Nitrogen, Nitrite, (total as N)		Quarterly
	Nitrogen, Nitrate, (total as N)		Quarterly
	Nitrogen, Total		Quarterly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	pH	Case by case determination using BPJ and consistent with the previous permit. MIL: pH, minimum: 6.0 S.U MIL: pH, minimum: 9.0 S.U	Continuous/ Monthly
	Phosphorus, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Quarterly
	Surfactants (MBAs)		Monthly
	Temperature (April – July and September - November)	MIL: 110°F Case by case determination using BPJ and consistent with the previous permit and zone of influence.	Continuous/ Monthly
	Temperature (August)	MIL: 115°F Case by case determination using BPJ and consistent with the previous permit and zone of influence.	Continuous/ Monthly
	Temperature (December - March)	MIL: 95°F Case by case determination using BPJ and consistent with the previous permit and zone of influence.	Continuous/ Monthly
	Total Suspended Solids	Monitoring only requirement based on case-by-case determination using BPJ	Twice per month
	Total Residual Chlorine	Monitoring only requirement based on BPJ. No RP to cause exceedance of WQC.	Weekly
	Zinc, total		Monthly
DSN 08A	Aluminum, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Semi-annual
	Flow Rate (Average Daily)		Continuous/Monthly
	Flow, Maximum during 24 hr period		Continuous/Monthly
	Flow (Day of Sampling)		Monthly
	pH		Continuous /Monthly
	Temperature		Continuous/ Monthly
	Total Residual Chlorine		Semi-annual
	Zinc, Total		Per Event
DSN 08B	Aluminum, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Semi-annual
	Flow Rate (Average Daily)		Continuous /Monthly
	Flow, Maximum during 24 hr period		Continuous /Monthly
	Flow (Day of Sampling)		Monthly
	pH		Continuous /Monthly
	Temperature		Continuous /Monthly
	Total Residual Chlorine		Semi-annual
	Zinc, Total		Only for a special condition discharge (Per Event)
DSN 08C	Aluminum, Total		Semi-annual

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	Flow Rate (Average Daily)	Monitoring only requirement based on case-by-case determination using BPJ.	Continuous /Monthly
	Flow, Maximum during 24 hr period[1]		Continuous /Monthly
	Flow (Day of Sampling)		Monthly
	Aquatic Toxicity, Daphnia pulex NOAEL = 100%	MDL ≥ 90% To meet in-stream water quality.	Only for a special condition discharge (Per Event)
	Aquatic Toxicity, Pimephales promelas NOAEL = 100%		
	pH		Continuous /Monthly
	Temperature		Continuous /Monthly
	Total Residual Chlorine		Semi-annual
	Zinc, Total		Only during special condition discharge (Per Event)
DSN 08D	Aluminum, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Semi-annual
	Flow Rate (Average Daily)		Continuous /Monthly
	Flow, Maximum during 24 hr period[1]		Continuous /Monthly
	Flow (Day of Sampling)		Monthly
	Iron, Total		Semi-annual
	pH		Continuous /Monthly
	Temperature		Continuous /Monthly
	Total Suspended Solids		Semi-annual
DSN 08E	Aluminum, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Semi-annual
	Flow Rate (Average Daily)		Continuous /Monthly
	Flow, Maximum during 24 hr period		Continuous /Monthly
	Flow (Day of Sampling)		Monthly
	Iron, Total		Quarterly
	pH, Minimum		Continuous /Monthly
	Temperature		Continuous /Monthly
	Total Suspended Solids		Quarterly
DSN 08A-E	Flow Rate (Average Daily)	AML: 1.472 MGD MDL: 3.509 MGD Summation of DSNs 08A, 08B, 08C, 08D and 08E.	Continuous /Monthly
	Flow, Maximum during 24 hr period[1]		Continuous /Monthly
DSN 08F	Aluminum, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Biochemical Oxygen Demand (5-day)	Anti-backsliding regulation AML: 26.4 mg/l, MDL: 39.3mg/l, MIL: 59 mg/l	Weekly

DISCHARGE POINT(S)	POLLUTANTS	LIMIT and BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
	Biochemical Oxygen Demand (5-day)	Anti-backsliding regulation AML: 404.3kg/d, MDL: 602 kg/d	Weekly
	Copper, Total	Monitoring only requirement based on case-by-case determination using BPJ.	Monthly
	Epichlorohydrin		Monthly
	Flow Rate (Average Daily)	AML: 4.5258 MGD	Continuous/ Monthly
	Flow, Maximum during 24 hr period	MDL: 5.76 MGD	Continuous/ Monthly
	Flow (Day of Sampling)	MDL: 5.76 MGD	Weekly
	Pentachlorophenol[4]	Anti-backsliding regulation MIL: 0.008 mg/l	Weekly
	pH, Minimum	40 CFR 430.122 (BPT) MIL: 5.0 S.U	Continuous/ Monthly
	pH, Maximum	40 CFR 430.122 (BPT) MIL: 9.0 S.U	Continuous/ Monthly
	Oil and grease, Total	Anti-backsliding regulation AML: 2.0 mg/l, MDL: 3.3 mg/l, MIL: 4.95 mg/l	Quarterly
	Total Residual Chlorine	Monitoring only requirement based on BPJ.	Monthly
	Total Suspended Solids	Anti-backsliding regulation. AML: 28 mg/l, MDL: 60.9 mg/l MIL: 91.35 mg/l	Weekly
	Total Suspended Solids	Anti-backsliding regulation. AML: 429.8 kg/d MDL: 933 kg/d	Weekly
	Trichlorophenol	Anti-backsliding regulation. MDL: 0.006 mg/l MIL: 0.006 mg/l	Weekly
DSN 013-1	Flow (Day of sampling)	Monitoring only requirement based on case-by-case determination using BPJ.	Annually
	pH		
	Total Residual Chlorine		
DSN 014-1	Flow (Day of sampling)		
	pH		
	Total Residual Chlorine		
DSN 015-1	Flow (Day of sampling)		
	pH		
	Total Residual Chlorine		

AML: Average Monthly Limit MDL: Maximum Daily Limit MIL: Maximum Instantaneous Limit
BPJ: Best Professional Judgment BPT: Best Practicable Control Technology Currently Available
WQC: Water quality criteria

3.6: CHANGES MADE TO THE PERMIT FROM THE PREVIOUS PERMIT

- Section 3 of Ahlstrom's permit includes a statement about 316(a) and 316(b) determinations and reads: "This permit includes a determination regarding section 316(a) of the Federal Water Pollution Control Act 33 U.S.C. § 1326(a) regarding the thermal component of the discharge, and compliance with this permit is sufficient to assure the protection and propagation of a balanced indigenous population of shellfish, fish and

wildlife in and on the receiving waters. This permit also contains a determination under section 316(b) of the Federal Water Pollution Control Act, 33 U.S.C. § 1326(b) regarding cooling water intake structures and Conn. Gen. Stat. § 22a-430(a)."

- Except for chronic toxicity monitoring requirements, semi-annual was changed from June and September to June and December consistent with DEEP's practice.

- Section 4 of Ahlstrom's permit states that "There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid." This is based on site specific fish advisories and Connecticut impairments.

- Monitoring requirements for zinc in the NCCW internal waste stream (DSNs 08A, 08B, 08C and 08D formerly 001, 002, 003 and 004 respectively) were eliminated because a review of previous discharge monitoring data showed low levels of this parameter (primarily non-detect or present in de minimis amounts). Zinc will still be monitored at the final discharge outfall DSN 008 and during the specified special conditions.

- The instantaneous limit ($\geq$ 14%) for aquatic toxicity was removed because sample type for aquatic toxicity is daily composite not grab.

- Monitoring requirement for manganese was included for DSN 008 and eliminated for DSNs 08B (former DSN 002), DSNs 08C (former DSN 003), and 08D (former DSN 004). Monitoring at DSN 008 provides a more accurate representation of manganese in the wastewater discharged.

- Monitoring requirements for iron, lead and zinc were removed from DSN 08F (formerly DSN 006) because iron, lead and zinc are not federal or state effluent categorical limits and a review of previous discharge monitoring data showed lead was always non-detect, zinc was present at levels below the water quality criteria except for 12/32/2019 that was 100 µg/l and iron had a maximum concentration level of 0.16 mg/l. These parameters will be monitored at the final discharge outfall DSN 008.

- Monitoring requirement for formaldehyde was removed from DSN 008 because the Permittee no longer uses any product that contains formaldehyde. Also, a review of previous discharge monitoring data showed that this parameter was always non-detect.

- The monitoring requirements and limits for total dissolved solids were removed. A review of the current permit and historical files did not provide a justification for the inclusion of these permit conditions, hence in accordance with CWA Section 402(o)2(B), DEEP believes this permit requirement was a mistaken interpretation of law. Additionally, this change does not contravene the anti-backsliding rule in Section 22a-430-4(l)4(A)(xxiii) of the Regulations of the Connecticut State.

- The monitoring frequencies for pentachlorophenol and trichlorophenol were increased from annually to weekly. This is because pentachlorophenol and trichlorophenol are pollutants with federal effluent limitations and Section 22a-430-3(j) of the CT RCSA prescribes weekly monitoring.

- Flow, total was changed to Flow (Day of sampling) and the monitoring frequencies were reduced to monthly from weekly for NCCW internal waste streams, with the exception of DSN 08F for which a frequency of weekly is required for consistency with pollutant monitoring requirements for the discharge. The current permit included a weekly flow monitoring requirement and it is redundant because the NCCW internal waste streams flows are already being monitored daily. Average flow for the month, maximum daily flow for the month and flow the day of sampling will all be reported monthly.

- A previous remark under DSN 008 that allowed the discharge of wastewaters to the Connecticut River in the event the gravity feed discharge from the tank gets blocked with debris to restrict the flow has been removed.

3.7 COMPLIANCE SCHEDULE

DEEP is requiring effluent monitoring for Per- and polyfluoroalkyl substances (PFAS) in certain discharges to support further regulatory evaluations regarding the identification of contributing sources of such substances to the state's surface waters. As such, this permit contains a compliance schedule requiring the Permittee to develop, submit for approval, and implement a PFAS monitoring and sampling plan to ensure data is representative and undergoes proper quality control and assurance. Based on information provided by the Permittee, they have no common knowledge of PFAS containing substances being used and they are not expected to be present in the wastewater generating activities; however, the industrial classification has been identified as a potential source and the effluent will be sampled to characterize the discharge.

SECTION 4 COOLING WATER INTAKE STRUCTURE & 316(b) DETERMINATION

Section 316(b) of the Federal Water Pollution Control Act, U.S.C. § 1326(b) states that "any standard established pursuant to section 301 or 306 of this Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures (CWIS) reflect the best technology available (BTA) for minimizing adverse environmental impact".

The federal regulations establish requirements under section 316(b) of the Clean Water Act (CWA) for existing power generating facilities and existing manufacturing and industrial facilities with a cooling water intake structure having a design intake flow greater than 2 million gallons per day of water from waters of the United States and use at least 25 percent of the water they withdraw exclusively for cooling purposes. Section 125.92 defines "Cooling water intake structure" as "the total physical structure and any associated constructed waterways used to withdraw cooling water from waters of the United States. The cooling water intake structure extends from the point at which water is first withdrawn from waters of the United States up to and including the intake pumps."

Section 125.90(b), states "Cooling water intake structures not subject to requirements under §§ 125.94 through 125.99 or subparts I or N of this part must meet requirements under section 316(b) of the CWA established by the Director on a case-by-case, best professional judgment (BPJ) basis."

The August 15, 2014, 316(b) final rule applies to existing facilities that withdraw more than 2 MGD of water and uses at least 25% of the actual intake flow exclusively for cooling purposes.

4.1 INTAKE WATER STRUCTURE DESCRIPTION

Intake Water Structure Description

The Ahlstrom facility is located between the Connecticut River and Windsor Locks Canal in Windsor Locks. The Canal is about 50 feet wide, and the intake structure is located approximately 1450 feet south of the Route 140 bridge. The facility has a water diversion permit and is authorized to divert 8 MGD from the Windsor Locks Canal. The water is withdrawn for use in production at the mill and once-through cooling of the facility equipment. However, less than 25% of the intake is used primarily for once-through cooling based on flow data evaluated from 2018 to 2023.

The intake is comprised of two inlets. The first inlet is comprised of a 14-inch pipe that is equipped with two pumps. The maximum capability of each pump is 2,100 gpm. When both pumps are running, the flow is restricted to a maximum combined pump rate of 3,700 gpm. One of the pumps for the 14-inch inlet runs 24 hours a day, 7 days a week for the whole year while the second pump runs 9 hours a day, 7 days a week for the whole year. The second inlet is comprised of a 19½ inch pipe that is equipped with one big pump with a maximum capability of 2,400 gpm and two small pumps with a capability of 400 gpm each. The small pumps are not operated at the same time. The big pump runs 2 hours a day, 5 days a week for 260 days, while the small pumps are run for 24 hours a day, 7 days a week for 45 days in a year.

Each inlet consists of a stainless-steel trash rack that stands off the intake pipe. The trash rack consists of parallel flat bars that are spaced one inch apart. The one inch spacing keeps debris and fish too wide to pass between the bars from entering the intake pipe. The dimensions of the spacer flat bars are 9¼ feet by 4 inches by ¼ inches. Periodically, the trash rack is cleaned off manually. There is no provision for returning impinged fish to the Canal. In a submittal dated November 13, 2015, and updated on November 16, 2015, the Permittee calculated the maximum intake velocity of the intake structure to be 0.23 fps (see Attachment 2). No facility modifications pertaining to the intake structure have occurred since that time to cause a change in the calculated velocity.

4.2 SECTION 316(b) DETERMINATION

On June 19, 2023, Ahlstrom submitted data of its NCCW and the total wastewater discharged from January 2018 to May 2023, as an addendum to its permit renewal application. From the submitted data, the percentages of the non-contact cooling water to the total intake water are summarized below:

January 2018 – December 2018, 5.9% of the actual intake flow was used exclusively for cooling purposes.
January 2019 – December 2019, 5.7% of the actual intake flow was used exclusively for cooling purposes.

January 2020 – December 2020, 4.7% of the actual intake flow was used exclusively for cooling purposes.
January 2021 – December 2021, 5.6% of the actual intake flow was used exclusively for cooling purposes.
January 2022 – December 2022, 5.7% of the actual intake flow was used exclusively for cooling purposes.
January 2023 – May 2023, 3.3% of the actual intake flow was used exclusively for cooling purposes.

Based on DEEPs evaluation, the facility's actual intake flow is less than 7.0 MGD, but less than 25% is used for cooling, hence the facility does not meet eligibility criteria in the final rule. However, the final rule states that for facilities that are below any of the applicability thresholds, for example, a facility that withdraws less than 25% of the intake flow for cooling purposes, the Director must set appropriate requirements on a case-by-case basis using best professional judgment based on 40 CFR 125.90(b). Therefore, DEEP evaluated Ahlstrom's CWIS as described below.

4.2.1 CWIS EVALUATION

Based on best professional judgment, DEEP has determined that the facility is compliant with BTA requirements after reviewing available information regarding the location, design, operation, and capacity of the intake structure. This determination is based on the following information:

- Calculations submitted by the Permittee showed that the intake velocity is 0.23fps (See Attachment 2). Based on best professional judgement, using 40 CFR 125.94(a)(1)(ii) as a guide, any intake velocity that is below or equal to 0.5 fps is deemed to acceptably reduce impingement.

- Using USGS data, the mean flow for Windsor Locks Canal at Ahlstrom's intake is about 434.24 MGD. The total design intake flow for Ahlstrom's CWIS is about 2.87% of the mean annual flow of Windsor Locks Canal. Since the total design intake flow is less than 5% of the mean annual flow of Windsor Locks Canal, Ahlstrom's CWIS is considered to have de minimis rate of impingement based on best professional judgment.

Based on the low through-screen velocity at Ahlstrom's intake and low percentage of water withdrawal, DEEP concludes that the intake is compliant with BTA requirements.

SECTION 5 VARIANCES AND WAIVERS

The facility did not request a variance or a waiver.

SECTION 6 E-Reporting

The Permittee is required to electronically submit documents in accordance with 40 CFR Part 127.

SECTION 7 PUBLIC PARTICIPATION PROCEDURES

7.1 INFORMATION REQUESTS

The application has been assigned the following numbers by the Department of Energy and Environmental Protection. Please use these numbers when corresponding with this office regarding this application.

APPLICATION NO. 201402656 PERMIT ID NO. CT0000434

Interested persons may obtain copies of the application from Gary Jackson, Ahlstrom Nonwovens LLC, 2 Elm Street, Windsor Locks, CT 06096, (860) 654-8556 or gary.jackson@ahlstrom.com.

The application is available for inspection by contacting Oluwatoyin Fakilede at oluwatoyin.fakilede@ct.gov-, at the Department of Energy and Environmental Protection, Bureau of Materials Management and Compliance Assurance, 79 Elm Street, Hartford, CT 06106-5127 from 8:-30 4-:30, Monday through Friday.

Any interested person may request in writing that his or her name be put on a mailing list to receive notice of intent to issue any permit to discharge to the surface waters of the state. Such request may be for the entire state or any geographic area of the state and shall clearly state in writing the name and mailing address of the interested person and the area for which notices are requested.

8.2 PUBLIC COMMENT

Prior to making a final decision to approve or deny any application, the Commissioner shall consider written comments on the application from interested persons that are received within 30 days of this public notice. Written comments should be directed to Oluwatoyin Fakilede, Bureau of Materials Management and Compliance Assurance, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 061065127 or oluwatoyin.fakilede@ct.gov. The Commissioner may hold a public hearing prior to approving or denying an application if in the Commissioner's discretion the public interest will be best served thereby, and shall hold a hearing upon receipt of a petition signed by at least twenty -five persons. Notice of any public hearing shall be published at least 30 days prior to the hearing.

Petitions for a hearing should include the application number noted above and also identify a contact person to receive notifications. Petitions may also identify a person who is authorized to engage in discussions regarding the application and, if resolution is reached, withdraw the petition. Original signed petitions may be scanned and sent electronically to deep.adjudications@ct.gov or may be mailed or delivered to: DEEP Office of Adjudications, 79 Elm Street, 3rd floor, Hartford, 06106-5127. All petitions must be received within the comment period noted above.

If submitted electronically, original signed petitions must also be mailed or delivered to the address above within ten days of electronic submittal. If a hearing is held, timely notice of such hearing will be published in a newspaper of general circulation. For additional information go to www.ct.gov/deep/adjudications.

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). If you are seeking a communication aid or service, have limited proficiency in English, wish to file an ADA or Title VI discrimination complaint, or require some other accommodation, including equipment to facilitate virtual participation, please contact the DEEP Office of Diversity and Equity at 860-418-5910 or by email at deep.accommodations@ct.gov. Any person needing an accommodation for hearing impairment may call the State of Connecticut relay number - 711. In order to facilitate efforts to provide accommodation, please request all accommodations as soon as possible following notice of any agency hearing, meeting, program, or event.

ATTACHMENT 1: NDDB DETERMINATION

Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Fisheries Division

DEEP Fisheries Consultation Form

To the Applicant - Prior to the submission of your permit application, registration, or authorization to the Connecticut Department of Energy & Environmental Protection (DEEP), please complete Part I below and e-mail the following to deep.inland.fisheries@ct.gov:

1. this completed DEEP *Fisheries Consultation Form*;
2. a site location map,
3. a PDF version of the proposed project plans including a site survey of existing conditions (if available), and
4. photos of the site.

Fisheries Division staff will contact you if further details are needed. Once the Fisheries Division staff returns the completed form to you, please include the form, and any signed plans (if applicable) in your license application submittal to DEEP or as a supporting document along with your NDDB Determination letter.

Part I: Applicant and Site Information (*to be completed by APPLICANT)*

1. Applicant/Registrant Information

Name: Ahlstrom-Munksjo Nonwovens LLC
Mailing Address: 2 Elm Street
City/Town: Windsor Locks State: CT Zip Code: 06096
Business Phone: 860.654.8300 Ext.: 8556
Contact Person: Gary A. Jackson Phone: 860.654.8300 Ext: 8556
E-mail Address: gary.jackson@ahlstrom-munksjo.com

2. Engineer/Surveyor/Agent Information (list as applicable)

Name: N/A
Mailing Address: _____
City/Town: _____ State: _____ Zip Code: _____
Business Phone: _____ Ext.: _____
Contact Person: _____ Phone: _____ Ext: _____
E-mail Address: _____
Service Provided: _____

3. Site Location:

Name of Site: Ahlstrom-Munksjo Nonwovens LLC
Address of Site or Location Description: 11 Canal Bank Road, Wet-Laid Mill
City/Town: Windsor Locks State: CT Zip Code: 06096
Parcel Location/Tax Assessor's Reference: Map 036 Block 057 Lot 003
Name of Stream or Waterbody: CT River

4. **Activity:** Check the box best describing your activity: (check all that apply):

- ☐ new public/fishing access;
- ☐ new docks and marinas on the Connecticut River;
- ☐ coastal/tidal dredging projects;
- ☐ activities in inland/non-tidal waterbodies and watercourses;
- ☐ withdrawal of water from a non-tidal/inland river, stream, pond or lake;
- ☐ withdrawal of water from a wetland, marsh, swamp, or bog hydrologically connected to a non-tidal/inland river, stream, pond or lake;
- ☐ withdrawal of groundwater from stratified drift deposits hydrologically connected to a non-tidal/inland river, stream, pond or lake.
- ☒ other, please describe:NPDES Renewal, CT0000434

Part I: Applicant and Site Information (*to be completed by APPLICANT) (continued)*

Note: Fisheries consultation is **not required** for docks and marinas on Long Island Sound.

5. **DEEP Pre-application Contact:** Indicate name of permit analyst or engineer, if applicable.
   N/A
6. **Project Description:** Provide or attach a brief, but thorough, description of the project including any measures to protect, enhance or restore fish populations:

   NPDES renewal application for permit CT0000434. Reference discharge summary atached on following page(s).

Part II: Fisheries Determination *(To be completed by DEEP Fisheries Staff only)*

To Fisheries Staff - This completed consultation form is required to be submitted as part of an application to DEEP. The application has not yet been submitted to DEEP. Please review the enclosed materials and determine whether the project will significantly impact any fisheries or fisheries habitat. You may provide comments or recommendations regarding the proposal. Send this completed form to the applicant and copy the DEEP analyst, if known, or the applicable WPMD/LWRD Supervisor. If the proposed work **WILL** significantly impact any fisheries and/or habitat or if you have any comments or concerns regarding the regulatory review for this project, contact the DEEP analyst, if known, or the applicable WPMD/LWRD Supervisor.

DEEP FISHERIES DIVISION DETERMINATION

Date Consultation Form received: 07/19/22

Please check applicable boxes and return the completed Consultation Form to the applicant:

- ☒ I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat;
- ☐ I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat **if the below Recommendations are followed**; and/or,
- ☐ I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any fisheries and/or habitat **if the design features shown on the attached plans are incorporated**. Fisheries staff to sign and date plans and return to the applicant with the completed Consultation Form.

COMMENTS/RECOMMENDATIONS (or check here if these are attached following this page: ☐):

"By entering my name below, I agree that I am providing my legal signature, and am legally bound by the determination above."

Bruce H Williams	08/11/22
Signature of Fisheries Division Staff	Date
Bruce H Williams	E.P. Fisheries Biologist
Print Name of Fisheries Division Staff	Title

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

July 15, 2022

Gary Jackson
Ahlstom-Munkjo Nonwovens LLC
2 Elm St
Windsor Locks, CT 06096
gary.jackson@ahlstrom-munksjo.com

NDDB DETERMINATION NUMBER: 202207424

Project: NPDES renewal permit (#CT0000434), Ahlstrom-Munksjo Nonwovens, 11 Canal Bank Rd, Windsor Locks, CT

Expiration: July 15, 2024

I have reviewed Natural Diversity Data Base (NDDB) maps and files regarding this project. According to our records, there are State-listed species (RCSA Sec. 26-306) documented downstream from discharge areas in the Connecticut River that may be sensitive to your discharge.

STATE STATUS	SPECIES	SCIENTIFIC NAME
T	Riverine clubtail	*Stylurus amnicola*
E/FED E	Atlantic sturgeon	*Acipenser oxyrinchus oxyrinchus*
E/FED E	Shortnose sturgeon	*Acipenser brevirostrum*
SC	Blueback herring	*Alosa aestivalis*
SC	Tidewater mucket	*Leptodea ochracea*
E	Yellow lampmussel	*Lampsilis cariosa*

Freshwater mussels are aquatic animals that play an important role in our environment. These sedentary organisms live in sediments on the bottom of streams and rivers and provide a service to all by filtering water and removing bacteria and phytoplankton. It is because they are filter-feeding animals that they are very susceptible to sediments and pollutants in the water in which they live. The greatest diversity of freshwater mussels in the world is found in Eastern North America. Freshwater mussels are one of the most endangered groups of animals with almost three-quarters of the native mussels in North America imperiled. The disappearance of freshwater mussels is a reliable indicator of chronic water pollution.

The following considerations will help protect and benefit these species, especially dragonflies and freshwater mussels.

- **Adhere strictly to water quality standards**.
- Pay special attention and address specific monitoring targets downstream for sediment, water temperature, copper, chlorine, and ammonia (TAN).
- No vegetation should be removed from the 100ft buffer of waterways.
- Turf grass and impervious surface should be minimized in the surrounding watershed.

Recommended water quality targets for waterways that contain this species should include:

- Turbidity
    - Turbidity should not increase 8 NTU over background levels

ATTACHMENT 2: INTAKE VELOCITY CALCULATION

AHLSTROM

13 November 2015

Ms. Oluwatoyin Fakilede
BMMCA/WPED
CT Dept. of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

RECEIVED
NOV 13 2015
BUREAU OF MATERIALS MANAGEMENT & COMPLIANCE ASSURANCE

RE: Application No.: 201402656, Permit No.: CT0000434
Response Request for Additional Information, X2

Ms. Fakilede,

Regarding your follow-up phone call of 2 November please find below and attached with this cover page responses to specific items (a), (c) and (f) under question 4 in your Technical Review Letter/Request.

a) See attached drawing.

c) Pump details. Also see attached line diagrams for Mill and SBC water systems.
Canal pump (North) 2100 gpm
Canal pump (South) 2100 gpm
note: Total Canal pump(s) flow is piping restricted to 3700 gpm if both are running
Pond pump 2400 gpm
SBC cooling pump (South) 400 gpm
SBC cooling pump (Middle) 400 gpm
note: only one SBC cooling pump is operated at a time

One Canal pump typically runs 24|7|365 (hrs/day|days/week|days/year)
The second Canal pump typically runs 9|7|365
The Pond pump cycles as needed 2|5|260
The SBC cooling pump is typically run seasonally during summer: 24|7|45

f) Average and maximum approach values.
South intake
2693 gpm average daily flow: 2693gpm * 0.1336cuft/gal * 1min/60sec = 6.0 cuft/sec
3700 gpm max daily flow: 3700gpm * 0.1336cuft/gal * 1min/60sec = 8.2 cuft/sec

North intake
1000 gpm average daily flow: 1000gpm * 0.1336cuft/gal * 1min/60sec = 2.2 cuft/sec
2800 gpm max daily flow: 2800gpm * 0.1336cuft/gal * 1min/60sec = 6.2 cuft/sec

Intake grate is 8ft * 9ft = 72 sqft, assume 75% porosity, effective 54 sqft

See Page 2

Ahlstrom Nonwovens LLC – Two Elm Street – Windsor Locks, CT 06096 – USA
T: +1 860.654.8556 – M: +1 860.593.0214 – F: +1 860.654.8597 – gary.jackson@ahlstrom.com
www.ahlstrom.com

.. Oluwatoyin Fakilede, 13 November 2015

South intake velocity
Average = 6.0cuft/sec * 1/54sqft = 0.11 ft/sec ~ 0.17 ft/sec.
Max = 8.2cuft/sec * 1/54sqft = 0.15 ft/sec ~ 0.23

North intake velocity
Average = 2.2cuft/sec * 1/54sqft = 0.0.04 ft/sec ~ 0.06
Max = 6.2cuft/sec * 1/54sqft = 0.11 ft/sec ~ 0.17

If you have any questions, please contact me at 860-654-8556.

Sincerely,

Gary A. Jackson, MS CSP CHMM
Manager, Environment and Regulatory Compliance

attachments

Toyin,
It was brought to my attention that a portion of our intake grates extends above the water line, so the area of the grate should be reduced accordingly.
The grate is 9 ft vertical and 8 ft horizontal, it extends out of the water about 3 ft making it effectively 6 x 8 or 48 sq ft.
With the assumed porosity of 75%, this makes 36 sq ft.
∴ South intake
$6.0\ ft^3/sec * 1/36\ ft^2 = 0.17\ ft/sec$

11/16/15