National Pollutant Discharge Elimination System
Factsheet

SECTION 1 FACILITY SUMMARY

APPLICANT	Sumitomo Bakelite North America, Inc.
PERMIT NO.	CT0003379
APPLICATION NO.	202007878
DATE APPLICATION RECEIVED	June 25, 2020
LOCATION ADDRESS	24 Mill Street, Manchester, CT 06042
FACILITY CONTACT	Alisa Werst Office Phone: (860) 533-6635 Email: AWerst@sbna-inc.com
MAILING ADDRESS	24 Mill Street, Manchester, CT 06042
DMR CONTACT	Alisa Werst Office Phone: (860) 533-6635 Email: AWerst@sbna-inc.com
SECRETARY OF STATE BUSINESS ID	0721216
PERMIT TERM	5 Years
PERMIT CATEGORY	National Pollutant Discharge Elimination System ("NPDES") Minor ("MI")
SIC & NAICS CODE(S)	3087 and 325211
APPLICABLE EFFLUENT GUIDELINES	None
PERMIT TYPE	Reissuance
OWNERSHIP	Private
RECEIVING WATER	Lydall Brook
WATERBODY SEGMENT ID	CT4500-12_02
WATERBODY CLASSIFICATION	A
DISCHARGE LOCATIONS (LAT, LONG)	DSN 101-1: 41° 47′ 46", -72° 31′ 09"
COMPLIANCE SCHEDULE	Yes (Per- and Polyfluoroalkyl Substances sampling requirements)
DEEP STAFF ENGINEER	Oluwatoyin Fakilede (860) 418-5986 Oluwatoyin.fakilede@ct.gov

TABLE OF CONTENTS

1.1 PERMIT FEES

***Application Fee**:*

Filing Fee	Invoice No.: DEP352497	Amount: $1,300	Date Paid: 6/5/2020
Processing Fee	Invoice No.: DEP355683	Amount: $ 13,650	Date Paid: 9/14/2020

Annual Fee (per Regulations of Connecticut State Agencies ("RCSA") Sec. 22a-430-7 and General Statutes of Connecticut ("CGS") Sec. 22a-6f):

DISCHARGE CODE	WASTEWATER CATEGORY	FLOW CATEGORY (Gallons per day (gpd))	DSNs	ANNUAL FEE
102000b	Non-Contact Cooling Water	450,000	001-1	$2,290.00
TOTAL AMOUNT				$2,290.00

1.2 APPLICATION SUBMITTAL INFORMATION

On June 25, 2020, the Department of Energy and Environmental Protection ("DEEP") received an application (Application No. 202007878) from Sumitomo Bakelite North America, Inc. ("Permittee", "Applicant") located in Manchester, CT 06042, for the renewal of its NPDES permit (Permit No. CT0003379), expiring on September 21, 2020 ("the previous permit").

Consistent with the requirements of Section 22a-6g of the Connecticut General Statutes ("CGS"), the Permittee published a Notice of Permit Application in the Hartford Courant on June 17, 2020. On September 23, 2020, the application was determined to be timely and administratively sufficient in accordance with Section 22a-430(d)2(B) of the RCSA.

Although the application was submitted less than 180 days before permit expiration, the application is considered timely because of an Executive Order No. 7M ("the Order") issued by the Governor of the State of Connecticut on March 25, 2020. The Order temporarily extended deadlines for filing applications for renewals of existing permits due to the effects of COVID-19 pandemic. Specifically, an application for renewal of a permit, due 180 days prior to its expiration, was then due on or before 90 days prior to the permit expiration date in accordance with the Order.

The Permittee seeks authorization for the following in Application No. 202007878:

DSN	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
001-1	450,000	Non-Contact Cooling Water	No Treatment	Lydall Brook

1.3 OTHER PERMITS

Other discharges from the site are covered under the following permitting mechanisms:

- Stormwater from the site is permitted under the "General Permit for the Discharge of Stormwater Associated with Industrial Activity" (GSI001591).
- Miscellaneous wastewaters from the site, such as water softener flush and boiler blowdown are discharged to the sanitary sewer. These discharges have automatic coverage (do not require registration because of the low volume) under the "General Permit for Discharges from Miscellaneous Industrial Users". Emergency discharge of non-contact cooling water ("NCCW") to the sanitary sewer when city water is used for non-contact cooling instead of well water, is also covered under the "General Permit for Discharges from Miscellaneous Industrial Users".

The Permittee also has a diversion permit (4500-036-IND-GR) that authorizes the withdrawal of water from a well on site.

1.4 FACILITY DESCRIPTION

Sumitomo Bakelite North America, Inc. ("SBNA") is a business that manufactures thermoset molding compounds comprised of resins (phenolic, epoxy, diallyl phthalate and silicone), glass and carbon reinforcements, inter fillers, pigments, and additives. SBNA is located on 24 Mill Street in Manchester, Connecticut, at the corner of Mill Street and Oakland Street.

1.5 DESCRIPTION OF INDUSTRIAL PROCESS

The process lines for manufacturing thermoset molding compounds consist of powder resin, fiberglass and filler mixing, extruding, grinding, screening, blending, conveying, and packaging of the final products. Compounding processes include:

1) Roll mill compounding of glass-reinforced phenolic resin-based molding compound;
2) Extrusion of glass-reinforced phenolic resin-based molding compound;
3) Processing of diallyl phthalate resin-based molding compound; and
4) Processing of long strands of chopped fiberglass and fillers.

The differences between the final products are the input material and methodology used to activate the chemicals. One process is solvent based which involves dissolving diallyl phthalate or epoxy resin in acetone and adding chopped glass fiber. Another process involves resin impregnation onto a glass roving in a dry process. The impregnated glass goes through a bank of ovens to cure and is then chopped into smaller lengths.

The Permittee is planning to install a new hydraulic press in the near future. The new hydraulic press is not expected to increase the discharge above the permitted maximum flow.

The process of compounding raw materials to produce molding compounds generates heat, which is damaging to both the materials and machinery. To reduce the heat, water is pumped from an on-site well into a 10,000-gallon stainless steel holding tank. The well water from the holding tank flows through piping and cooling jackets and is subsequently discharged to the Lydall Brook. The well water is used for non-contact cooling of the following:

1) Heat exchangers that cool the press oil used in the facility's seven existing hydraulic presses and newly proposed hydraulic press;
2) Single screw extruder barrels E1, E2, E3, and E4;
3) Two roll mills used for compounding glass reinforced phenolic resin;
4) Water cooled process chillers; and
5) The mixer drive.

When the groundwater well is not in operation or requires maintenance, the facility switches to potable water supplied by the City of Manchester. If potable water is used, the NCCW is not discharged to Lydall Brook, it is instead directed into the sanitary sewer with the approval of the City (see Section 1.3).

1.6 TREATMENT SYSTEM DESCRIPTION

There is no treatment for the once through NCCW.

1.7 FACILITY CHANGES

With this permit application, the Permittee is proposing to add a new hydraulic press (see Section 1.5 above).

In addition, the Regulations of the Connecticut State Agencies ("RCSA") require that permittees notify DEEP and obtain written approval of any facility expansion or process change that may result in an increased or new discharge or constitute a new source, and of any expansion or significant changes made to a wastewater collection system, treatment system, or its method of operation in accordance with RCSA Section 22a-430-3(i). These regulatory provisions are commonly referred to as "3(i) determinations". DEEP will review the notification and determine if the change can be implemented under the current permit or if the requested change requires a permit modification to protect waters of the State in accordance with RCSA Section 22a-430-4(p).

The following are a list of 3(i) determinations since the previous permit:

Application No.	3(i) Approval issuance Date	Change Implemented
Application No. 202305060	July 6, 2023	Replacement of old Teledyne ISCO flowmeter with Teledyne ISCO Signature area velocity meter system and components on October 20, 2022. Replacement of old chart recorder with Dell Computer Windows 10, Custom SCADA/Dream Reports Application on November 1, 2022.
Application No. 202305061	July 6, 2023	Installation of 3 water cooled chillers on the long fiber production Line 1 in 2014 and installation of 2 water cooled chillers on the long fiber production Line 2 in 2018.

1.8 COMPLIANCE HISTORY

Based on the Permittee's discharge monitoring report ("DMR") data evaluated from September 2019 to August 2024, the Permittee reported the following effluent violations. The exceedances have been corrected.

Table 1.4: Effluent violations in the past 5 years

MONTH/ YEAR	DSN	PARAMETER	TYPE OF LIMIT	PERMITTED LIMIT	EXCEEDENCE
January, 2023	001-1	Lead, Total	AML	0.79 µg/l	2.0 µg/l
January, 2023	001-1	Lead, Total	MDL	1.59 µg/l	2.0 µg/l
July, 2024	001-1	Lead, Total	AML	0.79 µg/l	2.0 µg/l
July, 2024	001-1	Lead, Total	MDL	1.59 µg/l	2.0 µg/l

AML: Average monthly limit MDL: Maximum daily limit

The Permittee is not subject to an ongoing enforcement action but had undergone the following:

A Notice of Violation (NOV WR IN 23013) was issued on May 24, 2023, for the following.

1. Failure to perform annual chronic toxicity testing between the months of July and August as required by Section 6(C) of NPDES Permit No. CT0003379 ("NPDES Permit"). The 2022 annual chronic toxicity testing was performed between November 28, 2022 and December 3, 2023.

2. Failure to properly preserve ammonia samples collected on November 29, 2022, from DSN 001-1 and Lydall Brook as part of the 2022 annual chronic toxicity testing as required by Section 6(A)(1) of the NPDES Permit and 40 CFR 136.3, Table II.

3. Failure to comply with holding time requirements for nitrate and nitrite samples collected on December 3, 2022, from DSN 001-1 and Lydall Brook as part of the 2022 annual chronic toxicity testing as required by Section 6(A)(1) of the NPDES Permit and 40 CFR 136.3, Table II.

4. Violation of the average monthly and maximum daily limits of lead on January 6, 2023 (see Table 1.4 above).

5. Failure to properly notify DEEP of the effluent violations as required by RCSA Section 22a-430-3(j)(11)(D).

6. Failure to notify DEEP of two new "long fiber" process lines installed in 2014 and 2018 as required by RCSA Section 22a-430-3(i)(2).

7. Failure to notify DEEP of the new doppler flowmeter and electronic flow recording system associated with DSN 001-1 installed in November 2022 as required by RCSA Section 22a-430-3(i)(3).

8. Failure to maintain records of facility flow monitoring information for DSN 001-1 between October 20, 2022, and October 31, 2022, in violation of RCSA Section 22a-430-3(j)(9)(A).

The NOV was closed on July 25, 2023, after the Permittee provided responses and developed procedures to prevent future violations.

1.9 GENERAL ISSUES RELATED TO THE APPLICATION

1.9.1 FEDERALLY RECOGNIZED INDIAN LAND

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

1.9.2 COASTAL AREA/COASTAL BOUNDARY

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

1.9.3 ENDANGERED SPECIES

As provided in the permit application, the site is not located within an area identified as a habitat for endangered, threatened or special concern species according to the January 2020 *State and Federal Listed Species and Natural Communities Map*.

1.9.4 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.

1.9.5 CONSERVATION OR PRESERVATION RESTRICTION

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

1.9.6 PUBLIC WATER SUPPLY WATERSHED

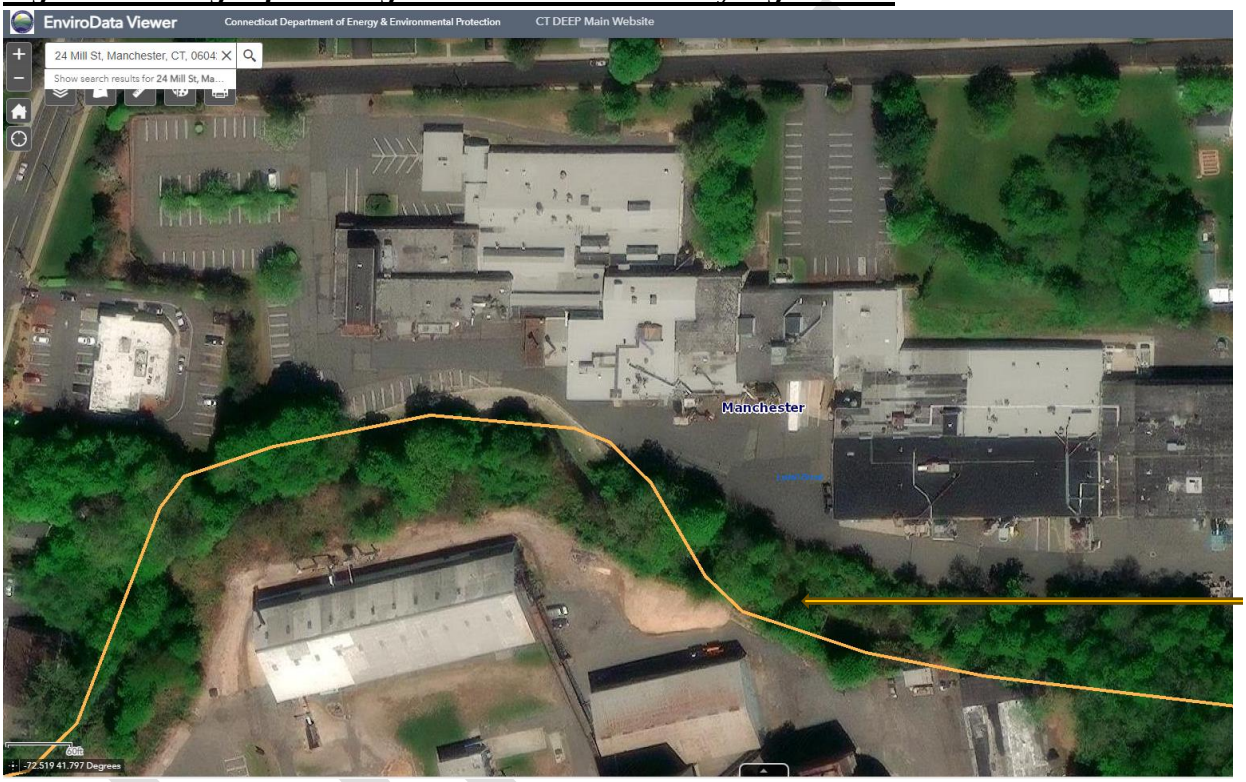
As provided in the permit application, the site is not located within a public water supply watershed.

SECTION 2 RECEIVING WATER BODY

2.1 RECEIVING WATER BODY INFORMATION

The Permittee discharges into Lydall Brook. The segment of Lydall Brook is identified as CT4500-12_02 and is a class "A" water. Class A waters are designated for: habitat for fish and other aquatic life and wildlife; potential drinking water supply; recreation; navigation; and industrial and agricultural water supply. This waterbody segment is identified on the 2022 Integrated Water Quality Report as an impaired waterbody. The waterbody is impaired for the designated uses habitat for fish, other aquatic life, and wildlife but the cause is unknown.
FINAL-2022-IWQR-Connecticut-305b-Assessment-Results-for-Rivers-and-Streams.pdf
FINAL-2022-IWQR-List-of-Impaired-Waters-for-Connecticut-EPA-Category-5.pdf

Figure 2.1. Image of discharge location with waterbody segment ID



Discharge Location

Figure 2.2 Image of applicable section of 2022 Connecticut Integrated Water Quality Report

Waterbody Segment ID	Waterbody Name	Location	Miles	Aquatic Life	Recreation
CT4500-12_02	Lydall Brook (Manchester)-02	Route 83 crossing (end of underground conduit), US to outlet of Salters Pond, parallel to Lydall Street at Coleman Road intersection, Manchester.	1.05	Not Supporting	Not Assessed

Figure 2.3. Image of applicable list of impaired waters for Connecticut

Waterbody Segment ID	Waterbody Name	Cause	Impaired Designated Use
CT4500-12_02	Lydall Brook (Manchester)-02	CAUSE UNKNOWN	Habitat for Fish, Other Aquatic Life and Wildlife

2.2 APPLICABLE TOTAL MAXIMUM DAILY LOAD (TMDL)

The entire state is subject to "A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound" (December 2000) (https://longislandsoundstudy.net/wp-content/uploads/2010/03/Tmdl.pdf). The Permittee's discharge has not been assigned a waste load allocation for nitrogen as part of this TMDL, but nitrogen may be present in the wastewater. Therefore, monitoring is included to characterize the total nitrogen associated with the discharge.

SECTION 3 PERMIT CONDITIONS AND EFFLUENT LIMITATIONS

3.1 POLLUTANTS OF CONCERN

The following pollutants are included as monitoring requirements in the permit for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	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
Chlorine, Total Residual		✓	
Copper, Total		✓	
Lead, Total		✓	
Oil and Grease, Total		✓	
Nitrates (as N)			✓
Nitrites (as N)			✓
Total Kjeldahl Nitrogen			✓
Total Nitrogen			✓
Temperature		✓	
Total Suspended Solids		✓	
Total Volatile Organics		✓	
Zinc, Total		✓	
Acute and chronic toxicity monitoring requirements are also included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring was included in the permit consistent with Section 22a-426-9(a)(1).			

3.2 BASIS FOR LIMITS

Technology and water-quality based requirements are considered when developing permit limits. Technology-based effluent limits ("TBELs") represent the minimum level of control imposed under the Clean Water Act ("CWA"). Industry-specific technology-based limits are set forth in 40 CFR Sections 405 – 471 (EPA's Effluent Limitation Guidelines) and in RCSA Section 22a-430-4(s)(2). Water quality-based limits are designed to protect water quality and are determined using the procedures set forth in EPA's *Technical Support Document for Water Quality-Based Toxics Control*, 1991 ("TSD"). When both technology and water quality-based limits apply to a particular pollutant, the more stringent limit would apply. In addition, water quality-based limits are required when any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) is or may be discharged at a level that causes, has reasonable potential to cause, or contributes to an excursion above any water quality criteria. Numeric water quality

criteria are found in RCSA Section 22a-429-9 of the Connecticut Water Quality Standards ("WQS").

3.3 TECHNOLOGY BASED EFFLUENT LIMITATIONS

Technology-based treatment requirements represent the minimum level of control that must be imposed under CWA Section 301(b) and 402 to meet best practicable control technology currently available ("BPT") for conventional pollutants and some metals, best conventional control technology ("BCT") for conventional pollutants, and best available technology economically achievable ("BAT") for toxic and non-conventional pollutants. See 40 CFR Section 125 Subpart A and RCSA Section 22a-430-4(l)(4)(A).

Subpart A of 40 CFR Section 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under CWA Section 402(a)(1). EPA promulgates New Source Performance Standards ("NSPS") under CWA Section 306 and 40 CFR Section 401.12. See also 40 CFR Section 122.2 (definition of "new source") and 122.29.

None of EPA's ELGs are applicable to this discharge. In the absence of published technology-based effluent guidelines, the permit writer is authorized under CWA Section 402(a)(1)(B) and RCSA Section 22a-430-4(m) to establish effluent limitations on a case-by-case basis using best professional judgment ("BPJ").

3.4 ZONE OF INFLUENCE

Section 22a-426-4(l) of the RCSA states that "The Commissioner may, on a case-by-case basis, establish zones of influence ("ZOI") when authorizing discharges to surface waters under Sections 22a-430 and 22a-133(k) of the CGS in order to allocate a portion of the receiving surface waters for mixing and assimilation of the discharge."

The previously assigned ZOI of 22,646 gph ("gallons per hour") was carried forward.

3.5 RESONABLE POTENTIAL ANALYSIS

Pursuant to CWA Section 301(b)(1)(C) and 40 CFR Section 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 United States Code ("USC") Section 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 Section 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 Section 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 Water Quality Based Effluent Limits ("WQBELs") or require additional monitoring if there is insufficient data to develop a WQBEL, for that pollutant. See 40 CFR Section 122.44(d)(1)(i).

Chlorine, copper and lead have been determined to have a reasonable potential to contribute or cause an excursion above the WQS (see Table 3.5.1).

Table 3.5.1: Reasonable Potential Evaluation
(This analysis compares the projected maximum concentration (PMC) in the receiving stream with the applicable water quality criteria (WQC). When the PMC is lower than the WQC, there is no potential for the discharge to exceed the WQC. When the PMC is higher than the WQC, there is a potential for the discharge to exceed the WQC and permit limits are therefore needed.)

Q = Flow, C = Concentration, $(QC)_u$ = Upstream data, $(QC)_d$ = Downstream data, $(QC)_e$ = Effluent data and $Q_d = Q_u + Q_e$. Q_e = 400,000 gpd = 16,667 gph, Q_u = 22,646 gph, Q_d = 39,313 gph, $Q_{u,health}$ = 45,292 gph, and $Q_{d,health}$ = 61,959 gph.

Pollutants	PMC in effluent = Maximum measured concentration X multiplier in Attachment A	PMC in the waterbody $C_d = \frac{(QC)_u + (QC)_e}{Q_d}$	Connecticut Water Quality Criteria (WQC) (Freshwater)			Is there potential to exceed WQC?
			Aquatic Life (Acute) (µg/l)	Aquatic Life (Chronic) (µg/l)	Human Health (µg/l)	
Chlorine	10 X 7.1 = 71	30.10	19	11	---	Yes
Copper	4 X 4.3 = 17.2	7.29	14.3	4.8	1,300	Yes
Lead	2 X 6.4 = 12.8	5.43	30	1.2	---	Yes
Zinc	5 X 2.4 = 12	5.09	65	65	26,000	No

3.5.1 TEMPERATURE

The previous permit had a maximum instantaneous limit of 85°F for temperature, consistent with the WQC for class A waters. The discharge temperature ranged from 52.3°F to 70.88°F (DMR data for September 2019 – August 2024), with an average temperature of 61.06 °F. A statistical analysis showed a 95% confidence interval of 61.06 °F ± 2.08 °F, which gives a range of 58.98 °F to 63.14 °F. The data shows that it is unlikely that the discharge would exceed the WQC of 85 °F. Therefore, the WQC was incorporated in the permit.

3.5.2 TOTAL VOLATILE ORGANICS

Total volatile organics monitoring was required in the previous permit because of historic contamination at the site. The target pollutant is 1,1,1 trichloroethane, which was believed to be present in the range of 2 - 3 µg/l. A review of DMR data (September 2019 – August 2024) showed total volatile organics was below detection 60% of the time and the maximum reported concentration was 2 µg/l, which is below United States Environmental Protection Agency's maximum contaminant level of 200 µg/l for drinking water. There is no numeric water quality criterion for 1,1,1-trichloroethane. Therefore, a numeric reasonable potential evaluation was not conducted and the continuation of monitoring is proposed based on best professional judgement.

3.5.3 pH

pH limitations of 6.8 – 8.5 S.U. are proposed consistent with the water quality criteria for class A waterbody.

3.6 WATER QUALITY BASED EFFLUENT LIMITATIONS (WQBELs)

The CWA and federal 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 Section 301(b)(1)(C) and 40 CFR Section 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

The reasonable potential analysis in Section 3.6 showed that water quality-based limits are needed for chlorine, copper, and lead. Therefore, the limits for these pollutants are calculated below.

Table 3.6.1: Permit Limits Calculation

Determine Waste Load Allocation ("WLA") in µg/l

$(QC)_d$ = Downstream data, $(QC)_u$ = Upstream data, Qe = Discharge flow (see Table 3.6.1 for flow data).

Pollutants	$WLA_{ac} = \frac{(QC)_d - (QC)_u}{Q_e}$	$WLA_{ch} = \frac{(QC)_d - (QC)_u}{Q_e}$	$WLA_{he} = \frac{(QC)_d - (QC)_u}{Q_e}$
Chlorine	44.82	25.95	---
Copper	33.73	11.32	48327
Lead	70.76	2.83	---

Determine long term averages and permit limits in µg/l

LTA = Long term average, AML = Average monthly limit, and MDL = Maximum daily limit

Pollutants	LTA_{acute} = WLA_{ac} X 99th percentile multiplier in Attachment B	$LTA_{chronic}$ = WLA_{ch} X 99th percentile multiplier in Attachment B	Governing LTA	AML = LTA X 95th percentile multipli in Attachment C	MDL = LTA X 99th percentile multiplier in Attachment C
Chlorine	44.82 X 0.117 = 5.24	25.95 X 0.214 = 5.55	5.24	5.24 X 2.78 = 14.57	5.24 X 8.55 = 44.8
Copper	33.73 X 0.174 = 5.87	11.32 X 0.321 = 3.63	3.63	3.63 X 2.13 = 7.7	3.63 X 5.76 = 20.9
Lead	70.76 X 0.126 = 8.92	2.83 X 0.224 = 0.63	0.63	0.63 X 2.64 = 1.66	0.63 X 7.95 = 5.0

3.7 WHOLE EFFLUENT TOXICITY

The Permittee shall comply with effluent standards or prohibitions established by CWA Section 307(a) and RCSA Section 22a-430-4(l), 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 additional acute or chronic whole effluent toxicity testing.

The Permittee's previous permit required quarterly acute toxicity testing using *Daphnia Pulex* and *Pimephales promelas* and annual chronic toxicity testing using *Ceriodaphnia dubia* and Fathead minnow (*Pimephales promelas)*. The previous permit had a NOAEL (no observable acute effect level) limit of 90% or greater survival in an undiluted effluent. During the last permit cycle, the Permittee had no exceedance of its NOAEL acute toxicity limit. The review of DMR data (September 2019 – August 2024) for acute toxicity tests, showed a range of 92% - 100% survival of test organisms in an undiluted effluent.

Based on the anti-backsliding regulations, the previous limit is carried forward.

3.8 COMPARISON OF LIMITS

After preparing and evaluating applicable TBELs and WQBELs, the most stringent limits are applied in the permit. Pollutants of concern that only require monitoring without limits are not included in the below table.

Parameters	Table 3.10.1: Comparison of Limits Based on Different Criteria	
	Water quality Limits Based on EPA/505/2-90-001 (mg/l) (See Table 3.6.1)	Previous permit limits
Acute toxicity	---	NOAEL = 100%, Survival ≥ 90%
Chlorine	AML = 14.57 µg/l MDL = 44.8 µg/l MIL = 24.3 µg/l	MIL = 6.5 µg/l
Copper	AML = 7.7 µg/l MDL = 20.9 µg/l	AML = 4.9 µg/l MDL = 11.86 µg/l MIL = 17.79 µg/l
Lead	AML = 1.66 µg/l MDL = 5.0 µg/l	AML = 0.79 µg/l MDL = 1.59 µg/l MIL = 2.38 µg/l
Oil and grease		5.0 mg/l
pH, minimum	6.8*	6.0
pH, maximum	8.5*	9.0
Temperature	85°F	85°F
Total suspended solids		AML = 20 mg/l MDL = 30 mg/l MIL = 45 mg/l

Note: The highlighted numbers represent the most stringent effluent limits.
* pH range of waterbody.
AML: Average Monthly Limit, MDL: Maximum Daily Limit, MIL: Maximum Instantaneous Limit

3.9 SAMPLING FREQUENCY, TYPE, AND REPORTING

RCSA Section 22a-430-3(j) prescribes quarterly monitoring for non-contact cooling wastewaters. Except for total volatile organics, the sampling frequency is consistent with RCSA Section 22a-430-3(j)(3). The semi-annual sampling frequency for total volatile organics in the previous permit was carried forward because the maximum reported total volatile organics is 2 µg/l, consistent with historical data and more frequent sampling is unwarranted.

3.10 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

POLLUTANTS	LIMIT	BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
Acute Aquatic Toxicity, *Daphnia pulex*, NOAEL = 100%	≥ 90% Survival	Anti-backsliding regulations. Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii)).	Quarterly
Acute Aquatic Toxicity *Pimephales promelas*, NOAEL = 100%	≥ 90% Survival	Anti-backsliding regulations. Consistent with RCSA 22a-430-4(l)(5)(A)(i-iii)).	Quarterly
Chronic Aquatic Toxicity (Survival) *Ceriodaphnia dubia*	Monitoring only requirement.	Case-by-case determination using BPJ.	Annually
Chronic Aquatic Toxicity (Reproduction) *Ceriodaphnia dubia*	Monitoring only requirement.	Case-by-case determination using BPJ.	Annually
Chronic Aquatic Toxicity (Survival) *Pimephales promelas*	Monitoring only requirement.	Case-by-case determination using BPJ.	Annually
Chronic Aquatic Toxicity (Growth) *Pimephales promelas*	Monitoring only requirement.	Case-by-case determination using BPJ.	Annually
Chlorine, total residual	MIL = 6.5 µg/l	Anti-backsliding regulations. The previous permit limits are WQBELs.	Quarterly
Copper, total	AML = 4.9 µg/l MDL = 11.86 µg/l MIL = 17.79 µg/l	Anti-backsliding regulations. The previous permit limits are WQBELs.	Quarterly
Flow rate (Average daily)	400,000 gpd	Permitted discharge flow per application.	Continuous/ Quarterly
Flow, Maximum during 24 hr. period	450,000 gpd	Permitted discharge flow per application.	Continuous/ Quarterly
Lead, total	AML = 0.79 µg/l MDL = 1.59 µg/l MIL = 2.38 µg/l	Anti-backsliding regulations. The previous permit limits are WQBELs.	Quarterly
Oil and grease, total	MDL = 5.0 µg/l MIL = 5.0 µg/l	Anti-backsliding regulations. The previous permit limit was a case-by-case determination using historical data.	Quarterly
pH	6.8 – 8.5	WQC – (pH range of waterbody)	Quarterly
Nitrates (as N)	Monitoring only requirement	Case-by-case determination using BPJ.	Quarterly
Nitrites (as N)	Monitoring only requirement	Case-by-case determination using BPJ.	Quarterly
Total Kjeldahl Nitrogen	Monitoring only requirement	Case-by-case determination using BPJ.	Quarterly
Total Nitrogen	Monitoring only requirement	Case-by-case determination using BPJ.	Quarterly
Solids, Total Suspended	AML = 20 mg/l MDL = 30 mg/l MIL = 45 mg/l	Anti-backsliding regulations. The previous permit limits were based on case-by-case determination using Section 22a-430-4(s)(2) as a guide.	Quarterly

POLLUTANTS	LIMIT	BASIS FOR LIMIT	MONITORING /REPORTING FREQUENCY
Temperature	85°F	WQC	Continuous/ Quarterly
Total Volatile Organics	Monitoring only requirement	Case-by-case determination using BPJ.	Semiannually
Zinc, Total	Monitoring only requirement.	No RP to cause exceedance of WQC.	Quarterly

AML: Average Monthly Limit MDL: Maximum Daily Limit MIL: Maximum Instantaneous Limit
BPJ: Best Professional Judgment RP: Reasonable potential WQC: Water quality criteria
WQBELs: Water Quality Based Effluent Limits

3.11 COMPLIANCE SCHEDULE

The permit has a compliance schedule that follows the requirements found under 40 CFR 122.47 and RCSA Section 22a-430-4(l)(3).

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. The Permittee operates under SIC codes 3087 and has been identified as a potential source of PFAS in accordance with DEEP's Industrial NPDES and Pretreatment PFAS Roadmap (https://www.business.ct.gov/-/media/deep/water_regulating_and_discharges/industrial_wastewater/2023-09-30-wped-pfas-roadmap.pdf). EPA identified the Permittee as one of the chemical companies to conduct and submit testing on certain PFAS analytes that may be used in resins (Oct 9, 2024's EPA's Test order for PFAS used in Manufacturing Under National Testing Strategy). 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. The Permittee will submit the results of the analysis to characterize the discharge.

3.12 ANTIDEGRADATION

Implementation of the Antidegradation Policy follows a tiered approach pursuant to the federal regulations (40 CFR Section 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 existing permitted discharge activities to all waters of the state. Tiers 1 and 2 Antidegradation reviews apply to new or increased discharges to high quality waters and wetlands, while Tiers 1 and 3 Antidegradation reviews apply to new or increased discharges to 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 Standards, RCSA Sec.22a-426-8(a)(1). This review involved:

- An evaluation of narrative and numeric water quality standards, criteria and associated policies;

- Consideration of 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 established for the waterbody.

Compliance with all the terms and conditions in the new permit would ensure that existing and designated uses of surface waters and the water quality necessary for their protection are maintained and preserved.

3.13 ANTI-BACKSLIDING

This permit has effluent limitations, standards or conditions that are at least as stringent as the final effluent limitations, standards, or conditions in the previous permit as required in 40 CFR Section 122.44(l) and RCSA Section 22a-430-4(l)(4)(A)(xxiii).

3.14 COOLING WATER INTAKE STRUCTURE SECTION 316(B)

Section 316(b) of the Federal Water Pollution Control Act, U.S.C. Section 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 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 CWIS as "the total physical structure and any associated constructed waterways used to withdraw cooling water from waters of the United States. The CWIS 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 Section 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 goal of this regulation is to reduce impingement mortality and entrainment of fish and other aquatic organisms at the CWIS. The Permittee withdraws water from an on-site groundwater well and not from a surface water. Therefore, Section 316(b) is not applicable to the Permittee's operation.

3.15 VARIANCES AND WAIVERS

The facility did not request a variance or a waiver.

3.16 E-REPORTING

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

SECTION 4 SUMMARY OF CHANGES MADE TO NEW PERMIT COMPARED TO THE PREVIOUS PERMIT

The changes made to the permit are as noted below.

- Monitoring requirements are included for total nitrogen the discharge enters the Long Island Sound basin, subject to the "A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound".
- The MIL for pH was changed from 6.0 – 9.0 to 6.8 – 8.5 S.U. (pH range of waterbody), consistent with the water quality criteria for a class A waterbody.

A review of the discharge monitoring reports from 2019 to 2024 showed that the Applicant should be able to meet the proposed effluent limits.

SECTION 5 PUBLIC PARTICIPATION PROCEDURES

5.1 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. 202007878 PERMIT ID NO. CT0003379

Interested persons may obtain copies of the application from Alisa Werst, 24 Mill Street, Manchester, CT 06042, (860) 533-6635 or AWerst@sbna-inc.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.

5.2 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, Environmental Engineer 3, Bureau of Materials Management and Compliance Assurance, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 061065127 or DEEP.IndustrialNPDESPublicComments@ct.gov and should indicate the Permit ID No. CT0003379 in the subject line. 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 (25) persons. Notice of any public hearing shall be published at least thirty (30) days prior to the hearing.

Petitions for a hearing shall be submitted within thirty (30) days from the date of publication of this public notice and 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. The Office of Adjudications will accept electronically-filed petitions for hearing in addition to those submitted by mail or hand-delivered. Petitions with required signatures may be sent to deep.adjudications@ct.gov; those mailed or delivered should go to the DEEP Office of Adjudications, 79 Elm Street, Hartford, CT 06106. If the signed original petition is only in an electronic format, the petition must be submitted with a statement signed by the petitioner that the petition exists only in that form. Original petitions that were filed electronically must also be mailed or delivered to the Office of Adjudications within 30 days of electronic submittal. Additional information can be found at 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 A

Reasonable Potential Statistical Multiplier (Table 3-1 of TSD EPA/505/2-90-001)

Table 3-1. Reasonable Potential Multiplying Factors: 99% Confidence Level and 99% Probability Basis

Number of	Coefficient of Variation																			
Samples	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
1	1.6	2.5	3.9	6.0	9.0	13.2	18.9	26.5	36.2	48.3	63.3	81.4	102.8	128.0	157.1	190.3	227.8	269.9	316.7	368.3
2	1.4	2.0	2.9	4.0	5.5	7.4	9.8	12.7	16.1	20.2	24.9	30.3	36.3	43.0	50.4	58.4	67.2	76.6	86.7	97.5
3	1.4	1.9	2.5	3.3	4.4	5.6	7.2	8.9	11.0	13.4	16.0	19.0	22.2	25.7	29.4	33.5	37.7	42.3	47.0	52.0
4	1.3	1.7	2.3	2.9	3.8	4.7	5.9	7.2	8.7	10.3	12.2	14.2	16.3	18.6	21.0	23.6	26.3	29.1	32.1	35.1
5	1.3	1.7	2.1	2.7	3.4	4.2	5.1	6.2	7.3	8.6	10.0	11.5	13.1	14.8	16.6	18.4	20.4	22.4	24.5	26.6
6	1.3	1.6	2.0	2.5	3.1	3.8	4.6	5.5	6.4	7.5	8.6	9.8	11.1	12.4	13.8	15.3	16.8	18.3	19.9	21.5
7	1.3	1.6	2.0	2.4	2.9	3.6	4.2	5.0	5.8	6.7	7.7	8.7	9.7	10.8	12.0	13.1	14.4	15.6	16.9	18.2
8	1.2	1.5	1.9	2.3	2.8	3.3	3.9	4.6	5.3	6.1	6.9	7.8	8.7	9.6	10.6	11.6	12.6	13.6	14.7	15.8
9	1.2	1.5	1.8	2.2	2.7	3.2	3.7	4.3	5.0	5.7	6.4	7.1	7.9	8.7	9.6	10.4	11.3	12.2	13.1	14.0
10	1.2	1.5	1.8	2.2	2.6	3.0	3.5	4.1	4.7	5.3	5.9	6.6	7.3	8.0	8.8	9.5	10.3	11.0	11.8	12.6
11	1.2	1.5	1.8	2.1	2.5	2.9	3.4	3.9	4.4	5.0	5.6	6.2	6.8	7.4	8.1	8.8	9.4	10.1	10.8	11.5
12	1.2	1.4	1.7	2.0	2.4	2.8	3.2	3.7	4.2	4.7	5.2	5.8	6.4	7.0	7.5	8.1	8.8	9.4	10.0	10.6
13	1.2	1.4	1.7	2.0	2.3	2.7	3.1	3.6	4.0	4.5	5.0	5.5	6.0	6.5	7.1	7.6	8.2	8.7	9.3	9.9
14	1.2	1.4	1.7	2.0	2.3	2.6	3.0	3.4	3.9	4.3	4.8	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2
15	1.2	1.4	1.6	1.9	2.2	2.6	2.9	3.3	3.7	4.1	4.6	5.0	5.4	5.9	6.4	6.8	7.3	7.7	8.2	8.7
16	1.2	1.4	1.6	1.9	2.2	2.5	2.9	3.2	3.6	4.0	4.4	4.8	5.2	5.6	6.1	6.5	6.9	7.3	7.8	8.2
17	1.2	1.4	1.6	1.9	2.1	2.5	2.8	3.1	3.5	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.4	7.8
18	1.2	1.4	1.6	1.8	2.1	2.4	2.7	3.0	3.4	3.7	4.1	4.4	4.8	5.2	5.6	5.9	6.3	6.7	7.0	7.4
19	1.2	1.4	1.6	1.8	2.1	2.4	2.7	3.0	3.3	3.6	4.0	4.3	4.6	5.0	5.3	5.7	6.0	6.4	6.7	7.1
20	1.2	1.3	1.6	1.8	2.0	2.3	2.6	2.9	3.2	3.5	3.8	4.2	4.5	4.8	5.2	5.5	5.8	6.1	6.5	6.8

ATTACHMENT B

WLA Statistical Multipliers from (Table 5-1 of TSD EPA/505/2-90-001)

Table 5-1. Back Calculations of Long-Term Average

CV	WLA Multipliers $e^{[0.5\sigma^2 - z\sigma]}$	
	95th Percentile	99th Percentile
0.1	0.853	0.797
0.2	0.736	0.643
0.3	0.644	0.527
0.4	0.571	0.440
0.5	0.514	0.373
0.6	0.468	0.321
0.7	0.432	0.281
0.8	0.403	0.249
0.9	0.379	0.224
1.0	0.360	0.204
1.1	0.344	0.187
1.2	0.330	0.174
1.3	0.319	0.162
1.4	0.310	0.153
1.5	0.302	0.144
1.6	0.296	0.137
1.7	0.290	0.131
1.8	0.285	0.126
1.9	0.281	0.121
2.0	0.277	0.117

Acute

$$LTA_{a,c} = WLA_{a,c} * e^{[0.5\sigma^2 - z\sigma]}$$

where $\sigma^2 = ln[CV^2 + 1]$,
$z = 1.645$ for 95th percentile occurrence probability, and
$z = 2.326$ for 99th percentile occurrence probability

Chronic
(4-day average)

$$LTA_c = WLA_c * e^{[0.5\sigma_4^2 - z\sigma_4]}$$

where $\sigma_4^2 = ln[CV^2/4 + 1]$,
$z = 1.645$ for 95th percentile occurrence probability, and
$z = 2.326$ for 99th percentile occurrence probability

CV	WLA Multipliers $e^{[0.5\sigma_4^2 - z\sigma_4]}$	
	95th Percentile	99th Percentile
0.1	0.922	0.891
0.2	0.853	0.797
0.3	0.791	0.715
0.4	0.736	0.643
0.5	0.687	0.581
0.6	0.644	0.527
0.7	0.606	0.481
0.8	0.571	0.440
0.9	0.541	0.404
1.0	0.514	0.373
1.1	0.490	0.345
1.2	0.466	0.321
1.3	0.449	0.300
1.4	0.432	0.281
1.5	0.417	0.264
1.6	0.403	0.249
1.7	0.390	0.236
1.8	0.379	0.224
1.9	0.369	0.214
2.0	0.360	0.204

ATTACHMENT C
LTA Statistical Multipliers from (Table 5-2 of TSD EPA/505/2-90-001)

Table 5-2. Calculation of Permit Limits

CV	LTA multipliers $e^{[z\sigma - 0.5\sigma^2]}$	
	95th Percentile	99th Percentile
0.1	1.17	1.25
0.2	1.36	1.55
0.3	1.55	1.90
0.4	1.75	2.27
0.5	1.95	2.68
0.6	2.13	3.11
0.7	2.31	3.56
0.8	2.48	4.01
0.9	2.64	4.46
1.0	2.78	4.90
1.1	2.91	5.34
1.2	3.03	5.76
1.3	3.13	6.17
1.4	3.23	6.56
1.5	3.31	6.93
1.6	3.38	7.29
1.7	3.45	7.63
1.8	3.51	7.95
1.9	3.56	8.26
2.0	3.60	8.55

Maximum Daily Limit

$MDL = LTA \cdot e^{[z\sigma - 0.5\sigma^2]}$

where $\sigma^2 = ln[CV^2 + 1]$,
z = 1.645 for 95th percentile occurrence probability, and
z = 2.326 for 99th percentile occurrence probability

Average Monthly Limit

$AML = LTA \cdot e^{[z\sigma_n - 0.5\sigma_n^2]}$

where $\sigma_n^2 = ln[CV^2/n + 1]$,
z = 1.645 for 95th percentile,
z = 2.326 for 99th percentile, and
n = number of samples/month

CV	LTA Multipliers $e^{[z\sigma_n - 0.5\sigma_n^2]}$									
	95th Percentile					99th Percentile				
	n=1	n=2	n=4	n=10	n=30	n=1	n=2	n=4	n=10	n=30
0.1	1.17	1.12	1.08	1.06	1.03	1.25	1.18	1.12	1.08	1.04
0.2	1.36	1.25	1.17	1.12	1.06	1.55	1.37	1.25	1.16	1.09
0.3	1.55	1.38	1.26	1.18	1.09	1.90	1.59	1.40	1.24	1.13
0.4	1.75	1.52	1.36	1.25	1.12	2.27	1.83	1.55	1.33	1.18
0.5	1.95	1.66	1.45	1.31	1.16	2.68	2.09	1.72	1.42	1.23
0.6	2.13	1.80	1.55	1.36	1.19	3.11	2.37	1.90	1.52	1.28
0.7	2.31	1.94	1.65	1.45	1.22	3.56	2.66	2.08	1.62	1.33
0.8	2.48	2.07	1.75	1.52	1.26	4.01	2.96	2.27	1.73	1.39
0.9	2.64	2.20	1.85	1.59	1.29	4.46	3.28	2.48	1.84	1.44
1.0	2.78	2.33	1.95	1.66	1.33	4.90	3.59	2.68	1.96	1.50
1.1	2.91	2.45	2.04	1.73	1.36	5.34	3.91	2.90	2.07	1.56
1.2	3.03	2.56	2.13	1.80	1.39	5.76	4.23	3.11	2.19	1.62
1.3	3.13	2.67	2.23	1.87	1.43	6.17	4.55	3.34	2.32	1.68
1.4	3.23	2.77	2.31	1.94	1.47	6.56	4.86	3.56	2.45	1.74
1.5	3.31	2.86	2.40	2.00	1.50	6.93	5.17	3.78	2.58	1.80
1.6	3.38	2.95	2.48	2.07	1.54	7.29	5.47	4.01	2.71	1.87
1.7	3.45	3.03	2.56	2.14	1.57	7.63	5.77	4.23	2.84	1.93
1.8	3.51	3.10	2.64	2.20	1.61	7.95	6.06	4.46	2.98	2.00
1.9	3.56	3.17	2.71	2.27	1.64	8.26	6.34	4.68	3.12	2.07
2.0	3.60	3.23	2.78	2.33	1.68	8.55	6.61	4.90	3.26	2.14