



National Pollutant Discharge Elimination System Permit Factsheet

NPDES Permit Summary	
Applicant	FirstLight CT Housatonic LLC
Permit No.	CT0030287
Application No.	201502735
Date Application Received	April 16, 2015
Location Address	200 Kent Road, New Milford, CT 06776
Facility Contact	Kevin Gerardi, Sr. HSE Specialist Office Phone: 203-470-8366 Email: kevin.gerardi@firstlight.energy
Mailing Address	143 West Street Suite E, New Milford, CT 06776
DMR Contact	Kevin Gerardi, Sr. HSE Specialist Office Phone: 203-470-8366 Email: kevin.gerardi@firstlight.energy
Secretary of State Business ID	0607778
Permit Term	5 Years
Permit Category	Minor
SIC & NAICS Code(s)	4911
Applicable Effluent Guidelines	NA
Permit Type	Reissuance
Ownership	Private
Receiving Water	Housatonic River
Waterbody Segment Id's	DSN 101 and 102 CT6000-00_03
Waterbody Classification	B
Discharge Locations	DSN 101 and 102 Latitude 41.58283 Longitude -73.43482
Compliance Schedule	NA
Staff Engineer	Patrick Bieger, Environmental Engineer Phone: 860-424-3805 E-Mail: Patrick.bieger@ct.gov

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Section 1.0 Facility Summary

1.1 Permit Fees

Application Fee:

Filing Fee	Invoice No.: DEP246234	Amount: \$1,300	Date Paid: 4/17/2015
Processing Fee	Invoice No.: NA	Amount: NA	Date Paid: NA

Annual Fee:

Wastewater Category (per Regs. Conn. State Agencies Sec. 22a-430-7)	Flow Category (gallons per day)	DSN	Annual Fee (per Regs. Conn. State Agencies sec. 22a-430-7 and Conn. Gen. Stat. Sec. 22a-6f)
<i>Non-contact cooling water</i>	0-100,000	101 102	\$660.00
<i>Building floor drain wastewaters</i>	-----	101 102	0
TOTAL			\$660.00

1.2 Application Submittal Information

On April 16, 2015, the Department of Energy and Environmental Protection (“DEEP”) received an application (application no. 201502735) from FirstLight CT Housatonic LLC (“the Permittee”, “the Applicant”, “the facility”) in New Milford for the renewal of its NPDES permit, permit no. CT0030287 expiring on October 25, 2015 (“the previous permit”).

Consistent with the requirements of Section 22a-6g of the Connecticut General Statutes (“Conn. Gen. Stat.”), the Permittee published a Notice of Permit Application in the Danbury News Times on April 3-5, 2015. On June 22, 2015, the application was determined to be timely and administratively sufficient.

The Permittee seeks authorization for the following in Application 201502735:

DSN	PROPOSED AVERAGE DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
101	NA	1,440,000	Service water strainer equalizing water; Units 1 & 2 stuffing box wastewater; Unit 1& 2 headcover siphon wastewater; Unit 3 headcover leakage wastewater; Draft tube drain valve operating wastewater; House pump priming line leakage wastewater; Unit 1 & 2 cooling water; Unit 3 cooling water; Air compressor blowdown; Penstock drain valve wastewater; Draft tube wastewater; Groundwater.	Oil/water separator and oil skimming	Housatonic River
102	NA	1,656,000	Emergency flood water discharge from the station powerhouse, including residual wastewater described in DSN 101.	Surface oil removal	Housatonic River
104	Combined into DSN 101. See Section 1.5 Facility Description				

1.3 Other Permits

The Permittee has no other permit coverage for wastewater discharges.

1.4 Description of Industrial Process

FirstLight CT Housatonic LLC is a business that performs hydroelectric generation at a peaking hydroelectric plant in New Milford, CT. The facility can generate energy using the flow from the Housatonic River or by releasing water from Candlewood Lake through the facility's turbines. Wastewater sources include leakage from the turbines, water from turbine draining, groundwater, and emergency discharges due to flood conditions. Water is discharged to the Housatonic River by way of DSN 101 and 102 under this draft permit.

1.5 Facility Description

Rocky River Station is a pumped storage facility or peaking plant, with one main powerhouse and a penstock between Candlewood Lake and the Housatonic River. The station also includes two reversible pumps (Unit 1 and Unit 2) and one 24-megawatt powered generator (Unit 3). The pumps transfer water from the Housatonic River for storage in Candlewood Lake. When conditions allow, this process is reversed to generate electricity. The facility is licensed by the Federal Energy Regulatory Commission (“FERC”). The FERC license dictates when the facility uses Candlewood Lake and Housatonic River for power generation. Hydroelectric operations have occurred at the site since 1928. This station is staffed 24 hours/day.

The facility has a 54” valve pit that collects all wastewaters covered under this permit. This pit collects miscellaneous wastewaters from various sumps and drains throughout the facility. The miscellaneous wastewaters include groundwater, floor gutter drain waters, station receiver condensation, service water strainer equalizing line draining wastewater, and Unit 1 and 2 stuffing box drain event wastewaters. The valve pit also receives flows from Unit 1’s circular trench, Unit 2’s circular trench, Unit 3’s cooling water, and Unit 3’s penstock drain valve leakage. Each circular trench collects the following wastewater: headcover siphon leakage, cooling water, draft tube drain valve operating water, and house pump priming line leakage. Unit 3’s cooling water goes through an oil water separator before being pumped into the valve pit.

The valve pit has two outlets. One outlet is the emergency discharge DSN 102. This discharge location is only used in the event the station floods from a rise in river waters. DSN 102 has a dedicated pump in the facility’s 54” valve pit. This pump discharges through the building’s roof drain line to the Housatonic River. This discharge can contain all wastewaters captured in the valve pit from normal facility operations and any flood water captured within the facility. The Permit contains a Best Management Practices (“BMP”) for operating the valve pit. The BMP focus on reducing the amount of oil and grease contained within the valve pit and includes physical removal of surface oil when necessary.

The second outlet from the valve pit flows to the station sump. This outlet is gravity fed. The station sump also receives draft tube drain water. This water consists of river water remaining in the Units’ draft tubes when they are shut down for maintenance.

Wastewater in the sump is treated using an oil-skimming belt that collects oil into a 55-gallon drum for disposal. This sump also contains two pumps (500 gpm max) that are used to discharge wastewater from the sump to the receiving water. These pumps were previously designated DSN 101 and 104 because they have independent piping. However, the pumps do not operate at the same time during normal operations and they discharge to the same location in the Housatonic River, therefore the discharge has been consolidated to DSN 101. DSN 104 will no longer be listed in the permit.

DSN 101 is a non-continuous discharge that occurs only during facility operations. The average discharge duration from May 2024 to May 2025 was 2.1 hours per day. The batch discharge occurs daily.

1.6 Facility Changes

The Regulations of the Connecticut State Agencies (“Regs. Conn. State Agencies”) 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 Regs. Conn. State Agencies 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 previous permit or if the requested change requires a permit modification to protect waters of the State in accordance with Regs. Conn. State Agencies Section 22a-430-4(p).

There were no changes to the facility since the previous permit was issued.

1.7 Treatment System Description

The facility contains an oil/water separator that treats the leakage collected from Unit 3 and an oil skimmer in the station sump that treats the combined facility discharge through DSN 101. A copy of the facility’s process flow diagram is included as **Attachment A**.

1.8 Compliance History

A review of the Permittee’s monitoring data from January 1, 2020 to January 1, 2025 was completed. The table below contains a summary of permit limit violations found during the review.

Permit Limit Violations					
Date	Parameter	DSN	Permit Limit	Reported Value	Units
06/30/2020	Oil & Grease	101	10	13.68	mg/L
10/31/2020	pH (Minimum)	101	6	1.4	S.U.
01/31/2022	pH (Minimum)	101	6	5.41	S.U.
01/31/2022	pH (Minimum)	104	6	5.41	S.U.

Is the Permittee subject to an ongoing enforcement action? ☒ Yes ☐ No

Consent Order Number WC5435 (“the order”), issued November 9, 2006, required the Permittee to investigate all discharges from hydroelectric facilities, including Rocky River Station, and submit discharge permit applications for all facilities with unpermitted wastewater discharges. DEEP received the report “Investigation and Remediation of Discharges at Ten Hydroelectric Stations” on June 6, 2008, an addendum “Investigation and Remediation of Discharges at Ten Hydroelectric Stations Addendum” required by Paragraph B.2.d of the order on November 2, 2009, and a subsequent report with an updated monitoring plan on March 29, 2024. DEEP issued an approval on May 2, 2024, indicating that the Permittee was in compliance with Paragraph B.2.d. of the order. The reports identified the discharges of turbine, non-contact cooling water, and building leakage from this facility.

Did the previous permit have a compliance schedule? ☐ Yes ☒ No

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 Conn. Gen. Stat. 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 2015 *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 Information

The water classification of section CT6000-00_03 of the Housatonic River is B. Class B waters are designated for habitat for fish and other aquatic life and wildlife; recreation; navigation; and industrial and agricultural water supply. This segment of the Housatonic River is not listed on the State's 305(b) list. However, both the segment below and above the receiving water segment are impaired for recreation due to *E. coli*. This segment was assessed as part of the 2022 305(b) assessment for aquatic life and recreation and the results are found in the figure below ([2022 Integrated Water Quality Report, CT DEEP](#)).

Figure 2.1. 2022 Assessment for Aquatic Life and Recreation

Waterbody Segment ID	Waterbody Name	Location	Miles	Aquatic Life	Recreation
CT6000-00_02	Housatonic River (Shelton/Derby)-02	Confluence with Naugatuck River, US to Lake Housatonic outlet dam (Derby Dam), Shelton/Derby town border (Between segment 02 and 03, are Lake Housatonic, Lake Zoar, and Lake Lillinonah, all independent waterbodies).	1.5	Not Assessed	Not Supporting
CT6000-00_03	Housatonic River (New Milford/Bridgewater)-03	Inlet Lake Lillinonah (Northwestern most portion, DS Lovers Leap Road crossing), confluence Town Farm Brook, New Milford/Bridgewater town border, US to Boardman Road crossing (between Route 7 and Railroad tracks), New Milford.	5.09	Insufficient Information	Fully Supporting
CT6000-00_04	Housatonic River-04	From Boardman Road crossing (between Route 7 and Railroad tracks), New Milford, US to Bull Bridge outlet dam (US of Bulls Bridge Road crossing, west side of Route 7), Kent.	8.05	Fully Supporting	Not Supporting

There is a statewide Total maximum Daily Load (“TMDL”) for total dissolved oxygen: “A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound”, December 2000 ([Total Maximum Daily Load for Long Island Sound \(ct.gov\)](https://www.ct.gov/dep/cwp/section.nsf/(open)/00000000-0000-0000-0000-000000000000?open&docid=00000000-0000-0000-0000-000000000000)). The Permittee’s discharge has not been assigned a waste load allocation (“WLA”) for total nitrogen as part of this TMDL.

Figure 2.2. Image of discharge location.



Section 3 Permit Conditions And Effluent Limitations

3.1 Effluent Guidelines

No categories found under the federal Effluent Limit Guidelines and Standards of Title 40 Code of Federal Regulations (“CFR”) Chapter 1 Subchapter N match the description of wastewaters discharged by DSNs 101 and 102. The Steam Electric Power Generating Point Source Category under 40 CFR Part 423 was reviewed for applicability as the facility is a hydroelectric power plant. Under the applicability in 40 CFR Part 423.10, it was determined that this category applies to electricity resulting primarily from fossil-type fuels or nuclear fuel. The Applicant uses water turbines to generate electricity; therefore, this activity would not fall under 40 CFR Part 423. There is no applicable federal effluent limit guideline for the proposed discharges.

3.2 Pollutants Of Concern

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

Pollutant	Reason For Inclusion			
	Pollutant With an Applicable Technology-Based Limit	Pollutant With a WLA From a TMDL	Pollutant Identified as Present in the Effluent Through Sampling	Pollutant Otherwise Expected to be Present in the Effluent
Oil and grease			X	
pH			X	
Copper			X	
Lead			X	
Zinc			X	
Tetrachloroethylene ¹				X
Temperature				X
Acute Toxicity			X	

¹Tetrachloroethylene has been found in the groundwater around the site of the facility and is likely due to historic industrial activity done on the site.

3.3 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 Regs. Conn. State Agencies 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 Regs. Conn. State Agencies Section 22a-429-9 of the *Connecticut Water Quality Standards* (“WQS”).

3.4 Waterbody Ambient Conditions

Parameter	Value
7Q10	158 cubic feet per second

3.5 Zone Of Influence

There is no zone of influence allocated to this facility.

3.6 Reasonable 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, 40 CFR Section 122.44(d)(1)(i) requires that 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.”.

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).

A reasonable potential analysis was completed for copper, zinc, and tetrachloroethylene for DSN 101. The analysis was completed using effluent data from the previous permit's DSN 101 and 104, from January 1, 2020 through January 1, 2025, as these outfalls are comprised of the same wastewater. It was determined that copper has a reasonable potential to exceed the water quality criteria, based on 20 samples of data, and the permit will include copper limits to protect the instream standards. Zinc and tetrachloroethylene did not have a reasonable potential to exceed the WQS but are still expected to be present at the site and in the discharge. Therefore, monitoring for zinc and tetrachloroethylene will be maintained in the permit. The reasonable potential analysis is presented in Section 3.6.1, below.

There is insufficient data to perform a reasonable potential analysis for DSN 102 because it has not discharged in the last ten (10) years and no monitoring data has been collected or provided. The monitoring requirements for this DSN will carry forward and if this location discharges, and sufficient data is collected, DEEP will perform a reasonable potential for the next iteration of the permit renewal.

Temperature: Based on monthly effluent monitoring data from January 1 2020 through January 1, 2025 the reported maximum temperature of the discharge is 77 degrees Fahrenheit. This maximum observed temperature does not exceed the WQS of 85 degrees. Therefore, a reasonable potential analysis was not completed for temperature.


Temperature is associated with non-contact cooling water, which makes up a fraction of the Permittee's discharge. The non-contact cooling water mixes with other wastewater sources in a sump allowing for temperature dissipation before discharging via DSN 101. The permit will maintain the monthly temperature monitoring requirement.

Lead: There is insufficient data to perform a reasonable potential analysis for lead. From January 2020 to January 2025 there have been only two detections of lead at the facility which were taken from grab samples used for toxicity. Due to the low sample size and low frequency of detections, there is not enough data to evaluate the reasonable potential of lead. The monitoring frequency for lead has been increased to monthly for this permit term. This will allow DEEP to acquire enough data to perform a reasonable potential analysis next permit issuance.

3.6.1 Reasonable Potential Calculation Summary

Figure 3.6.1 DSN 101 Discharge and Receiving Water Flows

Discharger	Firstlight Rocky River Station	
Permit Number	CT0030287	
DSN	101	
	Select Water Type	Select Segment
Receiving Water	River	CT6000-00_03
Average Flow per Day (gpd)	1,440,000	
Avg Hours of Discharge (hrs/d)	2.2	
Allocated ZOI (gph)	0	
Date of Analysis (mm/dd/yyyy)	2/1/2025	
IWC % (1 Hour)	100	
IWC % (24 Hours)	100	
Average Dshg Flow (gph)	654545.4545	
CT Site Specific Copper (Y/N)	No	



Receiving Water Details	
Segment Name	Housatonic River (New Milford/Bridgewater)-03
Salinity Regime	Freshwater
Water Class	B
Fish and wildlife habitat, recreational use, agricultural and industrial supply and other legitimate uses including navigation.	

Monitoring data was reviewed from January 1, 2020 through January 1, 2025. The average concentration, maximum concentration, the standard deviation of the data, the coefficient of variation (“CV”), the number of data points, and a statistical multiplier was found for each parameter analyzed.

The equation to calculate the CV is: $CV = \frac{\text{Standard Deviation}}{\text{Average}}$

A statistical multiplier is found for each parameter using a lookup table found in the TSD. The lookup table calculates a statistical multiplier using the number of samples and the CV.

Reported Monitoring Data From January 1, 2020 to January 1 2025								
Copper			Zinc			Tetrachloroethylene*		
Date	Value	Unit	Date	Value	Unit	Date	Value	Unit
1/31/20	4	µg/L	1/31/20	11	µg/L	1/31/20	0.5	µg/L
4/30/20	6	µg/L	4/30/20	14	µg/L	7/31/20	0.5	µg/L
7/31/20	23	µg/L	7/31/20	25	µg/L	1/31/21	0.5	µg/L
10/31/20	7	µg/L	10/31/20	28	µg/L	7/31/21	0.5	µg/L
1/31/21	6	µg/L	1/31/21	18	µg/L	1/31/22	0.5	µg/L
4/30/21	3	µg/L	4/30/21	02	µg/L	7/31/22	0.5	µg/L
7/31/21	16	µg/L	7/31/21	27	µg/L	1/31/23	0.5	µg/L
10/31/21	11	µg/L	10/31/21	150	µg/L	7/31/23	0.5	µg/L
1/31/22	4	µg/L	1/31/22	2	µg/L	1/31/24	0.5	µg/L
4/30/22	7	µg/L	4/30/22	18	µg/L	7/31/24	0.5	µg/L
7/31/22	27	µg/L	7/31/22	49	µg/L	*No data was above detection level for Tetrachloroethylene.		
10/31/22	33	µg/L	10/31/22	26	µg/L			
1/31/23	2	µg/L	1/31/23	21	µg/L			
4/30/23	8	µg/L	4/30/23	16	µg/L			
7/31/23	14	µg/L	7/31/23	08	µg/L			
10/31/23	42	µg/L	10/31/23	11	µg/L			
1/31/24	5	µg/L	1/31/24	18	µg/L			
4/30/24	25	µg/L	4/30/24	50	µg/L			
7/31/24	5	µg/L	7/31/24	16	µg/L			
10/31/24	9	µg/L	10/31/24	4	µg/L			

Summary of Monitoring Data						
Parameter	Average Concentration	Maximum Concentration	Standard Deviation	CV	Number of Samples	Statistical Multiplier
Copper	12.3 µg/l	42 µg/l	0.011	0.9	20	3.2
Zinc	27.5 µg/l	150 µg/l	0.030	1.1	20	3.8
Tetrachloro-ethylene	0.5 µg/l	0.5 µg/l	0	0.6*	10	1.7

*The coefficient of variation was outside of the acceptable range. 0.6 was used as the CV based on EPA guidance found in the TSD.

The estimated maximum concentration is compared to the lowest of its acute, chronic, and human health (“HH”) WQC. If the estimated concentration is above the lowest WQC there is reasonable potential for that parameter to exceed the WQS.

$$\text{Maximum Value} * \text{Statistical Multiplier} = \text{Estimated Maximum Concentration}$$

Reasonable Potential Analysis Results			
Parameter	Estimated Maximum Concentration	Lowest WQC	Reasonable Potential
Copper	105.6 µg/l	4.8 µg/l	Yes
Zinc	57 µg/l	65 µg/l	No
Tetrachlorethylene	1.5 µg/l	6.6 µg/l	No

WQBEL calculations for parameters with reasonable potential are presented in Section 3.8 of this fact sheet.

3.7 Whole Effluent Toxicity

The Permittee shall comply with effluent standards or prohibitions established by CWA Section 307(a) and Regs. Conn. State Agencies 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 acute or chronic whole effluent toxicity (“WET”) testing.

The acute toxicity limit found in the previous permit of $\geq 90\%$ survival at a critical test concentration (“CTC”) of 100% effluent (No Observable Adverse Effluent Level (“NOAEL”)) was developed consistent with Regs. Conn. State Agencies Section 22a-430-3(j)(7)(A)(i) and 22a-430-4(1)(5).

Semi-annual acute and annual chronic toxicity data was reviewed from 2020-2025. The highest acute toxicity reported was 92% survival in 100% effluent. The highest chronic toxicity reported was a no observable effect concentration (“C-NOEC”) for invertebrate reproduction of 12.5% effluent.

NOAEL at 100% effluent is the most stringent limit possible for toxicity. Therefore, a reasonable potential analysis was not conducted for acute toxicity and the previous limit is being carried forward. Semi-annual monitoring will be required to determine compliance.

Detections of toxicity were observed in chronic WET tests. In evaluating chronic WET data, DEEP considered the average discharge duration of the facility. The facility discharges an average of 2 hours per day, 7 days per week. While, the chronic toxicity test is a 7-day test where test organisms are exposed to effluent for 7-days, 24-hours per day. Given the actual discharge duration is less than the chronic toxicity test period, the discharge is not likely to exceed the chronic toxicity test exposure period in the receiving water. Therefore, a reasonable potential analysis was not conducted for chronic toxicity. Chronic toxicity monitoring will remain in the permit in the event discharge duration increases at the facility.

3.8 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).

Copper requires a WQBEL based on its potential to exceed the WQS. Copper will receive a limit of 8.8 µg/l and 20.4 µg/l as the average monthly and maximum daily limit in the permit. This limit applies to DSN 101. The WQBEL calculations are presented in Section 3.8.1. below.

The pH limits have been adjusted to 6.5-8.0 S.U. to align the WQS for class B waterbodies. This limit has been applied to both DSN 101 and 102.

3.8.1 WQBEL Calculations

Parameter with reasonable potential are given a waste load allocation (“WLA”). A WLA is calculated for each WQC. A long-term average (“LTA”) is calculated from each WLA following the procedure found in the TSD. The lowest LTA is used to calculate an average monthly limit (“AML”) and a maximum daily limit (“MDL”). These limits are protective of the waterbody and its designated uses. The equations and results of these calculations are listed below.

WLA Acute, Chronic, and Human Health (“HH”) Equation

$$WLA_{acute,chronic,HH} = \frac{Q_d * C_{d(acute,chronic,HH)} - Q_u * C_{u(acute,chronic,HH)}}{Q_e}$$

Qd = downstream flow = discharge flow + zone of influence

Cd = downstream concentration = Lowest WQC

Cu = upstream concentration

Qu = upstream flow = zone of influence

Qe = average permitted flow

LTA Acute Equation

$$LTA_{acute} = WLA_{acute} \times e^{(0.5\sigma^2 - z\sigma)}$$

LTA Chronic Equation

$$LTA_{chronic} = WLA_{chronic} \times e^{(0.5\sigma_n^2 - z\sigma_n)}$$

LTA Human Health (“HH”) Equation

$$LTA_{HH} = WLA_{HH}$$

MDL Equation

$$MDL = LTA \times e^{(z\sigma - 0.5\sigma^2)}$$

Z = 1.645 for 95th percentile probability basis

Z = 2.326 for 99th percentile probability basis

AML Equation

$$AML = LTA \times e^{(z\sigma_n - 0.5\sigma_n^2)}$$

$\sigma^2 = \ln(CV^2 + 1)$

n = number of samples per month, If < 4 = 4

Parameter	Lowest WLA	Lowest LTA	AML	MDL
Copper	4.8 µg/l	4.8 µg/l	8.87 µg/l	20.44 µg/l

These copper limits have been applied to DSN 101.

3.9 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 Regs. Conn. State Agencies 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.

In the absence of published technology-based effluent limits in effluent limit guidelines, the permit writer is authorized under CWA Section 402(a)(1)(B) and Regs. Conn. State Agencies Section 22a-430-4(m) to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

There are no federal TBELs for hydroelectric generation wastewaters.

Oil & Grease: An MDL of 10 mg/l and instantaneous max limit of 15 mg/l has been developed for oil and grease based on BPJ, pursuant to Regs. Conn. State Agencies Section 22a-430-4(m) and 40 CFR Part 125.3(a). This limit is based on the State’s technology-based treatment requirements for certain industrial discharges published at Regs. Conn. State Agencies 22a-430-4(s). These limits are consistent with the previous permit.

3.10 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 with are not included in the below table. A summary of the calculations used to determine reasonable potential and effluent limitations can be found above. The most stringent limits are highlighted in green.

DSN 101

Parameter	Units	DSN 101 Limit Comparison					
		BPJ		Water Quality Standards		Previous Permit	
		Average Monthly Limit or pH Minimum	Maximum Daily Limit or pH Maximum	Average Monthly Limit or pH Minimum	Maximum Daily Limit or pH Maximum	Average Monthly Limit or pH Minimum	Maximum Daily Limit or pH Maximum
Toxicity Acute	%				≥ 90%		≥ 90%
Copper	µg/L			8.8	20.4		
pH	SU			6.5	8.0	6.0	9.0
Oil and Grease*	mg/l		10				10

DSN 102

Parameter	Units	DSN 102 Limit Comparison					
		BPJ		Water Quality Standards		Previous Permit	
		Average Monthly Limit or pH Minimum	Maximum Daily Limit or pH Maximum	Average Monthly Limit or pH Minimum	Maximum Daily Limit or pH Maximum	Average Monthly Limit or pH Minimum	Maximum Daily Limit or pH Maximum
Toxicity Acute	%						≥ 90%
pH	SU			6.5	8.0	6.0	9.0
Oil and Grease*	mg/l						10

* This parameter contains an instantaneous limit of 15 mg/l.

3.11 Sampling Frequency, Type, And Reporting

DSN 101

Sample Type	Sample Frequency	Parameter	Reason
Daily Composite	Monthly	Copper	Regs. Conn. State Agencies Section 22a-430-4(l)(4)(A) and 22a-430-4(m)
	Semi-Annual	Acute Toxicity	
	Annual	Chronic Toxicity	
Grab	Monthly	Temperature	
	Monthly	Lead	
	Quarterly	Zinc	
	Semi-Annual	Tetrachloroethylene	
Grab Sample Average	Monthly	Oil and Grease	

Sample Type	Sample Frequency	Parameter	Reason
Grab	Monthly	Acute Toxicity	Regs. Conn. State Agencies Sections 22a-430-4(l)(4)(A) and 22a-430-4(m)
	Monthly	Copper	
		Lead	
		Zinc	
		Temperature	
		Tetrachloroethylene	
		Oil and Grease	

3.12 Other Permit Conditions

The permit contains a special condition that requires the Permittee to maintain a BMP for the 54” valve pit.

3.13 Compliance Schedule

There is no compliance schedule in the permit.

3.14 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, Regs. Conn. State Agencies Sec.22a-426-8(a)(1). This 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 established for the waterbody.

DEEP has determined that the discharges and associated activities are consistent with the maintenance, restoration, and protection of the existing and designated uses of the Housatonic River when following the conditions and limits written in the permit.

3.15 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 Regs. Conn. State Agencies Section 22a-430-4(l)(4)(A)(xxiii).

3.16 Categorical Discharge Conditions

There are no applicable federal or state categorical discharge regulations for these discharges.

3.17 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 “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 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 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. In July 2022, EPA published guidance to the Region and state in the Memorandum *Transmittal of the Revised Framework for Best Professional Judgment for Cooling Water Intake Structures at Hydroelectric Facilities*. This document maintains EPA’s interpretation that the 2014 rule’s substantive provisions were not intended to apply to hydroelectric facilities and that instead CWIS at hydroelectric facilities are subject to site-specific requirements set on a BPJ basis pursuant to 40 CFR Section 125.90(b). The following factors are considered in establishing BTA on a BPJ basis in accordance with EPA’s memo:

1. *Volume of cooling water used relative to other power generation facilities and relative to total water use at the facility.* The amount of cooling water used at the facility is comparable to the other hydroelectric facilities in Connecticut. The maximum water that could run through the facility is 1,131,112,800 gallons per day and the maximum flow of non-contact cooling water is 60,126 gallons per day. The percentage of cooling water used at the facility during maximum flow is 0.00005%;
2. *Cooling water withdrawn relative to waterbody flow.* The percentage of cooling water utilized would be approximately 0.0008% of the river's flow;
3. *Location of the intake structure.* The intake structure is located within the facility's penstock; and
4. *Technologies at the facility.* The facility's penstock includes trash racks to limit the flow of organisms and debris through the penstock. The trash racks are cleared when the pressure differential inhibits operations. Additionally, the design of the plant includes the use of a duplex strainer, which reduces impingement and entrainment.

Based on this information, DEEP's BPJ concludes that this facility meets BTA pursuant to 40 CFR Section 125.90(b).

3.18 Variances And Waivers

The Permittee did not request a variance or a waiver.

3.19 E-Reporting

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

Section 4 Summary Of New Permit Conditions And Limits From The Previous Permit

- DSN 104 has been combined into DSN 101 and is no longer in the permit.
- In DSN 101 the monitoring frequency for lead and copper have been increased to monthly.
- Limits have been included for copper based on a reasonable potential analysis.
- Reporting requirements have been updated for WET.
- WET data and paired chemical data is now required to be reported via NetDMR.

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. 201502735

Permit No. CT0030287

Interested persons may obtain copies of the application from Kevin Gerardi, FirstLight CT Housatonic LLC, 200 Kent Road, New Milford, CT 06776.

The application is available for inspection by contacting Patrick Bieger at Patrick.bieger@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 Patrick Bieger, Environmental Engineer II, Bureau of Materials Management and Compliance Assurance, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106-5127 or DEEP.IndustrialNPDESPublicComments@ct.gov and should indicate the Permit ID No. CT0030287 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 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. Upon receipt of a petition, the Commissioner shall take action as required by relevant laws, including Public Act 25-84, which was effective upon passage in June 2025. 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

