

# Underground Injection Control Program Fact Sheet

## SECTION 1.0 FACILITY SUMMARY

<b>APPLICANT</b>	Regional School District 17
<b>PERMIT NO.</b>	UI0000405
<b>APPLICATION NO.</b>	201612103
<b>DATE APPLICATION RECEIVED</b>	September 23, 2016
<b>LOCATION ADDRESS</b>	Haddam-Killingworth Middle School 451 Route 81 Killingworth, CT 06419
<b>FACILITY CONTACT</b>	Jeff Wihbey, Superintendent of Schools <a href="mailto:rsd17super@rsd17.org">rsd17super@rsd17.org</a>
<b>MAILING DDRESS</b>	57 Little City Road Higganum, CT 06441
<b>PERMIT TERM</b>	10 Years
<b>PERMIT TYPE</b>	Renewal
<b>PERMIT CATEGORY</b>	UIC Class V Injection Well
<b>TREATMENT DESCRIPTION</b>	5W12 Advanced Treatment
<b>OWNERSHIP</b>	Municipal
<b>COMPLIANCE SCHEDULE</b>	Yes
<b>RECENT ENFORCEMENT HISTORY</b>	NOV issued August 27, 2024 and closed October 18, 2024
<b>RECEIVING WATERBODY</b>	Groundwater in the Menunketesuck River
<b>WATER QUALITY CLASSIFICATION(S)</b>	GA
<b>DISCHARGE LOCATION(S)</b>	DSN 301-2
<b>DEEP STAFF ENGINEER</b>	Antoanela Daha, <a href="mailto:antoanela.daha@ct.gov">antoanela.daha@ct.gov</a>

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## **SECTION 2.0 PERMIT FEES**

Discharge Code: 312000a    Representing: DSN 301-2    Annual Fee: \$1,110

## **SECTION 3.0 PROJECT HISTORY**

On September 23, 2016, a permit renewal application (Application No. 201612103) was received for the discharge of domestic sewage to a subsurface sewage treatment and disposal system from Regional School District #17 – at Haddam-Killingworth Middle School location, in Killingworth, Connecticut. On February 1, 2017, DEEP issued a Notice of Sufficiency for this application.

The subsurface sewage treatment and disposal system serving Haddam-Killingworth Middle School was finalized in January 2007. The system was designed for a projected design flow of 19,680 gallons per day anticipating an increase in student and teacher population, which resulted in a very conservative per person design flow. The system was designed for high strength wastewater typically encountered for elementary and middle schools.

Due to high-strength wastewater, the school is served by Amphidrome reactors for Biochemical Oxygen Demand<sub>5-day</sub> (“BOD”), Total Suspended Solid (“TSS”) and nitrogen removal and due to limited natural soils, the current leaching field was constructed in a lateral sand filter with a potential for toe of the slope discharge to nearby wetlands. The toe of the slope design was later found nonconformant with Water Quality Standards. Section 22a-426-4(e)(1) of the Water Quality Standards was revised on February 28, 2011, to allow such discharges, provided that such discharges are necessary and don’t include any additional sources of discharge.

DEEP completed the review of the application and additional information, including a detailed review of the Discharge Monitoring Reports (“DMR”) and determined that several DMRs were missing for the last three years. A Notice of Violation (“NOV”) was issued on August 27, 2024. The required information was received September 5, 2024, and the permittee was found in compliance on with the NOV on October 18, 2024. The DMR review concluded that the alternative treatment system performs as designed and produces very high quality effluent in compliance with permit requirements for effluent quality. The average flows are generally under 2,500 gallons per day with maximum daily flows occasionally around 5,000 gallons per day. However, the monitoring wells within and downgradient of the lateral sand filter are dry.

This treatment system is located within a public water supply watershed. Typically, alternative treatment systems are prohibited in public water supply watersheds with few exceptions under C.G.S. 22a-430(b). This project met the criteria by being: “a system for the expansion of an existing municipal or public school project or for new construction of a municipal or public school project on an existing municipal or public school site, in a municipality in which a majority of the land is located within a drinking water supply watershed”.

DEEP completed the review of the application and additional information, including a detailed review of the Discharge Monitoring Reports and determined the subsurface sewage treatment and disposal system was functioning properly.

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## SECTION 4.0 SITE INSPECTION

The DEEP and the permittee’s representatives completed a site inspection on November 22, 2024. During the inspection, the DEEP went over the operation, maintenance and reporting requirements included in the permit. As the current flows are significantly smaller than the design flow, the two treatment trains are operated in series providing high quality effluent discharging to the lateral sand filter. Following a discussion about the design of the lateral sand filter and the current flows, a walk over the leaching revealed no seepage through the riprap downgradient of the lateral sand filter. An audit performed in 2016 observed that the monitoring wells were not sufficiently deep to adequately capture the dispersed flow. Following the recommendations of the 2016 audit, the permittee installed the monitoring wells at the bottom of the lateral sand filter. However, even though the monitoring wells capture the flow there isn’t sufficient amount of liquid to capture a viable sample.

## SECTION 5.0 NATURE OF BUSINESS GENERATING DISCHARGE

Regional School District No. 17 proposes to continue discharging a maximum of 19,680 gallons per day of domestic sewage, from operations of Haddam-Killingworth Middle School to groundwaters in the watershed of the Menunketesuck River.

## SECTION 6.0 PROCESS AND TREATMENT DESCRIPTION (by DSN)

**Conventional Treatment ( )      Advanced Treatment (X)      RECYCLE ( )**

DSN 301-2 represents the discharge from Haddam-Killingworth Middle School to the existing alternative sewage treatment system consisting of a wastewater collection system, a raw sewage pump station with force main, grease traps, anoxic /equalization tanks, Amphidrome reactors and clear wells followed by a leaching bed constructed in a lateral sand filter with the potential for toe of the slope surface water discharge.

## SECTION 7.0 COMPLIANCE SCHEDULE

Does the permit include a compliance schedule?                      YES (X)                      NO ( )

The proposed permit includes the following compliance schedules:

- 1) To record the permit in the town’s land records;
- 2) To submit the results of a detailed permit compliance, audit every two years.

## SECTION 8.0 BASIS FOR LIMITATIONS, PERMIT STANDARDS OR CONDITIONS

In accordance with section 22a-430 of the Regulations of Connecticut State Agencies (“RCSA”), DEEPs “Guidance for Design of Large-Scale On-Site Wastewater Renovation Systems,” (February 2006), and DEEP’s review of the permit application, site investigation and hydraulic capacity modeling, and pollutant analyses of the wastewater, a determination has been made that there is a need for an advanced wastewater treatment system to protect the ground water from

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pollution. The advanced wastewater treatment system is designed to treat wastewater and remove pollutants before being discharged to the pressure distribution leaching bed.

## 8.1 Advanced Wastewater Treatment

The wastewater discharging to the advanced treatment plant and entering the leaching bed was designed to meet the following parameters:

- Average daily flow: 13,120 gallons per day
- Maximum daily flow: 19,680 gallons per day
- Daily minimum and maximum: pH: 6.0 – 9.0 s.u.

Parameter	Average Monthly Limit	Maximum Daily Limit
Biochemical Oxygen Demand <sub>5-day</sub>	20 mg/L	30 mg/L
Total Suspended Solid	20 mg/L	30 mg/L
Total Nitrogen	10 mg/L (12-month rolling average)	N/A

Monitoring of additional parameters, such as nitrate, has been included in the permit to quantify nitrogen loading and to validate design criteria and year-round operations of the treatment system.

## 8.2 Leaching Bed Requirements [revise to reflect leaching bed description]

The leaching bed with the dimensions of 400ft x 70ft each, for a total of 28,000 sq.ft is installed in a 12 ft deep lateral sand filter and designed to accept 19,680 gallons per day.

The treatment system and leaching bed and the unsaturated zone beneath it are designed to treat and absorb phosphorus and the absorption rate has been demonstrated through calculations thus limiting the discharge significant concentrations of phosphorus to the groundwater.

Bacteria and virus inactivation is achieved as partially treated wastewater continues to flow through the unsaturated area under the leaching bed and downgradient of it. In accordance with the DEEPs design criteria, the minimum required travel time for the wastewater to all points of environmental concern is not less than 21 days.

## 8.3 Groundwater Monitoring Requirements

Groundwater monitoring at the edge of the property is required to ensure the treated domestic wastewater does not cause pollution. Groundwater leaving the site boundaries must meet the primary maximum contaminant levels (MCLs) in the Safe Drinking Water Act. Groundwater will be monitored for the following parameters: depth to groundwater (feet), nitrate, as N (mg/L), nitrite, as N (mg/L), ammonia, as N (mg/L), total Kjeldahl nitrogen, as N (mg/L), and total nitrogen, as N (mg/L), total phosphorus as P (mg/l), pH (standard units), and total coliform.

## SECTION 9.0 VARIANCES AND WAIVERS

The facility did not request a variance or a waiver.

## SECTION 10.0 E-REPORTING

The permittee is required to electronically submit discharge monitoring reports.

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## SECTION 11.0 PUBLIC PARTICIPATION PROCEDURES

### 11.1 Information Requests

Interested persons may obtain copies of the application from Jeff Wihbey, 57 Little City Road, Higganum, Connecticut.

The application is available for inspection by contacting Antoanela Daha at 860-424-3876 or [antoanela.daha@ct.gov](mailto:antoanela.daha@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 to 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.

### 11.2 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 thirty (30) days of this public notice. Written comments should be directed to Antoanela Daha, Bureau of Materials Management and Compliance Assurance, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106-5127 or [DEEP.UICPermittong@ct.gov](mailto:DEEP.UICPermittong@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 thirty (30) days prior to the hearing.

### 11.3 Petitions For 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](mailto: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 thirty (30) days of electronic submittal.

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Additional information can be found at [www.ct.gov/deep/adjudications](http://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](mailto: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.