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AUG 14 2023

SOUND VIEW SEWER COALITION, LLC.

CT DEPT OF ENERGY &  
ENVIRONMENTAL PROTECTION  
COMMISSIONER'S OFFICE

Dear Chief Graham Stevens,

The Sound View Sewer Coalition, LLC (SVSC) represents a majority of property owners in Sound View and Area B – the Old Lyme neighborhoods, that hopefully, WILL NOT be sewered in the near future. The Coalition is committed to adopting an environmentally safe solution to waste management that is not only cost efficient but also expandable, manageable, and utilizes state of the art solutions. We do not believe that sewers are the best solution for this small, seasonal neighborhood.

Pollution of Long Island Sound and our ground water is, of course, of paramount concern. Although DEEP has taken the position that pollution must exist due to density, our research has uncovered a very different situation. This sewer project was initiated over twenty years ago and the call to install sewers today is based on data that is now over 10 years old. Since that data was collected, the Town of Old Lyme instituted a pump-out program, mandating that septic tanks be pumped and inspected every 7 years. The past 5 years of water sampling and testing performed by the State of Connecticut Health Department has shown clearly that Old Lyme is NOT polluting the Sound. Furthermore, we have found no test data anywhere indicating that Old Lyme has ever contributed to pollution in the Sound.

Our "lack of pollution" position is reinforced by 2019 test data from Hawks Nest Beach collected by the town and reviewed by the State Health Department, and again analyzed by an independent expert, who concluded that the Old Lyme Hawks Nest community, does not have source pollution warranting sewers. Attached is the Hawks Nest conclusive analysis presented to the WPCA and DEEP. Hawks Nest has a similar density to Sound View, and is located less than a ½ mile to the North, immediately adjacent to Miami Beach. The DEEP issued its decision regarding Old Lyme several years ago, based on the assumption that due to density and proximity to the Sound, there must be pollution going into the Sound, despite the fact that there is not, and has never been, any data to prove that assumption, and that more recent testing shows just the opposite. That decision 15-20 years ago, did not include today's test results.

The proposed sewer system will serve only a small portion of Old Lyme, yet will have a significant impact on the entire shoreline and beyond. We are very concerned about the aquifer in Old Lyme, which provides potable water to individual and Connecticut Water Company wells located just North of Sound View. In fact, the Connecticut Water Company wells that provide water to 95% of the shoreline properties, are located less than 500 feet from Sound View. Connecticut Water is already struggling to meet customer demand, and in 2022 had to truck in millions of gallons of water to service this community. Residents regularly receive voicemails urging consumption reduction, even in wintertime, when most cottages are closed for the season. In 2022 the Miami Beach community in Old Lyme was ordered by the Health Department to abandon their private water company and convert to Connecticut Water. This conversion should occur within the year. Property owners will be mandated to shutter their working wells if sewers are installed. Clearly, all of this will add a tremendous burden to the already stressed solitary public water system. Adding a sewer system which will send millions of gallons of groundwater out of town as sewage will ultimately result in severe aquifer depletion, salt water intrusion, and subsidence. This loss of groundwater is deeply troubling, and will have long-term consequences to the aquifer.

The Town of Old Lyme is not under a consent order, only an administrative order that directs the town to examine and explore. The three private beach associations (Old Lyme Shores, Old Colony, and Miami Beach) have agreed to consent orders. Since their agreement, Old Lyme Shores has requested that DEEP lift their consent order, citing costs, lack of testing, and the availability of better solutions today. If this project does move forward, we foresee only confusion and conflict when the four separate WPCA bodies (the town, and three private beach associations) try to manage this expansive project with untrained volunteers. Case in point – there is no common EDU definition shared across all 4 neighborhoods, so there are many outstanding questions regarding the division of cost sharing, etc. Clearly, leadership is lacking here.



In the years since the sewer project was first proposed, DEEP has begun to recognize the value of engineered septic systems, even those designed for non-compliant lots, like those in Sound View. The average engineered system costs somewhere between \$20k and \$30K, and are now eligible for funding under the Clean Water Act. Several properties in Sound View have already upgraded their existing septic systems to these new engineered systems at their own expense. They are clean, simple, cost effective and will keep our groundwater in the area, helping to replenish and maintain our aquifer. Enclosed is an email dialogue from Dec 2022 between DEEP (Carlos Esguerra) and Sandy Garvin (Hawks Nest) that suggests that DEEP does recognize that testing is lacking, and that there may be alternatives to sewers for this area. Once again, we must stress a solution to problems where and when they exist, rather than a costly "one size fits all" solution which is not appropriate for this community as a whole.

The Sound View/Area B community would like to go green. Installing sewers will mandate a need for a continual energy source to run the pump house and grinder pumps (because the targeted topology is relatively flat) and a bioxide station in the center of a neighborhood, since the flow will be minimal 8 months out of the year. This is a seasonal community - basically a ghost town for 8 months every year. There will not be enough thrust to keep flows moving and pipes clean so pipes will rust and break. We expect repairs will be often because of this.

There is alternative technology available. Environmentally sound, green technology which has evolved over the past twenty years and is now the best solution to resolve issues such as nitrogen. The cost to implement these green solutions has dropped significantly. DEEP and EPA websites recognize and support green technology. Advanced state of the art solutions contained on each individual property, that are not subject to massive breaks or clogs in sewer lines, not dependent on an energy source, and do not require chemical infusions or grinder pumps. Clean Water funds, which require that the most cost-effective solution be applied, can be used to upgrade individual septic systems. Let us move forward to isolate the problems where they occur and apply state of the art technology to make the necessary corrections to individual properties. Please help us to go green and avoid a costly, inefficient sewer project that just is not the right fit for this community.

We urge you to direct the State's attention and available funds to repairing existing sewer lines and treatment plants that are in dire need. We urge you to allow this small insignificant Old Lyme seasonal community address whatever problem may exist by adopting green, state of the art, manageable solutions.

Thank you for your time and attention to this important matter.

Sound View Sewer Coalition  
Submitted by Secretary, Mary Daley 860-794-7480  
[SVSCLLC@gmail.com](mailto:SVSCLLC@gmail.com)

*Mary Daley 9 Portland Ave  
OLD LYME CT*

Enclosures:

State of Connecticut Health Department test data

Hawks Nest test data

Documentation of DEEP (Carlos Esguerra) and Sandy Garvin's (Hawks Nest) positions

The following is from Carlos Esguerra, DEEP, dated December 22<sup>nd</sup>, 2022 to Sandy Garvin Hawks Nest Beach:

Sandy: Dear Carlos,

>>> I am, once again, writing to you regarding the "high needs" description attributed to our property at Hawk's Nest Beach in Old Lyme by the OL WPCA.

**The report completed by Woodard & Curran in 2017 did not identify Hawks Nest as a High Priority area but as a medium priority area recommended for additional groundwater sampling work.**

And, once again I am asking for feedback from you regarding the DEEP required groundwater testing analysis that was never completed by the WPCA. In spite of many requests by our family in 2019 to complete the analysis to clear our name and show the public that our groundwater was NOT contributing to an assumed pollution issue, the WPCA dismissed our requests and put us on the back burner. Obviously, if there had been an environmental problem, they would have immediately brought big attention to it.

**The Town has collected groundwater samples between the years 2000 and 2013 within Hawks Nest and nearby coastal areas. As you know, the sampling program was reinstated in July 2018 and discontinued in November 2019. We understand that the Town may restart GW testing with the main goal of making a determination of pollution sources and possible solutions.**

I believe Sound View residents should have the same rights for new testing and determine where and how many sites exist that are problematic.

**based on a cursory review of Dr. Wigginton's report, the Department's perspective is that it has a very narrow scope of evaluation. Evaluating community pollution problems related to onsite septic systems is a multidimensional effort that requires the evaluation of several variables. Variables such as subsurface conditions (soil permeability and depth to groundwater for example), the condition and age of the onsite septic system, compliance with public health code, lot size, location of nearby drinking water wells, vulnerability to floods and rising groundwaters due to climate change. All of these variables should be evaluated individually and collectively to be able to render an assessment and conclusion of the wastewater management needs. These variables do not seem to have been included in Dr. Wigginton's report and the Department would caution against reaching conclusions in the absence of a holistic evaluation.**



Several times, I suggested that an environmental engineer (Dave Potts) come to speak to the WPCA members about cheaper, site specific alternatives that could identify problems and solve them without going to the extreme and expense of sewers.

We are familiar with Mr. Potts' system and we understand that these systems may be viable based on site specific considerations. Site specific septic system upgrades requires a lot by lot understanding and evaluation of the site-specific conditions such as soil permeability, distance to sensitive receptors such as drinking water wells. Ultimately an engineering analysis factoring in all of these variables should be considered and dictate the viability and selection of a given solution or preferred alternative.

to reiterate, a comprehensive wastewater management analysis will need to rely on the evaluation of several variables as described previously in this email and not rely solely on one or a limited set of data.

They (the WPCA) also site DEEP as being the one to decide if HNB is high needs. How will you know if they did not finish a most important groundwater study? Why did you not ask for the results in the last 3 years?

Hawks Nest has not been identified as a High Need Area ,,,, And as a point of clarification, please note that it is the community's responsibility to document the sources of pollution and recommended solutions.

There is more, but in the interest of time, I'll stop here. DEEPs comments to imply that they too recognize that the original data was not complete – now 23 years old, and that DEEP would consider alternatives, such as updated septic systems etc.

# Hawk's Nest Beach Nitrogen Report

Report prepared by:  
Sara Wigginton, PhD  
Environmental Scientist  
Geomatrix LLC

## Background:

The over-enrichment of nitrogen (i.e. eutrophication) can lead to harmful algal blooms causing hypoxia (i.e. low oxygen) and the impairment of coastal water bodies. This can decrease the value of coastal areas in terms of property values and the ecosystem services they provide. Additionally, elevated levels of nitrate-nitrogen ( $\text{NO}_3^-$ ) in drinking water sources, such as wells and reservoirs, can be harmful to human health. The United States Environmental Protection Agency has set a drinking water standard of 10 mg/L (i.e. ppm) nitrate ( $\text{NO}_3^-$ ) for potable water<sup>1</sup>. This level of  $\text{NO}_3^-$  is acceptable for anyone to drink without adverse health effects. Management of nitrogen in coastal waters is based on total daily maximum loads to that water body, which is more complex than a concentration and involves managing the total poundage of nitrogen that is added to a watershed or waterbody. In coastal New England, a major source of nitrogen pollution can originate from onsite wastewater treatment systems (i.e. septic systems). Decreasing nitrogen loads from septic systems can involve decreasing both the concentration of nitrogen in the system and the amount of water that is loaded from each system to the surrounding environment. Other nitrogen mitigating strategies include installing nitrogen removing barriers, upgrading onsite wastewater systems to include nitrogen removal, or by connecting homes to a sewer system. All of these mitigation strategies have pros and cons, but in all situations a vital step before undertaking any nitrogen controlling initiative is to carefully consider where efforts are most needed and can have the biggest impact.

The following is a report on nitrogen pollution in groundwater monitoring wells located on Hawk's Nest Beach. Hawk's nest Beach contains 100 cottages; 75% of these are vacant for 7 months of the year and all rely on septic systems for wastewater treatment and dispersal. The data detailed are from four groundwater monitoring wells within the Hawk's Nest Beach community and three groundwater monitoring wells that are located on the waterfront portion of Hawk's Nest Beach. Below we detail total nitrogen and nitrate values in these wells to determine if nitrogen reduction mitigation is necessary at Hawk's Nest Beach.

## Methods:

Analysis was performed on the water quality data publicly available on the Town of Old Lyme's website<sup>2</sup> using RStudio software (version 1.3). Four groundwater monitoring wells (HN-2-98, HN-9, HN-10, and HN-11; Figure 1) on Hawk's Nest beach were monitored for nitrogen concentrations to determine the impact of septic system pollution from this area. One of the wells (HN-2-98) was sampled 26 times between June 1998 and June 2012. All of the wells were sampled 10 times between July 2018 and November 2019. We performed summary analysis of the total nitrogen (TN) and nitrate ( $\text{NO}_3^-$ ) concentrations for the entire dataset as well as the average concentrations separated by well and

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<sup>1</sup> <https://www.epa.gov/sdwa/2018-drinking-water-standards-and-advisory-tables>

<sup>2</sup> <https://www.oldlyme-ct.gov/water-pollution-control-authority/pages/water-testing-data>



sampling date. The total number of observations for the whole dataset was 66. This monitoring was performed under the jurisdiction of the Old Lyme Water Pollution Control Authority.

In addition to the four groundwater monitoring wells located throughout the Hawk’s Nest community, three wells were located near the shore (within 50 meters of the Long Island Sound) and sampled once on September 9, 2015 and once on December 18, 2015. A collection from the Long Island Sound (hereafter “the Sound”) was also made on September 9, 2015 (Figure 1). This monitoring was performed by Geolnsight (Middletown, CT).

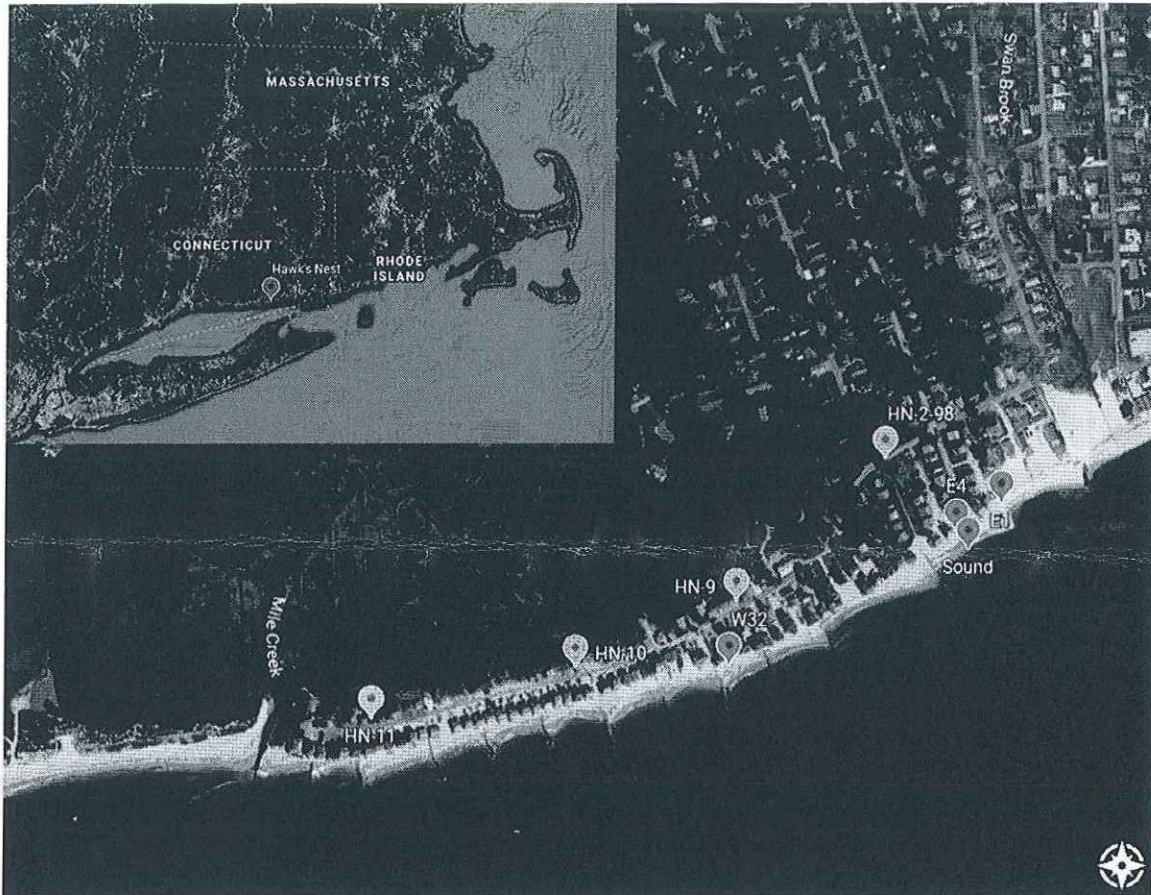


Figure 1: Location of Hawk's Beach groundwater monitoring wells. Yellow symbols indicate wells that were monitored in 2018 and 2019. Blue symbols indicate groundwater monitoring wells and a collection point in the Long Island Sound collected in 2015. Map created using Google Earth.

Results:

All TN or NO<sub>3</sub><sup>-</sup> values for all wells and collection dates were below 10 mg/L (Figure 2 and Figure 3). We found the mean TN value in the four Hawk’s nest groundwater monitoring wells to be 3.9 mg/L when all samples collected were included (Table 1; Figure 4). The mean NO<sub>3</sub><sup>-</sup> value for all samples collected was 2.4 mg/L (Figure 4). Total nitrogen values ranged from 7.89 mg/L in July 2018 to 1.37 mg/L in November 2018 (Figure 2).

Well HN-2-98 had the highest average of TN and NO<sub>3</sub><sup>-</sup> with mean values of 4.4 and 3.85 mg/L, respectively. HN-11 had the lowest mean TN and NO<sub>3</sub><sup>-</sup> values of 3.2 and 0.41 mg/L, respectively (Figure 5). Mean total nitrogen values were highest during the 7/30/2018 sampling event at 7.2 mg/L; this was 3 mg/L higher than the date with the next highest mean TN concentration. The lowest mean concentration was collected on 1/9/2019 and was 2.2; it is not surprising that nitrogen values were generally lower in months when most cottages were vacant and systems are not experiencing flow.

We averaged the two samples taken from each of the three waterfront groundwater monitoring wells collected by GeolInsight and found that the average TN and NO<sub>3</sub><sup>-</sup> values for well E1 were 3.9 and 3.6 mg/L, respectively. In well E4 the average TN value was 7 mg/L and the average NO<sub>3</sub><sup>-</sup> value was 3.9 mg/L. The average concentrations of TN and NO<sub>3</sub><sup>-</sup> at well W32 were 2.98 and 1 mg/L, respectively. The sample collected directly from the Sound had a TN concentration of 1.38 mg/L and no detectable levels of NO<sub>3</sub><sup>-</sup>.

*Table 1: All wells were sampled 10 times between July 2018 through November 2019. Well HN-2-98 was also sampled 26 times from June 1998 through June 2012 (average values in this well did not differ significantly when all times were included compared to when only samples post 2018 were included; reported values include all available data).*

	Mean TN (mg/L)	Mean NO <sub>3</sub> <sup>-</sup> (mg/L)
All samples	3.9	2.4
<b>Well</b>		
Well	Mean TN (mg/L)	Mean NO <sub>3</sub> <sup>-</sup> (mg/L)
HN-2-98	4.4	3.85
HN-9	3.6	0.68
HN-10	3.6	0.61
HN-11	3.2	0.41
<b>Date (average of all wells)</b>		
Date (average of all wells)	Mean TN (mg/L)	Mean NO <sub>3</sub> <sup>-</sup> (mg/L)
7/30/2018	7.2	1.7
9/20/2018	3.2	1.7
11/20/2018	2.6	1.5
1/9/2019	2.2	1.1
3/20/2019	3.9	2.3
6/19/2019	4.2	2.4
7/16/2019	3.9	1.5
8/21/2019	3.3	0.9
9/18/2019	4.1	1.6
11/19/2019	4.2	1.4



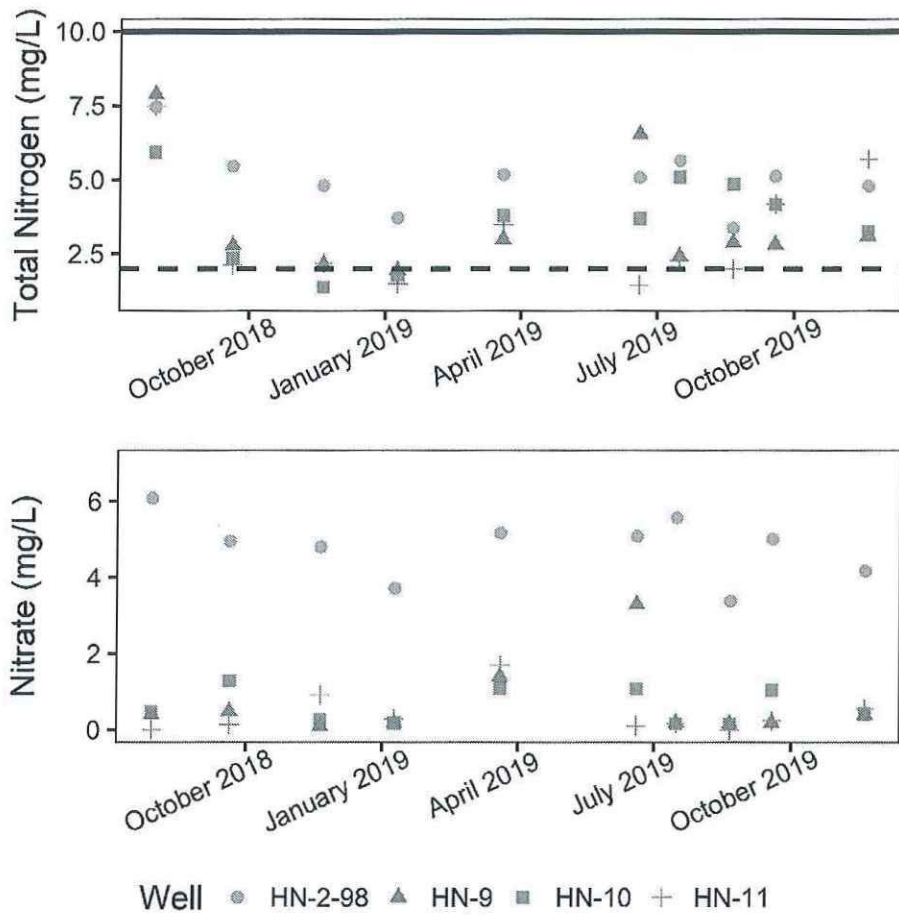


Figure 2: The total nitrogen (top) and nitrate (bottom) concentrations in each groundwater monitoring well located on Hawk's Nest Beach during each sampling event collected from 2018 through 2019.

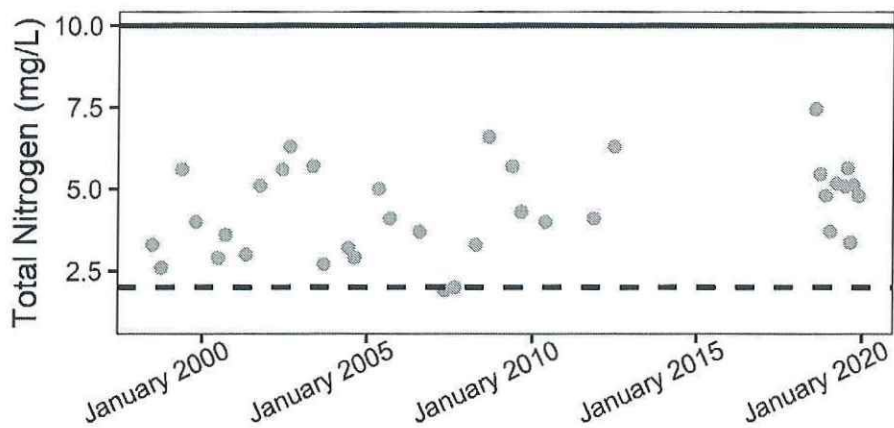


Figure 3: Total nitrogen concentrations from each sampling event collected from well HN-2-98 from 1998 through 2019. Samples were not collected or not available from 2012 through 2017.



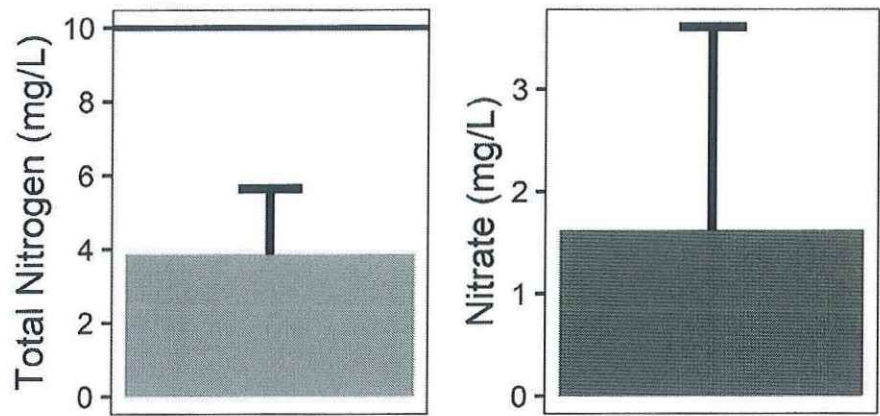


Figure 4: The mean total nitrogen (left) and nitrate (right) concentrations in groundwater monitoring wells located at Hawk's Nest Beach. The black line represents the limit set by the United States EPA for safe drinking water.

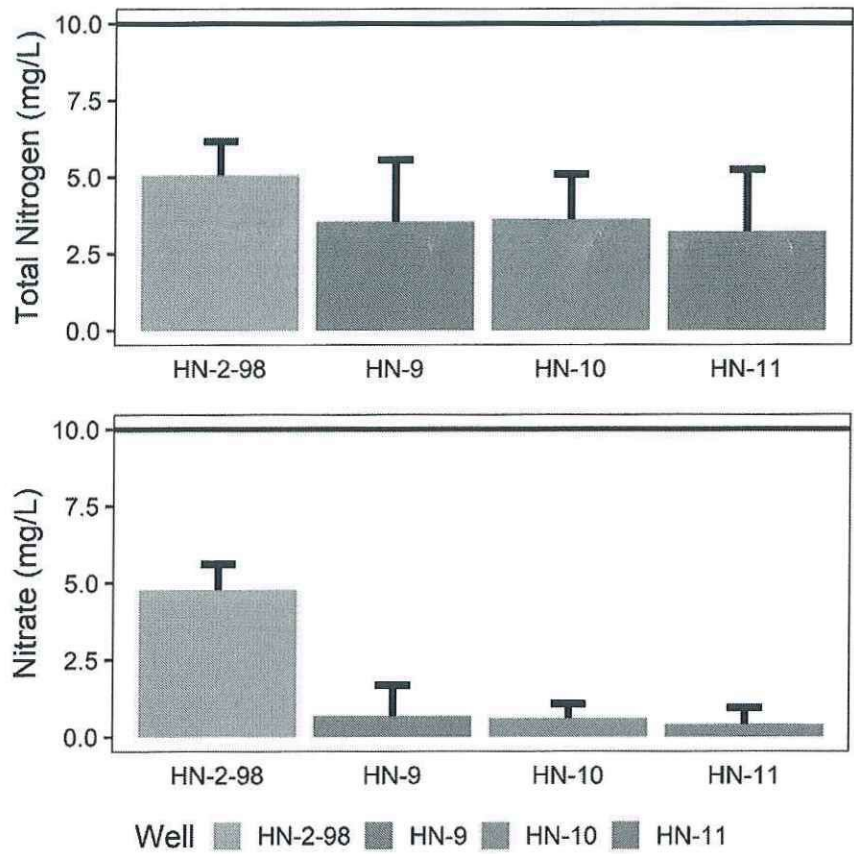


Figure 5: The mean total nitrogen (top) and nitrate (bottom) concentrations in each groundwater monitoring well located on Hawk's Nest Beach. The black line represents the limit set by the United States EPA for safe drinking water.

## Conclusions:

Background levels of total nitrogen in groundwater are 2 mg/L<sup>3</sup>. When this background concentration is considered, the average concentration from wells is 1.9 mg/L and the waterfront wells monitored by GeoInsight have average values of less than 5. These values are much lower than the 10 mg/L standard. The low levels of nitrogen in the groundwater monitoring wells and the Sound indicate that the current wastewater infrastructure at Hawk's Nest Beach is protective of the Sound from a nitrogen control standpoint.

Targeting Hawk's Nest Beach for upgrades would not be an efficient use of nitrogen reduction funds as this area is not high need, especially compared to other areas of the Sound where efforts would translate to a larger benefit for the region as a whole. In addition to the low nitrogen values observed in groundwater monitoring wells, Hawk's Nest is likely producing a much smaller annual nitrogen load compared to communities with longer periods of annual occupancy. Seasonal homes, such as those at Hawk's Nest Beach, generally load less nitrogen to the environment than houses occupied year-round, even if the concentrations of nitrogen in the septic tanks are higher at the seasonal sites<sup>4</sup>. Again, this is because the majority of the cottages on Hawk's Nest Beach are only loading nitrogen to the Sound for a few months each year. In addition to low overall loading, this community does not have issues with groundwater separation distances; the groundwater ranges from 40-90" and is an average of 60". Further still, this community does not rely on well water, has not experienced any beach closures, and has soils suitable for efficient nitrogen attenuation.

There are multiple options for upgrading wastewater treatment systems and mitigating nitrogen pollution when that is required or desired. One of these options is sewerage. While it is not necessary at Hawk's Nest Beach, there has been propositions to sewer the community and send wastewater to New London Wastewater Treatment Plant. Even if upgrades were required at Hawk's Nest, sending their wastewater to this plant would be ill advised as this plant is in a more polluted portion of the Sound than Hawk's Nest. According to the 2012 SPARROW (SPATIally References Regressions on Watershed attributes) mappers<sup>5</sup>, the load of nitrogen to the Sound is greater than 934 kg/km<sup>2</sup> from the New London subwatershed, compared to a load of between 500 and 934 kg/km<sup>2</sup> from the subwatershed where Hawk's Nest Beach is located (Figure 6). The nitrogen concentration discharged from the New London Wastewater Treatment Plant to the Thames river was 7.0 mg/L in September 2015, indicating that the septic systems at Hawk's Nest Beach are already removing similar or more nitrogen from the wastewater stream than would be possible at the treatment plant. Adding Hawk's Nest Beach's wastewater flows to this plant would further challenge nitrogen control into the Thames River (New London Wastewater Treatment Plant's final distribution point).

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<sup>3</sup> <https://pubs.usgs.gov/circ/circ1225/>

<sup>4</sup> <https://digitalcommons.uri.edu/dissertations/AAI27962549/>

<sup>5</sup> [https://www.usgs.gov/mission-areas/water-resources/science/sparrow-mappers?qt-science\\_center\\_objects=0#qt-science\\_center\\_objects](https://www.usgs.gov/mission-areas/water-resources/science/sparrow-mappers?qt-science_center_objects=0#qt-science_center_objects)



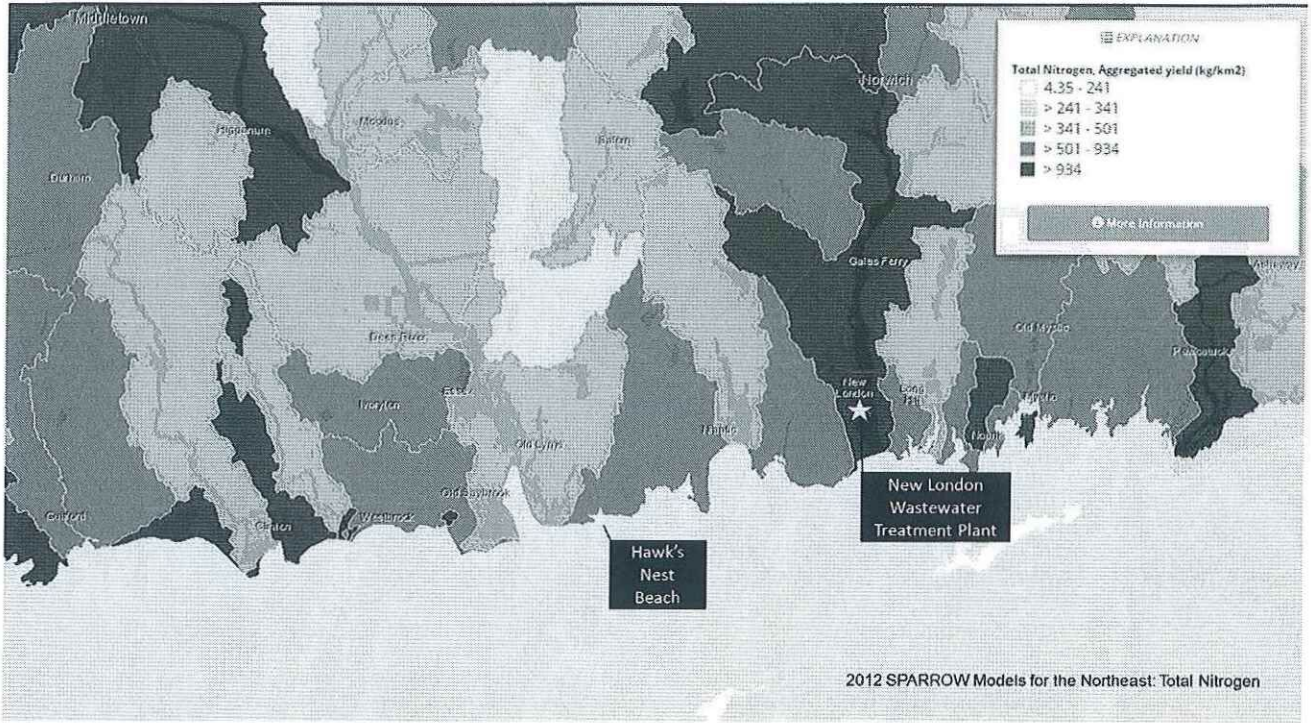


Figure 6: Most recent SPARROW nitrogen loading model for the Northeast. The area is divided into subwatersheds (12-Digit Hydrologic Unit Codes).

Based on the nitrogen levels in groundwater monitoring wells and variables such as use, soil type, and distance to groundwater at Hawk's nest beach, we conclude that the current wastewater infrastructure at Hawk's Nest Beach is protective of the Long Island Sound's resident's health, property values and ecosystem services.