Estuary 11: New London / Groton

Watershed Summary

WATERSHED DESCRIPTION AND MAPS

The New London/Groton Estuary (Estuary 11) covers an area of approximately 14.08 acres in southern Connecticut. These impaired segments are located in the central portion of Long Island Sound (LIS). All of the impaired segments in this summary are located in the municipality of Stonington, CT.

The New London and Groton Estuary includes two segments impaired for commercial shellfish harvesting and ten segments impaired for direct shellfish harvesting due to elevated bacteria levels. These segments were assessed by Connecticut Department of Energy and Environmental Protection (CT DEEP) and included in the CT 2012 303(d) list of impaired waterbodies. Some additional segments in the estuary are currently unassessed as of the writing of this document. This does not mean there are no potential issues on these segments, but indicates a lack of current data to evaluate the segments as part of the assessment process. An excerpt of the Integrated Water Quality Report is included in Table 1 (CT DEEP, 2012).

Impaired Segments

Segment 1: LIS EB Inner - Beebe Cove (Mystic Harbor), (CT-E1_009) is located in the Eastern portion of LIS. The segment is Beebe Cove (Mystic Harbor) waters west of two RR crossings along shore, Groton.

Segment 2: LIS EB Inner – Palmer Cove (CT-E1_010) extends Inner Palmer Cove waters from North side of Groton Long Point Road crossing, past RR crossings to saltwater limit, Groton

Segment 3: LIS EB Inner – Inner Mumford Cove (CT-E1_011-SB) extends Inner Mumford Cove along east side of Bluff Point State Park shore, and North of Groton Long Point to saltwater limit near RR crossing, Groton

Impaired Segment Facts

Impaired Segments, Classifications, and Areas (mi^2):

Segment 1: LIS EB Inner – Beebe Cove (Mystic Harbor) (CT-E1_009), SA; 0.207

Segment 2: LIS EB Inner Palmer Cove (Inner) (CT-E1_010), SA; 0.113

Segment 3: LIS EB Inner Mumford Cove (Inner) (CT-E1_011-SB) SB; 0.219

Segment 4: LIS EB Inner Poquonuck River (Mouth) (CT-E1_012) SA; 0.367

Segment 5: LIS EB Inner – Baker Cove (CT-E1_013) SA; 0.314

Segment 6: LIS EB Inner Thames River (Mouth) (CT-E1_014-SB) SB; 1.994

Segment 7: LIS EB Inner Alewife Cove (CT-E1_017) SA; 0.063

Segment 8: LIS EB Shore West Cove (Groton Long Pt) (CT-E2_006) SA; 0.422

Segment 9: LIS EB Shore Outer Mumford Cove (CT-E2_007) SA; 0.555

Segment 10: LIS EB Shore- Bluff Point (CT-E2_008) SA; 0.235

Segment 11: LIS EB Midshore Mystic River (CT-E3_003) SA; 2.853

Segment 12: LIS EB Midshore Thames River (CT-E3_004) SA; 6.738

Municipalities: Groton, New London

Designated Use Impairments: Shellfishing

MS4 Applicable? Yes

Applicable Season: Recreation Season (May 1 to September 30),Year Round for Shellfish Uses

Segment 4: LIS EB Inner - Inner Poquonuck River (Mouth) (CT-E1_012) extends from Poquonuck River from mouth at Baker Cove (along East of Groton-New London Airport), US to saltwater limit just US of RR crossing, Groton.

Segment 5: LIS EB Inner – Inner Baker Cove (CT-E1_013) extends from Baker cove from Avery Point and tip of Pine Island, to mouth of the Poquonuck River (South of Groton-New London Airport), Groton.

Segment 6: LIS EB Inner – Thames River (Mouth) (CT-E1_014-SB) extends from mouth of Thames River from Eastern Point (North of Avery Point), Upstream to I-95 crossing (Includes Inner New London Harbor), Groton.

Segment 7: LIS EB Inner – Alewife Cove (CT-E1_017) extends from Alewife Cove from outlet at Waterford Beach Park Picnic Area, US to Saltwater limit at Niles Hill Road crossing, Waterford.

Segment 8: LIS EB Shore – West Cove (CT-E2_006) extends from tip of Groton Long Point to Morgan Point at SB/ SA water quality boundary at the Mystic River mouth, out approximately 1000 ft offshore.

Segment 9: LIS EB Shore – Outer Mumford Cove (CT-E2_007) extends from Mumford Point to eastern most tip of Groton Long Point (includes outer Mumford cove and all of Venetian Harbor), out approximately 1000 ft offshore.

Segment 10: LIS EB Shore – Bluff Point (CT-E2_008) extends from Eastern portion of LIS from SB/ SA water quality boundary at Bushy Point Beach to Mumford Point, out approximately 1000 ft offshore.

Segment 11: LIS EB Midshore – Groton, Mystic River (CT-E3_003) extends from eastern portion of LIS from approximately 1000 ft offshore, Groton Long Point to Enders Island, out to CT/ NY State line.

Segment 12: LIS EB Midshore – Groton, Thames River (CT-E3_004) extends from SB/ SA water quality boundary out to 50 ft contour offshore of Goshen Point, Waterford, to approximately 1000 ft offshore, Groton Long Point, out to CT/ NY State line

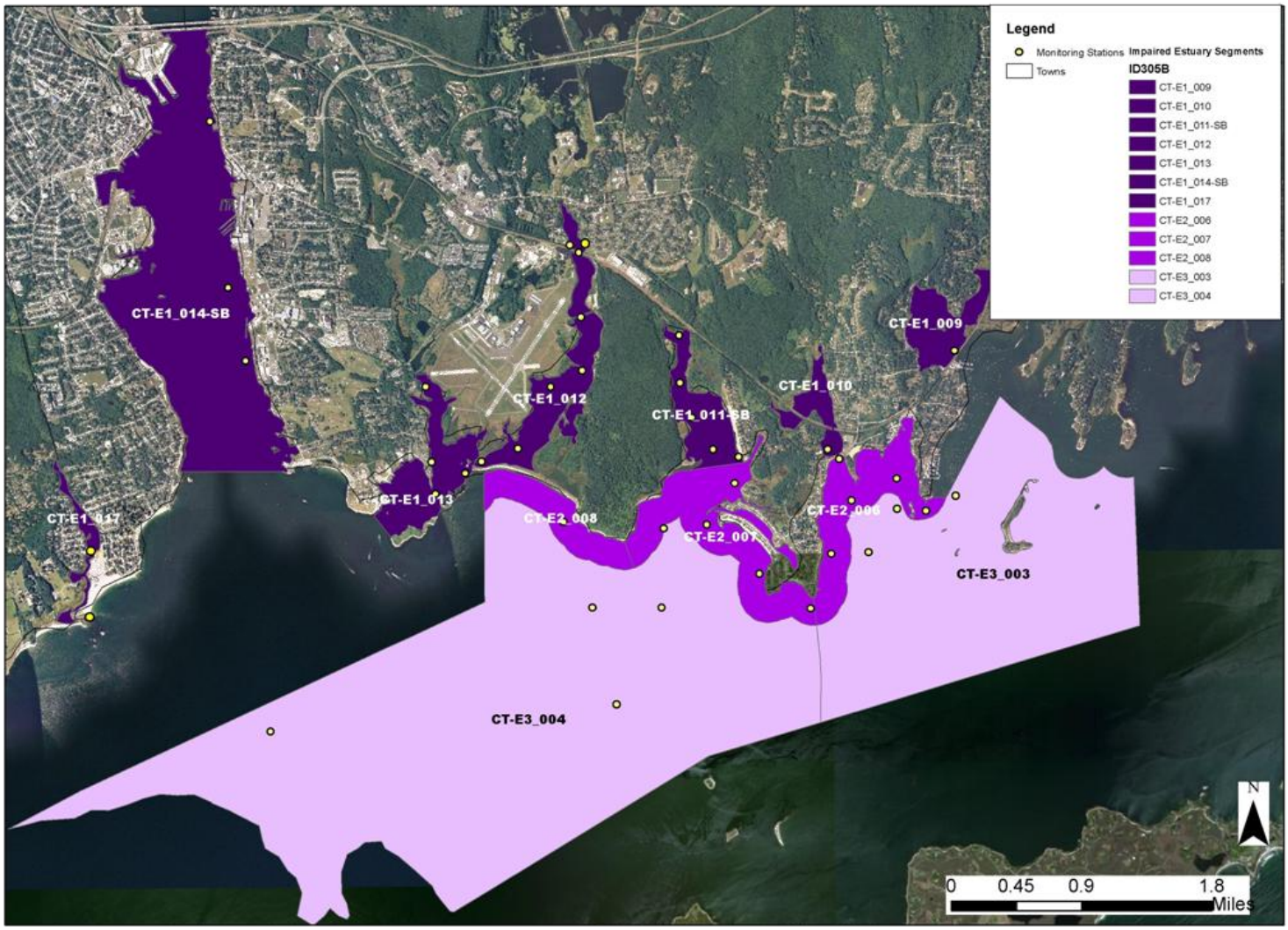
These impaired segments of the New London and Groton estuary have a water quality classification of either SA or SB. Designated uses include shellfish harvesting for direct human consumption, commercial shellfish harvesting, recreation, habitat for marine fish and other aquatic life and wildlife, industrial water supply, and navigation. The included segments of the estuary are impaired due to elevated bacteria concentrations, affecting the designated uses of direct consumption and commercial shellfishing.

Table 1: Impaired segments in the Groton/New London Estuary from the Connecticut 2012 Integrated Water Quality Report

Waterbody ID	Waterbody Name	Location	Square Miles	Marine Aquatic Life	Recreation	Shellfish	Shellfish Class
CT-E1_009	LIS EB Inner - Beebe Cove (Mystic Harbor), Groton	Eastern portion of LIS, Inner Estuary, Beebe Cove (Mystic Harbor) waters west of two RR crossings along shore, Groton.	0.207	Not Assessed	Not Assessed	Not Supporting	Direct Consumption
CT-E1_010	LIS EB Inner - Palmer Cove (Inner), Groton	Eastern portion of LIS, Inner Estuary, Inner Palmer Cove waters from North side of Groton Long Point Road crossing, past RR crossings to saltwater limit, Groton.	0.113	Not Assessed	Not Assessed	Not Supporting	Direct Consumption
CT-E1_011-SB	LIS EB Inner - Mumford Cove (Inner), Groton	Eastern portion of LIS, Inner Estuary, Inner Mumford Cove along east side of Bluff Point State Park shore, and North of Groton Long Point to saltwater limit near RR crossing, Groton.	0.219	Not Assessed	Not Assessed	Not Supporting	Commercial Harvesting
CT-E1_012	LIS EB Inner - Poquonuck River (Mouth), Groton	Eastern portion of LIS, Inner Estuary, Poquonuck River from mouth at Baker Cove (along East of Groton-New London Airport), US to saltwater limit just US of RR crossing, Groton.	0.367	Not Assessed	Not Assessed	Not Supporting	Direct Consumption
CT-E1_013	LIS EB Inner - Baker Cove, Groton	Eastern portion of LIS, Inner Estuary, Baker cove from Avery Point and tip of Pine Island, to mouth of Poquonuck River (South of Groton-New London Airport), Groton.	0.314	Not Assessed	Not Assessed	Not Supporting	Direct Consumption
CT-E1_014-SB	LIS EB Inner - Thames River (Mouth), New London	Eastern portion of LIS, Inner Estuary, mouth of Thames River from Eastern Point (North of Avery Point), US to I95 crossing (Includes Inner New London Harbor), Groton.	1.994	Not Supporting	Fully Supporting	Not Supporting	Commercial Harvesting
CT-E1_017	LIS EB Inner - Alewife Cove, Waterford/ New London	Eastern portion of LIS, Inner Estuary, Alewife Cove from outlet at Waterford Beach Park Picnic Area, US to Saltwater limit at Niles Hill Road crossing, Waterford.	0.063	Not Supporting	Not Assessed	Not Supporting	Direct Consumption

Waterbody ID	Waterbody Name	Location	Square Miles	Marine Aquatic Life	Recreation	Shellfish	Shellfish Class
CT-E2_006	LIS EB Shore - West Cove (Groton Long Pt), Groton	Eastern portion of LIS from tip of Groton Long Point to Morgan Point at SB/ SA water quality boundary for Mystic River mouth, out approximately 1000 ft offshore.	0.422	Not Assessed	Fully Supporting	Not Supporting	Direct Consumption
CT-E2_007	LIS EB Shore - Outer Mumford Cove, Groton	Eastern portion of LIS from Mumford Point to eastern most tip of Groton Long Point (includes outer Mumford cove and all of Venetian Harbor), out approximately 1000 ft offshore.	0.555	Not Assessed	Not Assessed	Not Supporting	Direct Consumption
CT-E2_008	LIS EB Shore - Bluff Point, Groton	See Map for Boundaries. Eastern portion of LIS from SB/ SA water quality boundary at Bushy Point Beach to Mumford Point, out approximately 1000 ft offshore.	0.235	Not Assessed	Not Assessed	Not Supporting	Direct Consumption
CT-E3_003	LIS EB Midshore - Groton, Mystic River	See Map for Boundaries. Eastern portion of LIS from approximately 1000 ft offshore, Groton Long Point to Enders Island, out to CT/ NY State line.	2.853	Not Assessed	Not Assessed	Not Supporting	Direct Consumption
CT-E3_004	LIS EB Midshore - Groton, Thames River	See Map for Boundaries. Eastern portion of LIS from SB/ SA water quality boundary out to 50 ft contour offshore of Goshen Point, Waterford, to approximately 1000 ft offshore, Groton Long Point, out to CT/ NY State line.	6.738	Not Assessed	Not Assessed	Not Supporting	Direct Consumption

Figure 1: GIS map featuring general information for impaired segments in the New London and Groton Estuary



New London - Groton Impaired Estuaries MAP DATA DEEP Created March 2013

Shellfish Bed Classifications, Closures, and Lease Locations

The Connecticut Department of Agriculture/Bureau of Aquaculture (CT DA/BA) is responsible for regulating shellfish harvesting (http://www.ct.gov/doag/cwp/view.asp?a=1369&Q=259170). A shellfish growing area is defined by CT DA/BA as any area that supports or could support the growth and/or propagation of molluscan shellstock. Shellfish are defined by CT DA/BA as oysters, clams, mussels, and scallops, either shucked or in the shell, fresh or frozen, whole or in part. All shellfish growing areas are classified by CT DA/BA in accordance with the Interstate Shellfish Sanitation Conference (ISSC) National Shellfish Sanitation Program Model Ordinance (NSSP-MO) and CT General Statutes Chapter 491, §26-192e. These classifications, summarized below, are established to minimize health risks and may restrict the take and use of shellfish from some areas. The classifications are based on fecal coliform bacteria standards as provided in the NSSP-MO (Interstate Shellfish Sanitation Conference, 2007). Any shellfish area, regardless of classification, may be temporarily closed to all activities when a potential public health emergency exists as a result of a storm event, flooding, sewage, chemical, or petroleum discharges, or a hazardous algal bloom.

Shellfish harvesting has been divided into two designated uses as specified in the Connecticut WQS: shellfish harvesting suitable for direct human consumption (Class SA waters), and shellfish harvesting suitable for commercial operations requiring depuration or relay (Class SB waters).

Shellfish Bed Classifications and Closures in the New London and Groton Estuary

Shellfish classification areas in the New London and Groton Estuary are shown in Figure 2. The following classifications for shellfish growing areas are defined by CT DA/BA:

APPROVED AREA: Is a classification used to identify a growing area that is safe for the direct marketing or consumption of shellfish. An area may be classified as Approved when a sanitary survey finds that there is no contamination from pathogenic organisms, poisonous or deleterious substances, marine biotoxins, or bacteria concentrations exceeding the bacteriological standards for a growing area in this classification as set forth in the NSSP MO. The water quality in the growing area shall also meet the bacteriological standards for an Approved classification.

CONDITIONALLY APPROVED AREA: Is a classification used to identify a growing area that is safe for the direct, marketing or consumption of shellfish when the area is in the open status. The area must meet the criteria for Approved classification when the area is in the open status, and meets the criteria for the restricted classification in the closed status. An area may be classified as Conditionally Approved when a sanitary survey finds that the area can remain in the open status for a reasonable period of time, the factors impacting the area are known and predictable and do not preclude a reasonable management approach, and the water quality correlates with the environmental conditions or other factors affecting the distribution of pollutants into the growing area. Each Conditionally Approved growing area must have a written management plan that is adhered to by all responsible parties.

RESTRICTED RELAY/DEPURATION: Is a classification used to identify a growing area where harvested shellstock is relayed to Approved or Conditionally Approved waters for natural cleansing or depuration*. An area may be classified as Restricted Relay when a sanitary survey finds a limited degree of pollution and levels of fecal pollution, human pathogens, or poisonous or deleterious substances so that shellstock can be made safe for human consumption by either relaying, depuration or low acid-canned food processing. Shellfish may only be harvested from Restricted areas by special license, and may not be directly harvested for market or consumption.

*Depuration means the process of reducing the pathogenic organisms that may be present in shellstock by using a controlled aquatic environment as the treatment process.

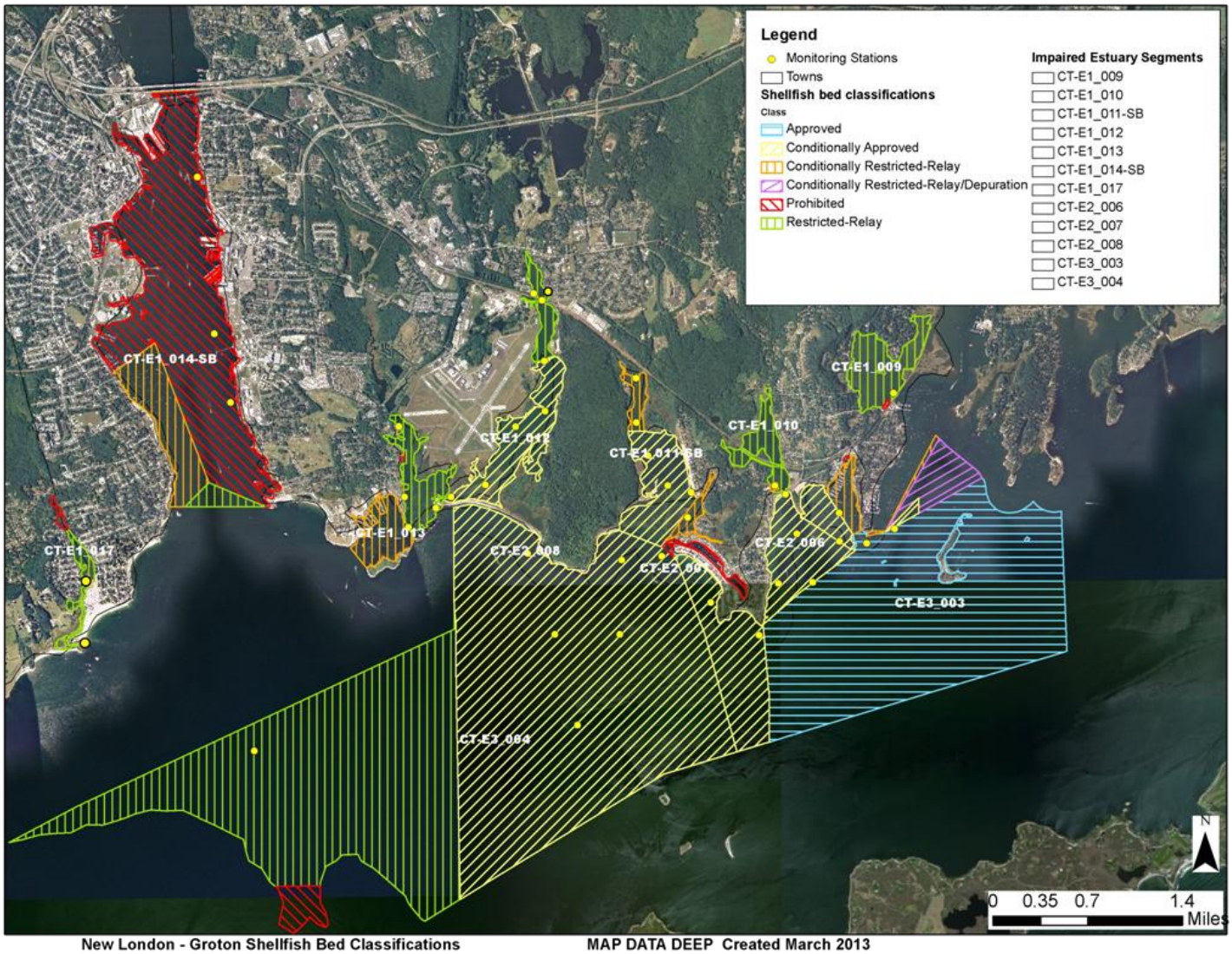
CONDITIONALLY RESTRICTED: Is a classification used to identify a growing area where a sanitary survey has found that the area meets the criteria for Restricted classification when the area is in the open status and meets the criteria for Prohibited classification when the area is in the closed status. Each Conditionally Restricted growing area must have a written management plan that designates whether harvested shellfish are relayed or depurated. Shellfish may only be harvested from Conditionally Restricted areas by special license, and may not be directly harvested for market or consumption.

PROHIBITED: Is a classification used to identify a growing area where there has been no current sanitary survey or where a sanitary survey has found that the area is adjacent to a sewage treatment plant or other point source outfall with public health significance; pollution sources may unpredictably contaminate the growing area; the growing area is contaminated with fecal waste so that the shellfish may be vectors for disease microorganisms; and/or that the concentration of biotoxin is sufficient to cause a

public health risk. Shellfish may not be harvested from Prohibited areas except for seed oystering or depletion of the areas.

As discussed above and shown in Table 1, Segments 1 – 12 did not meet their designated use for shellfish harvesting for direct consumption due to bacteria. Segment 1 (CT-E1_009) is Prohibited from shellfish harvesting in one small section and Restricted-Relay for the remainder of the segment. Segment 2 (CT-E1_010) is primarily Restricted-Relay for shellfish use with one small piece of Conditionally Restricted-Relay. Segment 3 (CT-E1_011-SB) is primarily a Conditionally Approved status with the northern most reaches of the segment as Conditionally Restricted-Relay. Segment 4 (CT-E1_012) has Conditionally Approved status with some Restricted – Relay in the furthest inland areas. Segment 5 (CT-E1_013) is a mixture of classifications with Some Restricted-Relay and Conditionally Restricted-Relay areas mixed with a very small area of Prohibited Use. Segment 6 (CT-E1_014-SB) is mostly a Prohibited status with portions of Conditionally Restricted-Relay and Restricted-Relay on the southern extent. Segment 7 (CT-E1_017) is Prohibited in its furthest inland reaches with Restricted-Relay dominating the remaining use. Segment 8 (CT-E2_006) features some areas of Conditionally Restricted-Relay and Conditionally Approved status. Segment 9 (CT-E2_007) features one section of Prohibited Status on an inlet with mostly Conditionally Approved and a small portion of Conditionally Restricted-Relay for the balance of the segment. Segment 10 (CT-E2_008) consists of entirely Conditionally Approved status. Segment 11 (CT-E3_003) is primarily Approved status with small sections of Conditionally Approved and Conditionally Restricted-Relay and one piece of Conditionally Restricted-Relay/Depuration. Segment 12 (CT-E3_004) is primarily Conditionally Approved with a large piece of Restricted-Relay in the western portion of the segment and one small piece of Prohibited status in the southernmost reach of the segment.

Figure 2: GIS map featuring Shellfish Bed Classifications and Closures for the impaired segments in the New London/ Groton Estuary



New London - Groton Shellfish Bed Classifications MAP DATA DEEP Created March 2013

Shellfish Bed Lease Locations

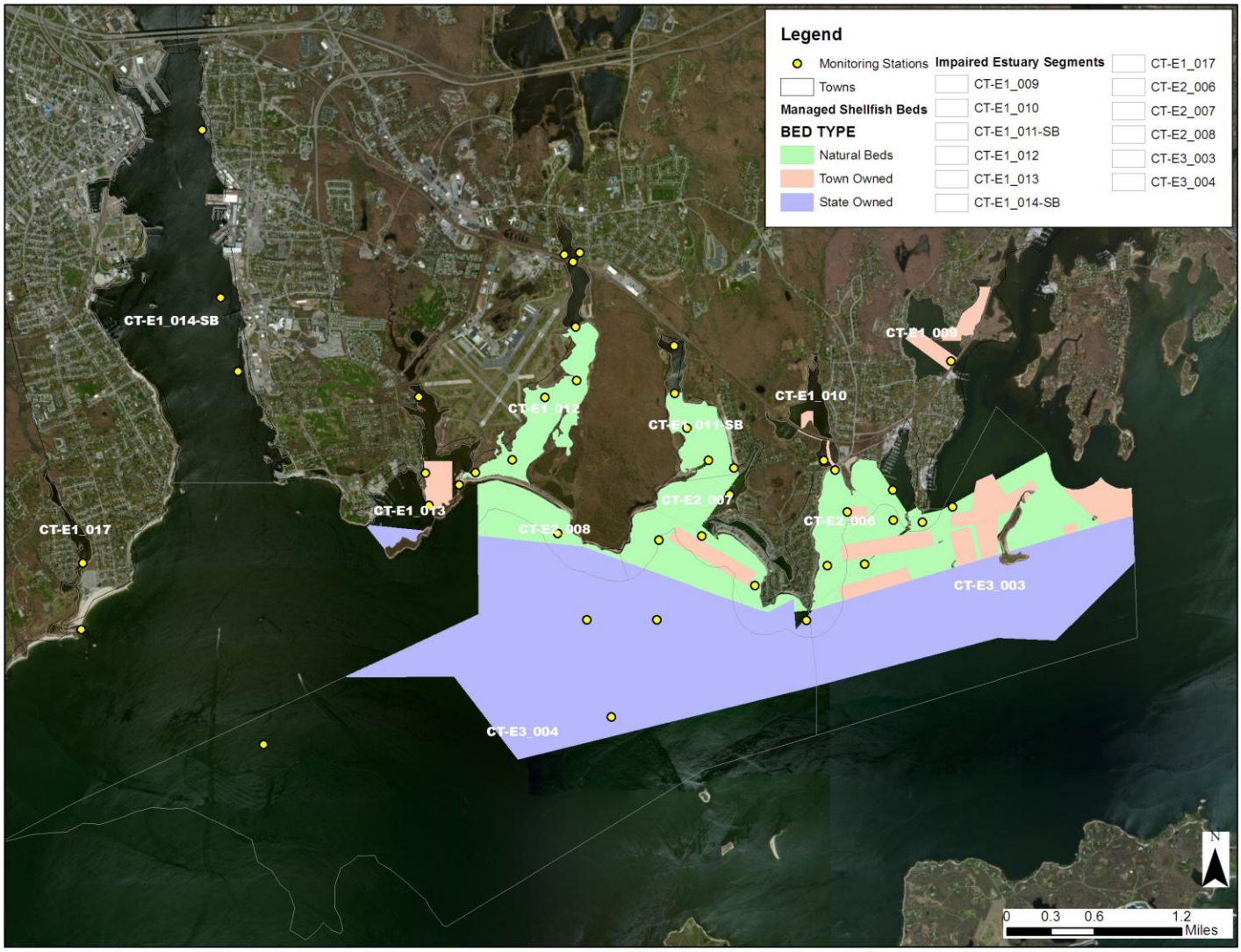
Shellfish beds in the New London and Groton Estuary are also classified by their management (Figure 3). CT DA/BA defines these areas as follows:

> **State and Town Beds**: In 1881, a line, referred to as the Commissioner's Line, was established to divide the waters of the State into northern and southern sections. All beds south of this line are State beds and most beds north of this line are town beds. Town beds are leased, owned or managed through the local shellfish commission. However, CT DA/BA still controls all the licensing and regulations for both state and town beds. For example, DA/BA issues licenses and determines when an area will be closed to shellfishing due to a change in water quality. Towns may require additional permits to work in waters under local jurisdiction. Beds north of the line in Westport, Milford, West Haven, and New Haven are exceptions to this as they are fully under State control.
>
> **State and Town Natural Beds**: Natural beds get their name from the fact that shellfish, especially oyster, naturally inhabited the area. These areas tend to be closer to shore, usually at the mouth of

a river. Natural beds have specific regulations concerning their use, including licensing and harvesting methods. They are predominately seed beds that cannot be mechanically harvested. Use of natural beds requires a Relay/Transplant License I or II and/or Seed Oyster Harvesting License from CT DA/BA. Any person assisting in the harvesting of seed oysters must have a Helper's License. These beds cannot be leased or subdivided; they are to remain open to any properly licensed harvester. State natural beds are natural beds south of the Commissioner's Line. Descriptions of these beds can be found in §3295 of the Connecticut General Statutes (CGS), revision of 1918. Not all beds listed in §3295 were mapped, and many natural beds in State waters off Greenwich are managed through leases. Town natural beds were defined by law under §2326 of the CGS of 1888. Each town had the opportunity to map areas to be considered natural beds. The documents, written descriptions, and maps were submitted to the Superior Court with jurisdiction for that town. Several towns did not avail themselves to this opportunity, and some, such as Westport, have changed the delineation of their natural beds in recent court decisions. There are also areas that may have been declared natural beds, but are now leased.

The shellfishing use is either recreational or non-existent due to freshwater flows in Segment 6 (CT-E1_014-SB) and Segment 7 (CT-E1_017). Segment 1 (CT-E1_009) and Segment 2 (CT-E1_010) have sections of Town Owned leases. Segment 3 (CT-E1_011-SB) and Segment 4 (CT-E1_012) are both exclusively natural bed leases. Segment 5 (CT-E1-013) and Segment 12 (CT-E3_004) are a mixture of State and Town owned leases. Segment 8 (CT-E2_006) mixes both Town owned and Natural leases while Segment 10 (CT-E2_008) features a combination of State and Town owned leases. Segment 11 (CT-E3_003), Segment 9 (CT-E2_007) have a combination of all three types of shellfish bed leases (Figure 3).

Figure 3: GIS map featuring Shellfish Bed Lease Locations for the impaired segments in the New London and Groton Estuary



New London - Groton Bed Lease Locations MAP DATA DEEP Created March 2013

WHY IS A TMDL NEEDED?

For saltwater segments, the indicator bacteria, fecal coliform, is used in the CT Water Quality Standards (WQS) to assess shellfish uses for Class SA and SB waters (CTDEEP, 2011). Enterococcus is the indicator bacteria used to assess recreational uses for Class SA and SB waters. All data are from CT DEEP, USGS, Bureau of Aquaculture, or volunteer monitoring efforts at stations located on the impaired segments.

Segments 3 and 6 are Class SB saltwater waterbodies, the remaining 10 segments in the estuary are Class SA waterbodies. The applicable designated uses include shellfish harvesting for direct human consumption, commercial shellfishing, recreation, habitat for marine fish and other aquatic life and wildlife, industrial water supply, and navigation. Water quality analyses were conducted using data from one sampling location on Segments 1 (CT-E1_009), 2 (CT-E1_010) and 10 (CT-E2_008). Analysis for Segment 7 (CT-E1_017) and Segment 11 (CT-E3_003) utilized data from two sampling locations. Segment 6 (CT-E1_014-SB) has three monitoring stations sampled for this TMDL. All other segments: Segment 3 (CT-E1_011-SB), Segment 5 (CT-E1_013), Segment 4 (CT-E2_001), Segment 8 (CT-E2_006), Segment 9 (CT-E2_007), and Segment 12 (CT_E3_004) have four or more sampling stations

that were used in the analysis for this TMDL document. The CT water quality criteria for fecal coliform, along with bacteria sampling results from 2000 – 2011, are presented in Tables 11 – 23. To aid in identifying possible bacteria sources, the geometric mean was also calculated for wet-weather and dry-weather sampling days for all stations in each segment, where possible (Table 13).

Segment 1 (CT-E1_009): Water quality analysis was conducted using data from one sampling location on Segment 1. The water quality criteria for fecal coliform are presented in Table 11, along with bacteria sampling results from 2000 – 2011 in Table 12. This segment of the estuary is impaired due to elevated bacteria concentrations, affecting the designated use of direct consumption shellfishing.

As shown in Table 12, 90% less than values exceeded the WQS for fecal coliform regularly at station 059-27.0 in Segment 1(CT-E1_009) once within the analyzed dataset. Geometric mean values did not exceed the WQS for fecal coliform within the analyzed dataset. Only 2004 data showed an exceedance of the 90% of samples criteria. Geometric means for data collected during the entire sampling period were also calculated for each station using wet and dry-weather conditions, resulting in no exceedances of geometric mean WQS for fecal coliform during wet or dry weather conditions at Station 059-27.0.

Segment 2 (CT-E1_010): As shown in Table 13, geometric mean values exceeded the WQS for fecal coliform twice at Station 059-17.0. Recorded 90% less than values exceeded the WQS for fecal coliform four times in the segment during the sampling period, however many years only had one data point. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions, with wet-weather fecal coliform results narrowly exceeding WQS.

Segment 3 (CT-E1_011-SB): As shown in Table 14, 90% less than values exceeded the WQS for fecal coliform did not exceed criteria during the sampling period. Geometric mean values also did not exceed criteria during the sampling period. There is a Sewage Treatment Plant on the segment and this is the likely source of closure status due to administrative reasons. The shellfishing classification for the segment is conditional Restricted-Relay, so direct consumption is not permitted. There are some data points that would cause exceedances in an SA waterbody, but this segment is in the SB class. Geometric means of data collected during the sampling period were calculated for each station using wet and dry-weather conditions, and all weather conditions. None of the resulting geomeans exceeded any water quality criteria for the segment.

Segment 4 (CT-E1_012): As shown in Table 15, 90% less than values exceeded the WQS for fecal coliform at every sampling station on multiple occasions during the sampling period. Geometric mean values also exceeded the WQS for fecal coliform for at least once at each station during the sampling period. Station 059-08.6 experienced the largest exceedance of the geomean criteria (426.1) and exhibited a 90% reduction to meet the 90% of samples criteria. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions, resulting in several exceedances for all conditions at stations 059-07.0, 059-08.1, and 059-08.6. Each dataset utilized at least 9 data points for the geomean calculations.

Segment 5 (CT-E1_013): As shown in Table 16, 90% less than values exceeded the WQS for fecal coliform at least once during the sampling period at each of the four stations utilized to monitor the segment. Geometric mean values also exceeded the WQS for fecal coliform for each station within the monitoring segment at least once during the sampling period. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions, three of the four stations recorded exceedances for the sampling period and no station resulted in exceedances during dry weather sampling events.

Segment 6 (CT-E1_014-SB): As shown in Table 17, 90% less than values exceeded the WQS for fecal coliform at none of the sampling stations during the sampling period. The data would have caused exceedances for class SA segment, but this segment is classified as SB, with higher criteria. Geometric mean values exceeded WQS at 095-2.1. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions, again due to the higher SB criteria, there were no results that exceeded WQS for fecal coliform.

Segment 7 (CT-E1_017): As shown in Table 18, 90% less than values exceeded the WQS for fecal coliform at both stations that were monitored during the sampling period. Geometric mean values exceeded the WQS for fecal coliform at station 152-14.5 on multiple occasions and only once at station 152-14.4 during the sampling period. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions. This analysis resulted in exceedances of criteria for each delineated condition at both stations.

Segment 8 (CT-E2_006): As shown in Table 19, 90% less than values exceeded the WQS for fecal coliform at four of the five stations monitored during the sampling period. The largest calculated reduction required for 40% at station 059-16.0. Geometric mean values exceeded the WQS for none f the stations monitored during the sampling season. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions. This analysis resulted in exceedances of criteria at none of the monitored stations.

Segment 9 (CT-E2-007): As shown in Table 20, 90% less than sample values at four of the five sampling stations monitored during the sampling period. These exceedances were all relatively minor, primarily due to the fairly robust sample sizes for each year where exceedances were recorded. The largest was only 15% at station 059-13.0. There were no recorded geomean exceedances throughout the segment during the sampling period. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions. This analysis resulted in exceedances of criteria at none of the monitored stations.

Segment 10 (CT-E2-008): As shown in Table 21, 90% less than sample values exceeded the WQS for fecal coliform twice during the sampling period. The data sets were relatively robust for each sampling year and exceedances were minor. There were no recorded geomean exceedances throughout the segment during the sampling period. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions. This analysis resulted in exceedances of criteria at none of the monitored stations.

Segment 11 (CT-E3_003):As shown in Table 22, 90% less than sample values exceeded the CT WQS for fecal coliform at two of the three sampling stations during the monitoring period. There was only one year that featured an exceedance at each station. Both of these exceedances were relatively minor. There were no recorded geomean exceedances throughout the segment during the sampling period. Geometric means for data collected during the sampling period were also calculated for each station using wet and dry-weather conditions. This analysis resulted in exceedances of criteria at none of the monitored stations.

Segment 12 (CT-E3_004):As shown in Table 23, 90% less than sample values exceeded the CT WQS at all four of the sampling stations during the monitoring period used in this analysis. The largest exceedance resulted in a 90% reduction goal at station 059-01.0. There were geomean exceedances at station 059-10.3 and 059-01.0. The largest geomean resulted in an 89% reduction goal to meet the CT WQS of 14 colonies/100ml. Geometric means for data collected during the sampling period were also

calculated for each station using wet and dry-weather conditions. This analysis resulted in exceedances of criteria at none of the monitored stations.

Due to the elevated bacteria measurements presented in Tables 11-23, these twelve impaired segments did not meet bacteria criteria in CT's WQS, were identified as impaired, and were placed on the CT List of Waterbodies Not Meeting Water Quality Standards, also known as the CT 303(d) Impaired Waters List. The Clean Water Act requires that all 303(d) listed waters undergo a TMDL assessment that describes the impairments and identifies the measures needed to restore water quality. The goal is for all waterbodies to comply with State WQS.

Table 2: Sampling station location description for the impaired segments in the New London and Groton Estuary

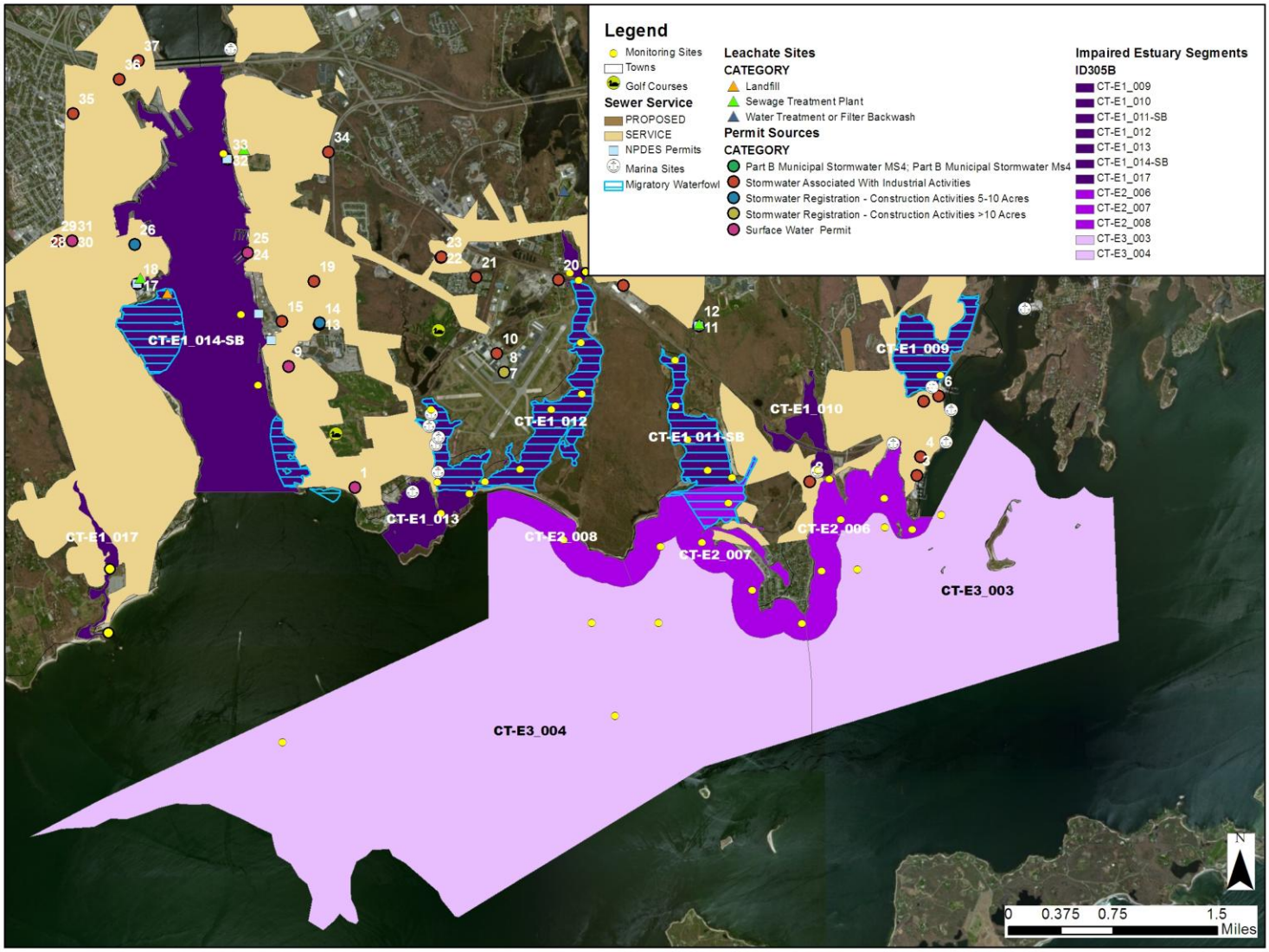
Waterbody ID	Station	Station Description	Municipality	Latitude	Longitude
Segment 1: CT-E1-009	059-27.0	Bebee Cove	Groton	41 19.861′	71 59.161′
Segment 2: CT-E1-010	059-17.0	Palmer Cove	Groton	41 19.275′	72 0.177′
Segment 3: CT-E1_011-SB	059-11.4	CA "C" Mumford Cove	Groton	41 19.281′	72 1.091′
	059-11.5	CA "C" Mumford Cove	Groton	41 19.474′	72 1.257′
	059-11.7	CA "C" Mumford Cove	Groton	41 19.684′	72 1.352′
	059-11.8	Mumford Cove	Groton	41 19.968′	72 1.353′
	059-12.5	CA "C" Mumford Cove	Groton	41 19.236′	72 0.890′
Segment 4: CT-E1_012	059-03.0	CA"P" Poquonock R	Groton	41 19.220′	72 2.936′
	059-04.0	CA"P" Poquonock R	Groton	41 19.296′	72 2.645′
	059-05.0	CA"P" Poquonock R	Groton	41 19.666	72 2.381′
	059-05.1		Groton	41 19.763′	72 2.129′
	059-06.0	CA"P" Poquonock R	Groton	41 20.084′	72 2.134′
	059-07.0		Groton	41 20.472′	72 2.148′
	059-08.1		Groton	41 20.516′	72 2.219′
	059-08.6	Storm Drain Poquonock R	Groton	41 20.526′	72 2.095′
Segment 5: CT-E1_013	059-02.1		Groton		
	059-02.2	Baker Cove Sawyers Dock	Groton	41 19.221′	72 3.333′
	059-02.3	Baker Cove Elks Club	Groton	41 19.673′	72 3.378′
	059-02.5	Jupiter Point	Groton	41 19.028′	72 3.304′
Segment 6: CT-E1_014-SB	059-01.2	Thames River WPCF outfall	Groton	41 20.275′	72 4.943′
	059-01.5	Thames River WPCF outfall	Groton	41 21.276′	72 5.079′
	059-02.1		Groton		
	095-01.2	NL Sewer Outfall	New London	41 20.552′	72 5.350′
	095-02.1	Near Junk Island	New London	41 20.125′	72 5.596′
Segment 7: CT-E1_017	152-14.4	Alewife Cove	Waterford	41 18.304	72 06.066′
	152-14.5	Alewife Cove	Waterford	41 18.700	72 06.052′
Segment 8: CT-E2_006	059-14.0	CA "E" Outer Palmer Cove	Groton	41 18.649′	72 0.156′
	059-15.1	CA "E" Outer Palmer Cove	Groton	41 18.967′	71 59.994′
	059-16.0	CA "E" Outer Palmer Cove	Groton	41 19.219′	72 0.087′

Waterbody ID	Station	Station Description	Municipality	Latitude	Longitude
	059-20.0	CA "F" Spicer's mooring	Groton	41 19.096′	71 59.632′
	059-22.0	Morgan Point	Groton	41 18.902′	71 59.401′
Segment 9: CT-E2_007	059-11.0	CA "A" Outside Mumford Cove	Groton	41 18.808′	72 1.489′
	059-11.2	CA "C" Mumford Cove	Groton	41 19.076′	72 0.921′
	059-12.0	CA "D"	Groton	41 18.532′	72 0.731′
	059-12.1	CA "A" Groton Long Point	Groton	41 18.831′	72 1.146′
	059-13.0	CA "D" Groton Long Point	Groton	41 18.321′	72 0.324′
Segment 10: CT-E2_008	059-10.0	Bluff Point	Groton	41 18.854′	72 2.289′
Segment 11: CT-E3_003	059-01.0	Mouth of Thames River	Groton	41 17.608′	72 4.631′
	059-10.1	CA "A"	Groton	41 18.337′	72 2.062′
	059-10.2	CA "A" Horseshoe Reef	Groton	41 18.333′	72 1.510′
	059-10.3	CA "A" Seaflower Reef	Groton	41 17.756′	72 1.877′
Segment 12: CT-E3_004	059-14.1		Groton	41 18.655′	71 59.861′
	059-21.0	CA "E" Esker Point Beach	Groton	41 18.915′	71 59.631′
	059-23.0	Morgan Point	Groton	41 18.992′	71 59.161′

POTENTIAL BACTERIA SOURCES

Potential sources of indicator bacteria in a watershed include point and non-point sources, such as stormwater runoff, agriculture, sanitary sewer overflows (collection system failures), illicit discharges, and inappropriate discharges to the waterbody. Potential sources that have been tentatively identified in the New London and Groton Estuary are presented in Table 3 and Figure 4. However, the list of potential sources is general in nature and should not be considered comprehensive. There may be other sources not listed here that contribute to the observed water quality impairment in the study segments. Further monitoring and investigation will confirm listed sources and discover additional ones. Some segments in this watershed are currently listed as unassessed by CT DEEP procedures. This does not mean that there are no data or impairments in existence in a particular segment. There are data from permitted sources for some segments, and CT DEEP recommends that any elevated concentrations found from those permitted sources be addressed through voluntary reduction measures. More detailed evaluation of potential sources is expected to become available as activities are conducted to implement these TMDLs.

Figure 4: Potential bacteria sources to the impaired segments in the New London and Groton Estuary



New London - Groton Potential Bacteria Sources MAP DATA DEEP Created March 2013

The potential sources map for the impaired basin was developed after thorough analysis of available data sets. If information is not displayed in the map, then no sources were discovered during the analysis. The following is the list of potential sources that were evaluated: problems with migratory waterfowl, golf course locations, reservoirs, proposed and existing sewer service, cattle farms, poultry farms, permitted sources of bacteria loading (surface water discharge, MS4 permit, industrial stormwater, commercial stormwater, groundwater permits, and construction related stormwater), and leachate and discharge sources (agricultural waste, CSOs, failing septic systems, landfills, large septic tank leach fields, septage lagoons, sewage treatment plants, and water treatment or filter backwash).

Table 3: Potential bacteria sources to the impaired segments in the New London and Groton Estuary

Segment #	Impaired Segment	Permit Source	Illicit Discharge	CSO/SSO Issue	Failing Septic System	Marinas	Stormwater Runoff	Nuisance Wildlife/Pets	Other
1	CT-E1_009 LIS EB Inner – Beebe Cove (Mystic Harbor)		x		x	x	x	x	
2	CT-E1_010 LIS EB Inner Palmer Cove (Inner)	x	x		x	x	x	x	
3	CT-E1_011-SB LIS EB Inner Mumford Cove (Inner)		x		x		x	x	
4	CT-E1_012 LIS EB Inner Poquonnuck River (Mouth)	x	x		x	x	x	x	x
5	CT-E1_013 LIS EB Inner – Baker Cove		x		x		x	x	x
6	CT-E1_014-SB LIS EB Inner Thames River (Mouth)		x		x		x	x	x
7	CT-E1_017 LIS EB Inner Alewife Cove	x	x		x	x	x	x	
8	CT-E2_006 LIS EB Shore West Cove (Groton Long Pt)	x	x		x	x	x	x	
9	CT-E2_007 LIS EB Shore Outer Mumford Cove		x		x		x	x	
10	CT-E2_008 LIS EB Shore-Bluff Point		x		x			x	
11	CT-E3_003 LIS EB Midshore Mystic River		x		x		x		
12	CT-E3_004 LIS EB Midshore Thames		x		x		x		

Point Sources

Permitted sources within the watershed that could potentially contribute to the bacteria loading are identified in Table 4. This table includes permit types that may or may not be present in the impaired watershed. A list of active permits in municipalities that drain to the Stonington estuary is included in Table 5. Additional investigation and monitoring could reveal the presence of other discharges in the estuary.

Table 4: General categories list of permitted discharges

Permit Code	Permit Description Type	Number in Estuary
CT	Surface Water Discharges	7
GPL	Discharge of Swimming Pool Wastewater	0
GSC	Stormwater Discharge Associated with Commercial Activity	0
GSI	Stormwater Associated with Industrial Activity	24
GSM	Part B Municipal Stormwater MS4	2
GSN	Stormwater Registration – Construction	4
LF	Groundwater Permit (Landfill)	0
UI	Underground Injection	0

Permitted Sources

As shown in Table 5, there are multiple permitted discharges in New London and Groton that could be contributing bacteria to the impaired LIS segments. These facilities include the Town of Groton Water Pollution Control Facility (WPCF) and City of Groton highway garage and multiple marinas throughout the coastline. There are also several industrial sites and a few schools with discharge permits. To assist with protecting the resources of LIS, there are three marine pump-out facilities in Groton and three located in New London. As shown in Table 6, there are water quality data available for some of the permitted discharges within the estuary. Although this data cannot be compared to the WQS as there is no single sample shellfish standard for fecal coliform, several samples were high, with a >24,000cols/100mls recorded at both Electric Boat Corporation and the City of Groton highway department.

Since the MS4 permits are not targeted to a specific location, but the geographic area of the regulated municipality, there is no one accurate location on the map to display the location of these permits. One dot will be displayed at the geographic center of the municipality as a reference point. Sometimes this location falls outside of the targeted watershed and therefore the MS4 permit will not be displayed in the Potential Sources Map. Using the municipal border as a guideline will show which areas of an affected watershed are covered by an MS4 permit.

Table 5: Permitted facilities in or near Groton and New London that may be affecting the Estuary

City	CLIENT NAME	Permit ID	Permit Type	SITE NAME	ADDRESS	Map #
Groton	UNIVERSITY OF CONNECTICUT (Permittee)	CT0028631	Surface Water Permit	UNIVERSITY OF CONNECTICUT AVERY POINT CAMPUS	1080 SHENNECOSSETT RD	1
Groton	MARINA ON PALMER COVE LLC (Permittee)	GSI001137	Stormwater Associated With Industrial Activities	MARINA ON PALMER COVE LLC	1023 Groton Long Point Rd	2

City	CLIENT NAME	Permit ID	Permit Type	SITE NAME	ADDRESS	Map #
Noank	Maxwell Boatyard (Permittee)	GSI002231	Stormwater Associated With Industrial Activities	MAXWELL BOATYARD	135 PEARL STREET	3
Groton	Noank Shipyard, Inc. (Permittee)	GSI000986	Stormwater Associated With Industrial Activities	Noank Shipyard	145 Pearl St	4
Groton	Noank Marine Service (Permittee)	GSI002229	Stormwater Associated With Industrial Activities	NOANK MARINE SERVICE	55 SPICER AVENUE	5
Groton	NOANK VILLAGE BOATYARD, INC. (Permittee)	GSI001164	Stormwater Associated With Industrial Activities	NOANK VILLAGE BOATYARD, INC.	38 BAYSIDE AVE	6
Groton	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION (Permittee)	GSI000937	Stormwater Associated With Industrial Activities	GROTON/NEW LONDON AIRPORT	155 TOWER AVE	7
Groton	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION (Permittee)	GSN002244	Stormwater Registration - Construction Activities >10 Acres	GROTON/NEW LONDON AIRPORT	155 TOWER AVE	8
Groton	PFIZER INC. (Permittee)	CT0000957	Surface Water Permit	Pfizer, Inc	445 EASTERN POINT RD	9
Groton	CONNECTICUT ARMY NATIONAL GUARD (Permittee)	GSI000290	Stormwater Associated With Industrial Activities	STATE MILITARY DEPARTMENT	139 TOWER AVE	10
Groton	TOWN OF GROTON (Permittee)	GSI001674	Stormwater Associated With Industrial Activities	GROTON (TOWN) WPCF	170 GARY COURT	11
Groton	TOWN OF GROTON (Permittee)	CT0100242	Surface Water Permit	GROTON (TOWN) WPCF	170 GARY COURT	12
Groton	LEARN (Permittee)	GSN002079	Stormwater Registration - Construction Activities 5-10 Acres	MARINE SCIENCE MAGNET HIGH SCHOOL	130 SHENNECOSSETT ROAD	13
Groton	J.R. VINAGRO CORPORATION (Permittee)	GSN002107	Stormwater Registration - Construction Activities 5-10 Acres	EASTERN POINT SCHOOL	130 SHENNECOSSETT RD	14

City	CLIENT NAME	Permit ID	Permit Type	SITE NAME	ADDRESS	Map #
Groton	HESS CORPORATION (Permittee)	GSI001243	Stormwater Associated With Industrial Activities	AMERADA HESS CORPORATION - GROTON	443 EASTERN POINT RD	15
Groton	NATIONAL RAILROAD PASSENGER CORPORATION (Permittee)	GSI001455	Stormwater Associated With Industrial Activities	MIDWAY MAINTENANCE OF WAY FAC	101 INDUSTRIAL DRIVE	16
New London	CITY OF NEW LONDON (Permittee)	GSI002007	Stormwater Associated With Industrial Activities	NEW LONDON WPCF	100 TRUMBULL ST	17
New London	CITY OF NEW LONDON (Permittee)	CT0100382	Surface Water Permit	NEW LONDON WPCF	100 TRUMBULL ST	18
Groton	TOWN OF GROTON (Permittee)	GSI000609	Stormwater Associated With Industrial Activities	FLANDERS RD LANDFILL & TRANSFER STATION	685 FLANDERS ROAD	19
Groton	A. P. MARQUARDT, INC. (Permittee)	GSI000604	Stormwater Associated With Industrial Activities	A.P. MARQUARDT, INC.	114 SOUTH RD	20
Groton	TILCON CONNECTICUT INC. (Permittee)	GSI001330	Stormwater Associated With Industrial Activities	GROTON PLANT TILCON	185 SOUTH RD	21
Groton	DONCASTERS INC. (Permittee)	GSI001713	Stormwater Associated With Industrial Activities	DONCASTERS INC.	835 POQUONOCK RD	22
Groton	WYMAN-GORDON INVESTMENT CASTINGS, INC. (Permittee)	GSI000387	Stormwater Associated With Industrial Activities	PCC Structurals	839 POQUONOCK RD	23
Groton	ELECTRIC BOAT CORPORATION (Permittee)	GSI000669	Stormwater Associated With Industrial Activities	ELECTRIC BOAT CORPORATION	75 EASTERN POINT RD	24
Groton	ELECTRIC BOAT CORPORATION (Permittee)	CT0003824	Surface Water Permit	ELECTRIC BOAT CORPORATION	75 EASTERN POINT RD	25
New London	CJ FORT TRUMBULL OFFICE LLC (Permittee)	GSN001730	Stormwater Registration - Construction Activities 5-10 Acres	ONE CHELSEA ST. AT FORT TRUMBULL	1 CHELSEA ST	26

City	CLIENT NAME	Permit ID	Permit Type	SITE NAME	ADDRESS	Map #
New London	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION (Permittee)	GSI000044	Stormwater Associated With Industrial Activities	NEW LONDON SALT STORAGE	STATE PIER ROAD	27
New London	CITY OF NEW LONDON (Applicant)	200902166	Part B Municipal Stormwater MS4	NEW LONDON, TOWN OF	MS4 PERMIT	28
New London	CITY OF NEW LONDON (Permittee)	GSM000111	Part B Municipal Stormwater Ms4	NEW LONDON, TOWN OF	MS4 PERMIT	29
New London	THE THAMES SHIPYARD & REPAIR COMPANY (Permittee)	GSI001418	Stormwater Associated With Industrial Activities	50 Farnsworth Street	50 Farnsworth Street	30
New London	THE THAMES SHIPYARD & REPAIR COMPANY (Permittee)	CT0030333	Surface Water Permit	50 Farnsworth Street	50 Farnsworth Street	31
Groton	CITY OF GROTON (Permittee)	GSI001673	Stormwater Associated With Industrial Activities	CITY OF GROTON SEWAGE TREATMNT	311 THAMES ST	32
Groton	CITY OF GROTON (Permittee)	CT0101184	Surface Water Permit	CITY OF GROTON SEWAGE TREATMNT	311 THAMES ST	33
Groton	CITY OF GROTON (Permittee)	GSI001247	Stormwater Associated With Industrial Activities	CITY OF GROTON HIGHWAY GARAGE	295 MERIDIAN ST	34
New London	FARIA LTD. LLC (Permittee)	GSI002328	Stormwater Associated With Industrial Activities	SHEFFIELD PHARMACEUTICALS	170 BROAD ST	35
New London	LOGISTEC USA INC (Permittee)	GSI001421	Stormwater Associated With Industrial Activities	LOGISTEC USA, INC.	200 STATE PIER RD	36
New London	CITY OF NEW LONDON (Permittee)	GSI002259	Stormwater Associated With Industrial Activities	TRANSFER STATION	63 LEWIS STREET	37

Table 6: Industrial permits affecting the Stonington Estuary and available fecal coliform data (colonies/100mL). These results alone cannot be compared to the water quality standard as there is no single sample shellfish standard for fecal coliform.

Name	Receiving Water	Town	Permit #	Sample Location	Sample Date	Result
Pequot River Shipworks	Lower Thames	New London	GSI000139		07/23/02	>600
Pequot River Shipworks	Lower Thames	New London	GSI000139		09/04/01	310
Niantic Bay Marina	Niantic River	Waterford	GSI000161	1st street CB outlet	09/21/01	>24000
CT Army National Guard		Groton	GSI000290	AVCRAD-paint bldg	10/16/02	140
CT Army National Guard		Groton	GSI000290	AVCRAD-paint bldg	09/14/01	50
Pfizer	Thames River	Groton	GSI000296	Outfall N	06/18/03	72
Pfizer	Thames River	Groton	GSI000296	Outfall O	06/18/03	140
Pfizer	Thames River	Groton	GSI000296	Outfall A	06/18/03	350
Pfizer	Thames River	Groton	GSI000296	Outfall M	06/18/03	350
Pfizer	Thames River	Groton	GSI000296	Outfall G	06/18/03	360
Pfizer	Thames River	Groton	GSI000296	Outfall 001	06/18/03	360
Pfizer	Thames River	Groton	GSI000296	Outfall 002	06/18/03	4,100
Pfizer	Thames River	Groton	GSI000296	Outfall 003	06/18/03	5,300
Pfizer Inc	Thames River	Groton	GSI000296	N	06/05/02	18
Pfizer Inc	Thames River	Groton	GSI000296	002	06/05/02	600
Pfizer Inc	Thames River	Groton	GSI000296	M	06/05/02	650
Pfizer Inc	Thames River	Groton	GSI000296	O	06/05/02	900
Pfizer Inc	Thames River	Groton	GSI000296	003	06/05/02	1,800
Pfizer Inc	Thames River	Groton	GSI000296	A	06/05/02	3,500
Pfizer Inc	Thames River	Groton	GSI000296	G	06/05/02	4,000
Pfizer Inc	Thames River	Groton	GSI000296	001	06/05/02	5,500
Pfizer Inc	Thames River	Groton	GSI000296	Outfall N	07/26/01	100
Pfizer Inc	Thames River	Groton	GSI000296	Outfall O	07/26/01	200
Pfizer Inc	Thames River	Groton	GSI000296	Outfall 003	07/26/01	400
Pfizer Inc	Thames River	Groton	GSI000296	Outfall 001	07/26/01	700
Pfizer Inc	Thames River	Groton	GSI000296	Outfall M	07/26/01	800
Pfizer Inc	Thames River	Groton	GSI000296	Outfall 002	07/26/01	1,900
Pfizer Inc	Thames River	Groton	GSI000296	Outfall A	07/26/01	5,300
Pfizer Inc	Thames River	Groton	GSI000296	Outfall G	07/26/01	7,400
Wyman-Gordon	Birch Plain Creek	Groton	GSI000387	location 1 manhole	09/25/01	0
Wyman-Gordon Investment	Birch Plain Creek	Groton	GSI000387	WG-338D-location 1-manhole	09/26/02	7
Town of Groton	Eccleston Brook	Groton	GSI000608	Outfall 001	09/14/01	>10000
Town of Groton	Eccleston Brook	Groton	GSI000608	Outfall 002	09/14/01	>10000

Name	Receiving Water	Town	Permit #	Sample Location	Sample Date	Result
Town of Groton	Eccleston Brook	Groton	GSI000608	Outfall 003	09/14/01	>10000
Electric Boat Corp	Thames River	Groton	GSI000669	SD-29	02/27/02	10
Electric Boat Corp	Thames River	Groton	GSI000669	SD-32	02/27/02	20
Electric Boat Corp	Thames River	Groton	GSI000669	SD-25	02/27/02	1,300
Electric Boat Corp	Thames River	Groton	GSI000669	SD-32	03/21/03	1
Electric Boat Corp	Thames River	Groton	GSI000669	SD-29	03/21/03	650
Electric Boat Corp	Thames River	Groton	GSI000669	SD-4	07/23/03	1,171
Electric Boat Corp	Thames River	Groton	GSI000669	SD-25	03/21/03	111,000
Electric Boat Corp	Thames River	Groton	GSI000669	SD-14	07/23/03	>6000
Electric Boat Corp	Thames River	Groton	GSI000669	SD-19	07/23/03	>6000
Electric Boat Corp	Thames River	Groton	GSI000669	SD-07	03/21/01	10
Electric Boat Corp	Thames River	Groton	GSI000669	SD-32	03/21/01	10
Electric Boat Corp	Thames River	Groton	GSI000669	SD-29	03/21/01	200
Electric Boat Corp	Thames River	Groton	GSI000669	SD-4	07/11/01	660
Electric Boat Corp	Thames River	Groton	GSI000669	SD-10	03/21/01	10,000
Electric Boat Corp	Thames River	Groton	GSI000669	SD-14	07/11/01	>10000
Electric Boat Corp	Thames River	Groton	GSI000669	SD-25	06/11/01	>6000
Electric Boat Corp	Thames River	Groton	GSI000669	SD-19	06/11/01	>6000
Electric Boat Corp.	Thames River	Groton	GSI000669	SD-4	07/23/02	273
Electric Boat Corp.	Thames River	Groton	GSI000669	SD-14	07/23/02	>6000
Electric Boat Corp.	Thames River	Groton	GSI000669	SD-19	07/23/02	>6000
Naval Submarine Base New London	Thames River	Groton	GSI000679	former cnst laydown	05/02/02	10
Naval Submarine Base New London	Thames River	Groton	GSI000679	yacht club	05/02/02	10
Naval Submarine Base New London	Thames River	Groton	GSI000679	B-460 transportation	05/02/02	40
Naval Submarine Base New London	Thames River	Groton	GSI000679	Building 89	05/02/02	70
Naval Submarine Base New London	Thames River	Groton	GSI000679	Building 85	05/02/02	130

Name	Receiving Water	Town	Permit #	Sample Location	Sample Date	Result
Naval Submarine Base New London	Thames River	Groton	GSI000679	ballfields	05/02/02	140
Naval Submarine Base New London	Thames River	Groton	GSI000679	DRMO	05/02/02	160
United States Naval Submarine Base	Thames River	Groton	GSI000679	ballfield	03/21/01	10
United States Naval Submarine Base	Thames River	Groton	GSI000679	Building 460	03/21/01	10
United States Naval Submarine Base	Thames River	Groton	GSI000679	yacht club	03/21/01	10
United States Naval Submarine Base	Thames River	Groton	GSI000679	Building 85	03/21/01	10
United States Naval Submarine Base	Thames River	Groton	GSI000679	DRMO	03/21/01	20
United States Naval Submarine Base	Thames River	Groton	GSI000679	yacht club	12/17/01	40
United States Naval Submarine Base	Thames River	Groton	GSI000679	parking lot	03/21/01	50
United States Naval Submarine Base	Thames River	Groton	GSI000679	Building 89	03/21/01	90
Laidlaw Transit	Birch Plain Creek	Groton	GSI000719	oil/h20 sep pipe	03/27/02	10
CTDOT Groton/New London Airport	Southeast Shoreline	Groton	GSI000937	DSN A	09/15/02	10
CTDOT Groton/New London Airport	Southeast Shoreline	Groton	GSI000937	DSN C	09/15/02	10
CTDOT Groton/New London Airport	Southeast Shoreline	Groton	GSI000937	DSN D	09/15/02	10
CTDOT Groton/New London Airport	Thames River	Groton	GSI000937	DSN-C	11/05/01	100
CTDOT Groton/New London Airport	Thames River	Groton	GSI000937	DSN-A	11/05/01	100
Waste Management of CT	Jordan Brook	Waterford	GSI001120	DSN-001	06/05/02	>600
Waste Management of CT		Waterford	GSI001120	DSN-001	12/20/02	410
Marina at Palmer Cove	Palmer Cove	Groton	GSI001137	launching ramp	07/26/01	23
Marina on Palmer Cove LLC	Palmer Cove	Groton	GSI001137	launching ramp	08/29/02	30

Name	Receiving Water	Town	Permit #	Sample Location	Sample Date	Result
Noank Village Boatyard	Mystic River	Groton	GSI001164	boat yard	05/13/02	100
Amerada Hess Corp.	Thames River	Groton	GSI001243	water separator	04/01/02	800
Amerada Hess Corp-Groton Terminal	Thames River	Groton	GSI001243	water separator	06/12/03	100
Amerada Hess Corp-Groton Terminal	Thames River	Groton	GSI001243	outfall 001	05/23/01	1,000
City of Groton	trib to Birch Plain Creek	Groton	GSI001247	1	09/14/01	40
City of Groton	trib to Birch Plain Creek	Groton	GSI001247	2	09/14/01	>24,000
City of Groton Highway Dept	Trib to Birch Plain Creek	Groton	GSI001247	1	08/29/02	3
City of Groton Highway Dept	Trib to Birch Plain Creek	Groton	GSI001247	2	08/29/02	3
Tilcon Connecticut	Poquonock River	Groton	GSI001330	Groton 001	08/29/02	0
Tilcon Connecticut	Poquonock River	Groton	GSI001330	Groton 001	06/18/03	6
Tilcon Connecticut	Poquonock River	Groton	GSI001330	Groton 001	09/25/01	6
Town of Waterford	2000	Waterford	GSI001409	03	05/01/03	>2000
Town of Waterford	SE shoreline 2000-30-01	Waterford	GSI001409	03	06/18/03	>200
Thames Shipyard and Repair Co		New London	GSI001418	large dry dock	09/15/02	100
Thames Shipyard and Repair Co		New London	GSI001418	area 4	09/14/01	100
Logistec USA	Thames River	New London	GSI001421	OF-10(LOG-10)	08/29/02	20
Logistec USA	Thames River	New London	GSI001421	OF-24(LOG-24)	08/29/02	30
Logistec USA	Thames River	New London	GSI001421	OF-1(LOG-1)	08/29/02	>600
Logistec USA	Thames River	New London	GSI001421	OF-10(LNL-10)	07/11/03	100
Logistec USA	Thames River	New London	GSI001421	OF-23(LNL-23)	07/11/03	200
Logistec USA	Thames River	New London	GSI001421	OF-1(LNL-1)	07/11/03	700
Logistec USA	Thames River	New London	GSI001421	outfall #24 (L-OF-24)	07/26/01	10
Logistec USA	Thames River	New London	GSI001421	outfall #24 (L-OF-1)	07/26/01	>600
Logistec USA	Thames River	New London	GSI001421	outfall #24 (L-OF-10)	07/26/01	>600
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 012	03/13/02	100
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 012A	03/13/02	100

Name	Receiving Water	Town	Permit #	Sample Location	Sample Date	Result
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 022	03/26/02	100
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 024	03/26/02	100
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 015	04/22/02	230
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 020A	06/05/02	<30
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 012A	05/21/01	10
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 012	05/21/01	70
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 020A	08/28/01	76
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 019	08/27/01	817
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 032	08/10/01	4,200
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 030	08/10/01	11,000
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 027	08/10/01	>24000
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 015	08/23/01	>24000
Dominion Nuclear CT, Inc.	Jordan Cove	Waterford	GSI001430	Millstone DSN 021	09/21/01	>24000
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 032	09/26/02	40
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 019	06/14/02	90
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 021	06/05/02	930
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 030	06/14/02	<30
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 027	06/05/02	>24000
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 022	02/04/03	10
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 012	05/01/03	10
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 012A	05/01/03	10
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 019	04/22/03	10
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 032	04/22/03	10
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 024	07/11/03	150
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 027	02/04/03	230
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 021	07/11/03	470
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 021	04/17/01	40

Name	Receiving Water	Town	Permit #	Sample Location	Sample Date	Result
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 022	04/06/01	100
Dominion Nuclear CT, Inc.	Niantic Bay	Waterford	GSI001430	Millstone DSN 024	04/06/01	100
Dean's Auto	Thames River	Waterford	GSI001444	left rear of property	01/11/02	>20000
Dean's Auto	Thames River	Waterford	GSI001444	cement platform	01/11/02	>20000
National Passenger Railroad Corp (Amtrak)	Poquonock River	Groton	GSI001455	outfall #1 (Grot-1)	08/29/02	>600
National Passenger Railroad Corp (Amtrak)	Poquonock River	Groton	GSI001455	001	09/14/01	>10000
Town of Waterford		Waterford	GSI001471	001-public works garage	11/14/00	3
Town of Waterford		Waterford	GSI001471	002-public works garage	11/14/00	3
Town of Waterford		Waterford	GSI001471	003-public works garage	11/14/00	4
Town of Waterford DPW		Waterford	GSI001471	Outfall 001	04/22/02	30
Town of Waterford DPW		Waterford	GSI001471	Outfall 002	04/22/02	30
Town of Waterford DPW		Waterford	GSI001471	Outfall 003	04/22/02	30
Pfizer Inc Pfizer Global Research & Development HQ	Thames River	New London	GSI001645	A3-003 SW New London	07/11/03	40
Pfizer Inc Pfizer Global Research & Development HQ	Thames River	New London	GSI001645	A2-002 SW New London	07/11/03	450
Pfizer Inc Pfizer Global Research & Development HQ	Thames River	New London	GSI001645	A1-001 SW New London	07/11/03	2,880
Pfizer Inc	Thames River	Groton	GSI001647	A3-003;SW King's Heights	05/31/03	340
Pfizer Inc	Thames River	Groton	GSI001647	A1-001;SW King's Heights	05/31/03	>2000
Pfizer Inc	Thames River	Groton	GSI001647	A2-002;SW King's Heights	05/31/03	>2000
Laidlaw Transit Inc	Wetlands W of facility	Waterford	GSI001888	waterford	12/16/05	18,500

Municipal Stormwater Permitted Sources

Per the EPA Phase II Stormwater rule all municipal storm sewer systems (MS4s) operators located within US Census Bureau Urbanized Areas (UAs) must be covered under MS4 permits regulated by the appropriate State agency. There is an EPA waiver process that municipalities can apply for to not

participate in the MS4 program. In Connecticut, EPA has granted such waivers to 19 municipalities. All participating municipalities within UAs in Connecticut are currently regulated under MS4 permits by CT DEEP staff in the MS4 program.

The US Census Bureau defines a UA as a densely settled area that has a census population of at least 50,000. A UA generally consists of a geographic core of block groups or blocks that exceeds the 50,000 people threshold and has a population density of at least 1,000 people per square mile. The UA will also include adjacent block groups and blocks with at least 500 people per square mile. A UA consists of all or part of one or more incorporated places and/or census designated places, and may include additional territory outside of any place. (67 FR 11663)

For the 2000 Census a new geographic entity was created to supplement the UA blocks of land. This created a block known as an Urban Cluster (UC) and is slightly different than the UA. The definition of a UC is a densely settled area that has a census population of 2,500 to 49,999. A UC generally consists of a geographic core of block groups or blocks that have a population density of at least 1,000 people per square mile, and adjacent block groups and blocks with at least 500 people per square mile. A UC consists of all or part of one or more incorporated places and/or census designated places; such a place(s) together with adjacent territory; or territory outside of any place. The major difference is the total population cap of 49,999 people for a UC compared to >50,000 people for a UA. (67 FR 11663)

While it is possible that CT DEEP will be expanding the reach of the MS4 program to include UC municipalities in the near future they are not currently under the permit. However, the GIS layers used to create the MS4 maps in this Statewide TMDL did include both UA and UC blocks. This factor creates some municipalities that appear to be within an MS4 program that are not currently regulated through an MS4 permit. This oversight can explain a municipality that is at least partially shaded grey in the maps and there are no active MS4 reporting materials or information included in the appropriate appendix. While these areas are not technically in the MS4 permit program, they are still considered urban by the cluster definition above and are likely to contribute similar stormwater discharges to affected waterbodies covered in this TMDL.

As previously noted, EPA can grant a waiver to a municipality to preclude their inclusion in the MS4 permit program. One reason a waiver could be granted is a municipality with a total population less than 1000 people living in the UA portion of the municipality. There are 19 municipalities in Connecticut that have received waivers, this list is: Andover, Bozrah, Canterbury, Coventry, East Hampton, Franklin, Haddam, Killingworth, Litchfield, Lyme, New Hartford, Plainfield, Preston, Salem, Sherman, Sprague, Stafford, Washington, and Woodstock. There will be no MS4 reporting documents from these towns even if they are displayed in an MS4 area in the maps of this document.

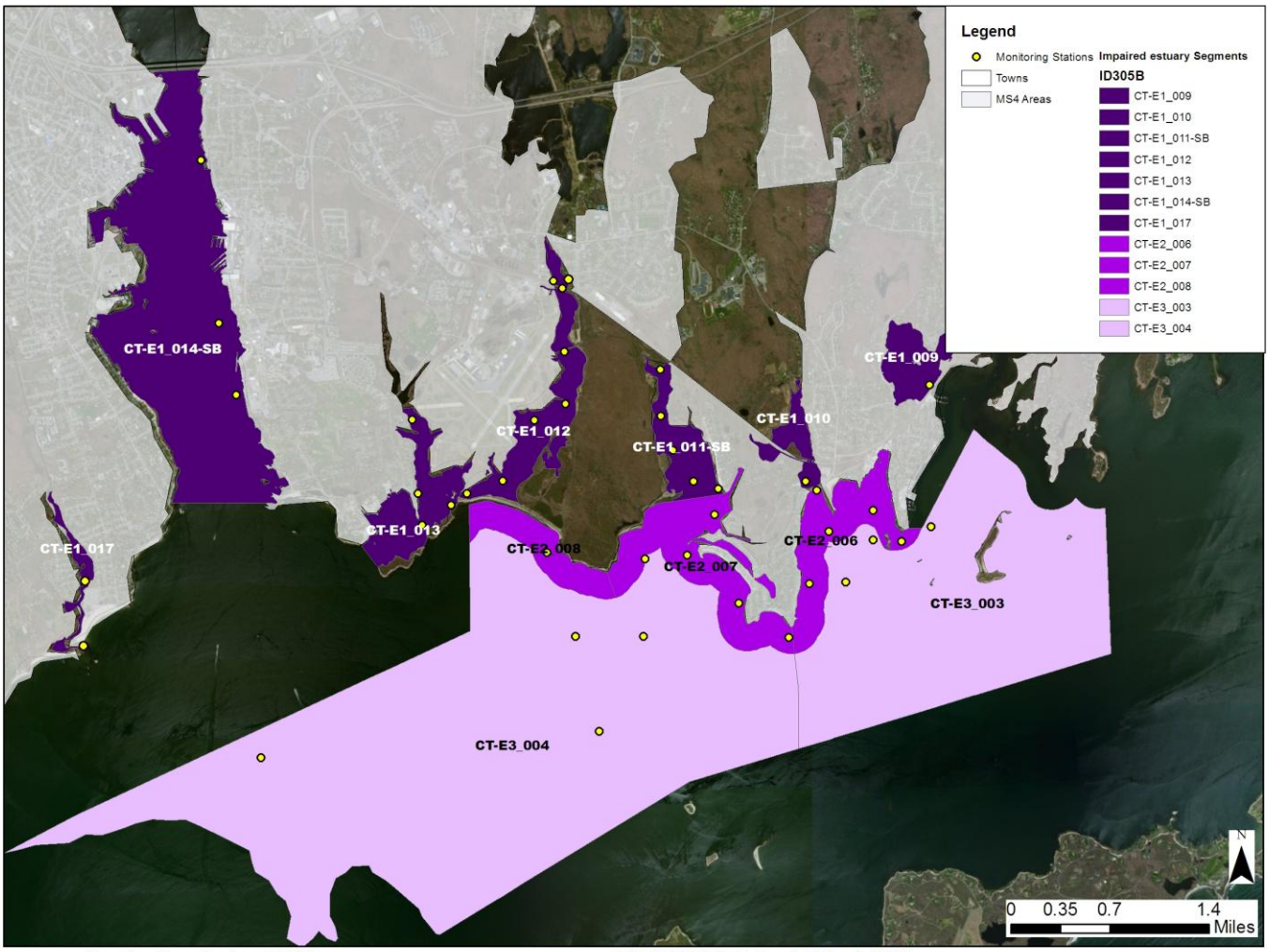
The list of US Census UCs is defined by geographic regions and is named for those regions, not necessarily by following municipal borders. In Connecticut the list of UCs includes blocks in the following Census Bureau regions: Colchester, Danielson, Lake Pocotopaug, Plainfield, Stafford, Storrs, Torrington, Willimantic, Winsted, and the border area with Westerly, RI (67 FR 11663). Any MS4 maps showing these municipalities may show grey areas that are not currently regulated by the CT DEEP MS4 permit program.

The impaired segments of the Groton and New London Estuary are located within the municipalities of Groton, Waterford, and New London, CT. These municipalities have designated urban areas, as defined by the U.S. Census Bureau and are required to comply with the General Permit for the Discharge of Stormwater from Small Municipal Storm Sewer Systems (MS4 permit) issued by CT DEEP (Figure 5).

This general permit is only applicable to municipalities that are identified in Appendix A of the MS4 permit that contain designated urban areas and discharge stormwater via a separate storm sewer system to surface waters of the State. The permit requires municipalities to develop a Stormwater Management Plan (SMP) to reduce the discharge of pollutants as well as protect water quality. The MS4 permit is discussed further in the "TMDL Implementation Guidance" section of the core TMDL document. Additional information regarding stormwater management and the MS4 permit can be obtained on CTDEEP's website (http:// www.ct.gov/deep/stormwater).

There are 19 MS4 outfalls that have been sampled for *E. coli* bacteria and reported in Groton. The Town of Waterford sampled and reported on an additional 13 outfall locations. These outfalls are discharging directly to the shoreline of LIS or indirectly through the Thames River and other smaller streams (Table 7). Although the results cannot be compared to the water quality standard as there is no single sample shellfish standard for *E. coli*, high counts were detected at multiple locations on multiple occasions throughout the two municipalities.

Figure 5: MS4 areas near the New London and Groton Estuary



New London - Groton MS4 Areas MAP DATA DEEP Created March 2013

Table 7: List of MS4 sample locations and *E. coli* (colonies/100 mL) results in the New London/Groton Estuary. The results cannot be compared to the Water Quality Standards as there is no single sample shellfish standard for *E. coli*.

TOWN NAME	LOCATION	TYPE	RECEIVING WATER	RECEIVING BASIN	SAMPLE DATE	E.COLI
Groton, City of	#12 Thames St & Pleasant	Residential	Thames River		1/11/2008	50
Groton, City of	#12 Thames St & Pleasant	Residential	Thames River		11/10/05	510
Groton, City of	#12 Thames St & Pleasant	Residential	Thames River		12/01/06	920
Groton, City of	#18 Shore Ave & Prospect	Residential	Thames River		11/10/05	30
Groton, City of	#19 Shore Ave & Tylon Ave	Residential	Thames River		11/10/05	20
Groton, City of	#26 Shennecossette Rd & Plant St	Residential	Thames River		11/10/05	10
Groton, City of	#26 Shennecossette Rd & Plant St	Residential	Thames River		12/01/06	550
Groton, City of	#30 Poquonock Rd & Rainville Ave	Residential	Birch Plain Creek & Sound		11/10/05	10
Groton, City of	#8 Grove Ave & Bliven St	Residential	Thames River		11/10/05	10
Groton, City of	#8 Grove Ave & Bliven St	Residential	Thames River		12/01/06	580
Groton, Town of	@ the end of Talewinds Lane (outfall 3699R)	Residential	stream to Palmer Cove		11/30/05	100
Groton, Town of	@ the end of Talewinds Lane (outfall 3699R)	Residential	stream to Palmer Cove		6/4/2008	1050
Groton, Town of	@ the end of Talewinds Lane (outfall 3699R)	Residential	stream to Palmer Cove		11/06/07	2,500
Groton, Town of	@ the end of Talewinds Lane (outfall 3699R)	Residential	stream to Palmer Cove		6/4/2008	3,200
Groton, Town of	@ the end of Talewinds Lane (outfall 3699R)	Residential	stream to Palmer Cove		12/01/06	>3,000
Waterford	Avery Lane #10010	Commercial	Jordan Brook		09/08/04	945
Waterford	Avery Lane #10010	Commercial	Jordan Brook/Jordan Cove		11/02/06	10
Groton, Town of	behind Big Y on Route 1 2 large diameter pipes @ headwall, pipe to the east sampled (outfall 3854C)	Commercial	LIS Baker Cove		09/29/05	800

TOWN NAME	LOCATION	TYPE	RECEIVING WATER	RECEIVING BASIN	SAMPLE DATE	E.COLI
Groton, Town of	behind Big Y on Route 1-2 large diameter pipes @ headwall, pipe to the east sampled (outfall 3854C)	Commercial	LIS Baker Cove		12/01/06	720
Groton, Town of	behind Big Y on Route 1-2 large diameter pipes @ headwall, pipe to the east sampled (outfall 3854C)	Commercial	LIS Baker Cove		11/06/07	1,300
Groton, Town of	behind Big Y on Route 1-2 large diameter pipes @ headwall, pipe to the east sampled (outfall 3854C)	Commercial	LIS Baker Cove		6/4/2008	3,300
Groton, Town of	behind Big Y on Route 1-2 large diameter pipes @ headwall, pipe to the east sampled (outfall 3854C)	Commercial	LIS Baker Cove		6/4/2008	4000
Groton, Town of	behind Big Y on Route 1-2 large diameter pipes @ headwall, pipe to the east sampled (outfall 3854C)	Commercial	LIS Baker Cove		11/30/05	5,200
Waterford	Bolles Court Residential Conn Co-ordinate grid:708,026N;1,176,530E	Residential	Smith Cove, Thames River		10/25/05	10
Waterford	Bolles Ct-708,026n;1,176,530 E	Residential	Smith's Cove-Thames River		05/02/07	10
Waterford	Bolles Ct-708,026n;1,176,530 E	Residential	Smith's Cove-Thames River		1/7/2009	10
Groton, Town of	btwn route 12 & Pleasant Valley Road behind the vacant "Good Times" restaurant (outfall 3568C)	Commercial	LIS, Poquonock River		09/29/05	200
Groton, Town of	btwn route 12 & Pleasant Valley Road behind the vacant "Good Times" restaurant (outfall 3568C)	Commercial	LIS, Poquonock River		12/01/06	280

TOWN NAME	LOCATION	TYPE	RECEIVING WATER	RECEIVING BASIN	SAMPLE DATE	E.COLI
Groton, Town of	btwn route 12 & Pleasant Valley Road behind the vacant "Good Times" restaurant (outfall 3568C)	Commercial	LIS, Poquonock River		11/30/05	500
Groton, Town of	btwn route 12 & Pleasant Valley Road behind the vacant "Good Times" restaurant (outfall 3568C)	Commercial	LIS, Poquonock River		6/4/2008	3250
Groton, Town of	btwn route 12 & Pleasant Valley Road behind the vacant "Good Times" restaurant (outfall 3568C)	Commercial	LIS, Poquonock River		6/4/2008	4,000
Groton, Town of	btwn route 12 & Pleasant Valley Road behind the vacant "Good Times" restaurant (outfall 3568C)	Commercial	Poquonock River	LIS	11/06/07	600
Waterford	Cross Road #20107	Industrial	Niantic River		11/02/06	10
Waterford	Cross Road #20107	Industrial	Niantic River		09/08/04	384
Waterford	Cross Road Commercial Conn Co-ordinate grid:696,489N;1,60,889E	Commercial	Niantic River		10/25/05	10
Waterford	Cross Road-696,489N;1,160,889	Commercial	Stoney Brook	Niantic River	05/02/07	10
Waterford	Cross Road-696,489N;1,160,889	Commercial	Stoney Brook	Niantic River	1/7/2009	10
Waterford	Cross Road-Dicin-700,064 N;1,161,331 E	Industrial	Stoney Brook	Niantic River	1/7/2009	10
Waterford	Cross Road-Dicin-700,064 N;1,161,331 E	Industrial	Stoney Brook	Niantic River	05/02/07	60
Waterford	Crossroad-Dicin-Industrial Conn Co-ordinate grid:700,064N;1,161,331E	Industrial	Niantic River		10/25/05	10
Waterford	Douglas Lane-704,913 N;1,161,632 E	Commercial	Jordan Brook	SE Shoreline	05/02/07	10

TOWN NAME	LOCATION	TYPE	RECEIVING WATER	RECEIVING BASIN	SAMPLE DATE	E.COLI
Waterford	Douglas Lane-704,913 N;1,161,632 E	Commercial	Jordan Brook	SE Shoreline	1/7/2009	10
Waterford	Douglas Lane-Commercial Conn Co-ordinate grid:704,913N;1,161,632E	Commercial	Jordan Brook		10/25/05	10
Groton, Town of	Flanders R S of Noank-Ledyard Rd (outfall 2004I)	Industrial	wetlands associated with Eccleston Brook		07/08/05	500
Groton, Town of	Flanders R S of Noank-Ledyard Rd across from self storage facility (outfall 2004I) (3452 in GIS)	Industrial	wetlands associated with Eccleston Brook	Mumford Cove	6/4/2008	1,050
Groton, Town of	Flanders R S of Noank-Ledyard Rd across from self storage facility (outfall 2004I) (3452 in GIS)	Industrial	wetlands associated with Eccleston Brook	Mumford Cove	6/4/2008	3300
Groton, Town of	Flanders R S of Noank-Ledyard Rd across from self storage facility (outfall 2004I) (3452 in GIS)	Industrial	wetlands associated with Eccleston Brook	Mumford Cove	12/01/06	>3,000
Groton, Town of	Flanders R S of Noank-Ledyard Rd across from self storage facility (outfall 2004I) (3452 in GIS)	Industrial	wetlands associated with Eccleston Brook		11/30/05	600
Groton, Town of	Flanders Rd S of Noank-Ledyard Rd across from self storage facility (outfall 2004I) (3452 in GIS)	Industrial	wetlands associated with Eccleston Brook	Mumford Cove	11/06/07	300
Waterford	Hickory Lane #10127	Residential	Thames River		09/08/04	178
Waterford	Hickory Lane #10127	Residential		Thames River Basin	11/02/06	10
Waterford	Industrial Drive	Industrial	Jordan Brook		11/02/06	10
Waterford	Industrial Drive #DHWDD41-1	Industrial	Oil Mill Brook	2203	09/08/04	406
Waterford	Industrial Drive Conn-Co-ordinate grid:707,244N;1,161,406E	Industrial	Jordan Brook		10/25/05	30

TOWN NAME	LOCATION	TYPE	RECEIVING WATER	RECEIVING BASIN	SAMPLE DATE	E.COLI
Waterford	Industrial Drive-707,244N;1,161,406	Industrial	Jordan Brook		1/7/2009	10
Waterford	Industrial Drive-707,244N;1,161,406	Industrial	Jordan Brook		05/02/07	60
Groton, Town of	Leonard Drive @ Groton Airport Business Park	Industrial	Baker Cove	LIS	11/06/07	200
Groton, Town of	Leonard Drive @ Groton Airport Business Park	Industrial	LIS Baker Cove		11/30/05	10
Groton, Town of	Leonard Drive @ Groton Airport Business Park	Industrial	LIS Baker Cove		09/29/05	100
Groton, Town of	Leonard Drive @ Groton Airport Business Park	Industrial	LIS Baker Cove		12/01/06	1,700
Groton, Town of	Leonard Drive @ Groton Airport Business Park	Industrial	LIS Baker Cove		6/4/2008	3,250
Groton, Town of	Leonard Drive @ Groton Airport Business Park	Industrial	LIS Baker Cove		6/4/2008	4400
Groton, Town of	Military Highway @ intersection of Lestertown Rd (outfall 3630R)	Residential	Thames River		11/06/07	1,250
Groton, Town of	Military Highway @ intersection of Lestertown Rd (outfall 3630R)	Residential	Thames River		12/01/06	1,360
Groton, Town of	Military Highway @ intersection of Lestertown Rd (outfall 3630R)	Residential	Thames River		6/4/2008	3200
Groton, Town of	Military Highway @ intersection of Lestertown Rd (outfall 3630R)	Residential	Thames River		6/4/2008	4,400
Groton, Town of	Military Rd @ intersection of Lestertown Rd (outfall 3630R)	Residential	Thames River		11/30/05	200
Groton, Town of	Military Rd @ intersection of Lestertown Rd (outfall 3630R)	Residential	Thames River		07/08/05	3,800
Waterford	Miner Lane #10003	Commercial	SE Shoreline		09/08/04	31
Waterford	Miner Lane #10003	Commercial		SE Shoreline	11/02/06	10

TOWN NAME	LOCATION	TYPE	RECEIVING WATER	RECEIVING BASIN	SAMPLE DATE	E.COLI
Waterford	Niles Hill Rd/Residential Conn Co-ordinate grid:677,898N;1,176,433E	Residential	Alewife Cove		10/25/05	10
Waterford	Niles Hill Rd-677,898 N;1,176,433E	Residential	Alewife Cove	SE Shoreline	05/02/07	10
Waterford	Niles Hill Rd-677,898 N;1,176,433E	Residential	Alewife Cove	SE Shoreline	1/7/2009	10
Groton, City of	OF-1				11/5/2008	50
Groton, City of	OF-1				12/01/06	220
Groton, City of	OF-12				11/5/2008	1,600
Groton, City of	OF-26				1/11/2008	800
Groton, City of	OF-26				11/5/2008	5000
Groton, City of	OF-28				1/11/2008	850
Groton, City of	OF-28				11/5/2008	900
Groton, City of	OF-28				12/01/06	2,000
Groton, City of	OF-29				1/11/2008	300
Groton, City of	OF-29				12/01/06	880
Groton, City of	OF-29				11/5/2008	2000
Groton, City of	OF-8				11/5/2008	100
Waterford	Stone Heights #10121	Residential	Jordan Brook		09/08/04	20
Waterford	Stone Heights Dr #10121	Residential	Jordan Brook/Jordan Cove		11/02/06	10

Publicly Owned Treatment Works

There are two Publicly Owned Treatment Works, (POTW) located in Groton, and one in New London. All of these facilities discharge into the Thames River. There was one violation at the New London WPCF in March of 2010. The violation was of the 7 day geometric mean and is highlighted below. According to the 2011 Annual Assessment of Shellfish Areas for New London, the only DEEP permitted industrial discharge is the US Coast Guard Academy. This facility discharges to the Thames River. There are several DEEP permitted industrial discharges that discharge directly to the Thames River.

Table 8: Wastewater treatment plant fecal coliform (colonies/100 mL) data discharging to the Groton and New London Estuary

Town	Permittee	Permit Number	Receiving Water	Date	30-Day Geometric Mean	7-Day Geometric Mean
Groton	GROTON WPCF	CT0100242	Thames River	01/31/2010	11	24
Groton	GROTON WPCF	CT0100242	Thames River	02/28/2010	2	4
Groton	GROTON WPCF	CT0100242	Thames River	03/31/2010	3	13
Groton	GROTON WPCF	CT0100242	Thames River	04/30/2010	18	117
Groton	GROTON WPCF	CT0100242	Thames River	05/31/2010	3	8
Groton	GROTON WPCF	CT0100242	Thames River	06/30/2010	6	13
Groton	GROTON WPCF	CT0100242	Thames River	07/31/2010	10	33
Groton	GROTON WPCF	CT0100242	Thames River	08/31/2010	2	3
Groton	GROTON WPCF	CT0100242	Thames River	09/30/2010	4	5
Groton	GROTON WPCF	CT0100242	Thames River	10/31/2010	2	8
Groton	GROTON WPCF	CT0100242	Thames River	11/30/2010	3	7
Groton	GROTON WPCF	CT0100242	Thames River	12/31/2010	2	3
Groton	GROTON WPCF	CT0100242	Thames River	01/31/2011	2	2
Groton	GROTON WPCF	CT0100242	Thames River	02/28/2011	2.6	4.6
Groton	GROTON WPCF	CT0100242	Thames River	03/31/2011	13	16
Groton	GROTON WPCF	CT0100242	Thames River	04/30/2011	2	3.6
Groton	GROTON WPCF	CT0100242	Thames River	05/31/2011	1.5	2.5
Groton	GROTON WPCF	CT0100242	Thames River	06/30/2011	1.5	2.5
Groton	GROTON WPCF	CT0100242	Thames River	07/31/2011	1.7	2.5
Groton	GROTON WPCF	CT0100242	Thames River	08/31/2011	1.6	2.5
Groton	GROTON WPCF	CT0100242	Thames River	09/30/2011	2.3	4.8
Groton	GROTON WPCF	CT0100242	Thames River	10/31/2011	3.9	9.3
Groton	GROTON WPCF	CT0100242	Thames River	11/30/2011	4.1	7.1
Groton	GROTON WPCF	CT0100242	Thames River	12/31/2011	3.7	9

Town	Permittee	Permit Number	Receiving Water	Date	30-Day Geometric Mean	7-Day Geometric Mean
Groton	GROTON WPCF	CT0100242	Thames River	01/31/2012	2.62	5.24
Groton	GROTON WPCF	CT0100242	Thames River	02/29/2012	3.4	5.8
Groton	GROTON WPCF	CT0100242	Thames River	03/31/2012	1.2	1.6
Groton	GROTON WPCF	CT0100242	Thames River	04/30/2012	2.4	4
Groton	GROTON WPCF	CT0100242	Thames River	05/31/2012	1.6	3.2
Groton	GROTON WPCF	CT0100242	Thames River	06/30/2012	1.2	2
Groton	GROTON WPCF	CT0100242	Thames River	07/31/2012	1.6	4
Groton	GROTON WPCF	CT0100242	Thames River	08/31/2012	1.6	4.6
Groton	GROTON WPCF	CT0100242	Thames River	09/30/2012	8.3	17.7
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	01/31/2010	4	12
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	02/28/2010	3	16
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	03/31/2010	2	92
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	04/30/2010	2	90
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	05/31/2010	1	10
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	06/30/2010	3	36
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	07/31/2010	2	10
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	08/31/2010	2	20
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	09/30/2010	3	64
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	10/31/2010	2	20

Town	Permittee	Permit Number	Receiving Water	Date	30-Day Geometric Mean	7-Day Geometric Mean
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	11/30/2010	2	38
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	12/31/2010	2	10
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	01/31/2011	2	14
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	02/28/2011	1	4
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	03/31/2011	1	2
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	04/30/2011	1	8
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	05/31/2011	2	16
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	06/30/2011	1	8
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	07/31/2011	1	6
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	08/31/2011	2	14
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	09/30/2011	2	14
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	10/31/2011	2	38
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	11/30/2011	1	4
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	12/31/2011	2	14
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	01/31/2012	1	2
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	02/29/2012	1	3

Town	Permittee	Permit Number	Receiving Water	Date	30-Day Geometric Mean	7-Day Geometric Mean
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	03/31/2012	1	11
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	04/30/2012	1	9
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	05/31/2012	2	20
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	06/30/2012	1	15
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	07/31/2012	1	
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	08/31/2012	1	2
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	09/30/2012	1	1
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	10/31/2012	2	10
Groton	GROTON WPCA, CITY OF	CT0101184	Thames River	11/30/2012	2	4
New London	NEW LONDON WPCF	CT0100382	Thames River	01/31/2010	8	24
New London	NEW LONDON WPCF	CT0100382	Thames River	02/28/2010	21	48
New London	NEW LONDON WPCF	CT0100382	Thames River	03/31/2010	7	620
New London	NEW LONDON WPCF	CT0100382	Thames River	04/30/2010	4	87
New London	NEW LONDON WPCF	CT0100382	Thames River	05/31/2010	4	24
New London	NEW LONDON WPCF	CT0100382	Thames River	06/30/2010	4	7
New London	NEW LONDON WPCF	CT0100382	Thames River	07/31/2010	13	35
New London	NEW LONDON WPCF	CT0100382	Thames River	08/31/2010	25	42
New London	NEW LONDON WPCF	CT0100382	Thames River	09/30/2010	12	38
New London	NEW LONDON WPCF	CT0100382	Thames River	10/31/2010	8	15
New London	NEW LONDON WPCF	CT0100382	Thames River	11/30/2010	17	34

Town	Permittee	Permit Number	Receiving Water	Date	30-Day Geometric Mean	7-Day Geometric Mean
New London	NEW LONDON WPCF	CT0100382	Thames River	12/31/2010	13	21
New London	NEW LONDON WPCF	CT0100382	Thames River	01/31/2011	19	32
New London	NEW LONDON WPCF	CT0100382	Thames River	02/28/2011	11	17
New London	NEW LONDON WPCF	CT0100382	Thames River	03/31/2011	3	4
New London	NEW LONDON WPCF	CT0100382	Thames River	04/30/2011	4	9
New London	NEW LONDON WPCF	CT0100382	Thames River	05/31/2011	6	10
New London	NEW LONDON WPCF	CT0100382	Thames River	06/30/2011	5	10
New London	NEW LONDON WPCF	CT0100382	Thames River	07/31/2011	8	9
New London	NEW LONDON WPCF	CT0100382	Thames River	08/31/2011	7	28
New London	NEW LONDON WPCF	CT0100382	Thames River	09/30/2011	8.2	15
New London	NEW LONDON WPCF	CT0100382	Thames River	10/31/2011	5	11
New London	NEW LONDON WPCF	CT0100382	Thames River	11/30/2011	6	10
New London	NEW LONDON WPCF	CT0100382	Thames River	12/31/2011	15	49
New London	NEW LONDON WPCF	CT0100382	Thames River	01/31/2012	15	22
New London	NEW LONDON WPCF	CT0100382	Thames River	02/29/2012	10	14
New London	NEW LONDON WPCF	CT0100382	Thames River	03/31/2012	6	10
New London	NEW LONDON WPCF	CT0100382	Thames River	04/30/2012	10	16
New London	NEW LONDON WPCF	CT0100382	Thames River	05/31/2012	8	16
New London	NEW LONDON WPCF	CT0100382	Thames River	06/30/2012	17	32
New London	NEW LONDON WPCF	CT0100382	Thames River	07/31/2012	13	19
New London	NEW LONDON WPCF	CT0100382	Thames River	08/31/2012	19	42
New London	NEW LONDON WPCF	CT0100382	Thames River	09/30/2012	13	20
New London	NEW LONDON WPCF	CT0100382	Thames River	10/31/2012	17	39

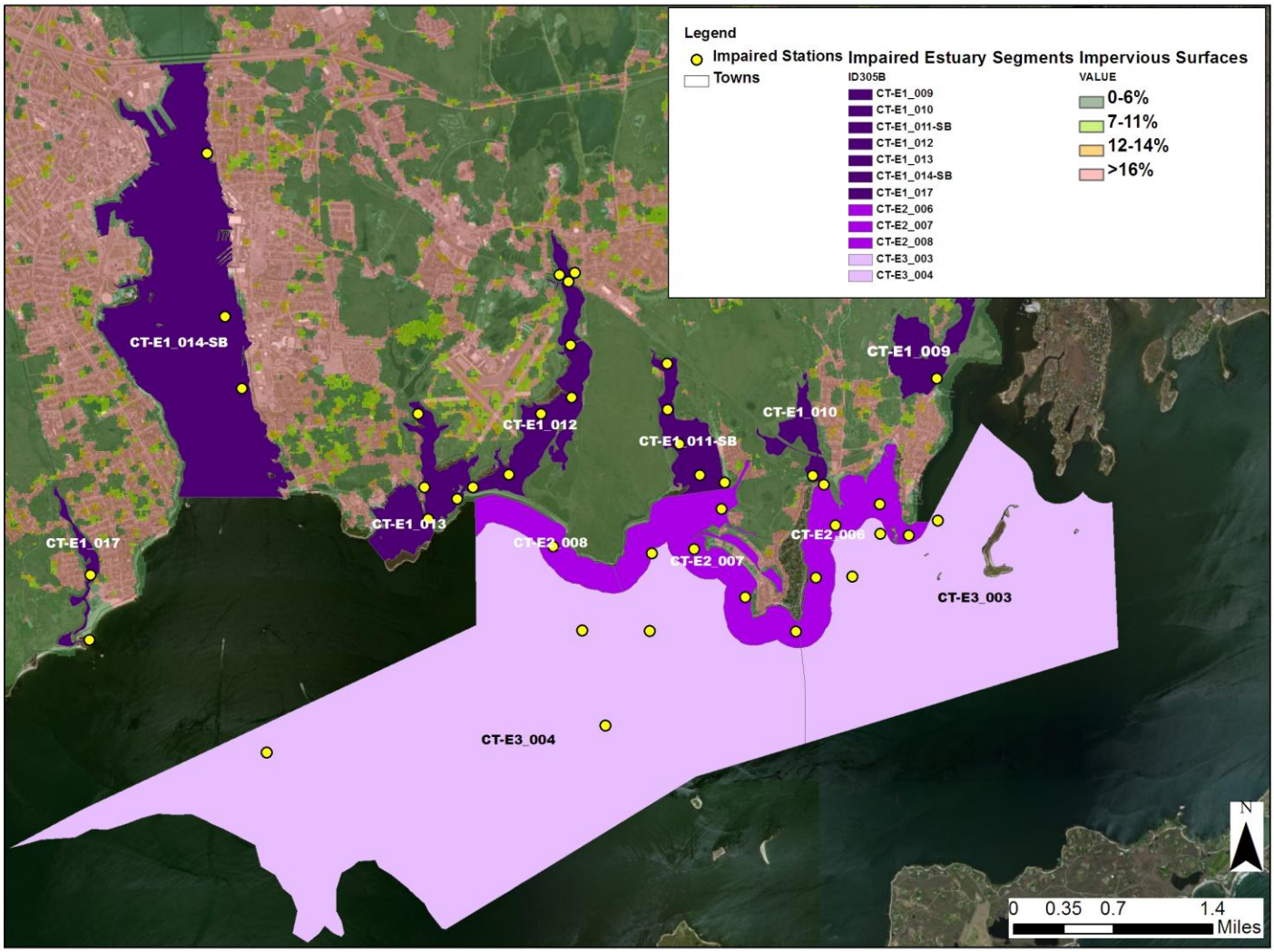
Non-point Sources

Non-point source (NPS) pollution comes from many diffuse sources and is more difficult to identify and control. NPS pollution is often associated with certain land-use practices. Examples of NPS that can contribute bacteria to surface waters include stormwater runoff, illicit discharges, insufficient septic systems, pet and wildlife waste, agriculture, and contact recreation (swimming or wading). With the waters of the Groton and New London Estuary being tidally influenced, many bacterial sources that appear to be downstream of the impaired segment may be affecting the water quality in upstream segments. Potential sources of NPS to the impaired segments in the Groton and New London Estuary are described below.

Stormwater Runoff from Developed Areas

The Town of Groton features a mix of residential and undeveloped land, while the City of New London is much more heavily developed land. The coastline of both municipalities along the Thames River is developed with residential and commercial structures mixed with some small areas of salt marsh and protected open space. There are several roads and a secondary highway (route 1) that traverse the coastline in Groton. Impervious surfaces, or surface areas such as roofs and roads that force water to run off land surfaces rather than infiltrate soil, often characterize developed areas. Studies have shown a link between the amount of impervious area in a watershed and water quality conditions (CWP, 2003). In one study, researchers correlated the amount of fecal coliform to the percentage of land with impervious cover in a watershed (Mallin *et al.*, 2000). Sections of coastal land bordering the New London and Groton Estuary has sections of development that are in the >16% impervious surface range. These areas primarily track development along roads (Figure 6). Also, several stations on exceeded the WQS for fecal coliform during wet-weather, which indicates that stormwater runoff is likely contributing bacteria to the estuary and the impairments.

Figure 6: Impervious cover (%) for New London and Groton, CT



New London - Groton Impervious Surfaces MAP DATA DEEP Created March 2013

Illicit Discharges and Insufficient Septic Systems

As shown in Figure 4, some portions of New London and Groton rely on a municipal sanitary sewer system. The sewered areas of these municipalities are clustered along the Thames River and the western banks of the Mystic River. However, much of the remaining land of these municipalities relies on septic systems for sanitation.

Properly managed septic systems and leach fields have the ability to effectively remove bacteria from waste. If systems are not maintained, waste will not be adequately treated and may result in bacteria reaching nearby surface and ground water.

Wildlife and Domestic Animal Waste

Wildlife, including waterfowl, and domestic animals within the municipalities of Groton and New London, including those present in the estuary, represent another potential source of bacteria to the impaired waterbodies. Elevated bacteria levels due solely to a natural population of wildlife are not subject to the WQS. However, any exacerbation of wildlife population sizes or residency times influenced by human activities is subject to the CT WQS and TMDL provisions. Multiple locations of concentrated

migratory waterfowl have been identified throughout the New London and Groton Estuary, including the entirety of Segment 1 (CT-E1_009), Segment 3(CT-E1_011-SB), Segment 4 (CT-E1-012), and along edges of the shoreline near Segments 6 (CT-E1_014-SB), and the northern section of Segment 5 (CT-E1_013) (Figure 4). With the construction of roads and drainage systems, wastes from these waterfowl may no longer be retained on the landscape, but instead may be conveyed via stormwater directly to the nearest surface waterbody. As such, physical land alterations can exacerbate the impact of these natural sources on water quality (USEPA, 2001).

As indicated previously, portions of New London and Groton near the estuary are heavily developed with residential properties. As such, waste from domestic animals, such as dogs, may also be contributing to bacteria concentrations in these impaired segments in the New London and Groton Estuary.

Marinas

As noted previously, multiple marinas are located within the New London and Groton Estuary, particularly in Segment 5 (CT-E1_013) (Figure 4 and Table 5). Marinas are located at the water's edge, and if no measures are taken to reduce pollutants, including buffering, pollutants can be transported via runoff from parking lots and hull maintenance areas directly into the marina basin. Common pollutants from marinas include bacteria and nutrients from stormwater runoff, solid and liquid materials used in boat maintenance and cleaning, fuel and oil, sewage from public restrooms and boat pump-outs, fish waste, and turbidity from boating activities. The CT DEEP has information on regional pump-out boats and facilities at its website, http://www.ct.gov/dep/cwp/view.asp?a=2705&q=323708&depNav_GID=1711. There are several pump-out facilities in both Groton and New London. Most services are free and eliminate the possibility of vessels dumping raw wastes into Long Island Sound, which is prohibited by CT Water Quality Standards Number 24, “the discharge of sewage from any vessel to any water is prohibited.”

Recreation

People coming in direct contact with surface water presents another potential source of bacterial contamination. Microbial source tracking (MST) surveys conducted in New Hampshire have shown humans to be a source of bacterial contamination at beaches (Jones, 2008). Since there are several swimming areas along the shoreline it is probable that some bacterial contamination can be attributed to human activities in the Stonington Estuary.

Additional Sources

The 2011 New London Estuary Report noted that there are no active sanitary landfills in New London. However, there is a city refuse transfer stations located at the public works complex. The report concludes that this transfer station has no impact on shellfish growing waters. The 2011 Groton Estuary Report noted that there are no active sanitary landfills in Groton, but there is a town transfer station on Flanders Road. The Report concludes that this facility has no impact on shellfish growing waters.

There may be other sources not listed here or identified in Figure 4 that contribute to the observed water quality impairments in the Stonington Estuary. Further monitoring and investigation will confirm the listed sources and discover additional ones. More detailed evaluation of potential sources is expected to become available as activities are conducted to implement this TMDL.

CURRENT MANAGEMENT ACTIVITIES

The Town of Stonington has developed and implemented programs to protect water quality from bacterial contamination. In addition, the National Shellfish Sanitation Program (NSSP) has multiple requirements for the protection and evaluation of shellfish growing areas. More information about this program is provided below and available online: http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FederalStatePrograms/NationalShellfishSanitationProgram/ucm053724.htm.

The NSSP requires the completion of a sanitary survey to determine acceptable and unacceptable growing areas, and to accurately classify a growing area as Approved, Conditionally Approved, Restricted, Conditionally Restricted, or Prohibited. A sanitary survey is an in-depth evaluation of all environmental factors impacting water quality in a shellfish growing area. Environmental factors include both actual and potential pollutant sources, whether natural or man-made, along with meteorological and hydrographic characteristics of the growing area. The principal components of a sanitary survey are: (1) identification and evaluation of pollutant sources, (2) evaluation of meteorological factors, (3) evaluation of hydrographic factors affecting the distribution of pollutants, and (4) assessment of water quality.

The sanitary survey includes data and results from the following:

1. Shoreline survey;
2. Survey of the bacteriological quality of the water;
3. Evaluation of meteorological, hydrodynamic, and geographic characteristics of the growing area;
4. Analysis of shoreline survey, bacteriological water quality, and meteorological, hydrodynamic, and geographic characteristics; and
5. Determination of the appropriate growing area classification

Maintaining updated sanitary survey records consists primarily of routinely evaluating major pollutant sources, collecting water quality data from sampling stations under the selected NSSP water quality monitoring strategy, and analyzing the data to ensure that the classification continues to represent current sanitary conditions in the growing area. The entire sanitary survey process must be repeated every 12 years. In the interim, the sanitary quality of each growing area must be reviewed as often as necessary to ensure appropriate classification. Certain sanitary survey components are required by the Model Ordinance to be updated annually and triennially.

The growing area classification and supporting data from the sanitary survey shall be reviewed at least every three years. As required by the NSSP, this triennial re-evaluation shall include:

1. A review of water quality sampling results;
2. Documentation of any new pollutant sources and evaluation of their impact on the growing area;
3. Re-evaluation of all pollutant sources, including sources previously identified in the sanitary survey, as necessary to fully evaluate any changes in the sanitary conditions of the growing area. Re-evaluation may or may not include a site visit;
4. A comprehensive report analyzing the sanitary survey data and determining whether the existing growing area classification is accurate or requires revision; and
5. Reclassification of the growing area if re-evaluation determines that conditions for classification have changed based on data collected during the triennial review

NSSP also requires that the sanitary survey be updated annually to reflect changes in conditions in the growing area. The annual re-evaluation shall include:

1. Field observation of pollutant sources during drive-through surveys, sample collections, or other information sources;
2. Addition and review of current year's water quality sampling results to a database collected in accordance with the bacteriological standards and sample collection required;
3. Review of available inspection reports and effluent samples collected from pollutant sources;
4. Review of available performance standards for various types of discharges impacting the growing area; and
5. A brief report documenting annual re-evaluation findings.

The most recent triennial re-evaluation for the Shellfish Growing Waters in the Town of Groton was published in 2011 (DABA, 2011). Based upon the findings of this report, all Groton shellfish growing area classifications, last amended on 6/2/06 conform to the applicable criteria set forth in the NSSP Model Ordinance and only Area P, which did not meet Approved criteria after rain events, requires a reclassification. Four of the five stations in area P did not meet criteria after < 1 inch of rain.

The most recent triennial re-evaluation for the Shellfish Growing Waters in the City of New London was published in 2011 (DABA, 2011). Based upon the findings of this report, all New London shellfish growing area classifications, last amended on 6/2/06 conform to the applicable criteria set forth in the NSSP Model Ordinance and all stations and growing areas are properly classified.

Other efforts have been taken by Groton and New London to reduce bacteria loads to their surface waters. As indicated previously, both New London and Groton are regulated under the MS4 program. The MS4 General Permit is required for any municipality with urbanized areas that initiates, creates, originates or maintains any discharge of stormwater from a storm sewer system to waters of the State. The MS4 permit requires towns to design a Stormwater Management Plan (SMP) that reduces the discharge of stormwater pollutants to improve water quality. The plan must address the following six minimum measures:

1. Public Education and Outreach.
2. Public Involvement/Participation.
3. Illicit discharge detection and elimination.
4. Construction site stormwater runoff control.
5. Post-construction stormwater management in the new development and redevelopment.
6. Pollution prevention/good housekeeping for municipal operations.

Each municipality is also required to submit an annual update outlining steps taken to meet the six minimum measures. The most recent updates that address bacterial contamination in the watershed is summarized in Table 9.

Table 9: Summary of MS4 requirement updates related to the reduction of bacterial contamination from Town of Groton, CT (Permit # GSM000055)

Minimum Measure	Groton Annual Report (2011)
Public Outreach and Education	1) The Town of Groton Parks and Recreation Department produces an annual magazine to the citizens in Town. An article about the concerns of stormwater runoff and potential solutions has been included each edition. 2) NEMO video entitled, “ Luck isn’t enough, the Fight for Clean Water” , was played on local cable access 15 times during the 2011 calendar year. 3) Town of Groton maintains a stormwater webpage on its municipal website. Information is updated annually including IDDE program

Minimum Measure	Groton Annual Report (2011)
	efforts. 4) All dog licensees receive a brochure from Long Island Sound Study regarding proper disposal of dog waste. 5) The town DPW inspects and maintains "no dumping signs" at 16 coastal access points. 6) The Annual MS4 report was submitted to the Town Council.
Public Involvement and Participation	1) Stormwater committee meetings were held semi-annually in Groton 2) Copies of the SWMP we made available at Town Hall and the public library. Public notice was given for review of the document in location newspapers. 3) Provide public notice to the citizens of SWMP Annual Report completion 4) Use of the Enviroscape model at summer camps and with a boy scout troop 5) Organized a household hazardous waste event, with 319 households participating.
Illicit Discharge Detection and Elimination	1) Dry weather outfall screening across the Town with 29 discovered to have dry weather flows. 2) All municipal catch basins, drain manholes, stormwater pipes and outfall have been identified and placed into GIS system. 3) Chemical and visual analysis of dry weather flow outfalls discovered in step 1) above 4) Evaluate procedures for inspecting new construction connections to the sanitary sewer 5) Develop a municipal ordinance to prohibit non-stormwater discharges 6) Six outfalls in the Town were monitored per MS4 permit requirements
Construction Site Stormwater Runoff Control	1) Approved amendments to the Groton Zoning Regulations proposed by the Zoning Commission to update landscaping and stormwater management standards 2) Waste management plans are required at larger sites per the zoning regulations. 3) Projects greater than 5 acres are notified by the Town to obtain a DEEP general permit 4) All projects 1 acre or greater requiring approval of IWC and Planning Commissions are presented at public meetings 5) All erosion and sediment control measures at sites greater than 1 acre are inspected by Town staff
Post Construction Stormwater Management	1) Amend regulations to apply requirements of CT Stormwater Quality Manual to the entire Town. This has been addressed in the changes to the Groton Zoning Regulations.
Pollution Prevention and Good Housekeeping	1) All DPW and Golf Course staff are given a 30 minute training dealing with SWPPP and BMPs on an annual basis. 2) 100% of municipal streets were swept at least twice in the calendar year. 3) All municipal vehicles are washed inside wash bays that drain to oil/water separators prior to discharge to the sanitary sewer. 4) All hazardous wastes are manifested out of Town. Spill kits are inspected monthly. 5) Catch basins are inspected annually and as many as possible are

Minimum Measure	Groton Annual Report (2011)
	cleaned during the process. High priority basins are cleaned each year to ensure proper function of the system. 6) During the 2011 calendar year 470 hours of maintenance and upgrades were undertaken by the DPW. 7) A total of 10 dog waste stations have been installed and maintained by Parks and Recreation staff. The Town advertises the locations of the stations and are emptied once per week. 8) Annual training session for personnel of both Parks maintenance and the Golf Course would attend the sessions. 9) Develop procedures for water companies and hydrant flushing to allow for chlorine dissipation and appropriate erosion control measures.

Table 10: Summary of MS4 requirement updates related to the reduction of bacterial contamination from New London, CT (Permit # GSM0000111)

Minimum Measure	New London Annual Report (2011)
Public Outreach and Education	1) Developed tri-fold brochure entitled "Everyday Solutions to Protect Our Water from Stormwater Pollution: A Guide to Healthy Habits for Cleaner Water". Available at Public Works office and Town website. 2) In addition to the brochure, maintained on the City website are all permit and Stormwater Management Plans. 3) City employees attempt to maintain a library of materials available for the public. Additional requests are filled as possible for the public. 4) 500 storm drain markers were purchased in 2010, 45 were installed and the remainder will be completed in 2011. 5) Hosting household hazardous waste day in 2011
Public Involvement and Participation	1) Coordinated park cleanup events with volunteer group named " Sound Community Services" 2) Developing outdoor classroom for New London High School that will educate students about erosion control, vegetative management and other stormwater measures 3) Continue vegetative planting along pathways to reduce erosion potential with assistance from volunteer groups 4) All management plans and permits are publicly noticed per FOIA requirements 5) Community outreach for storm drain stenciling volunteers and efforts
Illicit Discharge Detection and Elimination	1) Illicit Discharge ordinance planned for vote of adoption in 2011. 2) No update on mapping of outfalls, nor storm drainage system due to budget shortfalls. Some existing projects that included mapping are built into a database. 3) No official training for public works department on discharge detection or inspections, informal training by engineering department during inspections
Construction Site Stormwater Runoff Control	1) City ordinances require development of sediment and erosion control plans for any disturbances greater than one-half acre. 2) City considering additional language in applications dealing with notification for stormwater requirements 3) Reviewing language in Zoning Regulations dealing with disposal of construction debris and other contaminated materials 4) Stormwater drainage of parking areas and erosion and sediment

Minimum Measure	New London Annual Report (2011)
	controls are included in City Zoning regulations 5) City has contracted with Milone and MacBroom to assist with preparation of Stormwater Management Ordinance. Draft language is under review by Municipal staff.
Post Construction Stormwater Management	1) City has contracted with Milone and MacBroom to assist with preparation of Stormwater Management Ordinance. Draft language is under review by Municipal staff. 2) Maintenance of BMPs schedule and the responsible parties are requested during the application for new systems 3) City is reviewing feasibility of establishing a fee based system to fund all stormwater maintenance
Pollution Prevention and Good Housekeeping	1) Staff do receive on-the-job training, Highway manager has committed to attending UCONN stormwater and roadway maintenance courses when they are available. 2) All city streets are swept at least once a year 3) All stormwater structures are evaluated and cleaned once per calendar year, a new drain cleaner machine was purchased in 2010. 4) Capital investments in drainage system improvements are included with each budget cycle

RECOMMENDED NEXT STEPS

New London and Groton have developed and implemented programs to protect water quality from bacterial contamination. Future mitigative activities are necessary to ensure the long-term protection of segments 1 – 12 in the New London and Groton Estuary and have been prioritized below.

1) Continue monitoring of permitted sources.

There are at least 35 permitted sources in the New London and Groton Estuary, some of which have shown historically high bacteria concentrations. Further monitoring will provide information essential to better locate, understand, and reduce pollution sources. If any current monitoring is not done with appropriate bacterial indicator based on the receiving water, then a recommended change during the next permit reissuance is to include the appropriate indicator species. If facility monitoring indicates elevated bacteria, then implementation of permit is required, and any voluntary measures to identify and reduce sources of bacterial contamination at the facility are also recommended. Regular monitoring should be established for all permitted sources to ensure compliance with permit requirements and to determine if current requirements are adequate or if additional measures are necessary for water quality protection.

Section 6(k) of the MS4 General Permit requires a municipality to modify their Stormwater Management Plan to implement the TMDL within four months of TMDL approval by EPA if stormwater within the municipality contributes pollutant(s) in excess of the allocation established by the TMDL. For discharges to impaired waterbodies, the municipality must assess and modify the six minimum measures of its plan, if necessary, to meet TMDL standards. Particular focus should be placed on the following plan components: public education, illicit discharge detection and elimination, stormwater structures cleaning, and the repair, upgrade, or retrofit of storm sewer structures. The goal of these modifications is to establish a program that improves water quality consistent with TMDL requirements. Modifications to the Stormwater Management Plan in response to TMDL development should be submitted to the Stormwater Program of DEEP for review and approval.

Table 11 details the appropriate bacteria criteria for use as waste load allocations established by this TMDL for use as water quality targets by permittees as permits are renewed and updated, within the New London and Groton Estuary.

For any municipality subject to an MS4 permit and affected by a TMDL, the permit requires a modification of the SMP to include BMPs that address the included impairment. In the case of bacteria related impairments municipal BMPs could include: implementation or improvement to existing nuisance wildlife programs, septic system monitoring programs, any additional measures that can be added to the required illicit discharge detection and elimination (IDDE) programs, and increased street sweeping above basic permit requirements. Any non-MS4 municipalities can implement these same types of initiatives in effort to reduce bacteria source loading to impaired waterways.

Any facilities that discharge non-MS4 regulated stormwater should update their Pollution Prevention Plan to reflect BMPs that can reduce bacteria loading to the receiving waterway. These BMPs could include nuisance wildlife control programs and any installations that increase surface infiltration to reduce overall stormwater volumes. Facilities that are regulated under the Commercial Activities Stormwater Permit should report any updates to their SMP in their summary documentation submitted to DEEP.

Table 11: Bacteria (Fecal Coliform) TMDLs, WLAs, and LAs for Shellfish Harvesting Areas.

		Geometric Mean Fecal coliform (#/100mL)[4]		90% less than Fecal Coliform (#/100mL)[4]	
Class	**Bacteria Source[1]**	**WLA[5]**	**LA[5]**	**WLA[5]**	**LA[5]**
SA Direct Consumption	CSOs	14		31	
	SSOs	0		0	
	OBDs[3]	0		0	
	Illicit sewer connection	0		0	
	Leaking sewer lines	0		0	
	Stormwater (MS4s)	14[6]		31[6]	
	Stormwater (non-MS4)		14[6]		31[6]
	Wildlife direct discharge		14[6]		31[6]
	Human or domestic animal direct discharge[2]		14		31
SB Indirect Consumption	Non-Stormwater NPDES	88		260	
	CSOs	88		260	
	SSOs	0		0	
	OBDs[3]	0		0	
	Illicit sewer connection	0		0	
	Leaking sewer lines	0		0	
	Stormwater (MS4s)	88[6]		260[6]	
	Stormwater (non-MS4)		88[6]		260[6]
	Wildlife direct discharge		88[6]		260[6]
	Human or domestic animal direct discharge[2]		88		260

(1) Criteria are based on utilizing the mTec method as specified in the U.S. Food and Drug Administration National Shellfish Sanitation Program-Model Ordinance (NSSP-MO) document *Guide for the Control of Molluscan Shellfish 2007.*

(2) Human direct discharge = swimmers

(3) All coastal and inland waters in Connecticut are designated as No Discharge Areas for Overboard Discharges (OBDs) from marine vessels with Marine Sanitation Devices.

(4) Adverse Condition Allocations apply to areas affected by Point Sources. Adverse Condition or Random Sampling Allocations apply to areas affected by Nonpoint Sources. Adverse condition is defined as "... a State or situation caused by meteorological, hydrological or seasonal events or point source discharges that has historically resulted in elevated [bacteria] levels in the particular growing area." USFDA 2005

(5) Unless otherwise required by statute or regulation, compliance with this TMDL will be based on ambient concentrations and not end-of-pipe bacteria concentrations

(6) Replace numeric value with "natural levels" if only source is naturally occurring wildlife. Natural is defined as the biological, chemical and physical conditions and communities that occur within the environment which are unaffected or minimally affected by human influences (CT DEEP 2011a). Sections 2.2.2 and 6.2.7 of this Core Document deal with BMPs and delineating type of wildlife inputs.

2) Identify areas in New London and Groton to implement Best Management Practices (BMPs) to control stormwater runoff.

The concentrations of Impervious Cover are the highest along the shoreline and the Thames River in New London and Groton. There is a direct connection of roads and IC % density increases. Many of these sections are considered urban areas regulated under the MS4 program. As such, stormwater runoff is likely contributing bacteria to the New London and Groton Estuary. To identify areas that are contributing bacteria to the impaired segments, municipalities should conduct wet-weather sampling at

stormwater outfalls that discharge directly to the impaired segments in New London and Groton Estuary. To treat stormwater runoff, the towns should identify areas along the developed sections of the impaired segments to install BMPs designed to encourage stormwater to infiltrate the ground before entering the waterbodies. These BMPs would disconnect impervious areas and reduce pollutant loads to the estuary. More detailed information and BMP recommendations can be found in the core TMDL document.

3) Implement a program to evaluate the sanitary sewer system and inspect conditions of lines.

Portions of both New London and Groton near the estuary rely on a municipal sewer system (Figure 4). It is important for these municipalities to develop a program to evaluate their sanitary sewer system and reduce leaks and overflows. These programs should include regular periodic inspections of the sewer line. Possible use of remote cameras will assist with completion of this suggested task.

4) Develop a system to monitor septic systems.

A number of residents near the New London and Groton Estuary rely on septic systems. If not already in place, these municipalities should establish programs to ensure that existing septic systems are properly operated and maintained. For instance, communities can create an inventory of existing septic systems through mandatory inspections. Inspections help encourage proper maintenance and identify failed and sub-standard systems. Policies that govern the eventual replacement of the sub-standard systems within a reasonable timeframe could be adopted. Municipalities can also develop programs to assist citizens with the replacement and repair of older and failing systems.

5) Evaluate municipal education and outreach programs regarding animal waste.

Any education and outreach program should highlight the importance of not feeding waterfowl and wildlife and managing waste from horses, dogs, and other pets. Municipalities and residents can take measures to minimize waterfowl-related impacts by allowing tall, coarse vegetation to grow in riparian areas of impaired segments frequented by waterfowl. Waterfowl, especially grazers like geese, prefer easy access to water. Maintaining an uncut vegetated buffer along the shore will make the habitat less desirable to geese and encourage migration. In addition, any educational program should emphasize that feeding waterfowl, such as ducks, geese, and swans, may contribute to water quality impairments in the Stonington Estuary and can harm human health and the environment. Animal wastes should be managed and disposed of away from any waterbody or storm drain system. BMPs effective at reducing the impact of animal waste on water quality include installing signage, providing pet waste receptacles in high-use areas, enacting ordinances requiring the clean-up of pet waste, and targeting educational and outreach programs in problem areas.

6) Improve education and outreach programs regarding boats and marinas.

Marinas must comply with permit requirements that limit bacteria contribution to the New London and Groton Estuary. Other programs, such as Connecticut's Clean Marina Program, may also be adopted by all marinas in the estuary to reduce bacteria contribution from non-point source pollution from marinas (http://www.ct.gov/dep/cwp/view.asp?a=2705&q=323530&depNav_GID=1635). The Clean Marina Program is a voluntary program that encourages inland and coastal marina operators to minimize pollution, and recognizes Connecticut marinas, boatyards, and yacht clubs that go above and beyond regulatory compliance as "Certified Clean Marinas." All certified marinas receive a weatherproof Clean Marina Flag to fly at their facility and authorization to use the Clean Marina Program logo on company publications. CT DEEP recognizes certified Clean Marinas through press releases, on its web page, and at public events. As a companion to the Clean Marina Program, the Clean Boater Program encourages boaters to use clean boating techniques when operating and maintaining their boats.

BACTERIA DATA AND PERCENT REDUCTIONS TO MEET THE TMDL

Table 12: Segment 1 LIS EB Inner- Beebe Cove (Mystic Harbor)
Waterbody ID: CT-E1_009
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml
Percent reduction to meet:
Geometric Mean: NA
90% of Samples Less Than: 40%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment : LIS EB Inner – Beebe Cove (Mystic Harbor), Groton (CT-E1_009) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-27.0	Beebe Cove	4/13/2000	1.6	Dry	1.6	n/a
059-27.0	Beebe Cove	9/6/2000	1.6	Dry		
059-27.0	Beebe Cove	3/4/2002	8.6	Wet	5	n/a
059-27.0	Beebe Cove	5/22/2002	1.7	Dry		
059-27.0	Beebe Cove	7/22/2002	8.6	Dry		
059-27.0	Beebe Cove	4/30/2003	10	Dry	2.6	n/a
059-27.0	Beebe Cove	6/17/2003	1.7	Dry		
059-27.0	Beebe Cove	10/20/2003	1.6	Dry		
059-27.0	Beebe Cove	11/24/2003	1.7	Dry		
059-27.0	Beebe Cove	5/5/2004	1.6	Dry	9	40
059-27.0	Beebe Cove	8/24/2004	51	Dry		
059-27.0	Beebe Cove	6/13/2007	5	Dry	5	n/a
059-27.0	Beebe Cove	5/6/2009	4	Wet	1.7	n/a
059-27.0	Beebe Cove	5/19/2009	1	Dry		
059-27.0	Beebe Cove	8/3/2009	2	Dry		
059-27.0	Beebe Cove	12/15/2009	1	Dry		
059-27.0	Beebe Cove	2/22/2010	1	Dry	1.4	n/a

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-27.0	Beebe Cove	3/17/2010	1	Dry		
059-27.0	Beebe Cove	3/25/2010	2	Dry		
059-27.0	Beebe Cove	12/15/2010	2	Dry		
059-27.0	Beebe Cove	3/15/2011	1	Dry	1.6	n/a
059-27.0	Beebe Cove	4/20/2011	4	Dry		
059-27.0	Beebe Cove	7/11/2011	1	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment : LIS EB Inner – Beebe Cove (Mystic Harbor), Groton (CT-E1_009)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-27.0	Beebe Cove	2000-2011	2	21	2.44	5.87	2.24

Table 13: Segment 2 LIS EB Inner Palmer Cove
Waterbody ID: CT-E1_010
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:

Geometric Mean:	14 colonies/100 ml
90% of Samples Less Than:	31 colonies/100 ml

Percent reduction to meet:

Geometric Mean:	65%
90% of Samples Less Than:	47%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment : LIS EB Inner – Palmer Cover (Inner), Groton (CT-E1_010) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-17.0	Palmer Cove	9/21/2000	18	Dry	18	n/a
059-17.0	Palmer Cove	1/31/2001	70	Wet	40.6	47
059-17.0	Palmer Cove	2/7/2001	8.6	Dry		
059-17.0	Palmer Cove	3/14/2001	18	Wet		
059-17.0	Palmer Cove	6/5/2001	8.7	Dry		
059-17.0	Palmer Cove	6/12/2001	139	Wet		
059-17.0	Palmer Cove	6/19/2001	258	Wet		
059-17.0	Palmer Cove	9/25/2001	54	Wet		
059-17.0	Palmer Cove	3/4/2002	8.6	Wet	3.7	n/a
059-17.0	Palmer Cove	5/1/2002	3.6	Wet		
059-17.0	Palmer Cove	5/7/2002	1.7	Dry		
059-17.0	Palmer Cove	1/6/2003	3.6	Wet	11.6	15
059-17.0	Palmer Cove	4/28/2003	10	Dry		
059-17.0	Palmer Cove	7/28/2003	51	Dry		
059-17.0	Palmer Cove	10/20/2003	10	Dry		
059-17.0	Palmer Cove	5/5/2004	10	Dry	4.4	n/a
059-17.0	Palmer Cove	8/16/2004	1.9	Wet		
059-17.0	Palmer Cove	2/16/2005	1	Wet	3.2	n/a
059-17.0	Palmer Cove	10/24/2005	10	Wet		
059-17.0	Palmer Cove	4/11/2006	1	Dry	9	40
059-17.0	Palmer Cove	6/6/2006	81	Dry		
059-17.0	Palmer Cove	11/7/2007	30	Wet	5.5	n/a
059-17.0	Palmer Cove	12/5/2007	1	Dry		
059-17.0	Palmer Cove	4/7/2009	2	Dry	5.1	23
059-17.0	Palmer Cove	5/18/2009	34	Dry		
059-17.0	Palmer Cove	10/21/2009	2	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment : LIS EB Inner – Palmer Cove (Inner), Groton (CT-E1_010)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-17.0	Palmer Cove	2000-2011	14	12	10.27	15.22	7.33

Table 13: Segment 3 LIS EB Inner Mumford Cove
Waterbody ID: CT-E1_011-SB
Characteristics: Saltwater, Class SB
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 88 colonies/100 ml
90% of Samples Less Than: 260 colonies/100 ml
Percent reduction to meet:
Geometric Mean: NA
90% of Samples Less Than: NA

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment : LIS EB Inner – Mumford Cove (Inner), Groton (CT-E1_011-SB) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-11.4	CA "C" Mumford Cove	1/31/2000	1.6	Wet	1.6	n/a
059-11.4	CA "C" Mumford Cove	4/20/2000	1.7	Dry		
059-11.4	CA "C" Mumford Cove	1/31/2001	1.6	Wet	1.6	n/a
059-11.4	CA "C" Mumford Cove	4/3/2001	1.6	Dry		
059-11.4	CA "C" Mumford Cove	1/10/2002	1.7	Dry	1.7	n/a
059-11.4	CA "C" Mumford Cove	6/3/2003	1.6	Dry	2.4	n/a
059-11.4	CA "C" Mumford Cove	11/24/2003	3.6	Dry		
059-11.4	CA "C" Mumford Cove	2/7/2005	1	Dry	2	n/a
059-11.4	CA "C" Mumford Cove	4/11/2005	8	Dry		
059-11.4	CA "C" Mumford Cove	12/12/2005	1	Dry		
059-11.4	CA "C" Mumford Cove	4/11/2006	1	Dry	3.6	n/a
059-11.4	CA "C" Mumford Cove	11/1/2006	13	Dry		
059-11.4	CA "C" Mumford Cove	11/28/2007	1	Dry	1	n/a
059-11.4	CA "C" Mumford Cove	2/25/2008	1	Dry	1	n/a
059-11.4	CA "C" Mumford Cove	3/10/2009	1	Wet	1	n/a
059-11.4	CA "C" Mumford Cove	11/18/2009	1	Dry		
059-11.4	CA "C" Mumford Cove	11/21/2010	4	Dry	9.2	n/a
059-11.4	CA "C" Mumford Cove	12/15/2010	21	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-11.4	CA "C" Mumford Cove	1/31/2011	1	Dry	1.4	n/a
059-11.4	CA "C" Mumford Cove	4/20/2011	2	Dry		
059-11.5	CA "C" Mumford Cove	1/31/2000	3.6	Wet	5.4	n/a
059-11.5	CA "C" Mumford Cove	4/20/2000	8.1	Dry		
059-11.5	CA "C" Mumford Cove	4/3/2001	1.6	Dry	1.6	n/a
059-11.5	CA "C" Mumford Cove	1/10/2002	3.6	Dry	3.6	n/a
059-11.5	CA "C" Mumford Cove	6/3/2003	5.8	Dry	4.6	n/a
059-11.5	CA "C" Mumford Cove	11/24/2003	3.6	Dry		
059-11.5	CA "C" Mumford Cove	2/7/2005	0.9	Dry	1.5	n/a
059-11.5	CA "C" Mumford Cove	4/11/2005	1	Dry		
059-11.5	CA "C" Mumford Cove	12/12/2005	4	Dry		
059-11.5	CA "C" Mumford Cove	4/11/2006	1	Dry	3.7	n/a
059-11.5	CA "C" Mumford Cove	11/1/2006	14	Dry		
059-11.5	CA "C" Mumford Cove	11/28/2007	1	Dry	1	n/a
059-11.5	CA "C" Mumford Cove	2/25/2008	1	Dry	1	
059-11.5	CA "C" Mumford Cove	3/10/2009	1	Wet	1	n/a
059-11.5	CA "C" Mumford Cove	11/18/2009	1	Dry		
059-11.5	CA "C" Mumford Cove	11/21/2010	1	Dry	3.5	n/a
059-11.5	CA "C" Mumford Cove	12/15/2010	12	Dry		
059-11.5	CA "C" Mumford Cove	1/31/2011	1	Dry	1	n/a
059-11.5	CA "C" Mumford Cove	4/20/2011	1	Dry		
059-11.7	CA "C" Mumford Cove	4/20/2000	1.6	Dry	1.6	n/a
059-11.7	CA "C" Mumford Cove	4/3/2001	1.6	Dry	1.6	n/a
059-11.7	CA "C" Mumford Cove	1/10/2002	1.7	Dry	1.7	n/a
059-11.7	CA "C" Mumford Cove	3/24/2003	1.6	Dry	3.4	n/a
059-11.7	CA "C" Mumford Cove	6/3/2003	14	Dry		
059-11.7	CA "C" Mumford Cove	11/24/2003	1.7	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-11.7	CA "C" Mumford Cove	2/7/2005	0.9	Dry	1	n/a
059-11.7	CA "C" Mumford Cove	4/11/2005	1	Dry		
059-11.7	CA "C" Mumford Cove	12/12/2005	1	Dry		
059-11.7	CA "C" Mumford Cove	4/11/2006	1	Dry	21	n/a
059-11.7	CA "C" Mumford Cove	11/1/2006	21	Dry		
059-11.7	CA "C" Mumford Cove	11/28/2007	2	Dry	2	n/a
059-11.7	CA "C" Mumford Cove	2/25/2008	1	Dry	1	n/a
059-11.7	CA "C" Mumford Cove	3/10/2009	1	Wet	1	n/a
059-11.7	CA "C" Mumford Cove	11/18/2009	1	Dry		
059-11.7	CA "C" Mumford Cove	11/21/2010	1	Dry	4.1	n/a
059-11.7	CA "C" Mumford Cove	12/15/2010	17	Dry		
059-11.7	CA "C" Mumford Cove	1/31/2011	1	Dry	1.4	n/a
059-11.7	CA "C" Mumford Cove	4/20/2011	2	Dry		
059-11.8	Mumford Cove	3/4/2002	8.6	Wet	8.6	n/a
059-11.8	Mumford Cove	10/29/2002	8.6	Dry		
059-11.8	Mumford Cove	1/6/2003	1.6	Wet	5.3	n/a
059-11.8	Mumford Cove	4/1/2003	8.7	Wet		
059-11.8	Mumford Cove	7/28/2003	11	Dry		
059-11.8	Mumford Cove	3/8/2004	10	Dry	10	n/a
059-11.8	Mumford Cove	8/30/2005	171	Dry	18.5	n/a
059-11.8	Mumford Cove	12/12/2005	2	Dry		
059-11.8	Mumford Cove	12/27/2006	1	Dry	1	n/a
059-11.8	Mumford Cove	1/2/2007	1	Wet	1	n/a
059-11.8	Mumford Cove	11/7/2007	1	Wet		
059-11.8	Mumford Cove	12/15/2008	42	Wet	42	n/a
059-11.8	Mumford Cove	12/7/2009	6	Dry	22.7	n/a
059-11.8	Mumford Cove	12/28/2009	86	Wet		
059-12.5	CA "C" Mumford Cove	1/31/2000	1.7	Wet	1.7	n/a
059-12.5	CA "C" Mumford Cove	4/20/2000	1.7	Dry		
059-12.5	CA "C" Mumford Cove	1/31/2001	1.7	Wet	9.9	n/a
059-12.5	CA "C" Mumford Cove	3/14/2001	1.6	Wet		
059-12.5	CA "C" Mumford Cove	4/3/2001	1.6	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-12.5	CA "C" Mumford Cove	6/5/2001	3.6	Dry		
059-12.5	CA "C" Mumford Cove	6/12/2001	248	Wet		
059-12.5	CA "C" Mumford Cove	6/19/2001	248	Wet		
059-12.5	CA "C" Mumford Cove	1/10/2002	1.7	Dry	4.2	n/a
059-12.5	CA "C" Mumford Cove	3/4/2002	8.6	Wet		
059-12.5	CA "C" Mumford Cove	5/1/2002	3.6	Wet		
059-12.5	CA "C" Mumford Cove	5/7/2002	5.8	Dry		
059-12.5	CA "C" Mumford Cove	1/6/2003	1.6	Wet	5.4	n/a
059-12.5	CA "C" Mumford Cove	6/3/2003	8.1	Dry		
059-12.5	CA "C" Mumford Cove	7/28/2003	18	Dry		
059-12.5	CA "C" Mumford Cove	11/24/2003	3.6	Dry		
059-12.5	CA "C" Mumford Cove	8/16/2004	18	Wet	18	n/a
059-12.5	CA "C" Mumford Cove	2/7/2005	0.9	Dry	1.2	n/a
059-12.5	CA "C" Mumford Cove	2/16/2005	1	Wet		
059-12.5	CA "C" Mumford Cove	4/11/2005	1	Dry		
059-12.5	CA "C" Mumford Cove	12/12/2005	2	Dry		
059-12.5	CA "C" Mumford Cove	4/11/2006	1	Dry	5.2	n/a
059-12.5	CA "C" Mumford Cove	6/6/2006	12	Dry		
059-12.5	CA "C" Mumford Cove	11/1/2006	12	Dry		
059-12.5	CA "C" Mumford Cove	11/28/2007	1	Dry	1	n/a
059-12.5	CA "C" Mumford Cove	2/25/2008	1	Dry	1	n/a
059-12.5	CA "C" Mumford Cove	3/10/2009	1	Wet	1	n/a
059-12.5	CA "C" Mumford Cove	11/18/2009	1	Dry		
059-12.5	CA "C" Mumford Cove	11/21/2010	1	Dry	4.2	n/a
059-12.5	CA "C" Mumford Cove	12/15/2010	18	Dry		
059-12.5	CA "C" Mumford Cove	1/31/2011	3	Dry	1.7	n/a
059-12.5	CA "C" Mumford Cove	4/20/2011	1	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment : LIS EB Inner – Mumford Cove (Inner), Groton (CT-E1_011-SB)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-11.4	CA "C" Mumford Cove	2000-2011	3	17	2.01	1.37	2.15
059-11.5	CA "C" Mumford Cove	2000-2011	2	17	2.15	1.90	2.18
059-11.7	CA "C" Mumford Cove	2000-2011	1	18	1.91	N/A	1.98
059-11.8	Mumford Cove	2000-2011	7	7	7.11	6.38	7.91
059-12.5	CA "C" Mumford Cove	2000-2011	11	21	3.46	5.81	2.64

Table 14: Segment 4 LIS EB Inner Poquonnuck River (Mouth)
Waterbody ID: CT-E1_013
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:

Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml

Percent reduction to meet:

Geometric Mean: 54%
90% of Samples Less Than: 65%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment: LIS EB Inner – Baker Cove, Groton (CT-E1_013) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-02.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/14/2004	51	Wet	26.7	40
059-02.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/19/2004	14	Wet		
059-02.2	Baker Cove Sawyers Dock	4/13/2000	8.6	Dry	8.6	n/a
059-02.2	Baker Cove Sawyers Dock	6/5/2001	8.7	Dry	8.7	
059-02.2	Baker Cove Sawyers Dock	3/4/2002	8.6	Wet	8.6	n/a
059-02.2	Baker Cove Sawyers Dock	10/29/2002	8.7	Dry		
059-02.2	Baker Cove Sawyers Dock	10/20/2003	1.6	Dry	9	40
059-02.2	Baker Cove Sawyers Dock	10/28/2003	51	Wet		
059-02.2	Baker Cove Sawyers Dock	5/5/2004	10	Dry	22.6	40
059-02.2	Baker Cove Sawyers Dock	7/19/2004	51	Wet		
059-02.2	Baker Cove Sawyers Dock	5/10/2005	1	Dry	3	n/a
059-02.2	Baker Cove Sawyers Dock	12/12/2005	9	Dry		
059-02.2	Baker Cove Sawyers Dock	10/16/2006	1	Dry	1.7	n/a
059-02.2	Baker Cove Sawyers Dock	11/20/2006	3	Dry		
059-02.2	Baker Cove Sawyers Dock	1/2/2007	20	Wet	20	n/a
059-02.2	Baker Cove Sawyers Dock	6/11/2008	2	Dry	2	n/a
059-02.2	Baker Cove Sawyers Dock	12/7/2009	1	Dry	1.4	n/a
059-02.2	Baker Cove Sawyers Dock	12/28/2009	2	wet		
059-02.3	Baker Cover Elks Club	4/13/2000	8.6	Dry	8.6	n/a
059-02.3	Baker Cover Elks Club	1/31/2001	51	Wet	**39**	65
059-02.3	Baker Cover Elks Club	2/7/2001	1.6	Dry		
059-02.3	Baker Cover Elks Club	6/12/2001	110	Wet		
059-02.3	Baker Cover Elks Club	9/25/2001	258	Wet		
059-02.3	Baker Cover Elks Club	3/4/2002	8.6	Wet	15.8	n/a
059-02.3	Baker Cover Elks Club	10/29/2002	29	Dry		
059-02.3	Baker Cover Elks Club	1/6/2003	5.8	Wet	11.9	n/a
059-02.3	Baker Cover Elks Club	4/1/2003	29	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-02.3	Baker Cover Elks Club	10/20/2003	10	Dry		
059-02.3	Baker Cover Elks Club	3/8/2004	10	Dry	26.4	56
059-02.3	Baker Cover Elks Club	5/5/2004	36	Dry		
059-02.3	Baker Cover Elks Club	7/19/2004	51	Wet		
059-02.3	Baker Cover Elks Club	1/4/2005	2	Wet	7	23
059-02.3	Baker Cover Elks Club	2/16/2005	1	Wet		
059-02.3	Baker Cover Elks Club	8/30/2005	171	Wet		
059-02.3	Baker Cover Elks Club	10/16/2006	4	dry	4.5	n/a
059-02.3	Baker Cover Elks Club	11/20/2006	5	dry		
059-02.3	Baker Cover Elks Club	1/2/2007	800	Wet	800	90
059-02.3	Baker Cover Elks Club	6/11/2008	1	Dry	7.1	40
059-02.3	Baker Cover Elks Club	12/15/2008	50	Wet		
059-02.3	Baker Cover Elks Club	12/7/2009	1	dry	1	n/a
059-02.3	Baker Cover Elks Club	12/28/2009	1	wet		
059-02.5	Jupiter Point	4/13/2000	1.7	Dry	4.4	n/a
059-02.5	Jupiter Point	5/15/2000	5.8	Wet		
059-02.5	Jupiter Point	9/6/2000	11	Dry		
059-02.5	Jupiter Point	11/13/2000	1.7	Dry		
059-02.5	Jupiter Point	11/28/2000	8.6	Dry		
059-02.5	Jupiter Point	6/4/2001	14	Dry	10.6	n/a
059-02.5	Jupiter Point	6/13/2001	8.1	Wet		
059-02.5	Jupiter Point	5/22/2002	1.7	Dry	1.7	n/a
059-02.5	Jupiter Point	7/22/2002	1.7	dry		
059-02.5	Jupiter Point	10/15/2002	1.6	Dry		
059-02.5	Jupiter Point	4/30/2003	1.6	Dry	3.5	15
059-02.5	Jupiter Point	10/20/2003	1.7	Dry		
059-02.5	Jupiter Point	10/28/2003	36	Wet		
059-02.5	Jupiter Point	11/24/2003	1.6	Dry		
059-02.5	Jupiter Point	5/5/2004	11	Dry	23.1	40
059-02.5	Jupiter Point	7/19/2004	51	Wet		
059-02.5	Jupiter Point	8/16/2004	51	Wet		
059-02.5	Jupiter Point	8/18/2004	10	wet		
059-02.5	Jupiter Point	11/20/2006	3	Dry	3	n/a
059-02.5	Jupiter Point	6/13/2007	8	Dry	2.5	n/a
059-02.5	Jupiter Point	7/9/2007	1	Dry		
059-02.5	Jupiter Point	11/28/2007	2	Dry		
059-02.5	Jupiter Point	6/11/2008	6	Dry	6	n/a
059-02.5	Jupiter Point	5/6/2009	1	Wet	5	n/a
059-02.5	Jupiter Point	5/18/2009	16	Dry		
059-02.5	Jupiter Point	5/19/2009	5	Dry		
059-02.5	Jupiter Point	8/3/2009	8	Dry		
059-02.5	Jupiter Point	4/13/2010	6	Dry	9.5	n/a

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-02.5	Jupiter Point	5/20/2010	15	Dry		
059-02.5	Jupiter Point	5/25/2011	26	Dry	5.1	n/a
059-02.5	Jupiter Point	7/11/2011	1	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment : LIS EB Inner – Baker Cove, Groton (CT-E1_013)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-02.1	LIS EB Inner - Poquonuck River (Mouth), Groton	2000-2011	2	0	226.72	26.72	N/A
059-02.2	Baker Cove Sawyers Dock	2000-2011	5	11	5.39	15.50	3.33
059-02.3	Baker Cover Elks Club	2000-2011	10	13	13.00	24.96	5.57
059-02.5	Jupiter Point	2000-2011	7	24	15.82	12.36	4.04

Table 15: Segment 5 LIS EB Inner – Baker Cove
Waterbody ID: CT-E1_012
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml
Percent reduction to meet:
Geometric Mean: 87%
90% of Samples Less Than: 90%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment : LIS EB Inner- Poquonuck River (Mouth), Groton (CT-E1_013) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-03.0	CA"P" Poquonock R	3/16/2000	1.6	Wet	7.2	15
059-03.0	CA"P" Poquonock R	4/20/2000	1.7	Dry		
059-03.0	CA"P" Poquonock R	8/9/2000	36	Dry		
059-03.0	CA"P" Poquonock R	8/14/2000	50	Wet		
059-03.0	CA"P" Poquonock R	9/6/2000	11	Dry		
059-03.0	CA"P" Poquonock R	9/18/2000	14	Dry		
059-03.0	CA"P" Poquonock R	9/21/2000	5.8	Dry		
059-03.0	CA"P" Poquonock R	11/13/2000	1.6	Dry		
059-03.0	CA"P" Poquonock R	2/7/2001	1.6	Dry	8.2	30
059-03.0	CA"P" Poquonock R	4/3/2001	1.6	Dry		
059-03.0	CA"P" Poquonock R	6/5/2001	5.8	Dry		
059-03.0	CA"P" Poquonock R	6/20/2001	51	Wet		
059-03.0	CA"P" Poquonock R	9/27/2001	50	Dry		
059-03.0	CA"P" Poquonock R	1/10/2002	1.7	Dry	3.6	n/a
059-03.0	CA"P" Poquonock R	3/12/2002	1.7	Dry		
059-03.0	CA"P" Poquonock R	5/22/2002	5.8	Dry		
059-03.0	CA"P" Poquonock R	7/22/2002	3.6	Dry		
059-03.0	CA"P" Poquonock R	9/17/2002	22	Wet		
059-03.0	CA"P" Poquonock R	9/19/2002	1.6	Dry		
059-03.0	CA"P" Poquonock R	6/3/2003	1.7	Dry	5.3	10
059-03.0	CA"P" Poquonock R	7/28/2003	3.6	Dry		
059-03.0	CA"P" Poquonock R	8/18/2003	50	Wet		
059-03.0	CA"P" Poquonock R	8/21/2003	8.1	Dry		
059-03.0	CA"P" Poquonock R	11/24/2003	1.7	Dry		
059-03.0	CA"P" Poquonock R	7/14/2004	50	Wet	26.3	30
059-03.0	CA"P" Poquonock R	7/19/2004	18	Wet		
059-03.0	CA"P" Poquonock R	8/16/2004	28	Wet		
059-03.0	CA"P" Poquonock R	8/23/2004	14	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-03.0	CA"P" Poquonock R	12/13/2004	36	Dry		
059-03.0	CA"P" Poquonock R	1/4/2005	3	Wet	2.9	n/a
059-03.0	CA"P" Poquonock R	2/16/2005	23	Wet		
059-03.0	CA"P" Poquonock R	3/30/2005	1	wet		
059-03.0	CA"P" Poquonock R	4/6/2005	1	Dry		
059-03.0	CA"P" Poquonock R	4/11/2005	1	Dry		
059-03.0	CA"P" Poquonock R	4/25/2005	23	wet		
059-03.0	CA"P" Poquonock R	5/10/2005	2	Dry		
059-03.0	CA"P" Poquonock R	7/5/2005	1	Dry		
059-03.0	CA"P" Poquonock R	7/12/2005	2	Dry		
059-03.0	CA"P" Poquonock R	9/21/2005	5	Dry		
059-03.0	CA"P" Poquonock R	10/19/2005	8	Dry		
059-03.0	CA"P" Poquonock R	12/12/2005	1	Dry		
059-03.0	CA"P" Poquonock R	12/20/2005	5	dry		
059-03.0	CA"P" Poquonock R	1/24/2006	10	Wet	3.3	3
059-03.0	CA"P" Poquonock R	4/11/2006	1	Dry		
059-03.0	CA"P" Poquonock R	8/23/2006	1	dry		
059-03.0	CA"P" Poquonock R	9/6/2006	8	dry		
059-03.0	CA"P" Poquonock R	9/19/2006	1	Dry		
059-03.0	CA"P" Poquonock R	10/16/2006	1	Dry		
059-03.0	CA"P" Poquonock R	11/1/2006	37	Dry		
059-03.0	CA"P" Poquonock R	11/20/2006	5	Dry		
059-03.0	CA"P" Poquonock R	6/11/2007	22	Dry	4.7	n/a
059-03.0	CA"P" Poquonock R	9/19/2007	1	Dry		
059-03.0	CA"P" Poquonock R	6/22/2008	1	Dry	2.3	n/a
059-03.0	CA"P" Poquonock R	9/17/2008	3	Dry		
059-03.0	CA"P" Poquonock R	12/3/2008	4	Dry		
059-03.0	CA"P" Poquonock R	3/10/2009	1	Wet	4.3	n/a
059-03.0	CA"P" Poquonock R	7/7/2009	5	Wet		
059-03.0	CA"P" Poquonock R	7/28/2009	4	Dry		
059-03.0	CA"P" Poquonock R	7/30/2009	11	Dry		
059-03.0	CA"P" Poquonock R	8/3/2009	9	Dry		
059-03.0	CA"P" Poquonock R	9/2/2009	2	Dry		
059-03.0	CA"P" Poquonock R	9/15/2009	12	Dry		
059-03.0	CA"P" Poquonock R	11/18/2009	1	Dry		
059-03.0	CA"P" Poquonock R	12/28/2009	11	Wet		
059-03.0	CA"P" Poquonock R	5/5/2010	81	Dry	2.4	4
059-03.0	CA"P" Poquonock R	7/26/2010	1	Wet		
059-03.0	CA"P" Poquonock R	8/25/2010	1	Dry		
059-03.0	CA"P" Poquonock R	9/7/2010	1	Dry		
059-03.0	CA"P" Poquonock R	9/20/2010	3	Dry		
059-03.0	CA"P" Poquonock R	11/21/2010	1	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-03.0	CA"P" Poquonock R	12/15/2010	2	Dry		
059-03.0	CA"P" Poquonock R	1/31/2011	2	Dry	12.5	40
059-03.0	CA"P" Poquonock R	4/20/2011	5	Dry		
059-03.0	CA"P" Poquonock R	5/25/2011	31	Dry		
059-03.0	CA"P" Poquonock R	7/27/2011	78	Dry		
059-04.0	CA"P" Poquonock R	1/31/2000	1.7	Wet	8	12
059-04.0	CA"P" Poquonock R	3/16/2000	1.6	Wet		
059-04.0	CA"P" Poquonock R	4/20/2000	5.8	Dry		
059-04.0	CA"P" Poquonock R	8/9/2000	51	Dry		
059-04.0	CA"P" Poquonock R	8/14/2000	50	Wet		
059-04.0	CA"P" Poquonock R	9/6/2000	5.8	Dry		
059-04.0	CA"P" Poquonock R	9/18/2000	28	Dry		
059-04.0	CA"P" Poquonock R	9/21/2000	5.8	Dry		
059-04.0	CA"P" Poquonock R	11/13/2000	3.6	Dry		
059-04.0	CA"P" Poquonock R	2/7/2001	1.6	Dry	7.7	30
059-04.0	CA"P" Poquonock R	4/3/2001	1.6	Dry		
059-04.0	CA"P" Poquonock R	6/5/2001	5.8	Dry		
059-04.0	CA"P" Poquonock R	6/20/2001	36	Wet		
059-04.0	CA"P" Poquonock R	9/27/2001	50	Dry		
059-04.0	CA"P" Poquonock R	1/10/2002	1.6	Dry	3.1	n/a
059-04.0	CA"P" Poquonock R	3/12/2002	1.6	Dry		
059-04.0	CA"P" Poquonock R	5/22/2002	3.6	Dry		
059-04.0	CA"P" Poquonock R	7/22/2002	1.6	Dry		
059-04.0	CA"P" Poquonock R	9/17/2002	18	Wet		
059-04.0	CA"P" Poquonock R	9/19/2002	3.6	Dry		
059-04.0	CA"P" Poquonock R	6/3/2003	11	Dry	6.5	10
059-04.0	CA"P" Poquonock R	7/28/2003	3.6	Dry		
059-04.0	CA"P" Poquonock R	8/18/2003	51	Wet		
059-04.0	CA"P" Poquonock R	8/21/2003	3.6	Dry		
059-04.0	CA"P" Poquonock R	11/24/2003	1.6	Dry		
059-04.0	CA"P" Poquonock R	7/14/2004	50	Wet	27.9	30
059-04.0	CA"P" Poquonock R	7/19/2004	22	Wet		
059-04.0	CA"P" Poquonock R	8/16/2004	50	Wet		
059-04.0	CA"P" Poquonock R	8/23/2004	14	Dry		
059-04.0	CA"P" Poquonock R	12/13/2004	22	Dry		
059-04.0	CA"P" Poquonock R	1/4/2005	0.9	Wet	2.3	n/a
059-04.0	CA"P" Poquonock R	2/16/2005	3	Wet		
059-04.0	CA"P" Poquonock R	3/30/2005	1	wet		
059-04.0	CA"P" Poquonock R	4/6/2005	1	Dry		
059-04.0	CA"P" Poquonock R	4/11/2005	1	Dry		
059-04.0	CA"P" Poquonock R	4/25/2005	20	wet		
059-04.0	CA"P" Poquonock R	5/10/2005	1	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-04.0	CA"P" Poquonock R	7/5/2005	1	Dry		
059-04.0	CA"P" Poquonock R	7/12/2005	7	Dry		
059-04.0	CA"P" Poquonock R	9/21/2005	1	Dry		
059-04.0	CA"P" Poquonock R	10/19/2005	14	Dry		
059-04.0	CA"P" Poquonock R	12/12/2005	2	Dry		
059-04.0	CA"P" Poquonock R	12/20/2005	6	dry		
059-04.0	CA"P" Poquonock R	1/24/2006	7	Wet	3.8	3
059-04.0	CA"P" Poquonock R	4/11/2006	1	Dry		
059-04.0	CA"P" Poquonock R	8/23/2006	1	dry		
059-04.0	CA"P" Poquonock R	9/6/2006	11	dry		
059-04.0	CA"P" Poquonock R	9/19/2006	2	Dry		
059-04.0	CA"P" Poquonock R	10/16/2006	1	Dry		
059-04.0	CA"P" Poquonock R	11/1/2006	43	Dry		
059-04.0	CA"P" Poquonock R	11/20/2006	6	Dry		
059-04.0	CA"P" Poquonock R	6/11/2007	19	Dry	4.4	n/a
059-04.0	CA"P" Poquonock R	9/19/2007	1	Dry		
059-04.0	CA"P" Poquonock R	6/22/2008	1	Dry	1.6	n/a
059-04.0	CA"P" Poquonock R	7/30/2008	6	Dry		
059-04.0	CA"P" Poquonock R	9/17/2008	1	Dry		
059-04.0	CA"P" Poquonock R	12/3/2008	1	Dry		
059-04.0	CA"P" Poquonock R	3/10/2009	1	Wet	4.8	1
059-04.0	CA"P" Poquonock R	7/7/2009	5	Wet		
059-04.0	CA"P" Poquonock R	7/28/2009	3	Dry		
059-04.0	CA"P" Poquonock R	7/30/2009	2	Dry		
059-04.0	CA"P" Poquonock R	8/3/2009	11	Dry		
059-04.0	CA"P" Poquonock R	9/2/2009	6	Dry		
059-04.0	CA"P" Poquonock R	9/15/2009	81	Dry		
059-04.0	CA"P" Poquonock R	11/18/2009	2	Dry		
059-04.0	CA"P" Poquonock R	12/28/2009	4	Wet		
059-04.0	CA"P" Poquonock R	5/5/2010	25	Dry	1.7	n/a
059-04.0	CA"P" Poquonock R	7/26/2010	1	Wet		
059-04.0	CA"P" Poquonock R	8/25/2010	1	Dry		
059-04.0	CA"P" Poquonock R	9/7/2010	1	Dry		
059-04.0	CA"P" Poquonock R	9/20/2010	1	Dry		
059-04.0	CA"P" Poquonock R	11/21/2010	1	Dry		
059-04.0	CA"P" Poquonock R	12/15/2010	2	Dry		
059-04.0	CA"P" Poquonock R	1/31/2011	2	Dry	9.4	15
059-04.0	CA"P" Poquonock R	4/20/2011	4	Dry		
059-04.0	CA"P" Poquonock R	5/25/2011	23	Dry		
059-04.0	CA"P" Poquonock R	7/27/2011	42	Dry		
059-05.0	CA"P" Poquonock R	1/31/2000	1.7	Wet	6.4	n/a
059-05.0	CA"P" Poquonock R	3/16/2000	1.7	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-05.0	CA"P" Poquonock R	4/20/2000	5.8	Dry		
059-05.0	CA"P" Poquonock R	8/9/2000	51	Dry		
059-05.0	CA"P" Poquonock R	8/14/2000	5.8	Wet		
059-05.0	CA"P" Poquonock R	9/6/2000	14	Dry		
059-05.0	CA"P" Poquonock R	9/18/2000	28	Dry		
059-05.0	CA"P" Poquonock R	9/21/2000	1.7	Dry		
059-05.0	CA"P" Poquonock R	11/13/2000	5.8	Dry		
059-05.0	CA"P" Poquonock R	2/7/2001	1.7	Dry		
059-05.0	CA"P" Poquonock R	4/3/2001	1.7	Dry		
059-05.0	CA"P" Poquonock R	6/5/2001	11	Dry	4.5	10
059-05.0	CA"P" Poquonock R	6/20/2001	36	Wet		
059-05.0	CA"P" Poquonock R	9/27/2001	1.7	Dry		
059-05.0	CA"P" Poquonock R	1/10/2002	1.6	Dry		
059-05.0	CA"P" Poquonock R	3/12/2002	1.6	Dry		
059-05.0	CA"P" Poquonock R	5/22/2002	5.8	Dry	3.5	6
059-05.0	CA"P" Poquonock R	7/22/2002	1.6	Dry		
059-05.0	CA"P" Poquonock R	9/17/2002	51	Wet		
059-05.0	CA"P" Poquonock R	9/19/2002	1.6	Dry		
059-05.0	CA"P" Poquonock R	6/3/2003	11	Dry		
059-05.0	CA"P" Poquonock R	7/28/2003	28	Dry		
059-05.0	CA"P" Poquonock R	8/18/2003	51	Wet	11.5	10
059-05.0	CA"P" Poquonock R	8/21/2003	8.1	Dry		
059-05.0	CA"P" Poquonock R	11/24/2003	1.6	Dry		
059-05.0	CA"P" Poquonock R	7/14/2004	36	Wet		
059-05.0	CA"P" Poquonock R	7/19/2004	8.1	Wet		
059-05.0	CA"P" Poquonock R	8/16/2004	36	Wet	21.9	30
059-05.0	CA"P" Poquonock R	8/23/2004	22	Dry		
059-05.0	CA"P" Poquonock R	12/13/2004	22	Dry		
059-05.0	CA"P" Poquonock R	1/4/2005	0.9	Wet		
059-05.0	CA"P" Poquonock R	2/16/2005	6	Wet		
059-05.0	CA"P" Poquonock R	3/30/2005	1	wet		
059-05.0	CA"P" Poquonock R	4/6/2005	2	Dry		
059-05.0	CA"P" Poquonock R	4/11/2005	1	Dry		
059-05.0	CA"P" Poquonock R	4/25/2005	9	wet		
059-05.0	CA"P" Poquonock R	5/10/2005	2	Dry	2.2	n/a
059-05.0	CA"P" Poquonock R	7/5/2005	1	Dry		
059-05.0	CA"P" Poquonock R	7/12/2005	7	Dry		
059-05.0	CA"P" Poquonock R	9/21/2005	2	Dry		
059-05.0	CA"P" Poquonock R	10/19/2005	12	Dry		
059-05.0	CA"P" Poquonock R	12/12/2005	1	Dry		
059-05.0	CA"P" Poquonock R	12/20/2005	1	dry		
059-05.0	CA"P" Poquonock R	1/24/2006	7	Wet	3.3	3

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-05.0	CA"P" Poquonock R	4/11/2006	1	Dry		
059-05.0	CA"P" Poquonock R	8/23/2006	1	dry		
059-05.0	CA"P" Poquonock R	9/6/2006	15	dry		
059-05.0	CA"P" Poquonock R	9/19/2006	1	Dry		
059-05.0	CA"P" Poquonock R	10/16/2006	1	Dry		
059-05.0	CA"P" Poquonock R	11/1/2006	44	Dry		
059-05.0	CA"P" Poquonock R	11/20/2006	3	Dry		
059-05.0	CA"P" Poquonock R	6/11/2007	18	Dry	4.2	n/a
059-05.0	CA"P" Poquonock R	9/19/2007	1	Dry		
059-05.0	CA"P" Poquonock R	6/22/2008	2	Dry	3.3	n/a
059-05.0	CA"P" Poquonock R	7/30/2008	5	Dry		
059-05.0	CA"P" Poquonock R	9/17/2008	4	Dry		
059-05.0	CA"P" Poquonock R	12/3/2008	3	Dry		
059-05.0	CA"P" Poquonock R	3/10/2009	1	Wet	4.1	1
059-05.0	CA"P" Poquonock R	7/7/2009	10	Wet		
059-05.0	CA"P" Poquonock R	7/28/2009	3	Dry		
059-05.0	CA"P" Poquonock R	7/30/2009	5	Dry		
059-05.0	CA"P" Poquonock R	8/3/2009	8	Dry		
059-05.0	CA"P" Poquonock R	9/2/2009	2	Dry		
059-05.0	CA"P" Poquonock R	9/15/2009	48	Dry		
059-05.0	CA"P" Poquonock R	11/18/2009	1	Dry		
059-05.0	CA"P" Poquonock R	12/28/2009	3	Wet		
059-05.0	CA"P" Poquonock R	5/5/2010	15	Dry	1.9	n/a
059-05.0	CA"P" Poquonock R	7/26/2010	1	Wet		
059-05.0	CA"P" Poquonock R	8/25/2010	1	Dry		
059-05.0	CA"P" Poquonock R	9/7/2010	1	Dry		
059-05.0	CA"P" Poquonock R	9/20/2010	1	Dry		
059-05.0	CA"P" Poquonock R	11/21/2010	1	Dry		
059-05.0	CA"P" Poquonock R	12/15/2010	5	Dry		
059-05.0	CA"P" Poquonock R	1/31/2011	2	Dry	10.2	40
059-05.0	CA"P" Poquonock R	4/20/2011	2	Dry		
059-05.0	CA"P" Poquonock R	5/25/2011	38	Dry		
059-05.0	CA"P" Poquonock R	7/27/2011	72	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/14/2004	50	Wet	15	10
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/19/2004	8.1	Wet		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/16/2004	18	Wet		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/23/2004	18	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	12/13/2004	5.8	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	1/4/2005	1	Wet	2.1	n/a
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	2/16/2005	3	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	3/30/2005	1	wet		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/6/2005	2	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/11/2005	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/25/2005	19	wet		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	5/10/2005	2	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/5/2005	2	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/12/2005	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/21/2005	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	10/19/2005	6	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	12/12/2005	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	12/20/2005	7	dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	1/24/2006	1	Wet	3.5	n/a
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/11/2006	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/23/2006	1	dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/6/2006	20	dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/19/2006	3	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	10/16/2006	3	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	11/1/2006	16	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	11/20/2006	7	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	6/11/2007	19	Dry	4.4	n/a
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/19/2007	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	6/22/2008	1	Dry	2.8	n/a
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/30/2008	3	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/17/2008	7	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	3/10/2009	1	Wet	3.6	n/a
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/7/2009	7	Wet		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/28/2009	6	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/30/2009	8	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/3/2009	16	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/2/2009	2	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/15/2009	9	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	11/18/2009	1	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	12/28/2009	1	wet		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	5/5/2010	81	Dry	2.1	4
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/26/2010	1	Wet		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/25/2010	2	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/7/2010	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/20/2010	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	11/21/2010	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	12/15/2010	1	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	1/31/2011	1	Dry	11.6	15
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/20/2011	7	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	5/25/2011	27	Dry		
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/27/2011	96	Dry		
059-06.0	CA"P" Poquonock R	2/16/2000	18	Dry	9.3	n/a
059-06.0	CA"P" Poquonock R	3/16/2000	5.8	Wet		
059-06.0	CA"P" Poquonock R	4/20/2000	1.6	Dry		
059-06.0	CA"P" Poquonock R	8/9/2000	36	Dry		
059-06.0	CA"P" Poquonock R	8/14/2000	8.1	Wet		
059-06.0	CA"P" Poquonock R	9/6/2000	5.8	Dry		
059-06.0	CA"P" Poquonock R	9/18/2000	18	Dry		
059-06.0	CA"P" Poquonock R	9/21/2000	18	dry		
059-06.0	CA"P" Poquonock R	11/13/2000	5.8	Dry		
059-06.0	CA"P" Poquonock R	2/7/2001	18	Dry	8.6	23
059-06.0	CA"P" Poquonock R	4/3/2001	1.7	Dry		
059-06.0	CA"P" Poquonock R	6/5/2001	3.6	Dry		
059-06.0	CA"P" Poquonock R	6/20/2001	51	Wet		
059-06.0	CA"P" Poquonock R	9/25/2001	41	Wet		
059-06.0	CA"P" Poquonock R	9/27/2001	1.7	Dry		
059-06.0	CA"P" Poquonock R	1/10/2002	1.6	Dry	4.2	n/a
059-06.0	CA"P" Poquonock R	3/4/2002	1.6	Wet		
059-06.0	CA"P" Poquonock R	3/12/2002	1.6	Dry		
059-06.0	CA"P" Poquonock R	5/22/2002	8.1	Dry		
059-06.0	CA"P" Poquonock R	7/22/2002	1.7	dry		
059-06.0	CA"P" Poquonock R	9/17/2002	51	Wet		
059-06.0	CA"P" Poquonock R	9/19/2002	8.1	Dry		
059-06.0	CA"P" Poquonock R	6/3/2003	18	Dry	20.6	30
059-06.0	CA"P" Poquonock R	7/28/2003	50	Dry		
059-06.0	CA"P" Poquonock R	8/18/2003	51	Wet		
059-06.0	CA"P" Poquonock R	8/21/2003	14	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-06.0	CA"P" Poquonock R	11/24/2003	5.8	Dry		
059-06.0	CA"P" Poquonock R	7/14/2004	51	Wet	19	15
059-06.0	CA"P" Poquonock R	7/19/2004	10	Wet		
059-06.0	CA"P" Poquonock R	8/16/2004	23	Wet		
059-06.0	CA"P" Poquonock R	12/13/2004	11	Dry		
059-06.0	CA"P" Poquonock R	1/4/2005	16	Wet	4.5	n/a
059-06.0	CA"P" Poquonock R	2/16/2005	7	Wet		
059-06.0	CA"P" Poquonock R	3/30/2005	1	wet		
059-06.0	CA"P" Poquonock R	4/6/2005	1	Dry		
059-06.0	CA"P" Poquonock R	4/11/2005	1	Dry		
059-06.0	CA"P" Poquonock R	4/25/2005	8	wet		
059-06.0	CA"P" Poquonock R	5/10/2005	1	Dry		
059-06.0	CA"P" Poquonock R	7/5/2005	4	Dry		
059-06.0	CA"P" Poquonock R	7/12/2005	18	Dry		
059-06.0	CA"P" Poquonock R	9/21/2005	2	Dry		
059-06.0	CA"P" Poquonock R	10/17/2005	171	Dry		
059-06.0	CA"P" Poquonock R	10/19/2005	12	Dry		
059-06.0	CA"P" Poquonock R	12/12/2005	1	dry		
059-06.0	CA"P" Poquonock R	12/20/2005	6	Wet		
059-06.0	CA"P" Poquonock R	1/24/2006	3	Dry	5.3	3
059-06.0	CA"P" Poquonock R	4/11/2006	1	dry		
059-06.0	CA"P" Poquonock R	8/23/2006	1	dry		
059-06.0	CA"P" Poquonock R	9/6/2006	38	Dry		
059-06.0	CA"P" Poquonock R	9/19/2006	26	Dry		
059-06.0	CA"P" Poquonock R	10/16/2006	1	Dry		
059-06.0	CA"P" Poquonock R	11/1/2006	24	Dry		
059-06.0	CA"P" Poquonock R	11/20/2006	9	Dry		
059-06.0	CA"P" Poquonock R	6/11/2007	17	Dry	4.1	n/a
059-06.0	CA"P" Poquonock R	9/19/2007	1	Dry		
059-06.0	CA"P" Poquonock R	6/12/2008	3	Dry	4.6	n/a
059-06.0	CA"P" Poquonock R	6/22/2008	4	Dry		
059-06.0	CA"P" Poquonock R	7/30/2008	14	Dry		
059-06.0	CA"P" Poquonock R	9/17/2008	4	Dry		
059-06.0	CA"P" Poquonock R	12/3/2008	3	Dry		
059-06.0	CA"P" Poquonock R	3/10/2009	1	Wet	6.6	1
059-06.0	CA"P" Poquonock R	7/7/2009	8	Wet		
059-06.0	CA"P" Poquonock R	7/28/2009	18	Dry		
059-06.0	CA"P" Poquonock R	7/30/2009	38	Dry		
059-06.0	CA"P" Poquonock R	8/3/2009	11	Dry		
059-06.0	CA"P" Poquonock R	9/2/2009	6	Dry		
059-06.0	CA"P" Poquonock R	9/15/2009	8	Dry		
059-06.0	CA"P" Poquonock R	11/18/2009	4	Dry		
059-06.0	CA"P" Poquonock R	12/28/2009	2	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-06.0	CA"P" Poquonock R	5/5/2010	27	Dry	5.5	4
059-06.0	CA"P" Poquonock R	7/26/2010	57	Wet		
059-06.0	CA"P" Poquonock R	8/25/2010	5	Dry		
059-06.0	CA"P" Poquonock R	9/7/2010	7	Dry		
059-06.0	CA"P" Poquonock R	9/20/2010	1	Dry		
059-06.0	CA"P" Poquonock R	11/21/2010	1	Dry		
059-06.0	CA"P" Poquonock R	12/15/2010	3	Dry		
059-06.0	CA"P" Poquonock R	1/31/2011	1	Dry	13.4	15
059-06.0	CA"P" Poquonock R	4/20/2011	7	Dry		
059-06.0	CA"P" Poquonock R	5/25/2011	27	Dry		
059-06.0	CA"P" Poquonock R	7/27/2011	171	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	1/31/2001	28	Wet	31.6	40
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	2/7/2001	5.8	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	6/12/2001	70	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/25/2001	88	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	3/4/2002	8.6	Wet	8.6	n/a
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	10/29/2002	8.6	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	1/6/2003	3.6	Wet	43.6	40
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/28/2003	312	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	8/18/2003	321	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	8/21/2003	10	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	3/8/2004	10	Dry	70	40
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	5/5/2004	10	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/14/2004	130	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/19/2004	320	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	8/16/2004	3500	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	12/13/2004	8.1	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	1/4/2005	30	Wet	10.3	20
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	3/30/2005	1	wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	4/6/2005	1	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	4/11/2005	1	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	4/25/2005	20	wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	5/10/2005	6	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/5/2005	40	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/12/2005	270	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/21/2005	4	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	10/19/2005	90	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	1/24/2006	12	Dry	11.3	28
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	4/11/2006	2	dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	8/23/2006	4	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/6/2006	40	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/19/2006	46	dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	10/16/2006	6	dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	11/1/2006	43	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	11/20/2006	6	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	6/11/2007	31	Dry	5.6	40
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/19/2007	1	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	6/12/2008	14	Dry	15.8	10
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	6/22/2008	74	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/30/2008	16	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/17/2008	6	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	12/3/2008	10	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	3/10/2009	2	Wet	26.5	53
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/7/2009	40	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/28/2009	90	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/30/2009	130	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	8/3/2009	36	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/2/2009	28	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/15/2009	32	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	11/18/2009	8	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	5/5/2010	38	Dry	7.1	10
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/26/2010	13	Wet		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	8/25/2010	6	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/7/2010	1	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	9/20/2010	6	Dry		
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	7/27/2011	171	Dry	171	90
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	1/31/2001	8.7	Wet	47.2	40
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	2/7/2001	8.6	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	6/12/2001	258	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/25/2001	258	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	3/4/2002	8.6	Wet	8.6	n/a
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	10/29/2002	8.6	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	1/6/2003	1.7	Wet	28.6	40
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/1/2003	8.7	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/18/2003	321	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/21/2003	140	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	3/8/2004	137	Dry	122	65
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	5/5/2004	10	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/14/2004	490	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/16/2004	330	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	1/4/2005	28	Wet	17.3	19
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	2/7/2005	9	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	3/30/2005	1	wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/6/2005	10	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/11/2005	1	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/25/2005	16	wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	5/2/2005	4	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	5/10/2005	4	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/5/2005	9	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/12/2005	200	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/30/2005	810	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/21/2005	10	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	10/17/2005	230	dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	10/19/2005	100	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	1/24/2006	1	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	4/11/2006	10	dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/23/2006	10	dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/28/2006	250	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/6/2006	60	Dry	18.2	34
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/19/2006	59	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	10/16/2006	10	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	11/1/2006	41	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	11/20/2006	6	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	6/11/2007	150	Dry	34.6	40
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/19/2007	8	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	6/12/2008	171	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	6/22/2008	171	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/30/2008	171	Dry	80.7	70
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/17/2008	171	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	12/3/2008	4	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	3/10/2009	1	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/7/2009	74	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/28/2009	114	Dry	45	65
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/30/2009	106	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/3/2009	140	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/2/2009	82	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/15/2009	118	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	11/18/2009	14	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	5/5/2010	38	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	7/26/2010	36	Wet		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	8/25/2010	20	Dry	28	30
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/7/2010	24	Dry		
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	9/20/2010	26	Dry		
059-08.6	Storm Drain Poquonock R	8/16/2004	17000	Wet		
059-08.6	Storm Drain Poquonock R	8/23/2004	51	Dry	277.1	65
059-08.6	Storm Drain Poquonock R	9/29/2004	680	Wet		
059-08.6	Storm Drain Poquonock R	12/13/2004	10	Dry		
059-08.6	Storm Drain Poquonock R	1/4/2005	9	Wet		
059-08.6	Storm Drain Poquonock R	2/7/2005	9	Dry		
059-08.6	Storm Drain Poquonock R	3/30/2005	91	Wet		
059-08.6	Storm Drain Poquonock R	4/6/2005	1	Dry		
059-08.6	Storm Drain Poquonock R	4/25/2005	9	Wet		
059-08.6	Storm Drain Poquonock R	5/2/2005	1	Dry	21.3	26
059-08.6	Storm Drain Poquonock R	5/10/2005	18	Dry		
059-08.6	Storm Drain Poquonock R	7/5/2005	20	Dry		
059-08.6	Storm Drain Poquonock R	8/30/2005	810	Dry		
059-08.6	Storm Drain Poquonock R	10/17/2005	540	Dry		
059-08.6	Storm Drain Poquonock R	10/19/2005	40	Wet		
059-08.6	Storm Drain Poquonock R	8/23/2006	500	Dry		
059-08.6	Storm Drain Poquonock R	8/28/2006	1700	Dry	**426.1**	**90**
059-08.6	Storm Drain Poquonock R	9/6/2006	91	Dry		
059-08.6	Storm Drain Poquonock R	6/12/2008	9	Dry		
059-08.6	Storm Drain Poquonock R	6/22/2008	10	Dry	18.4	15
059-08.6	Storm Drain Poquonock R	7/30/2008	140	Dry		
059-08.6	Storm Drain Poquonock	12/3/2008	9	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
	R					
059-08.6	Storm Drain Poquonock R	3/10/2009	9	Wet	24	28
059-08.6	Storm Drain Poquonock R	7/7/2009	80	Wet		
059-08.6	Storm Drain Poquonock R	7/28/2009	12	Dry		
059-08.6	Storm Drain Poquonock R	7/30/2009	114	Dry		
059-08.6	Storm Drain Poquonock R	8/3/2009	4	Dry		
059-08.6	Storm Drain Poquonock R	9/2/2009	24	Dry		
059-08.6	Storm Drain Poquonock R	9/15/2009	116	Dry		
059-08.6	Storm Drain Poquonock R	11/18/2009	10	Dry		
059-08.6	Storm Drain Poquonock R	7/26/2010	81	Wet	115.1	90
059-08.6	Storm Drain Poquonock R	8/25/2010	171	Dry		
059-08.6	Storm Drain Poquonock R	9/20/2010	110	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment: LIS EB Inner – Poquonock River (Mouth), Groton (CT-E1_012)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-03.0	CA"P" Poquonock R	2000-2010	17	58	4.78	9.03	3.85
059-04.0	CA"P" Poquonock R	2000-2010	18	59	4.46	7.05	3.88
059-05.0	CA"P" Poquonock R	2000-2010	18	59	4.37	6.17	3.93
059-05.1	LIS EB Inner - Poquonuck River (Mouth), Groton	2000-2010	12	39	3.62	3.46	3.68
059-06.0	CA"P" Poquonock R	2000-2010	19	61	6.88	10.46	6.03
059-07.0	LIS EB Inner - Poquonuck River (Mouth), Groton	2000-2010	16	39	18.30	30.70	14.80
059-08.1	LIS EB Inner - Poquonuck River (Mouth), Groton	2000-2010	16	41	30.35	30.11	30.44
059-08.6	Storm Drain Poquonock R	2000-2010	9	24	45.01	83.57	35.68

Table 16: Segment 6 LIS EB Inner Thames River (mouth)
Waterbody ID: CT-E1_014-SB
Characteristics: Saltwater, Class SB
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 88 colonies/100 ml
90% of Samples Less Than: 260 colonies/100 ml
Percent reduction to meet:
Geometric Mean: 48%
90% of Samples Less Than: N/A

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment: LIS EB Inner - Thames River (Mouth), New London (CT-E1_014-SB) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-01.2	Thames River WPCF outfall	5/15/2000	18	Wet	18	n/a
059-01.2	Thames River WPCF outfall	5/22/2002	29	Dry	19.3	n/a
059-01.2	Thames River WPCF outfall	6/10/2002	29	Dry		
059-01.2	Thames River WPCF outfall	7/22/2002	8.6	dry		
059-01.2	Thames River WPCF outfall	4/30/2003	23	Dry	39.3	n/a
059-01.2	Thames River WPCF outfall	10/28/2003	67	Wet		
059-01.2	Thames River WPCF outfall	7/19/2004	28	Wet	22.4	n/a
059-01.2	Thames River WPCF outfall	8/24/2004	18	Dry		
059-01.2	Thames River WPCF outfall	11/20/2006	81	dry	81	n/a
059-01.2	Thames River WPCF outfall	7/9/2007	1	Dry	1	n/a
059-01.2	Thames River WPCF outfall	4/30/2008	54	Wet	38.2	n/a
059-01.2	Thames River WPCF outfall	6/17/2008	27	Wet		
059-01.2	Thames River WPCF outfall	5/20/2009	2	dry	5.8	n/a
059-01.2	Thames River WPCF outfall	8/4/2009	10	Dry		
059-01.2	Thames River WPCF outfall	12/12/2009	10	dry		
059-01.2	Thames River WPCF outfall	4/13/2010	8	Dry	8	n/a
059-01.2	Thames River WPCF outfall	7/27/2011	4	Dry	4	n/a
059-01.5	Thames River WPCF outfall	5/15/2000	54	Wet	54	n/a
059-01.5	Thames River WPCF outfall	5/22/2002	41	Dry	40	n/a
059-01.5	Thames River WPCF outfall	6/10/2002	179	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-01.5	Thames River WPCF outfall	7/22/2002	8.7	dry		
059-01.5	Thames River WPCF outfall	4/30/2003	10	Dry	15.2	n/a
059-01.5	Thames River WPCF outfall	10/28/2003	23	Wet		
059-01.5	Thames River WPCF outfall	7/19/2004	50	Wet	50	n/a
059-01.5	Thames River WPCF outfall	8/24/2004	50	Dry		
059-01.5	Thames River WPCF outfall	11/20/2006	81	dry	81	n/a
059-01.5	Thames River WPCF outfall	7/9/2007	2	Dry	2	n/a
059-01.5	Thames River WPCF outfall	6/17/2008	1	Wet	1	n/a
059-01.5	Thames River WPCF outfall	5/20/2009	4	Dry	15	n/a
059-01.5	Thames River WPCF outfall	8/4/2009	14	Dry		
059-01.5	Thames River WPCF outfall	12/14/2009	60	wet		
059-01.5	Thames River WPCF outfall	4/13/2010	30	Dry	30	n/a
059-01.5	Thames River WPCF outfall	7/27/2011	2	Dry	2	n/a
095-01.2	New London Sewer Outfall	5/15/2000	70	wet		
095-01.2	New London Sewer Outfall	5/22/2002	28	dry	83.33	n/a
095-01.2	New London Sewer Outfall	6/10/2002	248	dry		
095-01.2	New London Sewer Outfall	4/30/2003	11	dry	23.69	n/a
095-01.2	New London Sewer Outfall	10/28/2003	51	dry		
095-01.2	New London Sewer Outfall	7/19/2004	11	wet	15.91	n/a
095-01.2	New London Sewer Outfall	8/24/2004	23	dry		
095-01.2	New London Sewer Outfall	11/20/2006	171	dry		
095-01.2	New London Sewer Outfall	7/9/2007	1	dry		
095-01.2	New London Sewer Outfall	4/30/2008	81	wet	40.25	n/a
095-01.2	New London Sewer Outfall	6/17/2008	20	wet		
095-01.2	New London Sewer Outfall	5/20/2009	4	dry	15.94	n/a
095-01.2	New London Sewer Outfall	8/4/2009	22	dry		
095-01.2	New London Sewer Outfall	12/14/2009	46	wet		
095-01.2	New London Sewer Outfall	4/13/2010	30	dry		
095-02.1	Near Junk Island	5/15/2000	70	wet		
095-02.1	Near Junk Island	5/20/2002	258	dry	168.46	n/a
095-02.1	Near Junk Island	6/10/2002	110	dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
095-02.1	Near Junk Island	3/24/2003	41	dry	69.15	n/a
095-02.1	Near Junk Island	6/3/2003	36	dry		
095-02.1	Near Junk Island	6/23/2003	224	dry		
095-02.1	Near Junk Island	10/28/2003	11	dry		
095-02.1	Near Junk Island	7/19/2004	51	wet	23.69	n/a
095-02.1	Near Junk Island	8/24/2004	11	dry		
095-02.1	Near Junk Island	7/9/2007	1	dry		
095-02.1	Near Junk Island	4/30/2008	81	wet	31.18	n/a
095-02.1	Near Junk Island	6/17/2008	12	wet		
095-02.1	Near Junk Island	5/20/2009	10	dry	21.19	n/a
095-02.1	Near Junk Island	8/4/2009	34	dry		
095-02.1	Near Junk Island	12/14/2009	28	wet		
095-02.1	Near Junk Island	4/13/2010	16	dry		

Wet and dry weather geometric mean values for all monitoring stations on segment : LIS EB Inner – Thames River (Mouth), New London (CT-E1_014-SB)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-01.2	LIS EB Inner - Thames River (Mouth), New London	2000-2011	5	12	14.78	34.55	10.37
059-01.5	Thames River WPCF outfall	2000-2011	5	11	17.31	20.62	15.98
095-01.2	New London WPCF outfall	2000-2010	5	10	26.57	35.62	22.95
095-02.1	Near Junk Island	2000-2010	5	11	30.63	39.58	27.26

Table 17: Segment 7 LIS EB Inner Alewife Cove
Waterbody ID: CT-E1_017
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml
Percent reduction to meet:
Geometric Mean: 68%
90% of Samples Less Than: 57%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment: LIS EB Inner – Alewife Cove, Waterford/New London (CT-E1_017) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
152-14.5	Alewife Cove	2/15/2000	54	Wet	54	90
152-14.5	Alewife Cove	1/31/2001	88	Wet	18.7	23
152-14.5	Alewife Cove	2/7/2001	8.7	Dry		
152-14.5	Alewife Cove	9/18/2001	8.6	Dry		
152-14.5	Alewife Cove	1/24/2002	54	Dry	36.7	57
152-14.5	Alewife Cove	10/28/2002	51	Dry		
152-14.5	Alewife Cove	10/29/2002	18	Dry		
152-14.5	Alewife Cove	3/24/2003	8.6	Dry	8.6	n/a
152-14.5	Alewife Cove	8/30/2005	171	wet	171	90
152-14.5	Alewife Cove	12/27/2006	66	Dry	66	90
152-14.5	Alewife Cove	11/7/2007	26	Wet	26	n/a
152-14.5	Alewife Cove	12/15/2008	76	Wet	76	90
152-14.5	Alewife Cove	3/9/2009	10	Wet	11.9	n/a
152-14.5	Alewife Cove	11/18/2009	28	Dry		
152-14.5	Alewife Cove	12/16/2009	6	wet		
152-14.5	Alewife Cove	1/26/2010	16	Wet	16	n/a
152-14.4	Alewife Cove	2/15/2000	41	wet		
152-14.4	Alewife Cove	1/31/2001	18	wet	30.54986	
152-14.4	Alewife Cove	2/7/2001	18	dry		
152-14.4	Alewife Cove	9/18/2001	88	dry		90
152-14.4	Alewife Cove	1/24/2002	88	dry	**43.228993**	**57**
152-14.4	Alewife Cove	10/28/2002	51	dry		
152-14.4	Alewife Cove	10/29/2002	18	dry		
152-14.4	Alewife Cove	3/24/2003	8.7	dry		
152-14.4	Alewife Cove	4/11/2005	1	dry	5.5504991	24
152-14.4	Alewife Cove	8/30/2005	171	wet		
152-14.4	Alewife Cove	9/26/2005	1	wet		
152-14.4	Alewife Cove	12/27/2006	171	dry		90

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
152-14.4	Alewife Cove	11/7/2007	10	wet		
152-14.4	Alewife Cove	12/15/2008	171	wet		90
152-14.4	Alewife Cove	3/9/2009	12	wet	6.6038545	n/a
152-14.4	Alewife Cove	11/18/2009	4	dry		
152-14.4	Alewife Cove	12/16/2009	6	wet		
152-14.4	Alewife Cove	1/26/2010	14	wet		n/a

Wet and dry weather geometric mean values for all monitoring stations on segment: LIS EB Inner – Alewife Cove, Waterford/New London (CT-E1_017)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
152-14.5	Alewife Cove	2000-2010	8	8	27.22	33.38	22.20
152-14.4	Alewife Cove	2000-2010	9	9	19.50	18.19	20.90

Table 18: Segment 8 LIS EB Shore West Cove
Waterbody ID: CT-E2_006
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml
Percent reduction to meet:
Geometric Mean: NA
90% of Samples Less Than: 40%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment: LIS EB Shore – West Cove (Groton Long Pt), Groton (CT-E2_006) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-14.0	CA "E" Outer Palmer Cove	3/16/2000	1.6	Wet	3	4
059-14.0	CA "E" Outer Palmer Cove	4/13/2000	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	8/9/2000	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	9/5/2000	50	Wet		
059-14.0	CA "E" Outer Palmer Cove	9/6/2000	3.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	11/13/2000	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	11/28/2000	1.7	Dry		
059-14.0	CA "E" Outer Palmer Cove	2/7/2001	1.7	Dry	2.7	n/a
059-14.0	CA "E" Outer Palmer Cove	4/3/2001	1.7	Dry		
059-14.0	CA "E" Outer Palmer Cove	6/5/2001	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	6/13/2001	5.8	Wet		
059-14.0	CA "E" Outer Palmer Cove	6/20/2001	28	Wet		
059-14.0	CA "E" Outer Palmer Cove	7/30/2001	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	8/15/2001	1.7	Wet		
059-14.0	CA "E" Outer Palmer Cove	9/27/2001	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	3/7/2002	1.6	Dry	2.4	n/a
059-14.0	CA "E" Outer Palmer Cove	5/22/2002	1.7	Dry		
059-14.0	CA "E" Outer Palmer Cove	6/11/2002	14	Dry		
059-14.0	CA "E" Outer Palmer Cove	7/22/2002	1.7	Dry		
059-14.0	CA "E" Outer Palmer Cove	9/17/2002	1.7	Wet		
059-14.0	CA "E" Outer Palmer Cove	10/2/2002	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	1/6/2003	1.6	Wet	2.5	n/a
059-14.0	CA "E" Outer Palmer Cove	2/26/2003	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	6/3/2003	3.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	7/28/2003	1.7	Dry		
059-14.0	CA "E" Outer Palmer Cove	8/18/2003	22	Wet		
059-14.0	CA "E" Outer Palmer Cove	8/21/2003	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	10/20/2003	1.6	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-14.0	CA "E" Outer Palmer Cove	11/24/2003	1.7	Dry		
059-14.0	CA "E" Outer Palmer Cove	5/5/2004	1.7	Dry	2	n/a
059-14.0	CA "E" Outer Palmer Cove	8/18/2004	1.7	Dry		
059-14.0	CA "E" Outer Palmer Cove	8/23/2004	1.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	12/13/2004	3.6	Dry		
059-14.0	CA "E" Outer Palmer Cove	1/24/2005	0.9	Dry	1.9	n/a
059-14.0	CA "E" Outer Palmer Cove	2/7/2005	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	4/11/2005	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	5/2/2005	3	wet		
059-14.0	CA "E" Outer Palmer Cove	5/10/2005	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	10/19/2005	6	Dry		
059-14.0	CA "E" Outer Palmer Cove	10/24/2005	9	Dry		
059-14.0	CA "E" Outer Palmer Cove	12/12/2005	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	4/11/2006	1	Dry	2.7	n/a
059-14.0	CA "E" Outer Palmer Cove	9/6/2006	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	9/19/2006	5	Dry		
059-14.0	CA "E" Outer Palmer Cove	11/1/2006	11	Dry		
059-14.0	CA "E" Outer Palmer Cove	6/11/2007	20	Dry	2.1	n/a
059-14.0	CA "E" Outer Palmer Cove	6/13/2007	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	9/19/2007	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	11/28/2007	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	2/25/2008	1	Dry	1	n/a
059-14.0	CA "E" Outer Palmer Cove	6/18/2008	1	Wet		
059-14.0	CA "E" Outer Palmer Cove	7/30/2008	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	9/10/2008	1	Wet		
059-14.0	CA "E" Outer Palmer Cove	12/3/2008	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	3/10/2009	1	Wet	1.6	n/a
059-14.0	CA "E" Outer Palmer Cove	5/6/2009	1	Wet		
059-14.0	CA "E" Outer Palmer Cove	5/18/2009	4	Dry		
059-14.0	CA "E" Outer Palmer Cove	5/19/2009	2	Dry		
059-14.0	CA "E" Outer Palmer Cove	7/7/2009	3	Wet		
059-14.0	CA "E" Outer Palmer Cove	7/8/2009	6	Wet		
059-14.0	CA "E" Outer Palmer Cove	7/28/2009	3	Dry		
059-14.0	CA "E" Outer Palmer Cove	7/30/2009	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	8/3/2009	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	9/2/2009	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	9/15/2009	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	10/27/2009	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	11/17/2009	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	12/15/2009	2	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-14.0	CA "E" Outer Palmer Cove	4/12/2010	1	Dry	1.3	n/a
059-14.0	CA "E" Outer Palmer Cove	11/21/2010	1	Dry		
059-14.0	CA "E" Outer Palmer Cove	12/15/2010	2	Dry		
059-14.0	CA "E" Outer Palmer Cove	1/31/2011	2	Dry	3.1	n/a
059-14.0	CA "E" Outer Palmer Cove	4/20/2011	3	Dry		
059-14.0	CA "E" Outer Palmer Cove	5/25/2011	16	Dry		
059-14.0	CA "E" Outer Palmer Cove	7/11/2011	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	3/16/2000	1.6	Wet	7.3	19
059-15.1	CA "E" Outer Palmer Cove	4/13/2000	1.7	Dry		
059-15.1	CA "E" Outer Palmer Cove	8/9/2000	51	Dry		
059-15.1	CA "E" Outer Palmer Cove	9/5/2000	51	Wet		
059-15.1	CA "E" Outer Palmer Cove	9/6/2000	11	Dry		
059-15.1	CA "E" Outer Palmer Cove	11/13/2000	1.7	Dry		
059-15.1	CA "E" Outer Palmer Cove	11/28/2000	8.1	Dry		
059-15.1	CA "E" Outer Palmer Cove	2/7/2001	1.6	Dry	2.3	n/a
059-15.1	CA "E" Outer Palmer Cove	4/3/2001	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	6/5/2001	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	6/13/2001	1.6	Wet		
059-15.1	CA "E" Outer Palmer Cove	6/20/2001	1.7	Wet		
059-15.1	CA "E" Outer Palmer Cove	7/30/2001	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	8/15/2001	28	Wet		
059-15.1	CA "E" Outer Palmer Cove	9/27/2001	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	3/7/2002	1.7	Dry	3.2	n/a
059-15.1	CA "E" Outer Palmer Cove	5/22/2002	1.7	Dry		
059-15.1	CA "E" Outer Palmer Cove	6/11/2002	3.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	7/22/2002	11	Dry		
059-15.1	CA "E" Outer Palmer Cove	9/17/2002	5.8	Wet		
059-15.1	CA "E" Outer Palmer Cove	10/2/2002	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	1/6/2003	1.6	Wet	2.3	n/a
059-15.1	CA "E" Outer Palmer Cove	2/26/2003	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	6/3/2003	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	7/28/2003	1.7	Dry		
059-15.1	CA "E" Outer Palmer Cove	8/18/2003	14	Wet		
059-15.1	CA "E" Outer Palmer Cove	8/21/2003	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	10/20/2003	3.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	11/24/2003	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	5/5/2004	1.7	Dry	3.8	n/a
059-15.1	CA "E" Outer Palmer Cove	8/18/2004	1.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	8/23/2004	22	Dry		
059-15.1	CA "E" Outer Palmer Cove	12/13/2004	3.6	Dry		
059-15.1	CA "E" Outer Palmer Cove	1/24/2005	0.9	Dry	3.5	n/a
059-15.1	CA "E" Outer Palmer Cove	2/7/2005	1	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-15.1	CA "E" Outer Palmer Cove	4/11/2005	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	5/2/2005	63	wet		
059-15.1	CA "E" Outer Palmer Cove	5/10/2005	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	10/19/2005	10	Dry		
059-15.1	CA "E" Outer Palmer Cove	10/24/2005	9	Dry		
059-15.1	CA "E" Outer Palmer Cove	12/12/2005	4	Dry		
059-15.1	CA "E" Outer Palmer Cove	4/11/2006	1	Dry	2.1	n/a
059-15.1	CA "E" Outer Palmer Cove	9/6/2006	2	Dry		
059-15.1	CA "E" Outer Palmer Cove	9/19/2006	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	11/1/2006	10	Dry		
059-15.1	CA "E" Outer Palmer Cove	6/11/2007	19	Dry	2.7	n/a
059-15.1	CA "E" Outer Palmer Cove	6/13/2007	3	Dry		
059-15.1	CA "E" Outer Palmer Cove	9/19/2007	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	11/28/2007	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	2/25/2008	1	Dry	2.2	n/a
059-15.1	CA "E" Outer Palmer Cove	6/18/2008	8	Wet		
059-15.1	CA "E" Outer Palmer Cove	7/30/2008	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	9/10/2008	2	Wet		
059-15.1	CA "E" Outer Palmer Cove	12/3/2008	3	Dry		
059-15.1	CA "E" Outer Palmer Cove	3/10/2009	1	Wet	4.7	n/a
059-15.1	CA "E" Outer Palmer Cove	5/6/2009	15	Wet		
059-15.1	CA "E" Outer Palmer Cove	5/18/2009	8	Dry		
059-15.1	CA "E" Outer Palmer Cove	5/19/2009	2	Dry		
059-15.1	CA "E" Outer Palmer Cove	7/7/2009	4	Wet		
059-15.1	CA "E" Outer Palmer Cove	7/8/2009	148	Wet		
059-15.1	CA "E" Outer Palmer Cove	7/28/2009	2	Dry		
059-15.1	CA "E" Outer Palmer Cove	7/30/2009	8	Dry		
059-15.1	CA "E" Outer Palmer Cove	8/3/2009	15	Dry		
059-15.1	CA "E" Outer Palmer Cove	9/2/2009	3	Dry		
059-15.1	CA "E" Outer Palmer Cove	9/15/2009	11	Dry		
059-15.1	CA "E" Outer Palmer Cove	10/27/2009	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	11/17/2009	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	12/15/2009	2	Dry		
059-15.1	CA "E" Outer Palmer Cove	4/12/2010	1	Dry	1.4	n/a
059-15.1	CA "E" Outer Palmer Cove	11/21/2010	1	Dry		
059-15.1	CA "E" Outer Palmer Cove	12/15/2010	3	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-15.1	CA "E" Outer Palmer Cove	1/31/2011	1	Dry	3.2	n/a
059-15.1	CA "E" Outer Palmer Cove	4/20/2011	2	Dry		
059-15.1	CA "E" Outer Palmer Cove	5/25/2011	26	Dry		
059-15.1	CA "E" Outer Palmer Cove	7/11/2011	2	Dry		
059-16.0	CA "E" Outer Palmer Cove	3/16/2000	1.7	Wet	12.9	40
059-16.0	CA "E" Outer Palmer Cove	4/13/2000	1.7	Dry		
059-16.0	CA "E" Outer Palmer Cove	8/9/2000	51	Dry		
059-16.0	CA "E" Outer Palmer Cove	9/5/2000	51	Wet		
059-16.0	CA "E" Outer Palmer Cove	9/6/2000	41	Dry		
059-16.0	CA "E" Outer Palmer Cove	9/21/2000	51	Dry		
059-16.0	CA "E" Outer Palmer Cove	11/13/2000	1.7	Dry		
059-16.0	CA "E" Outer Palmer Cove	11/28/2000	28	Dry		
059-16.0	CA "E" Outer Palmer Cove	1/31/2001	1.7	Wet	7.7	20
059-16.0	CA "E" Outer Palmer Cove	2/7/2001	1.7	Dry		
059-16.0	CA "E" Outer Palmer Cove	3/14/2001	8.6	Wet		
059-16.0	CA "E" Outer Palmer Cove	6/5/2001	5.8	Dry		
059-16.0	CA "E" Outer Palmer Cove	6/13/2001	36	Wet		
059-16.0	CA "E" Outer Palmer Cove	6/20/2001	51	Wet		
059-16.0	CA "E" Outer Palmer Cove	7/30/2001	1.7	Dry		
059-16.0	CA "E" Outer Palmer Cove	8/15/2001	50	Wet		
059-16.0	CA "E" Outer Palmer Cove	9/25/2001	18	Wet		
059-16.0	CA "E" Outer Palmer Cove	9/27/2001	1.7	Dry		
059-16.0	CA "E" Outer Palmer Cove	3/4/2002	1.6	Wet	3.5	n/a
059-16.0	CA "E" Outer Palmer Cove	3/21/2002	1.7	Wet		
059-16.0	CA "E" Outer Palmer Cove	5/22/2002	1.6	Dry		
059-16.0	CA "E" Outer Palmer Cove	6/11/2002	8.1	Dry		
059-16.0	CA "E" Outer Palmer Cove	7/22/2002	5.8	Dry		
059-16.0	CA "E" Outer Palmer Cove	9/17/2002	18	Wet		
059-16.0	CA "E" Outer Palmer Cove	10/2/2002	1.7	Dry		
059-16.0	CA "E" Outer Palmer Cove	1/6/2003	1.7	Wet	6.1	3
059-16.0	CA "E" Outer Palmer Cove	2/26/2003	1.6	Dry		
059-16.0	CA "E" Outer Palmer Cove	6/3/2003	8.1	Dry		
059-16.0	CA "E" Outer Palmer Cove	7/28/2003	11	Dry		
059-16.0	CA "E" Outer Palmer Cove	8/18/2003	51	Wet		
059-16.0	CA "E" Outer Palmer Cove	8/21/2003	28	Dry		
059-16.0	CA "E" Outer Palmer Cove	10/20/2003	3.6	Dry		
059-16.0	CA "E" Outer Palmer Cove	11/24/2003	1.6	Dry		
059-16.0	CA "E" Outer Palmer Cove	5/5/2004	1.6	Dry	6.4	15
059-16.0	CA "E" Outer Palmer Cove	8/18/2004	5.8	Dry		
059-16.0	CA "E" Outer Palmer Cove	8/23/2004	50	Dry		
059-16.0	CA "E" Outer Palmer Cove	12/13/2004	3.6	Dry		
059-16.0	CA "E" Outer Palmer Cove	1/24/2005	0.9	Dry	3.6	4

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-16.0	CA "E" Outer Palmer Cove	2/7/2005	1	Dry		
059-16.0	CA "E" Outer Palmer Cove	4/11/2005	1	Dry		
059-16.0	CA "E" Outer Palmer Cove	5/2/2005	81	wet		
059-16.0	CA "E" Outer Palmer Cove	5/10/2005	1	Dry		
059-16.0	CA "E" Outer Palmer Cove	10/24/2005	9	Dry		
059-16.0	CA "E" Outer Palmer Cove	12/12/2005	11	Dry		
059-16.0	CA "E" Outer Palmer Cove	4/11/2006	1	Dry	7.5	n/a
059-16.0	CA "E" Outer Palmer Cove	9/6/2006	30	Dry		
059-16.0	CA "E" Outer Palmer Cove	9/19/2006	7	Dry		
059-16.0	CA "E" Outer Palmer Cove	11/1/2006	15	Dry		
059-16.0	CA "E" Outer Palmer Cove	6/11/2007	43	Dry	4.9	15
059-16.0	CA "E" Outer Palmer Cove	6/13/2007	13	Dry		
059-16.0	CA "E" Outer Palmer Cove	9/19/2007	1	Dry		
059-16.0	CA "E" Outer Palmer Cove	11/28/2007	1	Dry		
059-16.0	CA "E" Outer Palmer Cove	2/25/2008	1	Dry	2	n/a
059-16.0	CA "E" Outer Palmer Cove	6/18/2008	2	Wet		
059-16.0	CA "E" Outer Palmer Cove	7/30/2008	1	Dry		
059-16.0	CA "E" Outer Palmer Cove	9/10/2008	16	Wet		
059-16.0	CA "E" Outer Palmer Cove	12/3/2008	1	Dry		
059-16.0	CA "E" Outer Palmer Cove	3/10/2009	1	Wet	7.9	n/a
059-16.0	CA "E" Outer Palmer Cove	5/6/2009	29	Wet		
059-16.0	CA "E" Outer Palmer Cove	5/18/2009	7	Dry		
059-16.0	CA "E" Outer Palmer Cove	5/19/2009	5	Dry		
059-16.0	CA "E" Outer Palmer Cove	7/7/2009	13	Wet		
059-16.0	CA "E" Outer Palmer Cove	7/8/2009	181	Wet		
059-16.0	CA "E" Outer Palmer Cove	7/28/2009	10	Dry		
059-16.0	CA "E" Outer Palmer Cove	7/30/2009	4	Dry		
059-16.0	CA "E" Outer Palmer Cove	8/3/2009	27	Dry		
059-16.0	CA "E" Outer Palmer Cove	9/2/2009	2	Dry		
059-16.0	CA "E" Outer Palmer Cove	9/15/2009	7	Dry		
059-16.0	CA "E" Outer Palmer Cove	10/27/2009	4	Dry		
059-16.0	CA "E" Outer Palmer Cove	11/17/2009	2	Dry		
059-16.0	CA "E" Outer Palmer Cove	12/15/2009	12	Dry		
059-16.0	CA "E" Outer Palmer Cove	4/12/2010	1	Dry	2.3	n/a
059-16.0	CA "E" Outer Palmer Cove	11/21/2010	1	Dry		
059-16.0	CA "E" Outer Palmer Cove	12/15/2010	12	Dry		
059-16.0	CA "E" Outer Palmer Cove	1/31/2011	1	Dry	3.5	n/a
059-16.0	CA "E" Outer Palmer Cove	4/20/2011	8	Dry		
059-16.0	CA "E" Outer Palmer Cove	5/25/2011	18	Dry		
059-16.0	CA "E" Outer Palmer Cove	7/11/2011	1	Dry		
059-20.0	CA "F" Spicer's mooring	3/16/2000	1.6	Wet	2.3	n/a
059-20.0	CA "F" Spicer's mooring	4/13/2000	1.6	Dry		
059-20.0	CA "F" Spicer's mooring	9/5/2000	14	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-20.0	CA "F" Spicer's mooring	9/6/2000	1.6	Dry		
059-20.0	CA "F" Spicer's mooring	11/13/2000	1.6	Dry		
059-20.0	CA "F" Spicer's mooring	11/28/2000	1.6	Dry		
059-20.0	CA "F" Spicer's mooring	2/7/2001	1.6	Dry	1.6	n/a
059-20.0	CA "F" Spicer's mooring	6/5/2001	1.6	Dry		
059-20.0	CA "F" Spicer's mooring	6/13/2001	1.6	Wet		
059-20.0	CA "F" Spicer's mooring	3/21/2002	1.6	Wet	1.6	n/a
059-20.0	CA "F" Spicer's mooring	5/22/2002	1.6	Dry		
059-20.0	CA "F" Spicer's mooring	1/6/2003	1.7	Wet	2.3	n/a
059-20.0	CA "F" Spicer's mooring	2/26/2003	1.6	Dry		
059-20.0	CA "F" Spicer's mooring	10/20/2003	1.7	Dry		
059-20.0	CA "F" Spicer's mooring	11/24/2003	5.8	Dry		
059-20.0	CA "F" Spicer's mooring	5/5/2004	1.6	Dry	2.1	n/a
059-20.0	CA "F" Spicer's mooring	8/18/2004	1.7	Dry		
059-20.0	CA "F" Spicer's mooring	12/13/2004	3.6	Dry		
059-20.0	CA "F" Spicer's mooring	2/7/2005	1	Dry	1	n/a
059-20.0	CA "F" Spicer's mooring	12/12/2005	1	dry		
059-20.0	CA "F" Spicer's mooring	9/6/2006	4	Dry	3.2	n/a
059-20.0	CA "F" Spicer's mooring	9/19/2006	1	Dry		
059-20.0	CA "F" Spicer's mooring	11/1/2006	8	Dry		
059-20.0	CA "F" Spicer's mooring	11/28/2007	1	Dry	1	n/a
059-20.0	CA "F" Spicer's mooring	2/25/2008	1	Dry	1.4	n/a
059-20.0	CA "F" Spicer's mooring	12/3/2008	2	Dry		
059-20.0	CA "F" Spicer's mooring	3/10/2009	1	Wet	1	n/a
059-20.0	CA "F" Spicer's mooring	10/27/2009	1	Dry		
059-20.0	CA "F" Spicer's mooring	11/17/2009	1	Dry		
059-20.0	CA "F" Spicer's mooring	12/15/2009	1	Dry		
059-20.0	CA "F" Spicer's mooring	7/11/2011	1	Dry	1	n/a
059-22.0	Morgan Point	4/13/2000	1.7	Dry	4.6	n/a
059-22.0	Morgan Point	8/1/2000	3.6	Wet		
059-22.0	Morgan Point	8/9/2000	18	Dry		
059-22.0	Morgan Point	9/5/2000	3.6	Wet		
059-22.0	Morgan Point	9/6/2000	8.1	Dry		
059-22.0	Morgan Point	11/13/2000	3.6	Dry		
059-22.0	Morgan Point	11/28/2000	3.6	Dry		
059-22.0	Morgan Point	4/3/2001	3.6	Dry	3.8	10
059-22.0	Morgan Point	6/5/2001	1.7	Dry		
059-22.0	Morgan Point	6/13/2001	1.6	Wet		
059-22.0	Morgan Point	6/19/2001	50	Wet		
059-22.0	Morgan Point	8/15/2001	1.7	Wet		
059-22.0	Morgan Point	5/22/2002	1.6	Dry	2.1	n/a
059-22.0	Morgan Point	7/22/2002	1.6	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-22.0	Morgan Point	9/3/2002	3.6	Wet		
059-22.0	Morgan Point	4/30/2003	1.6	Dry	1.6	n/a
059-22.0	Morgan Point	6/17/2003	1.6	Dry		
059-22.0	Morgan Point	7/28/2003	1.6	Dry		
059-22.0	Morgan Point	10/20/2003	1.6	Dry		
059-22.0	Morgan Point	11/24/2003	1.6	Dry		
059-22.0	Morgan Point	5/5/2004	1.7	Dry	1.6	n/a
059-22.0	Morgan Point	7/14/2004	1.6	Wet		
059-22.0	Morgan Point	8/18/2004	1.6	Dry		
059-22.0	Morgan Point	8/24/2004	1.6	Dry		
059-22.0	Morgan Point	10/19/2005	2	Dry	4.2	n/a
059-22.0	Morgan Point	10/24/2005	9	Wet		
059-22.0	Morgan Point	6/5/2006	5	Dry	4.5	n/a
059-22.0	Morgan Point	8/31/2006	2	Dry		
059-22.0	Morgan Point	11/1/2006	9	Dry		
059-22.0	Morgan Point	6/11/2007	3	Dry	3	n/a
059-22.0	Morgan Point	6/13/2007	3	Dry		
059-22.0	Morgan Point	6/18/2008	2	Wet	2.5	n/a
059-22.0	Morgan Point	9/10/2008	2	Wet		
059-22.0	Morgan Point	12/3/2008	1	Dry		
059-22.0	Morgan Point	12/16/2008	10	Wet		
059-22.0	Morgan Point	5/6/2009	1	Wet	1.1	n/a
059-22.0	Morgan Point	5/19/2009	1	Dry		
059-22.0	Morgan Point	7/7/2009	1	Wet		
059-22.0	Morgan Point	7/8/2009	2	Wet		
059-22.0	Morgan Point	7/28/2009	1	Dry		
059-22.0	Morgan Point	7/30/2009	1	Dry		
059-22.0	Morgan Point	8/3/2009	1	Dry		
059-22.0	Morgan Point	9/15/2009	1	Dry		
059-22.0	Morgan Point	10/27/2009	1	Dry		
059-22.0	Morgan Point	11/17/2009	1	Dry		
059-22.0	Morgan Point	12/15/2009	1	Dry		
059-22.0	Morgan Point	3/17/2010	1	dry	1.2	n/a
059-22.0	Morgan Point	3/25/2010	2	dry		
059-22.0	Morgan Point	4/12/2010	1	Dry		
059-22.0	Morgan Point	5/20/2010	1	Dry		
059-22.0	Morgan Point	5/25/2011	1	Dry	1	n/a
059-22.0	Morgan Point	7/11/2011	1	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment: LIS EB Shore – West Cove (Groton Long Pt), Groton (CT-E2_006)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-14.0	CA "E" Outer Palmer Cove	2000-2011	15	60	2.08	3.34	1.85
059-15.1	CA "E" Outer Palmer Cove	2000-2011	15	60	3.23	7.20	2.62
059-16.0	CA "E" Outer Palmer Cove	2000-2011	20	58	5.61	11.48	4.38
059-20.0	CA "F" Spicer's mooring	2000-2011	6	25	1.73	2.15	1.65
059-22.0	Morgan Point	2000-2011	14	38	2.10	3.10	1.82

Table 19: Segment 9 LIS EB Shore Outer Mumford Cove
Waterbody ID: CT-E2_007
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml
Percent reduction to meet:
Geometric Mean: NA
90% of Samples Less Than: 15%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment : LIS EB Shore – Outer Mumford Cove, Groton (CT-E2_007) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-11.0	CA "A" Outside Mumford Cove	1/31/2000	1.7	Wet	2.5	3
059-11.0	CA "A" Outside Mumford Cove	3/16/2000	1.6	Wet		
059-11.0	CA "A" Outside Mumford Cove	4/13/2000	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	8/1/2000	50	Wet		
059-11.0	CA "A" Outside Mumford Cove	8/9/2000	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	9/6/2000	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	11/13/2000	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	11/28/2000	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	1/16/2001	1.6	Wet	3.4	n/a
059-11.0	CA "A" Outside Mumford Cove	2/7/2001	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	4/3/2001	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	6/5/2001	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	6/13/2001	11	Wet		
059-11.0	CA "A" Outside Mumford Cove	6/20/2001	28	Wet		
059-11.0	CA "A" Outside Mumford Cove	8/15/2001	5.8	Wet		
059-11.0	CA "A" Outside Mumford Cove	9/27/2001	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	3/21/2002	1.6	Wet	1.6	n/a
059-11.0	CA "A" Outside Mumford Cove	5/22/2002	1.7	Dry		
059-11.0	CA "A" Outside Mumford Cove	7/22/2002	1.6	dry		
059-11.0	CA "A" Outside Mumford Cove	9/17/2002	1.6	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-11.0	CA "A" Outside Mumford Cove	1/6/2003	1.6	Wet	2.1	n/a
059-11.0	CA "A" Outside Mumford Cove	2/26/2003	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	6/3/2003	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	7/28/2003	1.6	Dry		
059-11.0	CA "A" Outside Mumford Cove	8/18/2003	8.1	Wet		
059-11.0	CA "A" Outside Mumford Cove	11/24/2003	1.7	Dry		
059-11.0	CA "A" Outside Mumford Cove	5/5/2004	1.6	Dry	1.6	n/a
059-11.0	CA "A" Outside Mumford Cove	7/14/2004	1.6	Wet		
059-11.0	CA "A" Outside Mumford Cove	8/18/2004	1.6	dry		
059-11.0	CA "A" Outside Mumford Cove	12/13/2004	1.7	Dry		
059-11.0	CA "A" Outside Mumford Cove	1/24/2005	0.9	Dry	2.1	n/a
059-11.0	CA "A" Outside Mumford Cove	2/7/2005	0.9	Dry		
059-11.0	CA "A" Outside Mumford	4/11/2005	1	Dry		
059-11.0	CA "A" Outside Mumford	4/26/2005	8	Wet		
059-11.0	CA "A" Outside Mumford	5/2/2005	1	Wet		
059-11.0	CA "A" Outside Mumford	5/10/2005	1	Dry		
059-11.0	CA "A" Outside Mumford	10/19/2005	6	Dry		
059-11.0	CA "A" Outside Mumford	10/24/2005	9	Wet		
059-11.0	CA "A" Outside Mumford	6/5/2006	7	dry	3.5	n/a
059-11.0	CA "A" Outside Mumford	9/19/2006	1	Dry		
059-11.0	CA "A" Outside Mumford	11/1/2006	6	dry		
059-11.0	CA "A" Outside Mumford	6/11/2007	41	Dry	3.6	15
059-11.0	CA "A" Outside Mumford Cove	6/13/2007	4	Dry		
059-11.0	CA "A" Outside Mumford Cove	9/19/2007	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	11/28/2007	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	2/25/2008	1	Dry	1.9	n/a
059-11.0	CA "A" Outside Mumford Cove	6/18/2008	1	Wet		
059-11.0	CA "A" Outside Mumford Cove	7/30/2008	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	9/10/2008	2	Wet		
059-11.0	CA "A" Outside Mumford Cove	12/3/2008	2	Dry		
059-11.0	CA "A" Outside Mumford Cove	12/16/2008	12	Wet		
059-11.0	CA "A" Outside Mumford Cove	3/31/2009	1	Dry	1.5	n/a
059-11.0	CA "A" Outside Mumford Cove	5/6/2009	4	wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-11.0	CA "A" Outside Mumford Cove	5/18/2009	2	dry		
059-11.0	CA "A" Outside Mumford Cove	5/19/2009	1	dry		
059-11.0	CA "A" Outside Mumford Cove	7/7/2009	1	Wet		
059-11.0	CA "A" Outside Mumford Cove	7/8/2009	52	Wet		
059-11.0	CA "A" Outside Mumford Cove	7/28/2009	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	7/30/2009	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	8/3/2009	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	9/2/2009	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	9/15/2009	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	10/27/2009	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	11/17/2009	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	12/15/2009	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	4/12/2010	1	Dry	1	n/a
059-11.0	CA "A" Outside Mumford Cove	5/20/2010	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	12/16/2010	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	1/31/2011	1	Dry	1.3	n/a
059-11.0	CA "A" Outside Mumford Cove	5/25/2011	1	Dry		
059-11.0	CA "A" Outside Mumford Cove	6/13/2011	3	Dry		
059-11.0	CA "A" Outside Mumford Cove	7/11/2011	1	Dry		
059-11.2	CA "C" Mumford Cove	1/31/2000	8.1	Wet	5.4	n/a
059-11.2	CA "C" Mumford Cove	4/20/2000	3.6	Dry		
059-11.2	CA "C" Mumford Cove	1/31/2001	1.6	Wet	1.6	n/a
059-11.2	CA "C" Mumford Cove	4/3/2001	1.6	Dry		
059-11.2	CA "C" Mumford Cove	1/10/2002	1.6	Dry	1.6	n/a
059-11.2	CA "C" Mumford Cove	6/3/2003	3.6	Dry	2.5	n/a
059-11.2	CA "C" Mumford Cove	11/24/2003	1.7	Dry		
059-11.2	CA "C" Mumford Cove	5/5/2004	1.6	Dry	1.6	n/a
059-11.2	CA "C" Mumford Cove	8/18/2004	1.6	Dry		
059-11.2	CA "C" Mumford Cove	2/7/2005	0.9	Dry	1	n/a
059-11.2	CA "C" Mumford Cove	4/11/2005	1	dry		
059-11.2	CA "C" Mumford Cove	12/12/2005	1	dry		
059-11.2	CA "C" Mumford Cove	4/11/2006	1	dry	4.2	n/a
059-11.2	CA "C" Mumford Cove	11/1/2006	18	dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-11.2	CA "C" Mumford Cove	11/28/2007	1	Dry	1	n/a
059-11.2	CA "C" Mumford Cove	2/25/2008	1	Dry	1	n/a
059-11.2	CA "C" Mumford Cove	3/10/2009	1	Wet	1	n/a
059-11.2	CA "C" Mumford Cove	11/18/2009	1	Dry		
059-11.2	CA "C" Mumford Cove	11/21/2010	1	Dry	3.6	n/a
059-11.2	CA "C" Mumford Cove	12/15/2010	13	Dry		
059-11.2	CA "C" Mumford Cove	1/31/2011	1	Dry	2.2	n/a
059-11.2	CA "C" Mumford Cove	4/20/2011	5	Dry		
059-12.0	CA "D"	4/13/2000	1.6	Dry	1.9	n/a
059-12.0	CA "D"	8/9/2000	3.6	Dry		
059-12.0	CA "D"	9/6/2000	1.6	Dry		
059-12.0	CA "D"	11/13/2000	1.6	Dry		
059-12.0	CA "D"	11/28/2000	1.7	Dry		
059-12.0	CA "D"	1/16/2001	1.6	Wet	4.1	3
059-12.0	CA "D"	2/7/2001	1.6	Dry		
059-12.0	CA "D"	4/3/2001	5.8	Dry		
059-12.0	CA "D"	6/5/2001	1.7	Dry		
059-12.0	CA "D"	6/13/2001	1.6	Wet		
059-12.0	CA "D"	6/19/2001	51	Wet		
059-12.0	CA "D"	6/20/2001	22	Wet		
059-12.0	CA "D"	8/15/2001	1.7	Wet		
059-12.0	CA "D"	3/21/2002	1.6	Wet	2.2	n/a
059-12.0	CA "D"	5/22/2002	1.6	Dry		
059-12.0	CA "D"	7/22/2002	1.6	dry		
059-12.0	CA "D"	9/3/2002	5.8	Wet		
059-12.0	CA "D"	1/6/2003	1.6	Wet	1.6	n/a
059-12.0	CA "D"	2/26/2003	1.6	Dry		
059-12.0	CA "D"	6/3/2003	1.6	Dry		
059-12.0	CA "D"	7/28/2003	1.7	Dry		
059-12.0	CA "D"	11/24/2003	1.6	Dry		
059-12.0	CA "D"	5/5/2004	1.6	Dry	2.4	n/a
059-12.0	CA "D"	7/14/2004	1.6	Wet		
059-12.0	CA "D"	8/18/2004	1.6	dry		
059-12.0	CA "D"	12/13/2004	8.1	Dry		
059-12.0	CA "D"	1/24/2005	0.9	Dry	1.9	n/a
059-12.0	CA "D"	2/7/2005	1	Dry		
059-12.0	CA "D"	4/11/2005	1	Dry		
059-12.0	CA "D"	5/10/2005	1	dry		
059-12.0	CA "D"	10/19/2005	6	dry		
059-12.0	CA "D"	10/24/2005	9	wet		
059-12.0	CA "D"	6/5/2006	6	dry	4	n/a
059-12.0	CA "D"	9/19/2006	1	dry		
059-12.0	CA "D"	11/1/2006	11	dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-12.0	CA "D"	6/11/2007	5	Dry	2	n/a
059-12.0	CA "D"	6/13/2007	3	Dry		
059-12.0	CA "D"	9/19/2007	1	Dry		
059-12.0	CA "D"	11/28/2007	1	Dry		
059-12.0	CA "D"	2/25/2008	2	Dry	1.5	n/a
059-12.0	CA "D"	6/18/2008	1	Wet		
059-12.0	CA "D"	7/30/2008	1	Dry		
059-12.0	CA "D"	9/10/2008	1	Wet		
059-12.0	CA "D"	12/3/2008	1	Dry		
059-12.0	CA "D"	12/16/2008	6	Wet		
059-12.0	CA "D"	3/31/2009	1	Dry	1.3	n/a
059-12.0	CA "D"	5/6/2009	1	Wet		
059-12.0	CA "D"	5/18/2009	1	Dry		
059-12.0	CA "D"	5/19/2009	1	Dry		
059-12.0	CA "D"	7/7/2009	1	Wet		
059-12.0	CA "D"	7/8/2009	2	Wet		
059-12.0	CA "D"	7/28/2009	2	Dry		
059-12.0	CA "D"	7/30/2009	11	Dry		
059-12.0	CA "D"	8/3/2009	1	Dry		
059-12.0	CA "D"	9/2/2009	1	Dry		
059-12.0	CA "D"	9/15/2009	1	Dry		
059-12.0	CA "D"	10/27/2009	1	Dry		
059-12.0	CA "D"	11/17/2009	1	Dry		
059-12.0	CA "D"	12/15/2009	1	dry		
059-12.0	CA "D"	4/12/2010	1	Dry	1.4	n/a
059-12.0	CA "D"	5/20/2010	2	Dry		
059-12.0	CA "D"	1/31/2011	1	Dry	2.6	n/a
059-12.0	CA "D"	5/25/2011	3	Dry		
059-12.0	CA "D"	6/13/2011	16	Dry		
059-12.0	CA "D"	7/11/2011	1	Dry		
059-12.1	CA "A" Groton Long Point	3/16/2000	14	Wet	5.1	n/a
059-12.1	CA "A" Groton Long Point	4/13/2000	1.6	Dry		
059-12.1	CA "A" Groton Long Point	8/1/2000	18	Wet		
059-12.1	CA "A" Groton Long Point	8/9/2000	14	Dry		
059-12.1	CA "A" Groton Long Point	9/6/2000	1.6	Dry		
059-12.1	CA "A" Groton Long Point	11/13/2000	1.7	Dry		
059-12.1	CA "A" Groton Long Point	11/28/2000	5.8	Dry		
059-12.1	CA "A" Groton Long Point	1/16/2001	1.6	Wet	2.5	3
059-12.1	CA "A" Groton Long Point	2/7/2001	1.7	Dry		
059-12.1	CA "A" Groton Long Point	4/3/2001	1.7	Dry		
059-12.1	CA "A" Groton Long Point	6/5/2001	1.6	Dry		
059-12.1	CA "A" Groton Long Point	6/13/2001	1.6	Wet		
059-12.1	CA "A" Groton Long Point	6/20/2001	50	Wet		
059-12.1	CA "A" Groton Long Point	8/15/2001	1.6	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-12.1	CA "A" Groton Long Point	9/27/2001	1.6	Dry		
059-12.1	CA "A" Groton Long Point	3/21/2002	1.6	Wet	2	n/a
059-12.1	CA "A" Groton Long Point	5/22/2002	1.7	Dry		
059-12.1	CA "A" Groton Long Point	7/22/2002	1.7	dry		
059-12.1	CA "A" Groton Long Point	9/17/2002	3.6	Wet		
059-12.1	CA "A" Groton Long Point	1/6/2003	1.6	Wet	2.1	n/a
059-12.1	CA "A" Groton Long Point	2/26/2003	1.6	Dry		
059-12.1	CA "A" Groton Long Point	6/3/2003	1.7	Dry		
059-12.1	CA "A" Groton Long Point	7/28/2003	1.7	Dry		
059-12.1	CA "A" Groton Long Point	8/18/2003	8.1	Wet		
059-12.1	CA "A" Groton Long Point	11/24/2003	1.6	Dry		
059-12.1	CA "A" Groton Long Point	5/5/2004	1.6	Dry	2.2	n/a
059-12.1	CA "A" Groton Long Point	7/14/2004	1.6	Wet		
059-12.1	CA "A" Groton Long Point	8/18/2004	1.6	dry		
059-12.1	CA "A" Groton Long Point	12/13/2004	5.8	Dry		
059-12.1	CA "A" Groton Long Point	1/24/2005	0.9	Dry	1.9	n/a
059-12.1	CA "A" Groton Long Point	2/7/2005	1	Dry		
059-12.1	CA "A" Groton Long Point	4/11/2005	1	Dry		
059-12.1	CA "A" Groton Long Point	4/26/2005	9	Wet		
059-12.1	CA "A" Groton Long Point	5/2/2005	2	Wet		
059-12.1	CA "A" Groton Long Point	5/10/2005	1	Dry		
059-12.1	CA "A" Groton Long Point	10/19/2005	1	Dry		
059-12.1	CA "A" Groton Long Point	10/24/2005	9	Wet		
059-12.1	CA "A" Groton Long Point	6/5/2006	23	Dry	3.6	n/a
059-12.1	CA "A" Groton Long Point	9/19/2006	1	Dry		
059-12.1	CA "A" Groton Long Point	11/1/2006	2	Dry		
059-12.1	CA "A" Groton Long Point	6/11/2007	20	Dry	2.5	n/a
059-12.1	CA "A" Groton Long Point	6/13/2007	2	Dry		
059-12.1	CA "A" Groton Long Point	9/19/2007	1	Dry		
059-12.1	CA "A" Groton Long Point	11/28/2007	1	Dry		
059-12.1	CA "A" Groton Long Point	2/25/2008	1	Dry	1.3	n/a
059-12.1	CA "A" Groton Long Point	6/18/2008	1	Wet		
059-12.1	CA "A" Groton Long Point	7/30/2008	1	Dry		
059-12.1	CA "A" Groton Long Point	9/10/2008	4	Wet		
059-12.1	CA "A" Groton Long Point	12/3/2008	1	Dry		
059-12.1	CA "A" Groton Long Point	12/16/2008	1	Wet		
059-12.1	CA "A" Groton Long Point	3/31/2009	1	Dry	2.3	n/a
059-12.1	CA "A" Groton Long Point	5/6/2009	7	Wet		
059-12.1	CA "A" Groton Long Point	5/18/2009	1	Dry		
059-12.1	CA "A" Groton Long Point	5/19/2009	1	Dry		
059-12.1	CA "A" Groton Long Point	7/7/2009	3	Wet		
059-12.1	CA "A" Groton Long Point	7/8/2009	4	Wet		
059-12.1	CA "A" Groton Long Point	7/28/2009	4	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-12.1	CA "A" Groton Long Point	7/30/2009	12	Dry		
059-12.1	CA "A" Groton Long Point	8/3/2009	1	Dry		
059-12.1	CA "A" Groton Long Point	9/2/2009	2	Dry		
059-12.1	CA "A" Groton Long Point	9/15/2009	3	Dry		
059-12.1	CA "A" Groton Long Point	10/27/2009	1	Dry		
059-12.1	CA "A" Groton Long Point	11/17/2009	1	Dry		
059-12.1	CA "A" Groton Long Point	12/15/2009	6	dry		
059-12.1	CA "A" Groton Long Point	4/12/2010	1	Dry	1.9	n/a
059-12.1	CA "A" Groton Long Point	5/20/2010	1	Dry		
059-12.1	CA "A" Groton Long Point	12/16/2010	7	Dry		
059-12.1	CA "A" Groton Long Point	1/31/2011	1	Dry	2	n/a
059-12.1	CA "A" Groton Long Point	5/25/2011	1	Dry		
059-12.1	CA "A" Groton Long Point	6/13/2011	16	Dry		
059-12.1	CA "A" Groton Long Point	7/11/2011	1	Dry		
059-13.0	CA "D" Groton Long Point	4/13/2000	1.6	Dry	1.6	n/a
059-13.0	CA "D" Groton Long Point	8/9/2000	1.6	Dry		
059-13.0	CA "D" Groton Long Point	9/6/2000	1.6	Dry		
059-13.0	CA "D" Groton Long Point	11/13/2000	1.6	Dry		
059-13.0	CA "D" Groton Long Point	11/28/2000	1.7	Dry		
059-13.0	CA "D" Groton Long Point	1/16/2001	1.6	Wet	3.7	15
059-13.0	CA "D" Groton Long Point	2/7/2001	1.6	Dry		
059-13.0	CA "D" Groton Long Point	4/3/2001	1.7	Dry		
059-13.0	CA "D" Groton Long Point	6/5/2001	1.6	Dry		
059-13.0	CA "D" Groton Long Point	6/13/2001	1.6	Wet		
059-13.0	CA "D" Groton Long Point	6/19/2001	51	Wet		
059-13.0	CA "D" Groton Long Point	6/20/2001	36	Wet		
059-13.0	CA "D" Groton Long Point	8/15/2001	1.7	Wet		
059-13.0	CA "D" Groton Long Point	3/21/2002	3.6	Wet	2	n/a
059-13.0	CA "D" Groton Long Point	5/22/2002	1.7	Dry		
059-13.0	CA "D" Groton Long Point	7/22/2002	1.6	dry		
059-13.0	CA "D" Groton Long Point	9/3/2002	1.7	Wet		
059-13.0	CA "D" Groton Long Point	1/6/2003	1.6	Wet	1.6	n/a
059-13.0	CA "D" Groton Long Point	2/26/2003	1.6	Dry		
059-13.0	CA "D" Groton Long Point	6/3/2003	1.6	Dry		
059-13.0	CA "D" Groton Long Point	7/28/2003	1.7	Dry		
059-13.0	CA "D" Groton Long Point	11/24/2003	1.6	Dry		
059-13.0	CA "D" Groton Long Point	5/5/2004	1.6	Dry	2.2	n/a
059-13.0	CA "D" Groton Long Point	7/14/2004	5.8	Wet		
059-13.0	CA "D" Groton Long Point	8/18/2004	1.6	dry		
059-13.0	CA "D" Groton Long Point	12/13/2004	1.7	Dry		
059-13.0	CA "D" Groton Long Point	1/24/2005	0.9	Dry	2.1	n/a
059-13.0	CA "D" Groton Long Point	2/7/2005	1	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-13.0	CA "D" Groton Long Point	4/11/2005	1	Dry		
059-13.0	CA "D" Groton Long Point	5/10/2005	1	Dry		
059-13.0	CA "D" Groton Long Point	10/19/2005	12	Dry		
059-13.0	CA "D" Groton Long Point	10/24/2005	9	Wet		
059-13.0	CA "D" Groton Long Point	6/5/2006	3	Dry	3	n/a
059-13.0	CA "D" Groton Long Point	9/19/2006	1	Dry		
059-13.0	CA "D" Groton Long Point	11/1/2006	9	Dry		
059-13.0	CA "D" Groton Long Point	6/11/2007	1	Dry	1.2	n/a
059-13.0	CA "D" Groton Long Point	6/13/2007	2	Dry		
059-13.0	CA "D" Groton Long Point	9/19/2007	1	Dry		
059-13.0	CA "D" Groton Long Point	11/28/2007	1	Dry		
059-13.0	CA "D" Groton Long Point	2/25/2008	1	Dry	2.5	n/a
059-13.0	CA "D" Groton Long Point	6/18/2008	1	Wet		
059-13.0	CA "D" Groton Long Point	7/30/2008	1	Dry		
059-13.0	CA "D" Groton Long Point	9/10/2008	4	Wet		
059-13.0	CA "D" Groton Long Point	12/3/2008	1	Dry		
059-13.0	CA "D" Groton Long Point	12/16/2008	2	Wet		
059-13.0	CA "D" Groton Long Point	3/31/2009	1	Dry	1.3	n/a
059-13.0	CA "D" Groton Long Point	5/6/2009	1	Wet		
059-13.0	CA "D" Groton Long Point	5/18/2009	1	Dry		
059-13.0	CA "D" Groton Long Point	5/19/2009	1	Dry		
059-13.0	CA "D" Groton Long Point	7/7/2009	1	Wet		
059-13.0	CA "D" Groton Long Point	7/8/2009	2	Wet		
059-13.0	CA "D" Groton Long Point	7/28/2009	2	Dry		
059-13.0	CA "D" Groton Long Point	7/30/2009	6	Dry		
059-13.0	CA "D" Groton Long Point	8/3/2009	1	Dry		
059-13.0	CA "D" Groton Long Point	9/15/2009	1	Dry		
059-13.0	CA "D" Groton Long Point	10/27/2009	1	Dry		
059-13.0	CA "D" Groton Long Point	11/17/2009	1	Dry		
059-13.0	CA "D" Groton Long Point	12/15/2009	2	dry		
059-13.0	CA "D" Groton Long Point	4/12/2010	1	Dry	2	n/a
059-13.0	CA "D" Groton Long Point	5/20/2010	4	Dry		
059-13.0	CA "D" Groton Long Point	1/31/2011	1	Dry	2.4	n/a
059-13.0	CA "D" Groton Long Point	5/25/2011	4	Dry		
059-13.0	CA "D" Groton Long Point	6/13/2011	8	Dry		
059-13.0	CA "D" Groton Long Point	7/11/2011	1	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment : LIS EB Shore – Outer Mumford Cove, Groton (CT-E2_007)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-11.0	CA "A" Outside Mumford Cove	2000-2011	21	51	2.04	4.10	1.53
059-11.2	CA "C" Mumford Cove	2000-2011	3	19	1.93	2.35	1.87
059-12.0	CA "D"	2000-2011	16	49	2.00	2.84	1.80
059-12.1	CA "A" Groton Long Point	2000-2011	20	51	2.32	3.77	1.92
059-13.0	CA "D" Groton Long Point	2000-2011	16	48	1.89	3.08	1.60

Table 20: Segment 10 LIS EB Shore- Bluff Point
Waterbody ID: CT-E2_008
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml
Percent reduction to meet:
Geometric Mean: NA
90% of Samples Less Than: 12%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment : LIS EB Shore – Bluff Point, Groton (CT-E2_008) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.0	Bluff Point	3/16/2000	1.6	Wet	2.1	n/a
059-10.0	Bluff Point	4/13/2000	1.7	Dry		
059-10.0	Bluff Point	8/1/2000	8.1	Wet		
059-10.0	Bluff Point	8/9/2000	1.7	Dry		
059-10.0	Bluff Point	9/6/2000	1.7	Dry		
059-10.0	Bluff Point	11/13/2000	1.6	Dry		
059-10.0	Bluff Point	11/28/2000	1.6	Dry		
059-10.0	Bluff Point	1/16/2001	1.6	Wet	3.5	12
059-10.0	Bluff Point	2/7/2001	1.6	Dry		
059-10.0	Bluff Point	4/3/2001	1.7	Dry		
059-10.0	Bluff Point	6/5/2001	1.6	Dry		
059-10.0	Bluff Point	6/13/2001	1.6	Wet		
059-10.0	Bluff Point	6/19/2001	51	Wet		
059-10.0	Bluff Point	6/20/2001	51	Wet		
059-10.0	Bluff Point	8/15/2001	1.6	Wet		
059-10.0	Bluff Point	9/27/2001	1.7	Dry		
059-10.0	Bluff Point	3/21/2002	1.6	Wet	1.6	n/a
059-10.0	Bluff Point	5/22/2002	1.7	Dry		
059-10.0	Bluff Point	7/22/2002	1.6	dry		
059-10.0	Bluff Point	9/17/2002	1.6	Wet		
059-10.0	Bluff Point	1/6/2003	1.7	Wet	1.9	n/a
059-10.0	Bluff Point	2/26/2003	1.6	Dry		
059-10.0	Bluff Point	6/3/2003	3.6	Dry		
059-10.0	Bluff Point	7/28/2003	1.6	Dry		
059-10.0	Bluff Point	8/18/2003	1.6	Wet		
059-10.0	Bluff Point	11/24/2003	1.7	Dry		
059-10.0	Bluff Point	5/5/2004	3.6	Dry	4	n/a
059-10.0	Bluff Point	7/14/2004	1.6	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.0	Bluff Point	8/18/2004	1.6	dry		
059-10.0	Bluff Point	12/13/2004	28	Dry		
059-10.0	Bluff Point	1/24/2005	0.9	Dry	3.4	3
059-10.0	Bluff Point	2/7/2005	0.9	Dry		
059-10.0	Bluff Point	4/11/2005	1	Dry		
059-10.0	Bluff Point	4/26/2005	37	Wet		
059-10.0	Bluff Point	5/2/2005	4	Wet		
059-10.0	Bluff Point	5/10/2005	1	Dry		
059-10.0	Bluff Point	10/19/2005	16	Dry		
059-10.0	Bluff Point	10/24/2005	9	Wet		
059-10.0	Bluff Point	6/5/2006	9	Dry	3.8	n/a
059-10.0	Bluff Point	9/19/2006	1	Dry		
059-10.0	Bluff Point	11/1/2006	12	Dry		
059-10.0	Bluff Point	11/20/2006	2	Dry		
059-10.0	Bluff Point	6/11/2007	3	Dry	2	n/a
059-10.0	Bluff Point	6/13/2007	5	Dry		
059-10.0	Bluff Point	9/19/2007	1	Dry		
059-10.0	Bluff Point	11/28/2007	1	Dry		
059-10.0	Bluff Point	2/25/2008	1	Dry	1.7	n/a
059-10.0	Bluff Point	6/18/2008	1	Wet		
059-10.0	Bluff Point	7/30/2008	1	Dry		
059-10.0	Bluff Point	9/10/2008	1	Wet		
059-10.0	Bluff Point	12/3/2008	1	Dry		
059-10.0	Bluff Point	12/16/2008	24	Wet		
059-10.0	Bluff Point	3/31/2009	1	Dry	1.5	n/a
059-10.0	Bluff Point	5/6/2009	1	Wet		
059-10.0	Bluff Point	5/18/2009	1	Dry		
059-10.0	Bluff Point	5/19/2009	3	Dry		
059-10.0	Bluff Point	7/7/2009	1	Wet		
059-10.0	Bluff Point	7/8/2009	2	Wet		
059-10.0	Bluff Point	7/28/2009	1	Dry		
059-10.0	Bluff Point	7/30/2009	6	Dry		
059-10.0	Bluff Point	8/3/2009	7	Dry		
059-10.0	Bluff Point	9/2/2009	1	Dry		
059-10.0	Bluff Point	9/15/2009	1	Dry		
059-10.0	Bluff Point	10/27/2009	1	Dry		
059-10.0	Bluff Point	11/17/2009	1	Dry		
059-10.0	Bluff Point	12/15/2009	1	dry		
059-10.0	Bluff Point	4/12/2010	1	Dry	3.5	n/a
059-10.0	Bluff Point	5/20/2010	3	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.0	Bluff Point	12/16/2010	14	Dry		
059-10.0	Bluff Point	1/31/2011	1	Dry	2.1	n/a
059-10.0	Bluff Point	5/25/2011	2	Dry		
059-10.0	Bluff Point	6/13/2011	9	Dry		
059-10.0	Bluff Point	7/11/2011	1	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment : LIS EB Shore – Bluff Point, Groton (CT-E2_008)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-10.0	Bluff Point	2000-2011	21	52	2.30	3.34	1.96

Table 21: Segment 11 LIS EB Midshore Mystic River
Waterbody ID: CT-E3_003
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:
Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml
Percent reduction to meet:
Geometric Mean: NA
90% of Samples Less Than: 6%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment : LIS EB Midshore – Groton, Mystic River (CT-E3_003) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-14.1	LIS EB Midshore - Groton, Mystic River	4/13/2000	1.6	Dry	1.8	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	8/1/2000	3.6	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	8/9/2000	1.6	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	9/5/2000	1.7	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	9/6/2000	1.7	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	11/13/2000	1.7	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	11/28/2000	1.6	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	4/3/2001	1.6	Dry	3.7	4
059-14.1	LIS EB Midshore - Groton, Mystic River	6/5/2001	1.6	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	6/13/2001	1.6	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	6/19/2001	50	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	6/20/2001	18	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	7/30/2001	1.6	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	8/15/2001	1.7	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	5/22/2002	1.6	Dry	2.7	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	7/22/2002	1.6	dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	9/3/2002	8.1	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	4/30/2003	1.6	Dry	1.9	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	6/17/2003	1.6	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	7/28/2003	1.6	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	10/20/2003	1.7	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-14.1	LIS EB Midshore - Groton, Mystic River	11/24/2003	3.6	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	5/5/2004	1.7	Dry	1.6	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	7/14/2004	1.6	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	8/18/2004	1.6	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	4/11/2005	1	Dry	3.2	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	10/24/2005	10	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	6/5/2006	7	Dry	3.8	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	8/31/2006	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	11/1/2006	8	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	6/11/2007	1	Dry	1	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	6/13/2007	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	6/18/2008	1	Wet	2.4	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	9/10/2008	1	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	12/16/2008	14	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	5/6/2009	1	Wet	1.3	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	5/19/2009	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	7/7/2009	1	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	7/8/2009	8	Wet		
059-14.1	LIS EB Midshore - Groton, Mystic River	7/28/2009	3	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	7/30/2009	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	8/3/2009	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	9/15/2009	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	10/27/2009	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	11/17/2009	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	12/15/2009	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	3/17/2010	1	Dry	1.4	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	3/25/2010	2	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	4/12/2010	1	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	5/20/2010	2	Dry		
059-14.1	LIS EB Midshore - Groton, Mystic River	5/25/2011	1	Dry	1	n/a
059-14.1	LIS EB Midshore - Groton, Mystic River	7/11/2011	1	Dry		
059-21.0	CA "E" Esker Point Beach	4/13/2000	1.6	Dry	2.7	n/a

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-21.0	CA "E" Esker Point Beach	8/9/2000	8.1	Dry		
059-21.0	CA "E" Esker Point Beach	9/5/2000	1.7	Wet		
059-21.0	CA "E" Esker Point Beach	9/6/2000	1.7	Dry		
059-21.0	CA "E" Esker Point Beach	11/13/2000	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	11/28/2000	5.8	Dry		
059-21.0	CA "E" Esker Point Beach	2/7/2001	1.6	Dry	2.1	n/a
059-21.0	CA "E" Esker Point Beach	4/3/2001	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	6/5/2001	1.7	Dry		
059-21.0	CA "E" Esker Point Beach	6/13/2001	1.6	Wet		
059-21.0	CA "E" Esker Point Beach	6/20/2001	14	Wet		
059-21.0	CA "E" Esker Point Beach	7/30/2001	1.7	Dry		
059-21.0	CA "E" Esker Point Beach	8/15/2001	1.7	Wet		
059-21.0	CA "E" Esker Point Beach	9/27/2001	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	3/7/2002	1.6	Dry	1.6	n/a
059-21.0	CA "E" Esker Point Beach	5/22/2002	1.7	Dry		
059-21.0	CA "E" Esker Point Beach	7/22/2002	1.6	dry		
059-21.0	CA "E" Esker Point Beach	9/17/2002	1.6	Wet		
059-21.0	CA "E" Esker Point Beach	10/2/2002	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	1/6/2003	1.6	Wet	1.6	n/a
059-21.0	CA "E" Esker Point Beach	2/26/2003	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	6/3/2003	1.7	Dry		
059-21.0	CA "E" Esker Point Beach	6/17/2003	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	7/28/2003	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	8/18/2003	1.6	Wet		
059-21.0	CA "E" Esker Point Beach	8/21/2003	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	10/20/2003	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	11/24/2003	1.6	Dry		
059-21.0	CA "E" Esker Point Beach	5/5/2004	1.6	Dry	2.9	n/a
059-21.0	CA "E" Esker Point Beach	8/18/2004	1.6	dry		
059-21.0	CA "E" Esker Point Beach	8/23/2004	8.1	Dry		
059-21.0	CA "E" Esker Point Beach	12/13/2004	3.6	Dry		
059-21.0	CA "E" Esker Point Beach	1/24/2005	0.9	Dry	2	n/a
059-21.0	CA "E" Esker Point Beach	2/7/2005	1	Dry		
059-21.0	CA "E" Esker Point Beach	4/11/2005	1	Dry		
059-21.0	CA "E" Esker Point Beach	5/2/2005	16	Wet		
059-21.0	CA "E" Esker Point Beach	5/10/2005	1	Wet		
059-21.0	CA "E" Esker Point Beach	10/19/2005	2	Dry		
059-21.0	CA "E" Esker Point Beach	10/24/2005	9	Dry		
059-21.0	CA "E" Esker Point Beach	12/12/2005	1	Wet		
059-21.0	CA "E" Esker Point Beach	4/11/2006	1	Dry	1.3	n/a
059-21.0	CA "E" Esker Point Beach	9/6/2006	1	Dry		
059-21.0	CA "E" Esker Point Beach	9/19/2006	1	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-21.0	CA "E" Esker Point Beach	11/1/2006	3	Dry		
059-21.0	CA "E" Esker Point Beach	9/19/2007	1	Dry	1	n/a
059-21.0	CA "E" Esker Point Beach	11/28/2007	1	Dry		
059-21.0	CA "E" Esker Point Beach	2/25/2008	1	Dry	1.1	n/a
059-21.0	CA "E" Esker Point Beach	6/18/2008	1	Wet		
059-21.0	CA "E" Esker Point Beach	7/30/2008	1	Dry		
059-21.0	CA "E" Esker Point Beach	9/10/2008	1	Wet		
059-21.0	CA "E" Esker Point Beach	12/3/2008	2	Dry		
059-21.0	CA "E" Esker Point Beach	3/10/2009	1	Wet	1.2	n/a
059-21.0	CA "E" Esker Point Beach	5/6/2009	2	Wet		
059-21.0	CA "E" Esker Point Beach	5/18/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	5/19/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	7/7/2009	1	Wet		
059-21.0	CA "E" Esker Point Beach	7/8/2009	2	Wet		
059-21.0	CA "E" Esker Point Beach	7/28/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	7/30/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	8/3/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	9/2/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	9/15/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	10/27/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	11/17/2009	1	Dry		
059-21.0	CA "E" Esker Point Beach	12/15/2009	5	dry		
059-21.0	CA "E" Esker Point Beach	4/12/2010	1	Dry	2	n/a
059-21.0	CA "E" Esker Point Beach	11/21/2010	2	Dry		
059-21.0	CA "E" Esker Point Beach	12/15/2010	4	Dry		
059-21.0	CA "E" Esker Point Beach	1/31/2011	1	Dry	1.9	n/a
059-21.0	CA "E" Esker Point Beach	4/20/2011	4	Dry		
059-21.0	CA "E" Esker Point Beach	5/25/2011	3	Dry		
059-21.0	CA "E" Esker Point Beach	7/11/2011	1	Dry		
059-23.0	Morgan Point	4/13/2000	1.6	Dry	2	n/a
059-23.0	Morgan Point	8/1/2000	8.1	Wet		
059-23.0	Morgan Point	8/9/2000	1.6	Dry		
059-23.0	Morgan Point	9/5/2000	1.6	Wet		
059-23.0	Morgan Point	9/6/2000	1.6	Dry		
059-23.0	Morgan Point	11/13/2000	1.7	Dry		
059-23.0	Morgan Point	11/28/2000	1.6	Dry		
059-23.0	Morgan Point	3/14/2001	29	Wet	4.4	6
059-23.0	Morgan Point	4/3/2001	1.7	Dry		
059-23.0	Morgan Point	6/5/2001	1.6	Dry		
059-23.0	Morgan Point	6/13/2001	1.6	Wet		
059-23.0	Morgan Point	6/19/2001	36	Wet		
059-23.0	Morgan Point	8/15/2001	1.7	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-23.0	Morgan Point	5/22/2002	1.6	Dry	1.6	n/a
059-23.0	Morgan Point	7/22/2002	1.6	dry		
059-23.0	Morgan Point	9/3/2002	1.7	Wet		
059-23.0	Morgan Point	4/30/2003	1.6	Dry	1.6	n/a
059-23.0	Morgan Point	6/17/2003	1.7	Dry		
059-23.0	Morgan Point	7/28/2003	1.6	Dry		
059-23.0	Morgan Point	10/20/2003	1.6	Dry		
059-23.0	Morgan Point	11/24/2003	1.6	Dry		
059-23.0	Morgan Point	5/5/2004	1.6	Dry	1.6	n/a
059-23.0	Morgan Point	7/14/2004	1.7	Wet		
059-23.0	Morgan Point	8/18/2004	1.7	wet		
059-23.0	Morgan Point	8/24/2004	1.6	Dry		
059-23.0	Morgan Point	10/19/2005	12	Dry	11	n/a
059-23.0	Morgan Point	10/24/2005	10	Wet		
059-23.0	Morgan Point	6/5/2006	6	Dry	7.3	n/a
059-23.0	Morgan Point	8/31/2006	5	Dry		
059-23.0	Morgan Point	11/1/2006	13	Dry		
059-23.0	Morgan Point	6/11/2007	3	Dry	2.4	n/a
059-23.0	Morgan Point	6/13/2007	2	Dry		
059-23.0	Morgan Point	6/18/2008	1	Wet	2	n/a
059-23.0	Morgan Point	9/10/2008	2	Wet		
059-23.0	Morgan Point	12/3/2008	1	Dry		
059-23.0	Morgan Point	12/16/2008	8	Wet		
059-23.0	Morgan Point	5/6/2009	1	Wet	1.1	n/a
059-23.0	Morgan Point	5/19/2009	1	Dry		
059-23.0	Morgan Point	7/7/2009	2	Wet		
059-23.0	Morgan Point	7/8/2009	2	Wet		
059-23.0	Morgan Point	7/28/2009	1	Dry		
059-23.0	Morgan Point	7/30/2009	1	Dry		
059-23.0	Morgan Point	8/3/2009	1	Dry		
059-23.0	Morgan Point	9/15/2009	1	Dry		
059-23.0	Morgan Point	10/27/2009	1	Dry		
059-23.0	Morgan Point	11/17/2009	1	Dry		
059-23.0	Morgan Point	12/15/2009	1	Dry		
059-23.0	Morgan Point	3/17/2010	1	Dry	1	n/a
059-23.0	Morgan Point	3/25/2010	1	Dry		
059-23.0	Morgan Point	4/12/2010	1	Dry		
059-23.0	Morgan Point	5/20/2010	1	Dry		
059-23.0	Morgan Point	5/25/2011	1	Dry	1	n/a
059-23.0	Morgan Point	7/11/2011	1	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment : LIS EB Midshore – Groton, Mystic River (CT-E3_003)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-14.1	LIS EB Midshore - Groton, Mystic River	2000-2011	16	36	1.95	3.42	1.52
059-21.0	CA "E" Esker Point Beach	2000-2011	17	55	1.69	1.82	1.65
059-23.0	Morgan Point	2000-2011	16	37	1.99	3.19	1.62

Table 22: Segment 12 LIS EB Midshore Thames
Waterbody ID: CT-E3_004
Characteristics: Saltwater, Class SA
Impairment: Shellfishing
Water Quality Criteria for Fecal coliform:

Geometric Mean: 14 colonies/100 ml
90% of Samples Less Than: 31 colonies/100 ml

Percent reduction to meet:

Geometric Mean: 89%
90% of Samples Less Than: 90%

Data : 2000 – 2011 from CT DEEP target sampling efforts, 2012 TMDL cycle
Single sample fecal coliform data (colonies/100mL) for all monitoring stations on segment : LIS EB Midshore – East Lyme, Rocky Neck (CT-E3_004) with annual geometric means and reduction goals for samples.

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-01.0	Mouth of Thames River	9/6/2000	1.6	Dry	3.7	n/a
059-01.0	Mouth of Thames River	11/13/2000	8.6	Dry		
059-01.0	Mouth of Thames River	6/4/2001	3.6	Dry	30.5	40
059-01.0	Mouth of Thames River	6/19/2001	258	Wet		
059-01.0	Mouth of Thames River	5/20/2002	70	Dry	10.7	30
059-01.0	Mouth of Thames River	6/10/2002	88	Dry		
059-01.0	Mouth of Thames River	7/22/2002	1.6	dry		
059-01.0	Mouth of Thames River	9/17/2002	1.6	Wet		
059-01.0	Mouth of Thames River	10/15/2002	8.7	Dry		
059-01.0	Mouth of Thames River	4/30/2003	1.6	Dry	1.6	n/a
059-01.0	Mouth of Thames River	10/28/2003	1.6	Wet		
059-01.0	Mouth of Thames River	5/5/2004	1.7	Dry	4.1	n/a
059-01.0	Mouth of Thames River	9/1/2004	10	Wet		
059-01.0	Mouth of Thames River	7/5/2005	1	Dry	1	n/a
059-01.0	Mouth of Thames River	6/6/2006	156	Dry	73.9	90
059-01.0	Mouth of Thames River	11/20/2006	35	Dry		
059-01.0	Mouth of Thames River	7/9/2007	1	Dry	1	n/a
059-01.0	Mouth of Thames River	4/30/2008	81	Wet	9	40
059-01.0	Mouth of Thames River	6/17/2008	1	Wet		
059-01.0	Mouth of Thames River	5/18/2009	3	Dry	3.1	15
059-01.0	Mouth of Thames River	5/20/2009	1	Dry		
059-01.0	Mouth of Thames River	7/8/2009	32	Wet		
059-01.0	Mouth of Thames River	9/15/2009	1	Dry		
059-01.0	Mouth of Thames River	4/13/2010	4	Dry	4	n/a
059-01.0	Mouth of Thames River	5/20/2010	4	Dry		
059-01.0	Mouth of Thames River	7/27/2011	12	Dry	12	n/a
059-10.1	CA "A"	3/16/2000	1.6	Wet	2.6	n/a
059-10.1	CA "A"	4/13/2000	1.7	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.1	CA "A"	8/1/2000	11	Wet		
059-10.1	CA "A"	8/9/2000	5.8	Dry		
059-10.1	CA "A"	9/6/2000	1.6	Dry		
059-10.1	CA "A"	11/13/2000	1.7	Dry		
059-10.1	CA "A"	11/28/2000	1.6	Dry		
059-10.1	CA "A"	1/16/2001	1.7	Wet		
059-10.1	CA "A"	2/7/2001	1.6	Dry		
059-10.1	CA "A"	4/3/2001	8.1	Dry		
059-10.1	CA "A"	6/5/2001	1.7	Dry		
059-10.1	CA "A"	6/13/2001	3.6	Wet	4.6	12
059-10.1	CA "A"	6/19/2001	50	Wet		
059-10.1	CA "A"	6/20/2001	51	Wet		
059-10.1	CA "A"	8/15/2001	1.7	Wet		
059-10.1	CA "A"	9/27/2001	1.6	Dry		
059-10.1	CA "A"	3/21/2002	1.6	Wet		
059-10.1	CA "A"	5/22/2002	1.7	Dry	1.6	n/a
059-10.1	CA "A"	7/22/2002	1.6	dry		
059-10.1	CA "A"	9/17/2002	1.6	Wet		
059-10.1	CA "A"	1/6/2003	1.6	Wet		
059-10.1	CA "A"	2/26/2003	1.6	Dry		
059-10.1	CA "A"	6/3/2003	1.7	Dry	2	n/a
059-10.1	CA "A"	7/28/2003	1.6	Dry		
059-10.1	CA "A"	8/18/2003	5.8	Wet		
059-10.1	CA "A"	11/24/2003	1.7	Dry		
059-10.1	CA "A"	5/5/2004	18	Dry		
059-10.1	CA "A"	7/14/2004	5.8	Wet	7.4	n/a
059-10.1	CA "A"	8/18/2004	1.6	dry		
059-10.1	CA "A"	12/13/2004	18	Dry		
059-10.1	CA "A"	1/24/2005	2	Dry		
059-10.1	CA "A"	4/11/2005	1	Dry		
059-10.1	CA "A"	4/26/2005	21	Wet		
059-10.1	CA "A"	5/2/2005	7	Wet	5.7	4
059-10.1	CA "A"	5/10/2005	1	Dry		
059-10.1	CA "A"	10/19/2005	76	Dry		
059-10.1	CA "A"	10/24/2005	9	Wet		
059-10.1	CA "A"	6/5/2006	29	Dry		
059-10.1	CA "A"	9/19/2006	1	Dry	6.6	n/a
059-10.1	CA "A"	11/1/2006	13	Dry		
059-10.1	CA "A"	11/20/2006	5	Dry		
059-10.1	CA "A"	6/11/2007	3	Dry		
059-10.1	CA "A"	6/13/2007	2	Dry	1.6	n/a
059-10.1	CA "A"	9/19/2007	1	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.1	CA "A"	11/28/2007	1	Dry		
059-10.1	CA "A"	2/25/2008	1	Dry	1.8	6
059-10.1	CA "A"	6/18/2008	1	Wet		
059-10.1	CA "A"	7/30/2008	1	Dry		
059-10.1	CA "A"	9/10/2008	1	Wet		
059-10.1	CA "A"	12/3/2008	1	Dry		
059-10.1	CA "A"	12/16/2008	34	Wet		
059-10.1	CA "A"	3/31/2009	1	Dry	2.1	n/a
059-10.1	CA "A"	5/6/2009	2	Wet		
059-10.1	CA "A"	5/18/2009	2	Dry		
059-10.1	CA "A"	5/19/2009	1	Dry		
059-10.1	CA "A"	7/7/2009	1	Wet		
059-10.1	CA "A"	7/8/2009	2	Wet		
059-10.1	CA "A"	7/28/2009	2	Dry		
059-10.1	CA "A"	7/30/2009	19	Dry		
059-10.1	CA "A"	8/3/2009	24	Dry		
059-10.1	CA "A"	9/2/2009	1	Dry		
059-10.1	CA "A"	9/15/2009	1	Dry		
059-10.1	CA "A"	10/27/2009	2	Dry		
059-10.1	CA "A"	11/17/2009	1	Dry		
059-10.1	CA "A"	12/15/2009	3	dry		
059-10.1	CA "A"	4/12/2010	1	Dry	2.3	n/a
059-10.1	CA "A"	5/20/2010	1	Dry		
059-10.1	CA "A"	12/16/2010	12	Dry		
059-10.1	CA "A"	1/31/2011	1	Dry	3.3	n/a
059-10.1	CA "A"	5/25/2011	4	Dry		
059-10.1	CA "A"	6/13/2011	29	Dry		
059-10.1	CA "A"	7/11/2011	1	Dry		
059-10.2	CA "A" Horseshoe Reef	3/16/2000	1.6	Wet	2.9	n/a
059-10.2	CA "A" Horseshoe Reef	4/13/2000	3.6	Dry		
059-10.2	CA "A" Horseshoe Reef	8/1/2000	18	Wet		
059-10.2	CA "A" Horseshoe Reef	8/9/2000	1.7	Dry		
059-10.2	CA "A" Horseshoe Reef	9/6/2000	3.6	Dry		
059-10.2	CA "A" Horseshoe Reef	11/13/2000	1.7	Dry		
059-10.2	CA "A" Horseshoe Reef	11/28/2000	1.6	Dry		
059-10.2	CA "A" Horseshoe Reef	1/16/2001	5.8	Wet	7	12
059-10.2	CA "A" Horseshoe Reef	2/7/2001	1.7	Dry		
059-10.2	CA "A" Horseshoe Reef	4/3/2001	28	Dry		
059-10.2	CA "A" Horseshoe Reef	6/5/2001	1.6	Dry		
059-10.2	CA "A" Horseshoe Reef	6/13/2001	5.8	Wet		
059-10.2	CA "A" Horseshoe Reef	6/19/2001	51	Wet		
059-10.2	CA "A" Horseshoe Reef	6/20/2001	51	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.2	CA "A" Horseshoe Reef	8/15/2001	3.6	Wet		
059-10.2	CA "A" Horseshoe Reef	9/27/2001	1.6	Dry		
059-10.2	CA "A" Horseshoe Reef	3/21/2002	1.7	Wet	1.7	n/a
059-10.2	CA "A" Horseshoe Reef	5/22/2002	1.7	Dry		
059-10.2	CA "A" Horseshoe Reef	7/22/2002	1.6	dry		
059-10.2	CA "A" Horseshoe Reef	9/17/2002	1.7	Wet		
059-10.2	CA "A" Horseshoe Reef	1/6/2003	1.6	Wet	1.9	n/a
059-10.2	CA "A" Horseshoe Reef	2/26/2003	1.6	Dry		
059-10.2	CA "A" Horseshoe Reef	6/3/2003	3.6	Dry		
059-10.2	CA "A" Horseshoe Reef	7/28/2003	1.6	Dry		
059-10.2	CA "A" Horseshoe Reef	8/18/2003	1.7	Wet		
059-10.2	CA "A" Horseshoe Reef	11/24/2003	1.7	Dry		
059-10.2	CA "A" Horseshoe Reef	5/5/2004	22	Dry	10.1	15
059-10.2	CA "A" Horseshoe Reef	7/14/2004	5.8	Wet		
059-10.2	CA "A" Horseshoe Reef	8/18/2004	1.6	dry		
059-10.2	CA "A" Horseshoe Reef	12/13/2004	50	Dry		
059-10.2	CA "A" Horseshoe Reef	1/24/2005	0.9	Dry	3.6	3
059-10.2	CA "A" Horseshoe Reef	2/7/2005	1	Dry		
059-10.2	CA "A" Horseshoe Reef	4/11/2005	1	Dry		
059-10.2	CA "A" Horseshoe Reef	4/26/2005	23	Wet		
059-10.2	CA "A" Horseshoe Reef	5/2/2005	3	Wet		
059-10.2	CA "A" Horseshoe Reef	5/10/2005	1	Dry		
059-10.2	CA "A" Horseshoe Reef	10/19/2005	48	Dry		
059-10.2	CA "A" Horseshoe Reef	10/24/2005	9	Wet		
059-10.2	CA "A" Horseshoe Reef	6/5/2006	27	Dry	5.5	n/a
059-10.2	CA "A" Horseshoe Reef	9/19/2006	1	Dry		
059-10.2	CA "A" Horseshoe Reef	11/1/2006	6	Dry		
059-10.2	CA "A" Horseshoe Reef	6/11/2007	7	Dry	1.6	n/a
059-10.2	CA "A" Horseshoe Reef	6/13/2007	1	Dry		
059-10.2	CA "A" Horseshoe Reef	9/19/2007	1	Dry		
059-10.2	CA "A" Horseshoe Reef	11/28/2007	1	Dry		
059-10.2	CA "A" Horseshoe Reef	2/25/2008	3	Dry	1.9	n/a
059-10.2	CA "A" Horseshoe Reef	6/18/2008	1	Wet		
059-10.2	CA "A" Horseshoe Reef	7/30/2008	1	Dry		
059-10.2	CA "A" Horseshoe Reef	9/10/2008	1	Wet		
059-10.2	CA "A" Horseshoe Reef	12/3/2008	1	Dry		
059-10.2	CA "A" Horseshoe Reef	12/16/2008	18	Wet		
059-10.2	CA "A" Horseshoe Reef	3/31/2009	1	Dry	1.8	n/a
059-10.2	CA "A" Horseshoe Reef	5/6/2009	1	Wet		
059-10.2	CA "A" Horseshoe Reef	5/18/2009	1	Dry		
059-10.2	CA "A" Horseshoe Reef	5/19/2009	1	Dry		
059-10.2	CA "A" Horseshoe Reef	7/7/2009	1	Wet		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.2	CA "A" Horseshoe Reef	7/8/2009	2	Wet		
059-10.2	CA "A" Horseshoe Reef	7/28/2009	2	Dry		
059-10.2	CA "A" Horseshoe Reef	7/30/2009	5	Dry		
059-10.2	CA "A" Horseshoe Reef	8/3/2009	10	Dry		
059-10.2	CA "A" Horseshoe Reef	9/2/2009	1	Dry		
059-10.2	CA "A" Horseshoe Reef	9/15/2009	1	Dry		
059-10.2	CA "A" Horseshoe Reef	10/27/2009	4	Dry		
059-10.2	CA "A" Horseshoe Reef	11/17/2009	1	Dry		
059-10.2	CA "A" Horseshoe Reef	12/15/2009	5	dry		
059-10.2	CA "A" Horseshoe Reef	4/12/2010	1	Dry	2.5	n/a
059-10.2	CA "A" Horseshoe Reef	5/20/2010	1	Dry		
059-10.2	CA "A" Horseshoe Reef	12/16/2010	15	Dry		
059-10.2	CA "A" Horseshoe Reef	1/31/2011	1	Dry	3	n/a
059-10.2	CA "A" Horseshoe Reef	5/25/2011	6	Dry		
059-10.2	CA "A" Horseshoe Reef	6/13/2011	14	Dry		
059-10.2	CA "A" Horseshoe Reef	7/11/2011	1	Dry		
059-10.3	CA "A" Seaflower Reef	4/13/2000	5.8	Dry	3.4	n/a
059-10.3	CA "A" Seaflower Reef	8/1/2000	11	Wet		
059-10.3	CA "A" Seaflower Reef	8/9/2000	5.8	Dry		
059-10.3	CA "A" Seaflower Reef	9/6/2000	1.6	Dry		
059-10.3	CA "A" Seaflower Reef	11/13/2000	1.6	Dry		
059-10.3	CA "A" Seaflower Reef	11/28/2000	1.7	Dry		
059-10.3	CA "A" Seaflower Reef	1/16/2001	1.6	Wet	8.5	23
059-10.3	CA "A" Seaflower Reef	2/7/2001	1.6	Dry		
059-10.3	CA "A" Seaflower Reef	4/3/2001	51	Dry		
059-10.3	CA "A" Seaflower Reef	6/5/2001	3.6	Dry		
059-10.3	CA "A" Seaflower Reef	6/13/2001	14	Wet		
059-10.3	CA "A" Seaflower Reef	6/19/2001	51	Wet		
059-10.3	CA "A" Seaflower Reef	6/20/2001	51	Wet		
059-10.3	CA "A" Seaflower Reef	8/15/2001	8.1	Wet		
059-10.3	CA "A" Seaflower Reef	9/27/2001	1.6	Dry		
059-10.3	CA "A" Seaflower Reef	3/21/2002	1.6	Wet	1.6	n/a
059-10.3	CA "A" Seaflower Reef	5/22/2002	1.7	Dry		
059-10.3	CA "A" Seaflower Reef	7/22/2002	1.6	dry		
059-10.3	CA "A" Seaflower Reef	9/17/2002	1.6	Wet		
059-10.3	CA "A" Seaflower Reef	1/6/2003	1.6	Wet	2.3	n/a
059-10.3	CA "A" Seaflower Reef	2/26/2003	1.6	Dry		
059-10.3	CA "A" Seaflower Reef	6/3/2003	5.8	Dry		
059-10.3	CA "A" Seaflower Reef	7/28/2003	1.6	Dry		
059-10.3	CA "A" Seaflower Reef	8/18/2003	3.6	Wet		
059-10.3	CA "A" Seaflower Reef	11/24/2003	1.6	Dry		
059-10.3	CA "A" Seaflower Reef	5/5/2004	14	Dry	7.3	n/a

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.3	CA "A" Seaflower Reef	7/14/2004	3.6	Wet		
059-10.3	CA "A" Seaflower Reef	8/18/2004	1.6	dry		
059-10.3	CA "A" Seaflower Reef	12/13/2004	36	Dry		
059-10.3	CA "A" Seaflower Reef	1/24/2005	0.9	Dry	3	n/a
059-10.3	CA "A" Seaflower Reef	2/7/2005	1	Dry		
059-10.3	CA "A" Seaflower Reef	4/11/2005	1	Dry		
059-10.3	CA "A" Seaflower Reef	4/26/2005	9	Wet		
059-10.3	CA "A" Seaflower Reef	5/2/2005	18	Wet		
059-10.3	CA "A" Seaflower Reef	5/10/2005	1	Dry		
059-10.3	CA "A" Seaflower Reef	10/19/2005	4	Dry		
059-10.3	CA "A" Seaflower Reef	10/24/2005	10	Wet		
059-10.3	CA "A" Seaflower Reef	6/5/2006	81	Dry	14.1	15
059-10.3	CA "A" Seaflower Reef	9/19/2006	1	Dry		
059-10.3	CA "A" Seaflower Reef	11/1/2006	26	Dry		
059-10.3	CA "A" Seaflower Reef	11/20/2006	19	Dry		
059-10.3	CA "A" Seaflower Reef	6/11/2007	4	Dry	2.5	n/a
059-10.3	CA "A" Seaflower Reef	6/13/2007	10	Dry		
059-10.3	CA "A" Seaflower Reef	9/19/2007	1	Dry		
059-10.3	CA "A" Seaflower Reef	11/28/2007	1	Dry		
059-10.3	CA "A" Seaflower Reef	2/25/2008	1	Dry	1.9	n/a
059-10.3	CA "A" Seaflower Reef	6/18/2008	1	Wet		
059-10.3	CA "A" Seaflower Reef	7/30/2008	1	Dry		
059-10.3	CA "A" Seaflower Reef	9/10/2008	1	Wet		
059-10.3	CA "A" Seaflower Reef	12/3/2008	3	Dry		
059-10.3	CA "A" Seaflower Reef	12/16/2008	16	Wet		
059-10.3	CA "A" Seaflower Reef	3/31/2009	1	Dry	2.1	n/a
059-10.3	CA "A" Seaflower Reef	5/6/2009	1	Wet		
059-10.3	CA "A" Seaflower Reef	5/18/2009	1	Dry		
059-10.3	CA "A" Seaflower Reef	5/19/2009	1	Dry		
059-10.3	CA "A" Seaflower Reef	7/7/2009	1	Wet		
059-10.3	CA "A" Seaflower Reef	7/8/2009	2	Wet		
059-10.3	CA "A" Seaflower Reef	7/28/2009	8	Dry		
059-10.3	CA "A" Seaflower Reef	7/30/2009	5	Dry		
059-10.3	CA "A" Seaflower Reef	8/3/2009	20	Dry		
059-10.3	CA "A" Seaflower Reef	9/2/2009	1	Dry		
059-10.3	CA "A" Seaflower Reef	9/15/2009	1	Dry		
059-10.3	CA "A" Seaflower Reef	10/27/2009	1	Dry		
059-10.3	CA "A" Seaflower Reef	11/17/2009	1	Dry		
059-10.3	CA "A" Seaflower Reef	12/15/2009	20	dry		
059-10.3	CA "A" Seaflower Reef	4/12/2010	1	Dry	2.8	n/a
059-10.3	CA "A" Seaflower Reef	5/20/2010	1	Dry		
059-10.3	CA "A" Seaflower Reef	12/16/2010	22	Dry		

Station #	Station Name	Date	Results	Wet/Dry	Geomean	90% Reduction
059-10.3	CA "A" Seaflower Reef	1/31/2011	1	Dry	1	n/a
059-10.3	CA "A" Seaflower Reef	5/25/2011	1	Dry		
059-10.3	CA "A" Seaflower Reef	6/13/2011	1	Dry		
059-10.3	CA "A" Seaflower Reef	7/11/2011	1	Dry		

Wet and dry weather geometric mean values for all monitoring stations on segment: LIS EB Midshore – Groton, Thames River (CT-E3_004)

Station #	Station Name	Years Sampled	Number of Samples		Geometric Mean		
			Wet	Dry	All	Wet	Dry
059-01.0	Mouth of Thames River	2000-2011	7	19	6.36	10.80	5.17
059-10.1	CA "A"	2000-2011	22	50	2.94	4.01	2.73
059-10.2	CA "A" Horseshoe Reef	2000-2011	22	50	2.90	3.97	2.52
059-10.3	CA "A" Seaflower Reef	2000-2011	21	51	3.11	3.97	2.72

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