

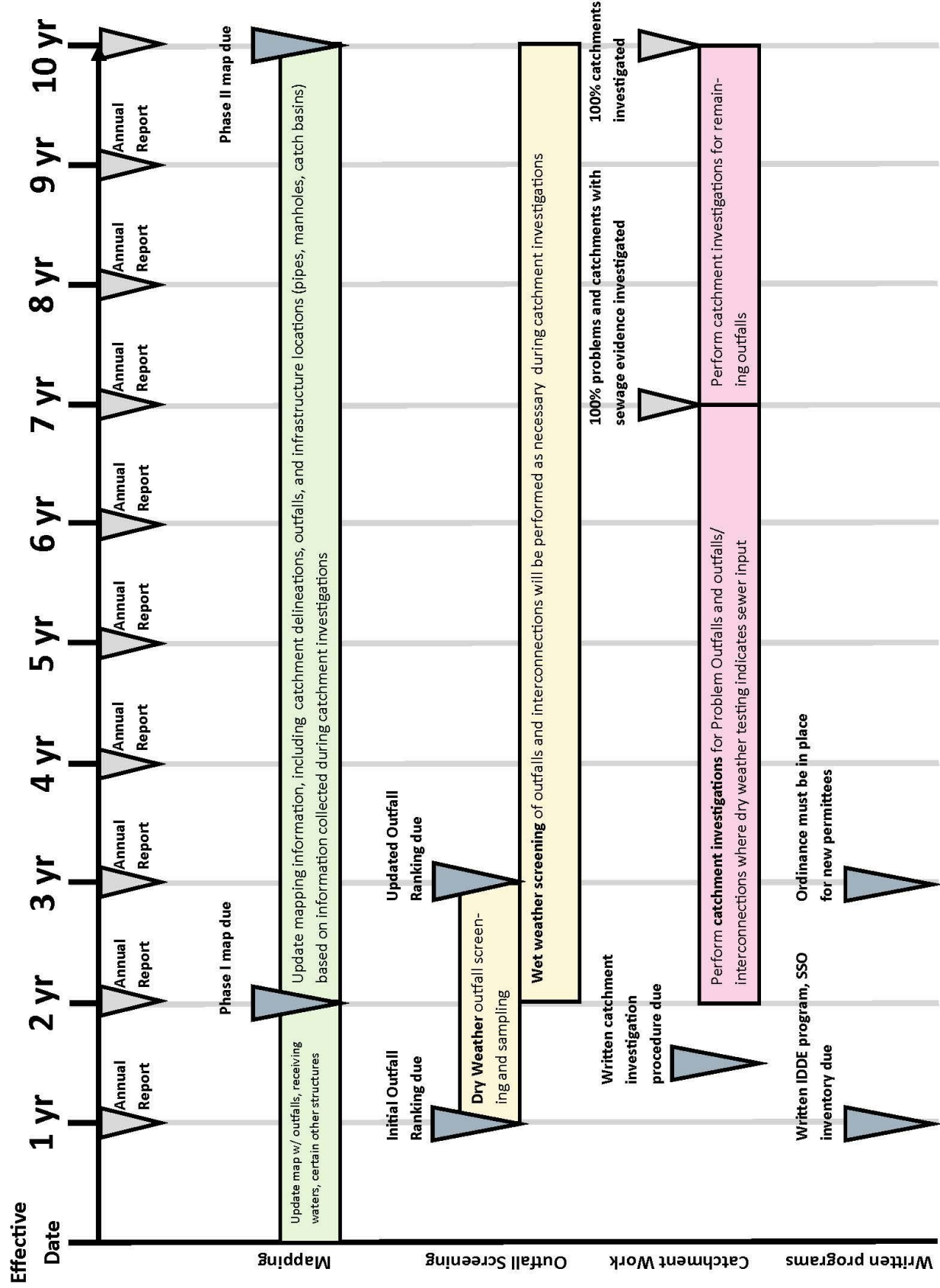
# **Illicit Discharge Detection and Elimination (IDDE) Plan**

Town of Seabrook, NH



**Prepared By:  
Seacoast Stormwater Coalition &  
Manchester/Nashua Stormwater Coalition**

**Permit Year 8**



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# 1 IDDE Program Implementation Timeline

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## 1.1 MS4 Program

This Illicit Discharge Detection and Elimination (IDDE) Plan has been developed by Town of Seabrook to address the requirements of the United States Environmental Protection Agency's (USEPA's) 2017 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in New Hampshire, hereafter referred to as the "2017 New Hampshire MS4 Permit" or "MS4 Permit."

The 2017 New Hampshire MS4 Permit requires that each permittee, or regulated community, address six Minimum Control Measures. These measures include the following:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination Program
4. Construction Site Stormwater Runoff Control
5. Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management); and
6. Good Housekeeping and Pollution Prevention for Permittee Owned Operations.

Under Minimum Control Measure 3, the permittee is required to implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to its municipal separate storm sewer system and implement procedures to prevent such discharges. The IDDE program must also be recorded in a written (hardcopy or electronic) document. This IDDE Plan has been prepared to address this requirement.

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## 1.2 Illicit Discharges

An "illicit discharge" is any discharge to a drainage system that is not composed entirely of stormwater, with the exception of discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire-fighting activities.

Illicit discharges may take a variety of forms. Illicit discharges may enter the drainage system through direct or indirect connections. Direct connections may be relatively obvious, such as cross-connections of sewer services to the storm drain system. Indirect illicit discharges may be more difficult to detect or address, such as failing septic systems that discharge untreated sewage to a ditch within the MS4, or a sump pump that discharges contaminated water on an intermittent basis.

Some illicit discharges are intentional, such as dumping used oil (or other pollutant) into catch basins, a resident or contractor illegally tapping a new sewer lateral into a storm drain pipe to avoid the costs of a sewer connection fee and service, and illegal dumping of yard wastes into surface waters.

Some illicit discharges are related to the unsuitability of original infrastructure to the modern regulatory environment. Examples of illicit discharges in this category include connected floor drains in old buildings, as well as sanitary sewer overflows that enter the drainage system. Sump pumps legally

connected to the storm drain system may be used inappropriately, such as for the disposal of floor wash water or old household products, in many cases due to a lack of understanding on the part of the homeowner.

Elimination of some discharges may require substantial costs and efforts, such as funding and designing a project to reconnect sanitary sewer laterals. Others, such as improving self-policing of dog waste management, can be accomplished by outreach in conjunction with the minimal additional cost of dog waste bins and the municipal commitment to disposal of collected materials on a regular basis.

Regardless of the intention, when not addressed, illicit discharges can contribute high levels of pollutants, such as heavy metals, toxics, oil, grease, solvents, nutrients, and pathogens to surface waters.

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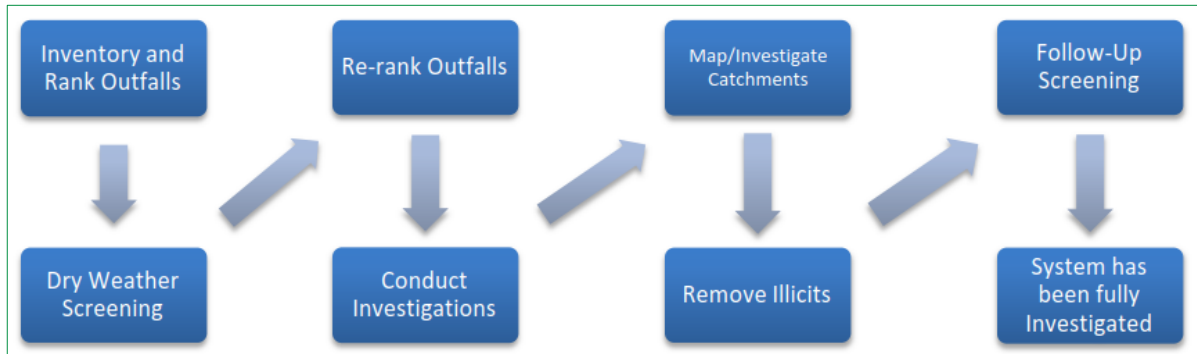
### **1.3 Allowable Non-Stormwater Discharges**

The following categories of non-storm water discharges are allowed under the MS4 Permit unless the permittee, USEPA identifies any category or individual discharge of non-stormwater discharge as a significant contributor of pollutants to the MS4:

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
- Uncontaminated pumped groundwater
- Discharge from potable water sources
- Foundation drains
- Air conditioning condensation
- Irrigation water, springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual resident car washing
- De-chlorinated swimming pool discharges
- Street wash waters
- Residential building wash waters without detergents

If these discharges are identified as significant contributors to the MS4, they must be considered an “illicit discharge” and addressed in the IDDE Plan (i.e., control these sources so they are no longer significant contributors of pollutants, and/or eliminate them entirely).

**Figure 1-1. IDDE Investigation Procedure Framework**



**Table 1-1. IDDE Program Implementation Timeline**

| IDDE Program Requirement                                               | Completion Date from Effective Date of Permit |           |         |         |         |          |
|------------------------------------------------------------------------|-----------------------------------------------|-----------|---------|---------|---------|----------|
|                                                                        | 1 Year                                        | 1.5 Years | 2 Years | 3 Years | 7 Years | 10 Years |
| Written IDDE Program Plan                                              | X                                             |           |         |         |         |          |
| SSO Inventory                                                          | X                                             |           |         |         |         |          |
| Initial Outfall Ranking                                                | X                                             |           |         |         |         |          |
| Written Catchment Investigation Procedure                              |                                               | X         |         |         |         |          |
| Phase I Mapping                                                        |                                               |           | X       |         |         |          |
| Phase II Mapping                                                       |                                               |           |         |         |         | X        |
| IDDE Regulatory Mechanism or By-law (if not already in place)          |                                               |           |         | X       |         |          |
| Dry Weather Outfall Screening                                          |                                               |           |         | X       |         |          |
| Follow-up Ranking of Outfalls and Interconnections                     |                                               |           |         | X       |         |          |
| Catchment Investigations – Problem Outfalls                            |                                               |           |         |         | X       |          |
| Catchment Investigations – all Problem, High and Low Priority Outfalls |                                               |           |         |         |         | X        |

Effective date of the permit is July 1, 2018

## 2 Authority and Statement of IDDE Responsibilities

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### 2.1 Legal Authority

The Town of Seabrook has adopted a Sewer Ordinance dated June 2005 with adequate legal authority to:

- Prohibit illicit discharges
- Investigate suspected illicit discharges
- Eliminate illicit discharges, including discharges from properties not owned by or controlled by the MS4 that discharge into the MS4 system
- Implement appropriate enforcement procedures and actions.

A copy of the bylaw is included in Appendix A. The Town of Seabrook will review its current Sewer Ordinance and related land use regulations and policies for consistency with the 2017 MS4 Permit.

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## 2.2 Statement of Responsibilities

AECOM, contracted by the Town of Seabrook Department of Public Works, is the lead municipal agency responsible for implementing the IDDE program pursuant to the provisions of the IDDE Ordinance. Other agencies or departments with responsibility for aspects of the program include:

- Building Inspector and/or Code Enforcement Officer – Shall be responsible for the oversight of new and old construction as it pertains to the MS4 permit.
- Planning Board Chairperson – Shall only approve stormwater management system designs conforming to MS4 documentation.

## 3 Stormwater System Mapping

A copy of the existing storm system map is provided in **Appendix B**.

The MS4 Permit requires the storm system map to be updated in two phases as outlined below. AECOM is responsible for updating the stormwater system mapping pursuant to the 2017 MS4 Permit. The Town of Seabrook will report on the progress towards completion of the storm system map in each annual report. Updates to the stormwater mapping will be included in **Appendix B**.

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### 3.1 Phase I Mapping

Phase I mapping must be completed within two (2) years of the effective date of the permit (July 1, 2020) and include the information per Part 2.3.4.5.a of the MS4 Permit.

- Outfalls and receiving waters (previously required by the MS4-2003 permit)
- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems
- Municipally owned stormwater treatment structures
- Water bodies identified by name and indication of all use impairments as identified on the most recent EPA approved Massachusetts Integrated List of Waters report
- Initial catchment delineations. Topographic contours and drainage system information may be used to produce initial catchment delineations.

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### 3.2 Phase II Mapping

Phase II mapping must be completed within ten (10) years of the effective date of the permit (July 1, 2028) and include the information per Part 2.3.4.5.b of the MS4 Permit.

- Outfall spatial location (latitude and longitude with a minimum accuracy of +/-30 feet)
- Pipes
- Manholes
- Catch basins
- Refined catchment delineations. Catchment delineations must be updated to reflect information collected during catchment investigations.
- Municipal Sanitary Sewer system (if available)
- Municipal combined sewer system (if applicable).

**Phase II System Mapping Completion Progress:** Phase II system mapping has been started by refining catchment delineations. All other requirements will be completed within ten (10) years of the effective date of the permit.

## 4 Sanitary Sewer Overflows (SSOs)

The Town of Seabrook has had one (1) Sanitary Sewer Overflows (SSOs) identified in the MS4 system and removed during this reporting period. The Town of Seabrook has had seven (7) Sanitary Sewer Overflows (SSOs) identified in the MS4 system and removed to date (since July 1, 2018).

**Table 2-1. SSO Inventory**

|   | Date Occurred     | Date Resolved     | Location             |
|---|-------------------|-------------------|----------------------|
| 1 | February 25, 2021 | February 25, 2021 | 443 Lafayette Road   |
| 2 | August 25, 2021   | August 25, 2021   | 193 Walton Road      |
| 3 | December 1, 2021  | December 2, 2021  | 360 Route 286        |
| 4 | June 14, 2022     | June 14, 2022     | 380 Lafayette Road   |
| 5 | June 11, 2024     | June 11, 2024     | 274 Route 286        |
| 6 | June 13, 2024     | June 13, 2024     | 70 Rocks Road        |
| 7 | January 16, 2025  | January 17, 2025  | 31 Centennial Street |
| 8 | April 4, 2026     | April 4, 2026     | 626 Lafayette Road   |

## 5 Assessment and Priority Ranking of Outfalls

The MS4 Permit requires an assessment and priority ranking of outfalls in terms of their potential to have illicit discharges related public health significance. The ranking helps determine the priority order for performing IDDE investigations and meeting permit milestones.

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### 5.1 Outfall Catchment Delineations

The catchments for each of the MS4 outfalls will be delineated to define contributing areas for investigation of potential sources of illicit discharges. Initial catchment delineations will be completed as part of the Phase I mapping, and refined catchment delineations will be completed as part of the Phase II mapping to reflect information collected during catchment investigations

## 5.2 Outfall and Interconnection Inventory and Initial Ranking

The Department of Public Works has completed an outfall and interconnection inventory and priority ranking to assess illicit discharge potential based on existing information. An updated inventory and ranking will be provided in each annual report. The inventory will be updated annually to include data collected in connection with dry weather screening and other relevant inspections.

The outfall and interconnection inventory identifies each outfall and interconnection discharging from the MS4, records its location and condition, and provides a framework for tracking inspections, screenings and other IDDE program activities. Seabrook has records of all known stormwater discharge points. What is evaluated here are the outfalls that fall under the NPDES definition of an outfall that are regulated by the Permit.

Outfalls and interconnections are classified into one of the following categories:

1. **Problem Outfalls:** Outfalls/interconnections with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Outfalls. This shall include any outfalls/interconnections where previous screening indicates likely sewer input. Likely sewer input indicators are any of the following:

- Olfactory or visual evidence of sewage,
- Ammonia  $\geq 0.5$  mg/L, surfactants  $\geq 0.25$  mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia  $\geq 0.5$  mg/L, surfactants  $\geq 0.25$  mg/L, and detectable levels of chlorine.

Dry weather screening and sampling, as described in **Section 6** of this IDDE Plan and Part 2.3.4.7.b of the MS4 Permit, is not required for Problem Outfalls. There are currently no Problem Outfalls in Seabrook, based on historical screening results and existing records.

2. **High Priority Outfalls:** Outfalls/interconnections that have not been classified as Problem Outfalls and that are:
  - Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds
  - Determined by the permittee as high priority based on the characteristics listed in #4 below or other available information.

There are no additional requirements for High Priority Outfalls, but ranking between High and Low Priority is intended to be a guide for Seabrook to plan for allocation of resources.

3. **Low Priority Outfalls:** Outfalls/interconnections determined by the permittee as low priority based on the characteristics listed in #4 below or other available information. Low priority outfalls are outfalls that are not determined to be High Priority.
4. **Excluded outfalls:** Outfalls/interconnections with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land. There are no excluded outfalls in Seabrook.

Outfalls have been ranked into the above priority categories (except for excluded outfalls, which may be eliminated from the IDDE program) based on the following characteristics of the area that drains to each outfall, where information is available.

- **Previous screening results and dry weather flow** – Previous screening/sampling results indicate likely input from sanitary flow (see criteria above for Problem Outfalls). Previous screening results indicate dry weather flow from outfalls.

- **Area of Concern-** Discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds.
- **Past discharge complaints and reports-** Records of complaints, reports that have been received for pollutants entering or exiting the storm sewer system.
- **Receiving water quality-** Receiving water quality can be determined in two ways; listing in the New Hampshire Impaired Waters list and TMDLs, and information from water quality testing. The following guidelines are recommended to identify receiving waters as having a high illicit discharge potential if they are tested:
  - Exceeding water quality standards for bacteria
  - Ammonia levels above 0.5 mg/l
  - Surfactants levels greater than or equal to 0.25 mg/l
- **Density of generating sites** – Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to: automotive repair shops, car washes, gas stations, garden centers, and industrial manufacturing areas.
- **Age of development and infrastructure** – Industrial areas greater than 40 years old will probably have a high illicit discharge potential. Developments 20 years or younger will probably have a low illicit discharge potential. This is the EPA's provided age criteria.
- **Combined sewers historically in the area-** This criterion does not apply since Seabrook has never had combined sewers.
- **Surrounding density of aging septic systems** – Septic systems thirty years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential. This is the EPA's provided age criteria.
- **Long Culverted Streams** – Culverts longer than the roadway have a tendency for higher Illicit discharge potential

Changes from the previous reporting year include data updates on some outfalls being identified as discharging to a stormwater BMP such as a detention pond, with the regulated outfall relisted as the detention pond outlet. Some outfalls were also determined to be at locations of culverts carrying surface waters, foundation drains, or other unregulated discharges. As a result, the following outfalls were removed from the ranking table: OF-10, 15, 32, 74, 82, 87, 104, 107, 113, 124, 138, 169, 172, 183. Some of these updates included the addition of outfalls to the ranking table: OF-20, 46, 190, 192, 195, 196, 197, and 198.

**Appendix C** is the outfall inventory and priority ranking matrix. Only regulated outfalls are listed here. Methods for ranking and the scoring system are further specified in the footnotes below the table.

## **6 Dry Weather Outfall Screening and Sampling**

Dry weather flow is a common indicator of potential illicit connections. The MS4 Permit requires all outfalls/interconnections (excluding Problem and Excluded Outfalls) to be inspected for the presence of dry weather flow. AECOM, contracted by the Town of Seabrook Department of Public Works, is responsible for conducting dry weather outfall screening, starting with High Priority outfalls, followed by Low Priority outfalls, based on the initial priority rankings described in the previous section by the end of Year 3.

Dry weather outfall Screening and Sampling shall be completed in accordance with Part 2.3.4.7.b of the MS4 Permit. Plans and procedures for such screening and sampling shall be incorporated into this plan.

## 7 Catchment Investigations

Once stormwater outfalls with evidence of illicit discharges have been identified, various methods can be used to investigate the source of the potential discharge within the outfall catchment area. Common catchment investigation techniques include, but are not limited to:

- Review of maps, historic plans, and records
- Manhole inspection
- Dry and wet weather sampling
- Video inspection
- Smoke testing
- Dye testing.

This section outlines a systematic procedure to investigate outfall catchments and identify the source(s) of potential illicit discharges. Information and data collected as part of the catchment investigations will be reported in each annual report.

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### 7.1 Map and Record Review

AECOM, contracted by the Town of Seabrook Department of Public Works, will review relevant mapping and historic plans and records to identify areas within the catchment with higher potential for illicit connections. The following information will be reviewed:

- Plans related to the construction of the drainage network
- Prior work on the storm drains
- Health Department or other municipal data on septic system failures or required upgrades
- Records related to septic system breakouts, SSOs, and sanitary sewer surcharges

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### 7.2 System Vulnerability Factors

Based on the Map and Records review, AECOM will identify any of the following System Vulnerability Factors (SVFs). SVFs indicate a risk of sanitary or septic system inputs to the MS4 under wet weather conditions.

The Town of Seabrook's SVF inventory based on the following factors, will be incorporated into the Outfall and Catchment investigation table in Appendix C as outfall testing is completed:

- History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
- Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
- Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.

- Common or twin-invert manholes serving storm and sanitary sewer alignments.
- Common trench construction serving both storm and sanitary sewer alignments.
- Crossings of storm and sanitary sewer alignments.
- Sanitary sewer alignments known or suspected to have been constructed with an underdrain system.
- Areas formerly served by combined sewer systems.
- Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
- Areas formerly served by combined sewer systems.
- Any storm drain infrastructure greater than 40 years old in medium and densely developed areas.

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## 7.3 Dry Weather Catchment Investigation (Manhole Inspections)

AECOM will implement a dry weather storm drain network investigation that involves systematically and progressively observing, sampling and evaluating key junction manholes in the MS4 to determine the approximate location of suspected illicit discharges.

AECOM will be responsible for implementing the dry weather manhole inspection program and making updates as necessary. Infrastructure information will be incorporated into the storm system map, and catchment delineations will be refined based on the field investigation, where necessary. The SVF inventory will also be updated based on information obtained during the field investigations, where necessary.

Several important terms related to the dry weather manhole inspection program are defined by the MS4 Permit as follows:

- **Junction Manhole** is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.
- **Key Junction Manholes** are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program. Adequate implementation of the illicit discharge program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to determine the possible presence of an upstream illicit discharge. A permittee may exclude a junction manhole located upstream from another located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

For all catchments identified for investigation, during dry weather, field crews will systematically inspect **key junction manholes** for evidence of illicit discharges and confirm or identify potential system vulnerability factors. This program involves progressive inspection and sampling at manholes in the storm drain network to isolate and eliminate illicit discharges.

The manhole inspection methodology will be conducted in one of two ways (or a combination of both):

- By working progressively up from the outfall and inspecting key junction manholes along the way, or
- By working progressively down from the upper parts of the catchment toward the outfall and inspecting key junction manholes along the way.

For most catchments, manhole inspections will proceed from the outfall moving up into the system. However, the decision to move up or down the system depends on the nature of the drainage system and the surrounding land use and the availability of information on the catchment and drainage system. Moving up the system can begin immediately when an illicit discharge is detected at an outfall, and only a map of the storm drain system is required. Moving down the system requires more advance preparation and reliable drainage system information on the upstream segments of the storm drain system, but may be more efficient if the sources of illicit discharges are believed to be located in the

upstream portions of the catchment area. Once a manhole inspection methodology has been selected, investigations will continue systematically through the catchment.

Inspection of key junction manholes will proceed as follows:

1. Manholes will be opened and inspected for visual and olfactory evidence of illicit connections.
2. If flow is observed, a sample will be collected and analyzed at a minimum for ammonia, chlorine, and surfactants.
3. Where sampling results or visual or olfactory evidence indicate potential illicit discharges, the area draining to the junction manhole will be flagged for further upstream manhole investigation and/or isolation and confirmation of sources.
4. Subsequent key junction manhole inspections will proceed until the location of suspected illicit discharges can be isolated to a pipe segment between two manholes.
5. If no evidence of an illicit discharge is found, catchment investigations will be considered complete upon completion of key junction manhole sampling.

Table 3-1: Seabrook Catchment Investigations Completed through June 30, 2026

| Location                   | Outfall ID | Key Junction Structures - Manhole(s)/Catch Basin(s) | SVF Presence | Key Junction Structures Present | Flow*     | Suspected IDDE | Comments                                              |
|----------------------------|------------|-----------------------------------------------------|--------------|---------------------------------|-----------|----------------|-------------------------------------------------------|
| Ocean Blvd                 | OF-01      | MH-19, SWMH-12, MH-18, MH-9                         | No           | Yes                             | Moderate  | Yes            | Chlorine detected in discharge                        |
| Adams Ave                  | OF-06      | MH-71, MH-75, CB-967, CB-987                        | No           | Yes                             | Trickling | No             |                                                       |
| 2 Viola Circle             | OF-07A     | CB-1072, CB-1073, SWMH-69                           | No           | Yes                             | Trickling | No             | Medium sized rocks in outlet                          |
| 2 Viola Circle             | OF-07B     | CB-1075                                             | No           | No                              | None      | No             |                                                       |
| 14 Centennial St           | OF-11A     | SWMH-13, CB-293, CB-290                             | No           | Yes                             | None      | No             | Sediment in outfall pipe                              |
| Centennial St              | OF-11B     | MH-83, CB-258                                       | No           | Yes                             | None      | No             |                                                       |
| Folly Mill Rd              | OF-13      | N/A                                                 | No           | No                              | None      | No             |                                                       |
| Pine St                    | OF-14      | CB-41                                               | No           | Yes                             | None      | No             |                                                       |
| 37 Rocks Rd                | OF-16      | MH-97, CB-1171, CB-1346                             | No           | Yes                             | Trickling | No             |                                                       |
| Stard Rd                   | OF-17      | CB-331, CB-1111                                     | No           | Yes                             | Trickling | No             |                                                       |
| 46/48 Alison Drive         | OF-19      | CB-503                                              | No           | Yes                             | None      | No             |                                                       |
| 30 Riley Rd                | OF-20      | CB-609, CB-604                                      | No           | Yes                             | Trickling | No             |                                                       |
| Centennial St              | OF-27      | MH-55                                               | No           | Yes                             | None      | No             |                                                       |
| Kimberly Dr                | OF-30      | N/A                                                 | No           | No                              | None      | No             | No pipe, runoff from Kimberly Dr                      |
| Turtle Creek Terr          | OF-31      | N/A                                                 | No           | No                              | None      | No             |                                                       |
| 38 Viola Circle            | OF-33      | CB-892, CB-1071, CB-1076, MH-80                     | No           | Yes                             | None      | No             |                                                       |
| 31 Worthley Ave            | OF-34      | N/A                                                 | No           | No                              | None      | No             |                                                       |
| South Main St              | OF-36      | CB-1007                                             | No           | Yes                             |           | No             | Verify pipe network                                   |
| 15 Violette Ln             | OF-38      | CB-246, CB-251, CB-253                              | No           | Yes                             | Trickling | No             |                                                       |
| Troy Way                   | OF-39      | CB-54, CB-55                                        | No           | Yes                             | Trickling | No             |                                                       |
| RR Ave                     | OF-40      | CB-150, MH-89                                       | No           | Yes                             | Trickling | No             |                                                       |
| 39 Farm Ln                 | OF-41      | CB-167, CB-81                                       | No           | Yes                             | None      | No             |                                                       |
| 51 Causeway St             | OF-42      | CB-165                                              | No           | Yes                             | None      | No             |                                                       |
| Walton Rd                  | OF-43      | MH-98                                               | No           | Yes                             | Moderate  | No             | Assumed network, verify connection to outfall         |
| 3 Quaker Ln                | OF-45      | CB-288, SWMH-67                                     | No           | Yes                             | None      | No             |                                                       |
| 89 Walton Rd               | OF-46      | CB-284                                              | No           | Yes                             | Heavy     | No             |                                                       |
| 31 Brooks Rd Ext           | OF-49      | N/A                                                 | No           | No                              | Moderate  | No             | Flow from residential drains                          |
| 24 Butland Ave             | OF-50      | CB-962, MH-78                                       | No           | Yes                             | None      | No             | Brown/orange sediment or residue in standing water    |
| 11 Pickens Ave             | OF-51      | CB-315                                              | No           | Yes                             | None      | No             |                                                       |
| 4 Janvrin Drive            | OF-52      | CB-63                                               | No           | Yes                             | None      | No             |                                                       |
| 33 Pickens Ave             | OF-53      | CB-310                                              | No           | Yes                             | None      | No             |                                                       |
| 59 Folly Mill Rd           | OF-54      | N/A                                                 | No           | No                              | None      | No             |                                                       |
| Folly Mill Rd              | OF-56      | N/A                                                 | No           | No                              | Moderate  | No             |                                                       |
| 37 Folly Mill Terr         | OF-57      | CB-19                                               | No           | No                              | Trickling | No             |                                                       |
| 8 Raymond Dr               | OF-58      | CB-238, CB-241, CB-242                              | No           | Yes                             | None      | No             | Leaves covering much of outlet, should be cleared     |
| 2 Lakeshore Drive          | OF-59      | N/A                                                 | No           | No                              | None      | No             |                                                       |
| 5 Forest Dr                | OF-60      | CB-1402, MH-42, MH-43, MH-44                        | No           | Yes                             | Trickling | No             |                                                       |
| 7 Forest Dr                | OF-61      | CB-244                                              | No           | Yes                             | None      | No             | Vines covering outlet. Sludge-like material in outlet |
| 10 Forest Dr               | OF-62      | CB-28, CB-193                                       | No           | Yes                             | None      | No             |                                                       |
| 15 Ayer Cir                | OF-63      | CB-1250, CB-21, CB-190                              | No           | Yes                             | Trickling | No             |                                                       |
| 18 Pine Cone Dr            | OF-64      | CB-39, CB-186                                       | No           | No                              | Moderate  | No             |                                                       |
| 14 Rocks Rd                | OF-68      | CB-471, CB-1167, SWMH-77                            | No           | Yes                             | None      | No             |                                                       |
| 47 Dearborn Ave            | OF-69      | CB-320, CB-1107, MH-92                              | No           | Yes                             | Trickling | No             | Vegetation should be cleared.                         |
| 24 Jean Dr                 | OF-71      | CB-1391, SWMH-62                                    | No           | No                              | None      | No             |                                                       |
| Folly Mill Rd (West Of 95) | OF-72      | N/A                                                 | No           | No                              | None      | No             |                                                       |
| 15 Randall Dr              | OF-83      | CB-520, CB-521                                      | No           | No                              | None      | No             |                                                       |
| 3 Halls Way                | OF-88      | SWMH-3, CB-1220, SWMH-4                             | No           | No                              | None      | No             |                                                       |
| 11 Halls Way               | OF-89      | CB-1222, SWMH-5                                     | No           | Yes                             | Moderate  | No             | Dry leaves at discharge point, oil hood present in CB |
| 23 Halls Way               | OF-90      | CB-1227                                             | No           | Yes                             | None      | No             |                                                       |
| Nicholas Way               | OF-103     | CB-1217                                             | No           | Yes                             | None      | No             |                                                       |
| 15 Beckman Landing         | OF-108     | CB-90                                               | No           | Yes                             | None      | No             |                                                       |
| Elementary School          | OF-109     | N/A                                                 | No           | No                              | Trickling | No             |                                                       |
| Middle School              | OF-110     | N/A                                                 | No           | No                              | None      | No             |                                                       |
| 245 Walton Road            | OF-111     | CB-264                                              | No           | Yes                             | None      | No             |                                                       |
| 180 South Main St          | OF-112     | N/A                                                 | No           | No                              | None      | No             |                                                       |
| Next to Circle Discount    | OF-114     | CB-50, CB-267                                       | No           | Yes                             | Moderate  | No             |                                                       |
| Community Center           | OF-115     | N/A                                                 | No           | No                              | None      | No             |                                                       |
| 50 Alison Drive            | OF-116     | CB-1352                                             | No           | Yes                             | None      | No             |                                                       |
| 1 True Ln                  | OF-117     | N/A                                                 | No           | Yes                             | None      | No             |                                                       |
| Ocean Blvd                 | OF-118     | MH-22, MH-29, SWMH-27, SWMH-26, SWMH-34             | No           | Yes                             | None      | No             |                                                       |
| 3 Locke Ln                 | OF-121     | N/A                                                 | No           | No                              | Trickling | No             |                                                       |

## Seabrook Catchment Investigations Completed through June 30, 2025 (continued)

| Location                         | Outfall ID | Key Junction Structures - Manhole(s)/Catch Basin(s) | SVF Presence | Key Junction Structures Present | Flow*     | Suspected IDDE | Comments                                            |
|----------------------------------|------------|-----------------------------------------------------|--------------|---------------------------------|-----------|----------------|-----------------------------------------------------|
| Locke Lane                       | OF-123     | N/A                                                 | No           | No                              | None      | No             |                                                     |
| 40 Halls Way                     | OF-125     | N/A                                                 | No           | Yes                             | Trickling | No             |                                                     |
| Raymond Dr                       | OF-127     | N/A                                                 | No           | No                              | None      | No             |                                                     |
| Pine St And Rt 1                 | OF-130     | CB-1269                                             | No           | Yes                             | None      | No             |                                                     |
| 17 Border Winds Ave              | OF-135     | N/A                                                 | No           | No                              | None      | No             | Excessive brush                                     |
| Border Winds Ave                 | OF-139     | CB-512                                              | No           | Yes                             | None      | No             |                                                     |
| 26 Pineo Farms Rd                | OF-152     | N/A                                                 | No           | Yes                             | Trickling | No             |                                                     |
| 24 Jean Dr                       | OF-155     | CB-1334, CB-1333                                    | No           | Yes                             | None      | No             |                                                     |
| 36 Jean Dr                       | OF-158     | N/A                                                 | No           | No                              | None      | No             |                                                     |
| 6 Austins Way                    | OF-160     | CB-66                                               | No           | No                              | None      | No             | Grading ineffective, leaves blocking potential flow |
| 18 Lighthouse Way                | OF-161     | N/A                                                 | No           | No                              | None      | No             |                                                     |
| 8 Timber Ct                      | OF-163     | N/A                                                 | No           | No                              | None      | No             |                                                     |
| 54 Dows Ln                       | OF-165     | CB-1350                                             | No           | No                              | Trickling | No             | Leaves blocking discharge point                     |
| Dows Lane                        | OF-166     | N/A                                                 | No           | No                              | None      | No             |                                                     |
| Liberty Ln                       | OF-167     | N/A                                                 | No           | No                              | Trickling | No             |                                                     |
| Liberty Ln                       | OF-168     | CB-1180                                             | No           | Yes                             | Moderate  | No             | Police station                                      |
| 87 Centennial St                 | OF-170     | (CB-223)                                            | No           | No                              | None      | No             |                                                     |
| 6 Quaker Lane                    | OF-171     | CB-278                                              | No           | Yes                             | None      | No             |                                                     |
| 38 Marshview Cir                 | OF-175     | (CB-1199)                                           | No           | Yes                             | None      | No             |                                                     |
| 58 Marshview Cir                 | OF-176     | N/A                                                 | No           | No                              | None      | No             |                                                     |
| 571 Layette Road (State Route 1) | OF-177     | SWMH-71, CB-1358                                    | No           | Yes                             | None      | No             | Discharges into state-owned catchment               |
| 63 Adams Ave                     | OF-178     | CB-1047                                             | No           | No                              | None      | No             | One CB to outfall                                   |
| 50 Belgian Dr                    | OF-182     | N/A                                                 | No           | No                              |           | No             |                                                     |
| 11 Belgian Dr                    | OF-185     | N/A                                                 | No           | No                              | None      | No             |                                                     |
| Belgian Dr                       | OF-186     | MH-55                                               | No           | Yes                             | None      | No             |                                                     |
| 27 Pickens Ave                   | OF-187     | CB-313                                              | No           | Yes                             | None      | No             |                                                     |
| 30 Folly Mill Road               | OF-189     | CB-266, CB-1159                                     | No           | Yes                             | None      | No             |                                                     |
| 5 Dandiview Acres                | OF-190     | CB-1133                                             | No           | Yes                             | None      | No             |                                                     |
| 141 South Main St                | OF-191     | N/A                                                 | No           | Yes                             | None      | No             |                                                     |
| Pine Street                      | OF-195     | CB-8, CB-94                                         | No           | Yes                             | None      | No             |                                                     |
| Walton Rd                        | OF-196     | CB-272                                              | No           | Yes                             | None      | No             |                                                     |
| 10 Austins Way                   | OF-198     | N/A                                                 | No           | No                              | None      | No             |                                                     |

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## 7.4 Wet Weather Catchment Investigation (Outfall Sampling)

Where a minimum of one (1) System Vulnerability Factor (SVF) is identified based on previous information or the catchment investigation, a wet weather investigation must also be conducted at the associated outfall. AECOM will be responsible for implementing the wet weather outfall sampling program and making updates as necessary.

Outfalls will be inspected and sampled under wet weather conditions, to the extent necessary, to determine whether wet weather-induced high flows in sanitary sewers or high groundwater in areas served by septic systems result in discharges of sanitary flow to the MS4.

Wet weather outfall sampling will proceed as follows:

1. Wet weather sampling will occur during or after a storm event of sufficient depth or intensity to produce a stormwater discharge at the outfall.
  - a. To the extent feasible, sampling should occur during the spring (March through June) when groundwater levels are relatively high.
  - b. There is no specific rainfall amount that will trigger sampling, although minimum storm event intensities that are likely to trigger sanitary sewer interconnections are preferred.
  - c. Sampling during the initial period of discharge (“first flush”) will be avoided.
2. If wet weather outfall sampling indicates a potential illicit discharge, then additional wet weather source sampling will be performed, as warranted, or source isolation and confirmation procedures will be followed as described in Source Isolation and Confirmation.
3. If wet weather outfall sampling does not identify evidence of illicit discharges, and no evidence of an illicit discharge is found during dry weather manhole inspections, catchment investigations will be considered complete.

Table 4-1: Discharge Point Inspections Permit Year 2025-2026

| Outfall ID | Inspection Date | Weather | Flow Description | Specific Conductivity | Salinity | Free Chlorine | Total Chlorine | Air Temp | Water Temp | Field Observations                                                                                                                                             |
|------------|-----------------|---------|------------------|-----------------------|----------|---------------|----------------|----------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OF-01      | 6/17/2026       | Dry     | Moderate         | 9320                  | 5.368566 | 0.06          | 0.07           | 67       | 64         | Flow observed leaving rubber baffle, sample taken from flow into marsh.                                                                                        |
| OF-01      | 6/17/2026       | Dry     | N/A              | 2694                  | 1.515757 | 0.08          | 0.08           | 67       | 63         | Taken from manhole                                                                                                                                             |
| OF-01      | 6/11/2026       | Dry     | None             | N/A                   | N/A      | 0.19          | 0.19           | 75       | 67         | Standing clear water                                                                                                                                           |
| OF-197     | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is dry with no flowing water. Stagnant water is seen within stream.                                                                                    |
| OF-170     | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall has no flow, stream is dry.                                                                                                                            |
| OF-168     | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall has no flow, stream channel is dry.                                                                                                                    |
| OF-161     | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is dry and has no flow, Channel down gradient also appears dry.                                                                                        |
| OF-89      | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall has no flow, substrate around outfall appears to be dry. Random black pipe to the east of pipe also appears to be dry.                                 |
| OF-88      | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall has no flow, outlet was forced in leaf litter and sediment.                                                                                            |
| OF-180     | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | pipe sits in a pool of standing water, Outfall has no flow. White pvc pipe adjacent to outfall observed.                                                       |
| OF-65      | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Out fall has no flow and is siting in stagnant water. Two black pipes adjacent outfall observed.                                                               |
| OF-164     | 10/2/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is dry with no flow. Stagnate water is seen down stream of outfall.                                                                                    |
| OF-198     | 9/11/2025       | Dry     | N/A              | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is in a stable condition with a HDPE outlet.                                                                                                           |
| OF-197     | 9/11/2025       | Dry     | Slow             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Blue sign labeled as outfall number 10 but mapped as outfall 197. Outfall is in a stable condition with a slight trickling flow                                |
| OF-181     | 9/11/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is in a stable condition, lots of vegetation surrounding outlet.                                                                                       |
| OF-30      | 9/11/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Swale only, no built conduit                                                                                                                                   |
| OF-08      | 9/11/2025       | Dry     | N/A              | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall not found, Thick reeds and thorn bushes overgrown within the area                                                                                      |
| OF-196     | 9/10/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Overgrown vegetation, standing water within the rip rap                                                                                                        |
| OF-104     | 9/10/2025       | Dry     | N/A              | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Cannot locate outfall, large granite structure in location surrounded by backed up water.                                                                      |
| OF-46      | 9/10/2025       | Dry     | Slow             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Covered in vegetation, clear water with a slow to moderate flow flowing down to inundated swamp.                                                               |
| OF-12C     | 9/10/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Covered in vegetation, with no water flowing.                                                                                                                  |
| OF-31      | 9/10/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Covered in thick vegetation, no flowing water.                                                                                                                 |
| OF-187     | 9/10/2025       | Dry     | N/A              | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | No outfall Observed, lots of debris along the bank                                                                                                             |
| OF-34      | 9/10/2025       | Dry     | N/A              | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall could not be located for inspection due to excessive brush growth and build up of sediment and silt.                                                   |
| OF-112     | 9/10/2025       | Dry     | N/A              | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Could not find outfall, previous inspection believed to be buried.                                                                                             |
| OF-176     | 9/10/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is in stable conduction, no flow observed.                                                                                                             |
| OF-33      | 9/10/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Mapping and channelized standing water indicates that outfall is located in this location, No pipe observed. Outfall sign is located at opposte property line. |
| OF-109     | 9/10/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is in a stable condition with light vegetation surrounding. No flow was observed.                                                                      |
| OF-110     | 9/10/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is in a stable condition, no flow was observed. Slight trash within the outlet                                                                         |
| OF-01      | 9/10/2025       | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall is in a stable condition, there appears to be rubber boots on the end of the outlet. Water level is halfway up the outlet                              |
| OF-193     | 9/5/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | 2/3 full of sediment partially from adjacent gravel driveway                                                                                                   |

**Discharge Point Inspections Permit Year 2025-2026**

| Outfall ID | Inspection Date | Weather | Flow Description | Specific Conductivity | Salinity | Free Chlorine | Total Chlorine | Air Temp | Water Temp | Field Observations                                                                                                                                                                                          |
|------------|-----------------|---------|------------------|-----------------------|----------|---------------|----------------|----------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OF-195     | 9/5/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Pipes have slight sediment build up in pipes. Small puddle, but stream dry. Resident came out says this was called Ben's Brook and he lives on this road in the oldest house in Seabrook                    |
| OF-14      | 9/5/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Slight sediment build up in pipe. Small puddle in front of outfall, but stream is dry at confluence of both outfalls.                                                                                       |
| OF-115     | 9/5/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | No flow at spillway, could not find pipe going into storm water pond from closed drainage.                                                                                                                  |
| OF-56      | 9/5/2025        | Dry     | Slow             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall into brook with slight flow. Likely groundwater                                                                                                                                                     |
| OF-114     | 9/5/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Excessive sediment build up downstream.                                                                                                                                                                     |
| OF-199     | 9/4/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Dry, no channel at outlet                                                                                                                                                                                   |
| OF-190     | 9/4/2025        | Dry     | N/A              | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall not found. Owner with pool noted there was a storm water feature that collapsed by end of driveway opposite garage door and not on slope where mapped. Could not locate outfall in either location. |
| OF-139     | 9/4/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Appears to be primary outfall of catchment to wetland area. Royal fern and soft ground at outlet, no scour. Water line(?) observed in pipe.                                                                 |
| OF-152     | 9/4/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outlet dry. Evidence of flow, minor scouring.                                                                                                                                                               |
| OF-17      | 9/4/2025        | Dry     | Slow             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Outfall at sign, appears submerged and turbid. Pooled water trickling from outfall location.                                                                                                                |
| OF-72      | 9/4/2025        | Dry     | None             | N/A                   | N/A      | N/A           | N/A            | N/A      | N/A        | Dry with some scour under outlet. Combined with adjacent highway outfall prior to drainage into brook. Major scouring from highway outfall.                                                                 |

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## 7.5 Source Isolation and Confirmation

Once the source of an illicit discharge is approximated between two manholes, more detailed investigation techniques will be used to isolate and confirm the source of the illicit discharge. The following methods may be used in isolating and confirming the source of illicit discharges:

- Sandbagging
- Smoke Testing
- Dye Testing
- CCTV/Video Inspections
- Optical Brightener Monitoring
- IDDE Canines.

Public notification is an important aspect of a detailed source investigation program. Prior to smoke testing, dye testing, or TV inspections, the Town of Seabrook will notify property owners in the affected area.

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## 7.6 Illicit Discharge Removal

When the specific source of an illicit discharge is identified, the Town of Seabrook will exercise its authority as necessary to require its removal. The annual report will include the status of IDDE investigation and removal activities including the following information for each confirmed source:

- The location of the discharge and its source(s)
- A description of the discharge
- The method of discovery
- Date of discovery
- Date of elimination, mitigation or enforcement action OR planned corrective measures and a schedule for completing the illicit discharge removal
- Estimate of the volume of flow removed.

### 7.6.1 Confirmatory Outfall Screening

Within one (1) year of removal of all identified illicit discharges and SSO sources within a catchment area, confirmatory outfall or interconnection screening will be conducted. The confirmatory screening will be conducted in dry weather unless System Vulnerability Factors have been identified, in which case both dry weather and wet weather confirmatory screening will be conducted. If confirmatory screening indicates evidence of additional illicit discharges, the catchment will be scheduled for additional investigation. Confirmatory screening is not required in catchments where no illicit discharges or System Vulnerability Factors have been identified and no previous screening indicated suspicious flows.

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## **7.7 Follow-up Screening**

Upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary), each outfall or interconnection will be scheduled for follow-up screening within five (5) years, or sooner based on the catchment's illicit discharge priority. Ongoing screening will consist of dry weather screening and sampling. Ongoing wet weather screening and sampling will also be conducted at outfalls where wet weather screening was required due to System Vulnerability Factors. All sampling results will be reported in the annual report.

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## **7.8 Illicit Discharge Detection and Elimination Training**

The Town of Seabrook will implement a training program to employees involved in IDDE program about the program, including how to recognize illicit discharges. The permittee shall report on the frequency and type of employee training in the annual report.

## 8 Progress Reporting

The progress and success of the IDDE program will be evaluated on an annual basis. The evaluation will be documented in the annual report and will include the following indicators of program progress:

- Number of SSOs and illicit discharges identified and removed
- Number and percent of total outfall catchments served by the MS4 evaluated using the catchment investigation procedure
- Number of dry weather outfall inspections/screenings
- Number of wet weather outfall inspections/sampling events
- All dry weather and wet weather screening and sampling results
- Estimate of the volume of sewage removed, as applicable
- Number of employees trained annually.

The success of the IDDE program will be measured by the IDDE activities completed within the required permit timelines.

## Appendix A

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Legal Authority (IDDE Bylaw or Ordinance)

## **Town of Seabrook Sewer Ordinance, June 2005**

It shall be unlawful to discharge to any natural outlet within the Town, or in any area under the jurisdiction of said Town, any wastewater or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this Ordinance and with State and Federal laws and regulations.

Use Of Storm Sewers. Storm water and all other unpolluted drainage shall be discharged only to such sewers as are specifically designed as storm sewers, or to natural outlets approved by the Board of Selectmen. Industrial cooling water, process waters, or storm water runoff generated in areas of industrial activity (as defined in 40 CFR Part 122) require an NPDES permit prior to discharge to a storm sewer or natural outlet.

Use Designation. If the intended or designated use of any particular sewer or drain and allowable discharge thereto is unclear, the Superintendent will consider the pertinent facts and make a determination. This determination shall be final and binding.

Use Of Sanitary Sewers. Except as specifically designated by the Town with reference to some particular sewer, sanitary sewers shall be used only for the conveyance and disposal of sanitary sewage, and for industrial wastes that are not objectionable as hereinafter provided. No sanitary sewer shall be used to receive and convey or dispose of any storm or surface water, subsoil drainage, or unpolluted water.

## Appendix B

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List of Impaired Waters  
Storm System Mapping

[illegible]

## Appendix C

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Outfall Inventory and  
Priority Ranking Matrix

Outfall Inventory and Priority Ranking Matrix

| Outfall ID | Receiving Water                                       | EPA Category <sup>3</sup> | Date of Most Recent Inspection | Pipe Diameter | Material           | Physical Condition | X-coordinate (NH State Plane) | Y-coordinate (NH State Plane) | Receiving Water Quality <sup>3</sup> | Density of Generating Sites <sup>4</sup> | Age of Development/ Infrastructure <sup>5</sup> | Long Culverted Streams? <sup>7</sup> | Additional Characteristics                                | Score | Priority Ranking |
|------------|-------------------------------------------------------|---------------------------|--------------------------------|---------------|--------------------|--------------------|-------------------------------|-------------------------------|--------------------------------------|------------------------------------------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------|-------|------------------|
|            |                                                       |                           | (m/d/yyyy)                     | (in.)         | Type               | Rank               | (NH State Plane)              | (NH State Plane)              | Poor = 6<br>Fair = 2<br>Good = 0     | High = 6<br>Medium = 3<br>Low = 1        | High = 3<br>Medium = 2<br>Low = 1               | Yes = 3<br>No = 0                    |                                                           |       |                  |
| OF-01      | Salt Marsh                                            |                           | 7/9/2026                       | 24            | Rubber             | Good               | 1,211,299.2                   | 141,103.7                     | 0                                    | 1                                        | 2                                               | 0                                    | Chlorine detected in discharge                            | 3     | Problem          |
| OF-14      | NHRIV600031004-17 Marys Brook                         | 4A                        | 9/5/2025                       | 18            | Concrete           | Fair               | 1,196,491.3                   | 142,848.6                     | 2                                    | 6                                        | 3                                               | 0                                    | Receives some stormwater from car wash parking lot        | 11    | High Priority    |
| OF-17      | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 9/4/2025                       | 15            | Concrete           | Poor               | 1,193,880.4                   | 146,765.1                     | 2                                    | 6                                        | 2                                               | 0                                    | Drainage from truck yards                                 | 10    | High Priority    |
| OF-72      | NHRIV600031004-10 Cains Brook - Unnamed Brook         | 5                         | 9/4/2025                       | 12            | Metal              | Poor               | 1,194,242.1                   | 140,471.2                     | 6                                    | 5                                        | 2                                               | 0                                    | Next to I-95 and Henkel Loctite facility                  | 13    | High Priority    |
| OF-114     | NHRIV600031004-21 Unnamed Brook - To Cains Mill Pond  | 4A                        | 9/5/2025                       | 24            | Concrete           | Fair               | 1,197,659.1                   | 138,319.8                     | 2                                    | 3                                        | 2                                               | 3                                    | Unnamed stream carried by culvert                         | 10    | High Priority    |
| OF-177     | NHRIV600031004-17 Marys Brook                         | 4A                        | 5/6/2022                       | 12            | Concrete           | Good               | 1,197,049.8                   | 143,780.5                     | 2                                    | 6                                        | 1                                               | 3                                    | Interconnection                                           | 12    | High Priority    |
| OF-06      | NHRIV600031004-29 Unnamed Brook                       | 4A                        | 4/27/2023                      | 15            | Concrete           | Fair               | 1,204,042.9                   | 135,849.4                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-07A     | NHRIV600031004-33 Unnamed Brook                       | 4A                        | 5/25/2023                      | 15            | Corrugated Plastic | Good               | 1,204,147.3                   | 137,377.5                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-07B     | NHRIV600031004-33 Unnamed Brook                       | 4A                        | 5/25/2023                      | 12            | Corrugated Plastic | Fair               | 1,204,148.3                   | 137,379.4                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-08      | NHEST600031004-07 Mill Creek                          | 5                         | 9/11/2025                      | 12            |                    |                    | 1,203,639.2                   | 141,265.8                     | 6                                    | 1                                        | 2                                               | 0                                    | Outfall not found, thick brush in vicinity                | 9     | Low Priority     |
| OF-11A     | NHRIV600031004-12 Cains Brook                         | 4A                        | 5/5/2023                       | 12            | Corrugated Metal   | Poor               | 1,200,977.1                   | 138,945.2                     | 2                                    | 1                                        | 2                                               | 0                                    | 50% full of sediment                                      | 5     | Low Priority     |
| OF-11B     | NHRIV600031004-12 Cains Brook                         | 4A                        | 5/5/2023                       | 18            |                    |                    | 1,200,977.5                   | 138,956.3                     | 2                                    | 1                                        | 1                                               | 0                                    | Drain MH directly discharges into culvert                 | 4     | Low Priority     |
| OF-13      | NHRIV600031004-09 Folly Mill Brook                    | 5                         | 5/18/2022                      | 12            | Corrugated Plastic | Fair               | 1,196,025.0                   | 139,369.6                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-16      | NHRIV600031004-07 Browns River                        | 4A                        | 4/27/2023                      | 18            | Concrete           | Good               | 1,198,670.6                   | 145,587.7                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-19      | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 8/23/2022                      | 12            | Corrugated Plastic | Fair               | 1,189,062.2                   | 144,250.6                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-20      | Wetland                                               |                           | 5/10/2023                      | 12            | Concrete           | Fair               | 1,188,938.9                   | 142,476.8                     | 0                                    | 3                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-27      | NHEST600031004-07 Mill Creek                          | 5                         | 5/12/2022                      | 15            | Concrete           | Fair               | 1,200,878.0                   | 140,154.8                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-30      | NHEST600031004-06-02 Hunts Island Creek (Upper)       | 5                         | 9/11/2025                      |               |                    |                    | 1,202,097.7                   | 143,084.3                     | 6                                    | 1                                        | 1                                               | 0                                    | Swale accepting run-off from a small area of roadway      | 8     | Low Priority     |
| OF-31      | NHEST600031004-07 Mill Creek                          | 5                         | 9/10/2025                      | 8             | Corrugated Plastic | Good               | 1,201,511.2                   | 139,124.8                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-33      | NHIMP600031004-10 Trib To Hampton Harbor              | 4A                        | 9/10/2025                      |               |                    |                    | 1,203,737.4                   | 138,379.6                     | 2                                    | 2                                        | 2                                               | 0                                    | Outfall not found                                         | 6     | Low Priority     |
| OF-34      | NHRIV600031004-14 Unnamed Brook                       | 4A                        | 9/10/2025                      | 12            |                    |                    | 1,204,005.7                   | 133,601.7                     | 2                                    | 2                                        | 2                                               | 0                                    | Outfall not found                                         | 6     | Low Priority     |
| OF-36      | NHRIV600031004-29 Unnamed Brook                       | 4A                        | 8/23/2022                      | 12            |                    |                    | 1,205,763.5                   | 135,588.5                     | 2                                    | 1                                        | 2                                               | 0                                    | Outfall not found                                         | 5     | Low Priority     |
| OF-38      | NHIMP600031004-06 Cains Brook - Noyes Pond            | 5                         | 4/27/2023                      | 12            | Corrugated Plastic | Good               | 1,198,777.8                   | 139,274.8                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-39      | NHRIV600031004-21 Unnamed Brook - To Cains Mill Pond  | 4A                        | 4/27/2023                      | 12            | Corrugated Plastic | Fair               | 1,198,337.5                   | 138,767.4                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-40      | NHRIV600031004-08 Farm Brook                          | 4A                        | 5/25/2023                      | 24            | Concrete           | Good               | 1,199,933.7                   | 142,535.5                     | 2                                    | 2                                        | 2                                               | 0                                    |                                                           | 6     | Low Priority     |
| OF-41      | NHRIV600031004-08 Farm Brook                          | 4A                        | 5/5/2023                       | 12            |                    | Fair               | 1,201,510.4                   | 142,174.2                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-42      | NHRIV600031004-34 Unnamed Brook                       | 4A                        | 8/23/2022                      | 12            | Concrete           | Fair               | 1,203,269.9                   | 141,735.6                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-43      | NHEST600031004-07 Mill Creek                          | 5                         | 9/6/2019                       | 24            | Concrete           | Fair               | 1,202,022.1                   | 139,397.6                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-45      | NHRIV600031004-12 Cains Brook                         | 4A                        | 5/17/2023                      | 18            | Concrete           | Good               | 1,199,913.7                   | 138,474.1                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-46      | NHRIV600031004-12 Cains Brook                         | 4A                        | 9/10/2025                      | 15            | Concrete           | Good               | 1,199,883.9                   | 139,047.5                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-49      | NHRIV600031004-12 Cains Brook                         | 4A                        | 5/13/2022                      |               | PVC                | Poor               | 1,198,993.0                   | 136,818.4                     | 2                                    | 1                                        | 1                                               | 0                                    | Catch basin without apparent outlet, trenched in vicinity | 4     | Low Priority     |
| OF-50      | NHRIV600031004-14 Unnamed Brook                       | 4A                        | 4/11/2023                      | 12            | Concrete           | Fair               | 1,201,090.8                   | 134,985.4                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-51      | NHRIV600031004-12 Cains Brook                         | 4A                        | 5/13/2022                      | 18            | Concrete           | Poor               | 1,199,473.0                   | 136,317.8                     | 2                                    | 1                                        | 2                                               | 0                                    | 50% full of sediment                                      | 5     | Low Priority     |
| OF-52      | NHRIV600031004-12 Cains Brook                         | 4A                        | 5/13/2022                      | 21            | Concrete           | Poor               | 1,199,494.1                   | 136,522.2                     | 2                                    | 1                                        | 2                                               | 0                                    | Significant debris at outlet                              | 5     | Low Priority     |
| OF-53      | NHRIV600031004-12 Cains Brook                         | 4A                        | 5/17/2023                      | 21            | Concrete           | Good               | 1,199,530.3                   | 136,961.2                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-54      | NHRIV600031004-09 Folly Mill Brook                    | 5                         | 5/18/2022                      | 12            | Corrugated Plastic | Good               | 1,195,953.0                   | 139,342.6                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-56      | NHRIV600031004-10 Cains Brook - Unnamed Brook         | 5                         | 9/5/2025                       | 12            | Concrete           | Fair               | 1,195,607.2                   | 140,366.6                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-57      | NHRIV600031004-10 Cains Brook - Unnamed Brook         | 5                         | 5/17/2023                      | 12            | Corrugated Metal   | Good               | 1,195,775.6                   | 140,241.0                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-58      | NHIMP600031004-04 Secord Pond Dam                     | 5                         | 5/17/2023                      | 12            |                    |                    | 1,196,576.7                   | 139,692.8                     | 6                                    | 1                                        | 2                                               | 0                                    | Fully buried or underwater                                | 9     | Low Priority     |
| OF-59      | NHIMP600031004-05 Cains Brook                         | 5                         | 7/1/2018                       | 12            | Concrete           | Poor               | 1,197,938.8                   | 139,699.4                     | 6                                    | 1                                        | 2                                               | 0                                    | 50% full of sediment                                      | 9     | Low Priority     |
| OF-60      | NHIMP600031004-05 Cains Brook                         | 5                         | 5/17/2023                      | 8             | Concrete           | Good               | 1,197,659.4                   | 139,694.7                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-61      | NHIMP600031004-05 Cains Brook                         | 5                         | 5/17/2023                      | 15            | Concrete           | Good               | 1,197,523.9                   | 139,750.5                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-62      | NHRIV600031004-10 Cains Brook - Unnamed Brook         | 5                         | 5/17/2023                      | 12            | Corrugated Plastic | Good               | 1,197,162.4                   | 139,844.5                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-63      | NHRIV600031004-10 Cains Brook - Unnamed Brook         | 5                         | 5/17/2023                      | 12            | Corrugated Plastic | Fair               | 1,196,771.3                   | 140,053.9                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-64      | NHRIV600031004-10 Cains Brook - Unnamed Brook         | 5                         | 5/17/2023                      | 12            | Concrete           | Fair               | 1,196,292.4                   | 140,215.1                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-68      | NHRIV600031004-07 Browns River                        | 4A                        | 4/27/2023                      |               |                    |                    | 1,197,823.4                   | 145,735.1                     | 2                                    | 3                                        | 1                                               | 0                                    | Drains auto store parking lot. Can't access gated pond    | 6     | Low Priority     |
| OF-69      | NHLAK600031003-01 Big Dodge Pond                      | 4A                        | 5/10/2023                      | 15            | Concrete           | Good               | 1,196,801.9                   | 147,839.1                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-71      | NHRIV600031004-07 Browns River                        | 4A                        | 4/11/2023                      | 12            | Corrugated Plastic | Good               | 1,196,562.3                   | 146,573.4                     | 2                                    | 1                                        | 0                                               | 0                                    | Discharges to swale before wetland                        | 3     | Low Priority     |
| OF-83      | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 4/27/2023                      | 12            | Corrugated Plastic | Fair               | 1,189,457.1                   | 144,274.8                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-88      | NHRIV600031004-34 Unnamed Brook                       | 4A                        | 10/2/2025                      | 12            | Concrete           | Fair               | 1,201,545.7                   | 141,855.4                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-89      | NHRIV600031004-34 Unnamed Brook                       | 4A                        | 10/2/2025                      | 12            | Concrete           | Good               | 1,201,664.0                   | 141,641.1                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-90      | NHRIV600031004-34 Unnamed Brook                       | 4A                        | 5/10/2023                      | 12            | Concrete           | Poor               | 1,202,248.7                   | 141,527.1                     | 2                                    | 1                                        | 1                                               | 0                                    | 50% full of sediment                                      | 4     | Low Priority     |
| OF-103     | NHIMP600031004-06 Cains Brook - Noyes Pond            | 5                         | 5/11/2022                      | 15            | Corrugated Plastic | Good               | 1,199,830.4                   | 139,360.6                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-108     | NHEST600031004-07 Mill Creek                          | 5                         | 8/23/2022                      | 12            | Concrete           | Fair               | 1,204,027.4                   | 142,183.7                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-109     | Salt marsh                                            |                           | 9/10/2025                      | 18            | Concrete           | Fair               | 1,204,421.8                   | 139,613.2                     | 0                                    | 1                                        | 1                                               | 0                                    | Seabrook Middle School                                    | 2     | Low Priority     |
| OF-110     | Salt marsh                                            |                           | 9/10/2025                      | 18            | Concrete           | Fair               | 1,204,346.0                   | 139,955.1                     | 0                                    | 1                                        | 1                                               | 0                                    | Seabrook Middle School                                    | 2     | Low Priority     |
| OF-111     | NHEST600031004-07 Mill Creek                          | 5                         | 5/17/2022                      | 18            | Corrugated Metal   | Good               | 1,203,173.7                   | 139,789.8                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-112     | NHRIV600031004-29 Unnamed Brook                       | 4A                        | 9/10/2025                      | 12            |                    |                    | 1,204,328.9                   | 134,334.2                     | 2                                    | 1                                        | 1                                               | 0                                    | Outfall appears to be buried                              | 4     | Low Priority     |
| OF-115     | NHRIV600031004-17 Marys Brook                         | 4A                        | 9/5/2025                       |               | Other              |                    | 1,197,923.7                   | 140,546.3                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-116     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 4/26/2022                      | 18            | Corrugated Metal   | Poor               | 1,188,717.5                   | 144,275.7                     | 2                                    | 1                                        | 1                                               | 0                                    | 50% full of sediment, top of pipe dented                  | 4     | Low Priority     |
| OF-117     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 8/23/2022                      | 18            | Concrete           | Good               | 1,187,357.9                   | 144,713.6                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-118     | Salt marsh                                            |                           | 9/24/2020                      | 18            | Concrete           |                    | 1,211,294.0                   | 141,102.3                     | 0                                    | 1                                        | 2                                               | 0                                    | Shares structure with OF-1 from separate catchment        | 3     | Low Priority     |
| OF-121     | NHEST600031004-07 Mill Creek                          | 5                         | 8/4/2021                       | 12            | Concrete           | Good               | 1,202,997.2                   | 140,847.4                     | 6                                    | 1                                        | 1                                               | 0                                    | Discharge from Retention basin BMP                        | 8     | Low Priority     |
| OF-123     | NHEST600031004-07 Mill Creek                          | 5                         | 8/4/2021                       | 12            |                    |                    | 1,202,999.6                   | 141,107.2                     | 6                                    | 1                                        | 1                                               | 0                                    | Discharge from Retention basin BMP                        | 8     | Low Priority     |

Outfall Inventory and Priority Ranking Matrix (continued)

| Outfall ID | Receiving Water                                       | EPA Category <sup>3</sup> | Date of Most Recent Inspection | Pipe Diameter | Material           | Physical Condition | X-coordinate (NH State Plane) | Y-coordinate (NH State Plane) | Receiving Water Quality <sup>3</sup> | Density of Generating Sites <sup>4</sup> | Age of Development/ Infrastructure <sup>5</sup> | Long Culverted Streams? <sup>7</sup> | Additional Characteristics                                | Score | Priority Ranking |
|------------|-------------------------------------------------------|---------------------------|--------------------------------|---------------|--------------------|--------------------|-------------------------------|-------------------------------|--------------------------------------|------------------------------------------|-------------------------------------------------|--------------------------------------|-----------------------------------------------------------|-------|------------------|
|            |                                                       |                           | (m/d/yyyy)                     | (in.)         | Type               | Rank               | (NH State Plane)              | (NH State Plane)              | Poor = 6<br>Fair = 2<br>Good = 0     | High = 6<br>Medium = 3<br>Low = 1        | High = 3<br>Medium = 2<br>Low = 1               | Yes = 3<br>No = 0                    |                                                           |       |                  |
| OF-125     | NHRIV600031004-34 Unnamed Brook                       | 4A                        | 5/10/2023                      | 12            | Concrete           | Fair               | 1,203,073.2                   | 141,413.1                     | 2                                    | 1                                        | 1                                               | 0                                    | Discharge from Retention basin BMP                        | 4     | Low Priority     |
| OF-127     | NHIMP600031004-04 Secord Pond Dam                     | 5                         | 8/6/2021                       | 12            | PVC                |                    | 1,196,309.8                   | 139,325.5                     | 6                                    | 1                                        | 1                                               | 0                                    | Located at pond                                           | 8     | Low Priority     |
| OF-130     | State Drainage System on Rt 1                         |                           | 8/10/2021                      | 16            |                    |                    | 1,197,311.4                   | 142,712.2                     | 0                                    | 3                                        | 2                                               | 0                                    | Interconnection with state system on Pine St and Rt 1     | 5     | Low Priority     |
| OF-135     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 4/27/2023                      | 12            | Corrugated Plastic | Good               | 1,189,339.7                   | 143,996.7                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-139     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 9/4/2025                       | 10            | Corrugated Plastic | Good               | 1,190,723.9                   | 143,587.4                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-147     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 11/10/2021                     |               | Other              | Good               | 1,185,980.7                   | 148,837.8                     | 2                                    | 1                                        | 1                                               | 0                                    | Riprap weir overflow                                      | 4     | Low Priority     |
| OF-149     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 12/10/2021                     | 6             | Corrugated Plastic |                    | 1,186,193.9                   | 148,944.3                     | 2                                    | 1                                        | 2                                               | 0                                    | Outside of fencing, cannot access                         | 5     | Low Priority     |
| OF-151     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 12/10/2021                     | 6             | PVC                |                    | 1,186,191.0                   | 148,947.3                     | 2                                    | 1                                        | 2                                               | 0                                    | Outside of fencing, cannot access                         | 5     | Low Priority     |
| OF-152     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 9/4/2025                       | 12            | Corrugated Plastic | Good               | 1,193,817.6                   | 147,894.5                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-155     | NHRIV600031004-07 Browns River                        | 4A                        | 4/11/2023                      | 6             | Concrete           | Poor               | 1,196,643.0                   | 146,583.3                     | 2                                    | 1                                        | 1                                               | 0                                    | Dual openings on a headwall. 50% full of sediment         | 4     | Low Priority     |
| OF-158     | NHRIV600031004-07 Browns River                        | 4A                        | 4/11/2023                      | 10            | Corrugated Plastic | Good               | 1,196,984.6                   | 146,520.0                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-159     | Constructed Pond                                      |                           |                                | 12            | Concrete           |                    |                               |                               | 0                                    | 3                                        | 2                                               | 0                                    | Coordinates error, update location and inspection records | 5     | Low Priority     |
| OF-160     | Unnamed Stream                                        |                           | 5/10/2023                      | 12            | PVC                | Good               | 1,198,964.2                   | 141,975.1                     | 0                                    | 1                                        | 1                                               | 0                                    |                                                           | 2     | Low Priority     |
| OF-161     | NHEST600031004-06-02 Hunts Island Creek (Upper)       | 5                         | 10/2/2025                      | 24            | Concrete           | Good               | 1,202,445.1                   | 142,711.4                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-163     | NHRIV600031004-17 Marys Brook                         | 4A                        | 4/18/2022                      | 8             | Other              | Poor               | 1,197,084.7                   | 140,760.1                     | 2                                    | 1                                        | 1                                               | 0                                    | Undermined at time of inspection, repairs planned         | 4     | Low Priority     |
| OF-164     | NHRIV600031004-10 Cains Brook - Unnamed Brook         | 5                         | 10/2/2025                      | 12            | Concrete           | Fair               | 1,195,964.2                   | 140,186.8                     | 6                                    | 1                                        | 2                                               | 0                                    |                                                           | 9     | Low Priority     |
| OF-165     | NHRIV600031004-08 Farm Brook                          | 4A                        | 5/10/2023                      |               | PVC                | Fair               | 1,200,598.4                   | 143,338.3                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-166     | NHRIV600031004-08 Farm Brook                          | 4A                        | 4/19/2022                      | 12"           | Corrugated Plastic | Good               | 1,200,494.8                   | 142,943.3                     | 2                                    | 1                                        | 2                                               | 0                                    |                                                           | 5     | Low Priority     |
| OF-167     | Unnamed stream                                        |                           | 4/27/2023                      | 16            | Concrete           | Fair               | 1,200,385.4                   | 141,308.9                     | 0                                    | 1                                        | 1                                               | 0                                    |                                                           | 2     | Low Priority     |
| OF-168     | Unnamed Stream                                        |                           | 10/2/2025                      | 6             | PVC                | Fair               | 1,200,534.8                   | 141,204.8                     | 0                                    | 6                                        | 2                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-170     | Fowlers Brook                                         |                           | 10/2/2025                      | 24            | Concrete           | Good               | 1,200,597.9                   | 141,056.7                     | 0                                    | 1                                        | 1                                               | 0                                    |                                                           | 2     | Low Priority     |
| OF-171     | NHRIV600031004-12 Cains Brook                         | 4A                        | 8/23/2022                      | 12            | Concrete           | Fair               | 1,199,910.5                   | 138,499.7                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-175     | Small Wetland                                         |                           | 5/6/2022                       | 12            | Corrugated Plastic | Good               | 1,205,052.2                   | 136,585.0                     | 0                                    | 1                                        | 1                                               | 0                                    |                                                           | 2     | Low Priority     |
| OF-176     | Salt Marsh                                            |                           | 9/10/2025                      | 12            | Corrugated Plastic | Good               | 1,204,966.7                   | 136,960.4                     | 0                                    | 1                                        | 1                                               | 0                                    |                                                           | 2     | Low Priority     |
| OF-178     | NHRIV600031004-29 Unnamed Brook                       | 4A                        | 4/27/2023                      | 12            | Concrete           | Good               | 1,204,046.9                   | 135,848.2                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-180     | NHRIV600031004-17 Marys Brook                         | 4A                        | 10/2/2025                      | 12            | Corrugated Plastic | Good               | 1,195,972.5                   | 142,424.7                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-182     | NHEST600031004-07 Mill Creek                          | 5                         | 9/11/2025                      | 10            | PVC                | Fair               | 1,199,829.4                   | 140,493.7                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-185     | NHEST600031004-07 Mill Creek                          | 5                         | 5/12/2022                      | 12            | Concrete           | Good               | 1,200,651.4                   | 140,131.8                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-186     | NHEST600031004-07 Mill Creek                          | 5                         | 5/12/2022                      | 18            | Concrete           | Fair               | 1,200,843.6                   | 140,214.6                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-187     | NHRIV600031004-12 Cains Brook                         | 4A                        | 9/10/2025                      | 12            |                    | Poor               | 1,199,520.7                   | 136,621.3                     | 2                                    | 1                                        | 2                                               | 0                                    | Area around outfall covered with yard waste/debris        | 5     | Low Priority     |
| OF-189     | NHIMP600031004-05 Cains Brook                         | 5                         | 5/18/2022                      | 12            | Concrete           | Good               | 1,196,805.7                   | 138,822.0                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-190     | NHRIV600031003-01 Hampton Falls River - Winkely Brook | 4A                        | 9/4/2025                       |               |                    |                    | 1,187,823.8                   | 143,672.0                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-191     | NHRIV600031004-14 Unnamed Brook                       | 4A                        | 8/23/2022                      |               | Concrete           |                    | 1,204,017.0                   | 133,687.5                     | 2                                    | 1                                        | 1                                               | 0                                    |                                                           | 4     | Low Priority     |
| OF-192     | NHRIV600031004-07 Browns River                        | 4A                        | 10/21/2022                     | N/A           | Other              | Good               | 1,198,699.2                   | 146,040.2                     | 2                                    | 1                                        | 1                                               | 0                                    | Riprap overflow from a stormwater detention basin         | 4     | Low Priority     |
| OF-195     | NHRIV600031004-17 Marys Brook                         | 4A                        | 9/5/2025                       | 8             | Concrete           | Poor               | 1,196,484.9                   | 142,839.6                     | 2                                    | 2                                        | 1                                               | 0                                    | 50% full of sediment                                      | 5     | Low Priority     |
| OF-196     | NHIMP600031004-06 Cains Brook - Noyes Pond            | 5                         | 9/10/2025                      | 10            | Corrugated Plastic | Good               | 1,199,113.0                   | 138,959.7                     | 6                                    | 1                                        | 1                                               | 0                                    |                                                           | 8     | Low Priority     |
| OF-197     | Unnamed Brook                                         |                           | 10/2/2025                      | 12            | Concrete           | Good               | 1,200,660.9                   | 141,055.3                     | 0                                    | 1                                        | 1                                               | 0                                    |                                                           | 2     | Low Priority     |
| OF-198     | Small Wetland                                         |                           | 9/11/2025                      |               | PVC                | Fair               | 1,198,912.1                   | 141,755.8                     | 0                                    | 1                                        | 1                                               | 0                                    |                                                           | 2     | Low Priority     |

<sup>1</sup> The data source for Screening Requirements is the SimpliCityGIS Online Database

<sup>2</sup> Seabrook does not have any outfalls/interconnections discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds

Seabrook does not have "Past discharge complaints and reports; Sewer conversion; Historic combined sewer systems; or Surrounding density of aging septic systems"<sup>6n</sup> (per. 2.3.4.7.a.iii.) so these parameters are not included in the ranking table.

Seabrook does not have any outfalls/interconnections where previous screening indicates likely sewer input indicated by:

- Olfactory or visual evidence of wastewater,
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine

<sup>3</sup> Receiving water quality based on the 2024 NHDES Status of Each Assesment Unit Catchment's Integrated Reporting Category. [https://gispub.epa.gov/arcgis/rest/services/OW/ATTAINS\\_Assessment/MapServer/3](https://gispub.epa.gov/arcgis/rest/services/OW/ATTAINS_Assessment/MapServer/3)

- Poor (6pt) = Category 5 waters on the 303(d) list.
- Fair (2pt) = Category 4 waters are impaired but do not require the developmentof a TMDL
- Good (0) = No water quality impairments

<sup>4</sup> Generating sites are institutional, municipal, commercial, or industrial sites with a potential to contribute to illicit discharges (e.g., car shops or washes, gas stations, garden centers, etc.). These were based on land use/GIS maps, and aerial photography

<sup>5</sup> Mean age of development and infrastructure was based on land use information, visual observation, and town staff. Rankings as prescribed by EPA are as follows:

- High = Industrial areas greater than 40 years old
- Medium = Developments 20-40 years old
- Low = Developments less than 20 years old

<sup>6</sup> Aging septic systems are septic systems 30 years or older in residential areas as prescribed by EPA.

<sup>7</sup> Long culverted streams are culverts than are significantly longer than the roadway crossing. This is based on GIS maps and town pipe data

## Appendix D

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Field Forms,  
Sample Bottle Labels, and  
Chain of Custody Forms



## ANALYTICAL REPORT

|                 |                                                 |
|-----------------|-------------------------------------------------|
| Lab Number:     | L2333173                                        |
| Client:         | AECOM<br>250 Apollo Dr.<br>Chelmsford, MA 01824 |
| ATTN:           | Doug DeNatale                                   |
| Phone:          | (978) 905-2180                                  |
| Project Name:   | SEABROOK WWTF                                   |
| Project Number: | Not Specified                                   |
| Report Date:    | 06/23/23                                        |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** SEABROOK WWTF  
**Project Number:** Not Specified

**Lab Number:** L2333173  
**Report Date:** 06/23/23

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b>  | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|-------------------|---------------|----------------------------|---------------------------------|---------------------|
| L2333173-01                | SEABROOK WWTF #37 | WATER         | SEABROOK, NH               | 06/13/23 06:29                  | 06/13/23            |

**Project Name:** SEABROOK WWTF  
**Project Number:** Not Specified

**Lab Number:** L2333173  
**Report Date:** 06/23/23

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: *Tiffani Morrissey* - Tiffani Morrissey

Title: Technical Director/Representative

Date: 06/23/23

# **INORGANICS & MISCELLANEOUS**

Project Name: SEABROOK WWTF

Lab Number: L2333173

Project Number: Not Specified

Report Date: 06/23/23

## SAMPLE RESULTS

Lab ID: L2333173-01

Date Collected: 06/13/23 06:29

Client ID: SEABROOK WWTF #37

Date Received: 06/13/23

Sample Location: SEABROOK, NH

Field Prep: Not Specified

Sample Depth:

Matrix: Water

| Parameter                           | Result | Qualifier | Units | RL  | MDL | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Analytical<br>Method | Analyst |
|-------------------------------------|--------|-----------|-------|-----|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - Westborough Lab |        |           |       |     |     |                    |                  |                  |                      |         |
| Solids, Total Suspended             | 17.    |           | mg/l  | 5.0 | NA  | 1                  | -                | 06/20/23 09:19   | 121,2540D            | NGS     |
| Chemical Oxygen Demand              | 31.    |           | mg/l  | 20  | --  | 1                  | 06/22/23 15:15   | 06/22/23 19:36   | 121,5220D            | CVN     |



Project Name: SEABROOK WWTF

Lab Number: L2333173

Project Number: Not Specified

Report Date: 06/23/23

### Method Blank Analysis Batch Quality Control

| Parameter                                                                | Result | Qualifier | Units | RL  | MDL | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Analytical<br>Method | Analyst |
|--------------------------------------------------------------------------|--------|-----------|-------|-----|-----|--------------------|------------------|------------------|----------------------|---------|
| General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1793632-1 |        |           |       |     |     |                    |                  |                  |                      |         |
| Solids, Total Suspended                                                  | ND     |           | mg/l  | 5.0 | NA  | 1                  | -                | 06/20/23 09:19   | 121,2540D            | NGS     |
| General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1794767-1 |        |           |       |     |     |                    |                  |                  |                      |         |
| Chemical Oxygen Demand                                                   | ND     |           | mg/l  | 20  | --  | 1                  | 06/22/23 15:15   | 06/22/23 19:32   | 121,5220D            | CVN     |

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** SEABROOK WWTF

**Project Number:** Not Specified

**Lab Number:** L2333173

**Report Date:** 06/23/23

| Parameter                                                                       | LCS<br>%Recovery | Qual | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|---------------------------------------------------------------------------------|------------------|------|-------------------|------|---------------------|-----|------|------------|
| General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1793632-2 |                  |      |                   |      |                     |     |      |            |
| Solids, Total Suspended                                                         | 103              |      | -                 |      | 80-120              | -   |      |            |
| General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1794767-2 |                  |      |                   |      |                     |     |      |            |
| Chemical Oxygen Demand                                                          | 102              |      | -                 |      | 90-110              | -   |      |            |

# Matrix Spike Analysis

## Batch Quality Control

**Project Name:** SEABROOK WWTF  
**Project Number:** Not Specified

**Lab Number:** L2333173  
**Report Date:** 06/23/23

| Parameter                                                                                                                         | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------|----------|----------|--------------|------|-----------|---------------|------|-----------------|-----|------|------------|
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1794767-4 QC Sample: L2332985-01 Client ID: MS Sample |               |          |          |              |      |           |               |      |                 |     |      |            |
| Chemical Oxygen Demand                                                                                                            | ND            | 238      | 240      | 103          |      | -         | -             |      | 84-120          | -   |      | 12         |

# Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** SEABROOK WWTF

**Project Number:** Not Specified

**Lab Number:** L2333173

**Report Date:** 06/23/23

| Parameter                                                                                                                          | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------|-------|-----|------|------------|
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1793632-4 QC Sample: L2333381-02 Client ID: DUP Sample |               |                  |       |     |      |            |
| Solids, Total Suspended                                                                                                            | ND            | ND               | mg/l  | NC  |      | 32         |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1794767-3 QC Sample: L2332985-01 Client ID: DUP Sample |               |                  |       |     |      |            |
| Chemical Oxygen Demand                                                                                                             | ND            | ND               | mg/l  | NC  |      | 12         |

**Project Name:** SEABROOK WWTF**Lab Number:** L2333173**Project Number:** Not Specified**Report Date:** 06/23/23**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information****Cooler**                      **Custody Seal**

A                                  Absent

**Container Information**

| <b>Container ID</b> | <b>Container Type</b>         | <b>Cooler</b> | <b>Initial<br/>pH</b> | <b>Final<br/>pH</b> | <b>Temp<br/>deg C</b> | <b>Pres</b> | <b>Seal</b> | <b>Frozen<br/>Date/Time</b> | <b>Analysis(*)</b> |
|---------------------|-------------------------------|---------------|-----------------------|---------------------|-----------------------|-------------|-------------|-----------------------------|--------------------|
| L2333173-01A        | Plastic 120ml H2SO4 preserved | A             | <2                    | <2                  | 2.6                   | Y           | Absent      |                             | COD-5220(28)       |
| L2333173-01B        | Plastic 950ml unpreserved     | A             | 7                     | 7                   | 2.6                   | Y           | Absent      |                             | TSS-2540(7)        |

**Project Name:** SEABROOK WWTF  
**Project Number:** Not Specified

**Lab Number:** L2333173  
**Report Date:** 06/23/23

## GLOSSARY

### Acronyms

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DL       | - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)                                                                                               |
| EDL      | - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).                        |
| EMPC     | - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.                                                                                                                                                              |
| EPA      | - Environmental Protection Agency.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| LCS      | - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.                                                                                                                                                                                                                                                         |
| LCSD     | - Laboratory Control Sample Duplicate: Refer to LCS.                                                                                                                                                                                                                                                                                                                                                                                                      |
| LFB      | - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.                                                                                                                                                                                                                                                        |
| LOD      | - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)                                                                                                                                              |
| LOQ      | - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)                                                                                                                                                                                                |
|          | Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)                                                                                                                                                                                                  |
| MDL      | - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.                                                                                                                         |
| MS       | - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.                                                                                                                                   |
| MSD      | - Matrix Spike Sample Duplicate: Refer to MS.                                                                                                                                                                                                                                                                                                                                                                                                             |
| NA       | - Not Applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| NC       | - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.                                                                                                                                                                                                                                                                                                          |
| NDPA/DPA | - N-Nitrosodiphenylamine/Diphenylamine.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| NI       | - Not Ignitable.                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| NP       | - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.                                                                                                                                                                                                                                                                                                                                                                             |
| NR       | - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.                                                                                                                                                                                                                                                                                                   |
| RL       | - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.                                                                                                                                                                                                                                  |
| RPD      | - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report. |
| SRM      | - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.                                                                                                                                                                                                                                                                                                    |
| STLP     | - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.                                                                                                                                                                                                                                                                                                                                                                                               |
| TEF      | - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.                                                                                                                                                                                                                                                                                                                            |
| TEQ      | - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.                                                                                                                                                                                                                                                                                       |
| TIC      | - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.                                                                                                                                                                                                     |

Report Format: Data Usability Report



**Project Name:** SEABROOK WWTF  
**Project Number:** Not Specified

**Lab Number:** L2333173  
**Report Date:** 06/23/23

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Chlordane:** The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Gasoline Range Organics (GRO):** Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

**Report Format:** Data Usability Report



**Project Name:** SEABROOK WWTF**Lab Number:** L2333173**Project Number:** Not Specified**Report Date:** 06/23/23**Data Qualifiers**

- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

**Project Name:** SEABROOK WWTF  
**Project Number:** Not Specified

**Lab Number:** L2333173  
**Report Date:** 06/23/23

## REFERENCES

- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



**Alpha Analytical, Inc.**Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**

Revision 20

Published Date: 6/16/2023 4:52:28 PM

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**Certification Information****The following analytes are not included in our Primary NELAP Scope of Accreditation:****Westborough Facility****EPA 624.1:** m/p-xylene, o-xylene, Naphthalene**EPA 625.1:** alpha-Terpineol**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270E:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.**Mansfield Facility****SM 2540D:** TSS.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** EPA 3050B**The following analytes are included in our Massachusetts DEP Scope of Accreditation****Westborough Facility:****Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B****EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,****SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables).**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.****EPA 522, EPA 537.1.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



Facility ID:

OF-43

Inspection ID:

INSP-58-DRY

Inspection Date: \*

September 6, 2019



clear

Inspected By:

☐ Town☒ Consultant☐ Other

Inspector Initials: \*

SM

Date of Last Rainfall Event:

September 2, 2019



clear

Label Present?

☒ Yes☐ No

Upload Photo

Upload File...

Comments:

Flow = approx. 15 gpm

Add a Water Quality Field Screening:



History of Field Screenings:

September 6, 2019



Add Water Quality Full Analytical Results:



History of Full Analytical Results:

September 6, 2019



OBSERVATIONS

FLOW DETAILS

REQUIRED MAINTENANCE

Update

Cancel



58 of 63



**Attachment A**  
**Quarterly Water Quality and Visual**  
**Monitoring of Stormwater**  
**Discharge**

Objective: To identify sources of storm water pollution and optimize SWPPP effectiveness

Frequency: Quarterly and Annually

Records: Monitoring Reports, Forms 1 and 2 and any analytical results

1. Obtain several clear glass one-liter jars prior to the sampling event. Identify and label the jars prior to the sampling event, if multiple samples are to be obtained. A minimum of one grab sample must be obtained; obtain additional samples if possible, to ensure sufficient quantity for visual, benchmark, and impaired waters monitoring as required.
2. Within thirty minutes after storm water runoff begins discharging from the facility outfall, collect one full sample jar. (Note: there is generally a lag time between the start of rainfall and the start of discharge, depending on site conditions).
3. Bring the collected samples to a well-lit area and perform the visual examination as soon as is practical.
4. Prepare benchmark and impaired waters monitoring samples for transport to the analytical lab, ensuring required preservation and hold times are complied with.
5. Using the Quarterly Visual Monitoring Report, Form 1, (or similar) included with this Procedure, record your observations of the quality of the storm water in each sample. Use a separate form for each sample. Record observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oily sheen, or other indicators of pollution.
6. Using the Monitoring of Storm Water Discharge Report, Form 2, record Storm Event Information as noted for this sampling event.
7. In the appropriate location on the Form 1, record your opinion of the probable source of the pollution observed in each sample.
8. As soon as practical, conduct inspections of each area of the facility thought to be a potential source of the observed pollution in each sample.
9. Record the results of the inspections in the appropriate location on the Form 1. Attach additional sheets, as necessary.
10. If the results of the visual examinations and the subsequent facility inspections indicate deficiencies in the facility SWPPP, make provisions to update the SWPPP as soon as possible.
11. File the Visual Examination Report with the SWPPP.
12. Upon receipt of analytical results, complete the DMRs, including appropriate signature, and submit to EPA, with the Storm Event Information, within 30 days either electronically or via mail. Maintain copies of results and signed DMRs with the SWPPP.
13. If any analytical results exceed WLA values, institute corrective actions and required follow-up reporting in accordance with the MSGP.

QUARTERLY VISUAL MONITORING OF STORM WATER DISCHARGE REPORT –  
SAMPLE OBSERVATIONS, Form 1

Seabrook Wastewater Treatment Facility, Seabrook, New Hampshire

Date/Time: \_\_\_\_\_

Personnel Involved: \_\_\_\_\_

| Parameter        | Outfall 03 ( <b>Permit Outfall # 002</b> ) |
|------------------|--------------------------------------------|
| Color            |                                            |
| Odor             |                                            |
| Clarity          |                                            |
| Floating Solids  |                                            |
| Suspended Solids |                                            |
| Settled Solids   |                                            |
| Foam             |                                            |
| Sheen            |                                            |

Sources of Pollution/Follow-up Inspections: Identify potential sources of the pollution identified above and results of follow-up inspections (follow-up inspections must be performed to trace any sources of pollution identified here)

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Additional Notes:

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Signatures:

\_\_\_\_\_  
Inspector

\_\_\_\_\_  
Principal Executive Officer or Authorized Rep

## Monitoring of Stormwater Discharge Report, Form 2

### Storm Event Information

Seabrook Wastewater Treatment Facility

Seabrook, New Hampshire

Outfall 03 (Permit Outfall # 002)

|                                                          |                          |
|----------------------------------------------------------|--------------------------|
| Date:                                                    |                          |
| Sample location (description):                           |                          |
| Visibility:                                              | Sun, Cloudy, Mixed, Gray |
| Outfall Rate (estimate):                                 | _____ L/sec or Gal/sec   |
| Sample volume (gallons):                                 | _____ Gallons            |
| Snow melt or Rainfall:                                   |                          |
| Air Temperature (estimate, if necessary):                |                          |
| Starting time and date of rainfall event:                |                          |
| Time of initial grab sample:                             |                          |
| Magnitude of rainfall:                                   | _____ Inches             |
| Ending time and date of rainfall event:                  |                          |
| Date and time most recent previous rainfall event ended: |                          |
| Magnitude of previous rainfall event:                    | _____ Inches             |

QUARTERLY VISUAL MONITORING OF STORM WATER DISCHARGE REPORT –  
SAMPLE OBSERVATIONS, Form 1

Seabrook Wastewater Treatment Facility, Seabrook, New Hampshire

Date/Time: \_\_\_\_\_

Personnel Involved: \_\_\_\_\_

| Parameter        | Outfall 037 ( <b>Permit Outfall # 001</b> ) |
|------------------|---------------------------------------------|
| Color            |                                             |
| Odor             |                                             |
| Clarity          |                                             |
| Floating Solids  |                                             |
| Suspended Solids |                                             |
| Settled Solids   |                                             |
| Foam             |                                             |
| Sheen            |                                             |

Sources of Pollution/Follow-up Inspections: Identify potential sources of the pollution identified above and results of follow-up inspections (follow-up inspections must be performed to trace any sources of pollution identified here)

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Additional Notes:

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Signatures:

\_\_\_\_\_  
Inspector

\_\_\_\_\_  
Principal Executive Officer or Authorized Rep

## Monitoring of Stormwater Discharge Report, Form 2

### Storm Event Information

Seabrook Wastewater Treatment Facility

Seabrook, New Hampshire

Outfall 037 (Permit Outfall # 001)

|                                                          |                          |
|----------------------------------------------------------|--------------------------|
| Date:                                                    |                          |
| Sample location (description):                           |                          |
| Visibility:                                              | Sun, Cloudy, Mixed, Gray |
| Outfall Rate (estimate):                                 | _____ L/sec or Gal/sec   |
| Sample volume (gallons):                                 | _____ Gallons            |
| Snow melt or Rainfall:                                   |                          |
| Air Temperature (estimate, if necessary):                |                          |
| Starting time and date of rainfall event:                |                          |
| Time of initial grab sample:                             |                          |
| Magnitude of rainfall:                                   | _____ Inches             |
| Ending time and date of rainfall event:                  |                          |
| Date and time most recent previous rainfall event ended: |                          |
| Magnitude of previous rainfall event:                    | _____ Inches             |

## **Appendix E**

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Water Quality Analysis Instructions,  
User's Manuals and  
Standard Operating Procedures

## Standard Operating Procedure for IDDE Catchment Investigation Procedure

### Table of Contents:

|                                                                  |       |
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| Purpose.....                                                     | 1     |
| Materials Needed.....                                            | 1     |
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| Conduct a field test using the YSI Pro Plus sonde.....           | 5     |
| Lab Test Procedure for <i>E. Coli</i> / <i>Enterococci</i> ..... | 7     |
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### Purpose

This document outlines the protocols for sample collection, use of field kits, storage and conveyance of samples, field data collection and storage, and catchment investigation in accordance with the City of Dover, NH Illicit Discharge Detection and Elimination (IDDE) Plan.

### Sample Collection Requirements

- All samples are to be collected during 'dry weather conditions' which is defined as less than 0.1 inches of rainfall over the previous 24-hour period and no significant snow melt is occurring.
- Prioritized outfalls are to be sampled first. Priority and ranking are determined according to the predetermined 'Outfall Assessment and Priority Ranking Procedure' outlined in the permit [Section 2.3.4.7] when dry weather discharge is observed at an outfall location. For purposes of this procedure dry weather discharge is considered any discharge from the outfall or interconnection that exceeds 50 gallons per day or 0.035 gallons per minute. Effectively what this means is that flow should be sufficient to collect the sample volume required within 5 minutes.
- All sampling personnel are to don proper personal protective equipment (PPE) during the sampling procedure (gloves, proper footwear, pants, etc.)

### Materials Needed

#### Sampling (field)

- About 300 ml of water sample for all analyses.
- The *E. coli* sample should be taken separately.

- 3- [120 ml sterile sampling bottles](#).
- YSI sonde with appropriate sensors.
- Millipore Sterivex Sterile Filter Unit
- Medex M/F luer lock plug
- BD 50 mL syringe
- Permanent marker for labeling.

### Surfactant Screening (lab)

- Untreated (non-bleached) paper for sample collection and testing. Standard [yellow Post-It Notes](#) are perfect as they are small, inexpensive, and most importantly, they do not contain optical brighteners and fluoresce under UV light.
- [365 nm UV flashlight](#) (“black” light). This flashlight, for example, is 365 nm, rechargeable, and includes UV safety glasses. Note: many UV flashlights are 395 nm and may work but less effectively.
- *Optional but suggested:* UV enhancing safety glasses to protect eyes for prolonged exposure to UV light and to enhance the contrast for analysis.

### Total Nitrogen (lab)

- Hach digester (DRB 200)
- Hach Spectrophotometer (DR1900, DR2800, DR3900)
- Total Kjeldahl Nitrogen (TKN) TNT 880 test kit
- Nitrate TNT 836 test kit
- 1-2 mL pipet(s)
- Distilled water
- Chem wipes
- At least 10 mL of water sample for all analyses

## 1. Field Kits

- Field kits will contain:
  - YSI handheld sampling device and appropriate sensors
  - Sample collection containers
  - Nitrile gloves
  - Data collection tablet/iPad
- Field kit maintenance:
  - After each day of sampling, all field kit supplies are to be replenished and sampling equipment is to be properly cleaned.
    - Refer to **YSI Pro Plus User Manual Page 58** for maintenance procedure.

## 2. Sample Storage and Conveyance

- *E. coli/ Enterococcus* samples are to be tested upon return from the field. Maximum holding time is 6 hours. (per EPA CFR Title 40, Chapter 1, Subchapter D, part 136) (per NEMI 9221 A, B, C, F).
- The maximum hold time for all samples will be 6 hours.

- The Nitrate TNT 836 test should be run no later than 3 hours after sampling for most accurate results. Store in a cool location. See the manual for instructions on preservation beyond this time period.
- Samples will be transported and held at 34-39°F (1-4° C) until testing occurs.
  - This is most simply done using a cooler containing ice packs. Do not allow the ice packs to come into direct contact with the sample containers.
  - A liquid thermometer should be kept in the cooler to allow for easy temperature monitoring. \*We recommend affixing the thermometer to the inside of the cooler.

### 3. Field Data Collection and Storage

- All field data will be collected using the Survey123, or similar data collection software on a tablet/iPad. See attachment.
- In the event that a tablet is unavailable, all the information will be collected on a paperform containing the same information.
- Collected information will include:
  - Outfall number
  - Outfall location
  - Date and time of sampling
  - Weather conditions
  - Time since last rainfall (hours)
  - Amount of last rainfall (inches)
  - Receiving water
  - Shape, dimensions, physical condition, and material of outfall pipe
  - Spatial location (coordinates provided by Survey123 or similar application)
- Data collected on the YSI handheld device can be uploaded into a spreadsheet and connected to the data point in the Survey123 map.
  - Refer to **YSI Pro Plus User Manual Pages 52-53** for data management procedure

## 1. Sampling Procedure

*Note: this protocol is written assuming you will collect samples in the field, label, store on ice, and process the samples back at a field lab. You can also take samples with the YSI Pro Plus in the flowing water stream.*

Locate outfall to be sampled. If the outfall is inaccessible, follow the stormwater drainage map to the next accessible upstream access point for sampling.

- a. Document outfall number and complete the field data collection form using the tablet/iPad Survey 123 form, or similar application/form (template form included as an appendix).
- b. To take the Genomic sample, fill the 50 mL syringe with water from the outfall
  - i. Screw the Sterivex filter unit onto the front of the syringe, push the water through
  - ii. Repeat 10 times or until no more water will pass through the filter unit
  - iii. Cap each filter side with two medex M/F lock plugs and freeze until processed
- c. To start, Label your sterile *E. coli* (freshwater) or *Enterococci* (coastal) bottle and two additional sample bottles/containers with the date, time, and name of outfall/location.
- d. Fill each sample bottle separately.
- e. Take the sample bottle and unscrew the top.
  - i. Hold the bottle cap facing down so nothing can get onto the underside of the lid.
  - ii. Do NOT touch the underside of the lid to avoid transferring bacteria.
  - iii. Do NOT set it down on the ground because something could get on it.
  - iv. By following these steps, you greatly reduce the chance of bacteria getting into the bottle, so you will not get a false positive.
- f. Fill the bottle from the outfall making sure to not get any sand, sediment, or debris in the container.
  - i. *A very important note: the E. coli/enterococci samples must be run within six hours of them being taken. Make sure to plan enough time to run all the bacteria samples in the lab when done sampling.*
- g. Next, take your two other sample bottles/containers and fill them the same way but making sure to fill them to the 200 mL mark.

## 2. Conduct a field test using the YSI Pro Plus sonde

- a. Turn on the meter by pressing the green circle button.
- b. When the screen comes on, it should show at least a temperature reading in degrees Celsius or Fahrenheit depending on your chosen options, a barometric pressure reading in mmhg, and a specific conductivity reading in us/cm.
- c. The end of the cord attached to the meter should have a small metal port that is covered with a red cap. It is important to leave the red cap on until a probe is inserted into the port. The cap will keep water and debris from entering the hole and damaging or destroying the sensor port.
- d. The next step is to make sure that both the conductivity and salinity results are being displayed. To turn these on is a two-step process.
  - First you click the probe button and then select setup. Look at the row that says conductivity and see if it says on or off next to it. If it says on, then you are all set but if it says off, click on conductivity. The next screen has a box that just be clicked to turn on conductivity. Click the box and it will turn it on. Then press escape to return to the main screen where the results are displayed.
  - Probe → Setup → Conductivity → Escape to return to main screen.
  - To turn on salinity, click the probe button. Then scroll down to display. From there scroll down to conductivity and click it. Then scroll down to salinity and click that as well. In this screen you will see three options. You want to scroll down to ppt and click that. Then press the escape button which will take you back to the main menu.
  - Probe → Display → Conductivity → Salinity → PPT → Escape
- e. Attach the ammonia (NH<sub>3</sub>) sensor to the probe by removing the red cap at the end and screwing the sensor into it. Caution, nothing should be forced in or screwed in with abnormal tightness. This could strip or damage the connections and ruin the instrument. If properly aligned the sensor should easily be installed and fall into alignment without much effort.
  - Then click the probe button and choose setup.
  - Scroll down to ISE1 and then choose NH<sub>3</sub>. Then press the escape button which will take you back to the main menu.
  - Probe → Setup → ISE1 → NH<sub>3</sub> → Escape
- f. The YSI screen should now have the following units displayed.
  - The temperature in degrees Celsius/fahrenheit
  - The barometric pressure in mmHg
  - The conductivity in us/cm
  - The salinity in ppt
  - The ammonia in mg/L
- g. If there are multiple dashed lines or strange symbols through some of the result areas, don't worry about it for now. It just means that nothing is detected yet. If dashed lines or strange symbols are not replaced by real numbers when you start sampling, then there is a problem. If symbols are not replaced, start by repeating

- step 2d and try again.
- h. Now take the end of the cord with the sensor and submerge it in one of the water sample bottles. The important things to note here are that the sensor is fully submerged and that the two holes near where the cord begins are fully submerged as well. You may have to jiggle the sensor to keep refreshing the sample within the probe. If the water level is too shallow such that the probe cannot be fully submerged, then you will have to add more sample water.
  - i. It may take a few minutes for all of the readings on the YSI screen to stabilize. If the numbers keep jumping back and forth within a small range, you can take the average or one of the numbers it keeps stopping on.
  - j. Record the ammonia, specific conductivity, salinity, and temperature on your tablet or field sheet making sure to note the units for each parameter.
  - k. Once you are done sampling with the YSI meter, take off the metal cage, and then rinse the whole sensor area with DI or distilled water. Make sure to get water into the two holes at the top of the probe.
  - l. You have gathered all the data and samples you will need for this outfall. You can move onto the next outfall sample. Remember, the *E.coli* samples must be run within six hours of collection.

### 3. **Lab Test Procedure for *E. Coli* (fresh water) / *Enterococci* (salt or brackish water):**

- a. In the lab, take your *E. coli* sample bottle and make sure your sample is 100 ml exactly. If you need to pour off some sample to get to 100 ml, be sure to shake the sample first.
- b. One packet of reagent will then be added to the sample. The cap is then replaced, and a swirling motion is performed until the reagent is dissolved into the sample. The reagent will have a hard time dissolving into an ice-cold sample, so be sure to let it sit for a short time.
  - i. For freshwater samples use Colilert, Brackish or saltwater samples will be run with Enterolert.
- c. Prep your Quanti-tray by writing on the back the sample name, location or other indicator and the date and time the sample was run. Use a soft tip sharpie so that you do not break through to one of the wells.
- d. Open the Quanti-tray by holding it in one hand and squeezing the sides, you can gently pull the tab if you need to. Be careful not to touch the inside of the tray. Gently tap the side to remove excess air bubbles.
- e. The sample is then carefully poured into the tray and placed onto the rubber sealer mat.
- f. The tray and sealer mat are then put through the sealer which should have been warming up for a few minutes. You will know it is ready when you have a green light.
- g. Place the tray and the rubber mat with the backing of the Quanti-tray facing up and the opening of the Quanti-tray facing out.
- h. Let the sealer grab the tray and pick it up a few seconds later from the back of the sealer.
- i. Once the sample tray comes out of the sealer it must be incubated:
  - i. For Colilert- put the Quanti-tray in the incubator at 95°F (35°C) +/- 0.5°C for 24 hours.
  - ii. For Enterolert- put the Quanti-tray in the incubator at 106°F (41°C) +/-0.5°C for 24 hours.
- j. AFTER the 24-hour incubation period:
  - i. Take tray out of incubator.
  - ii. If there is no color that indicates that no total coliforms are present.
  - iii. To check for *E. coli* / *enterococci* you will need to use a UV light to see how many wells fluoresce. Sometimes it is tricky to decide if what you are seeing is a positive. Use the comparator to help.
  - iv. Mark the number of wells with positive reaction on your datasheet.
  - v. Calculate the Most Probable Number (MPN) using the IDEXX 51-Well Quanti-Tray MPN Table or the IDEXX MPN generator software found at: <https://www.idexx.com/en/water/resources/mpn-generator/>

**IDEXX**  
**51-Well Quanti-Tray®**  
**MPN Table**

| No. of wells giving<br>positive reaction | MPN<br>per 100 ml sample | 95% Confidence Limits |          |
|------------------------------------------|--------------------------|-----------------------|----------|
|                                          |                          | Lower                 | Upper    |
| 0                                        | <1.0                     | 0.0                   | 3.7      |
| 1                                        | 1.0                      | 0.3                   | 5.6      |
| 2                                        | 2.0                      | 0.6                   | 7.3      |
| 3                                        | 3.1                      | 1.1                   | 9.0      |
| 4                                        | 4.2                      | 1.7                   | 10.7     |
| 5                                        | 5.3                      | 2.3                   | 12.3     |
| 6                                        | 6.4                      | 3.0                   | 13.9     |
| 7                                        | 7.5                      | 3.7                   | 15.5     |
| 8                                        | 8.7                      | 4.5                   | 17.1     |
| 9                                        | 9.9                      | 5.3                   | 18.8     |
| 10                                       | 11.1                     | 6.1                   | 20.5     |
| 11                                       | 12.4                     | 7.0                   | 22.1     |
| 12                                       | 13.7                     | 7.9                   | 23.9     |
| 13                                       | 15.0                     | 8.8                   | 25.7     |
| 14                                       | 16.4                     | 9.8                   | 27.5     |
| 15                                       | 17.8                     | 10.8                  | 29.4     |
| 16                                       | 19.2                     | 11.9                  | 31.3     |
| 17                                       | 20.7                     | 13.0                  | 33.3     |
| 18                                       | 22.2                     | 14.1                  | 35.2     |
| 19                                       | 23.8                     | 15.3                  | 37.3     |
| 20                                       | 25.4                     | 16.5                  | 39.4     |
| 21                                       | 27.1                     | 17.7                  | 41.6     |
| 22                                       | 28.8                     | 19.0                  | 43.9     |
| 23                                       | 30.6                     | 20.4                  | 46.3     |
| 24                                       | 32.4                     | 21.8                  | 48.7     |
| 25                                       | 34.4                     | 23.3                  | 51.2     |
| 26                                       | 36.4                     | 24.7                  | 53.9     |
| 27                                       | 38.4                     | 26.4                  | 56.6     |
| 28                                       | 40.6                     | 28.0                  | 59.5     |
| 29                                       | 42.9                     | 29.7                  | 62.5     |
| 30                                       | 45.3                     | 31.5                  | 65.6     |
| 31                                       | 47.8                     | 33.4                  | 69.0     |
| 32                                       | 50.4                     | 35.4                  | 72.5     |
| 33                                       | 53.1                     | 37.5                  | 76.2     |
| 34                                       | 56.0                     | 39.7                  | 80.1     |
| 35                                       | 59.1                     | 42.0                  | 84.4     |
| 36                                       | 62.4                     | 44.6                  | 88.8     |
| 37                                       | 65.9                     | 47.2                  | 93.7     |
| 38                                       | 69.7                     | 50.0                  | 99.0     |
| 39                                       | 73.8                     | 53.1                  | 104.8    |
| 40                                       | 78.2                     | 56.4                  | 111.2    |
| 41                                       | 83.1                     | 59.9                  | 118.3    |
| 42                                       | 88.5                     | 63.9                  | 126.2    |
| 43                                       | 94.5                     | 68.2                  | 135.4    |
| 44                                       | 101.3                    | 73.1                  | 146.0    |
| 45                                       | 109.1                    | 78.6                  | 158.7    |
| 46                                       | 118.4                    | 85.0                  | 174.5    |
| 47                                       | 129.8                    | 92.7                  | 195.0    |
| 48                                       | 144.5                    | 102.3                 | 224.1    |
| 49                                       | 165.2                    | 115.2                 | 272.2    |
| 50                                       | 200.5                    | 135.8                 | 387.6    |
| 51                                       | > 200.5                  | 146.1                 | infinite |

#### 4. Lab Test Procedure for Surfactant Screening

- a. All UV testing should be performed in a dark room for best results.
- b. Prepare two reference papers to provide a clear positive and negative reference for comparing to samples. Run one reference paper under tap water and apply a known surfactant with optical brighteners to the other (most laundry detergents work well). The positive reference should be confirmed to fluoresce (bright bluish glow) under UV light. Label papers as “Ref. Pos.” and “Ref. Neg.” or similar.
- c. Label a Post-It Note (or selected sampling paper) with the sample ID at the top of the paper.
- d. Note that samples that are dried fluoresce brighter than wet samples.
- e. Apply the sample to the paper and allow to dry for best results. Simply pouring some of the sample onto the paper is sufficient.
- f. Put on your safety glasses if you are using them and turn off the lights.
- g. Expose the sample paper and references to UV light.
- h. Determine if the sample is *positive*, *negative*, or *retest*.
  - i. *Positive* – the sample will definitely fluoresce (glow) a bright bluish color and will resemble the positive laundry soap reference.
  - ii. *Negative* – the sample is dull with no glow and resembles the negative reference with tap water.
  - iii. *Retest* – may occur with some contamination and is not clearly positive or negative. Retest with the same sample or another sample may need to be collected.
- i. Turn on the lights, record the result, and dispose of the sample paper.
- j. Keep the positive and negative reference samples for future tests.

## 5. Lab Test Procedure for Total Nitrogen

### **Nitrate TNT 836 Test**

- a) Carefully pipet 0.2 mL of water sample into vile from Nitrate TNT 836 test kit
- b) Carefully add 1.0 mL of Solution A to the vile (be sure to adequately clean the pipet or use a separate pipet)
- c) Close the vile
- d) Invert a few times until no more streaks can be seen in liquid
- e) Wait 15 minutes then thoroughly clean outside of vile with chem wipe
- f) Insert vile into cell holder of Hach spectrophotometer. Scan barcode on vile to select test, push READ. Record Nitrate reading.

### **Total Nitrogen TNT 826 Test**

- a) Preheat the digester (DRB 200) to 120°C (248°F), select 30 minutes.
- b) Quickly add 1.3 mL of sample, 1.3 mL of solution A, and one tablet B to a reaction tube.
- c) Close tube immediately, do not invert.
- d) Place in the digester and heat for 30 minutes.
- e) Allow to cool to room temperature.
- f) Invert a few times.
- g) Carefully pipet 0.5 mL of digested sample into the test vial.
- h) Carefully add 0.2 mL of solution D.
- g) Invert a few times until no more streaks can be seen in liquid
- h) Wait 15 minutes then thoroughly clean outside of vile with chem wipe
- i) Insert vile into cell holder of Hach spectrophotometer. Scan barcode on vile to select test, push READ. Record TN reading.

### Total Kjeldahl Nitrogen TNT 880 Test

- j) Preheat the digester (DRB 200) to 100°C (212°F), select 60 minutes.
  - k) In quick succession, carefully add the following to reaction tube:
    - i) 1.3 mL of water sample
    - ii) 1.3 mL of solution A
    - iii) 1 tablet B
  - l) Immediately close reaction tube and do not invert
  - m) Insert vial into the digester and heat vial for 60 minutes at 100°C
  - n) Remove vial after step d) and wait for reaction tube to cool down to room temperature
  - o) Add 1 MicroCap C
  - p) Close reaction tube and invert a few times until all of the contents have been removed from MicroCap and no more streaks are seen
  - q) Slowly pipet 0.5 mL of the digested sample into vial 1 (red label)
  - r) Slowly pipet 0.2 mL of Solution D into vial 1 (red label)
  - s) Immediately close vial 1 and invert a few times
  - t) Slowly pipet 1.0 mL of undigested sample into vial 2 (green label)
  - u) Slowly pipet 0.2 mL of solution D into vial 2 (green label)
  - v) Immediately close vial 2 and invert a few times until no streaks are seen
  - w) Set reaction timer to 15 minutes
  - x) After 15 minutes thoroughly clean outside of vial 1 (red label) with chem wipe
  - y) Insert vial 1 (red label) into cell holder of Hach spectrophotometer. Scan barcode on vial to select test, push READ. Record reading.
  - z) Remove vial 1 (red label) from cell holder
  - aa) Thoroughly clean outside of vial 2 (green label) with chem wipe
  - bb) Insert vial 2 (green label) into cell holder of Hach spectrophotometer. Scan barcode on vial to select test, push READ.
  - cc) Record readings. Report the value of Total Nitrogen (TN) for the IDDE screening.
- Note: If your spectrophotometer does not have the correct program after reading the barcode, you may update the machine's software via a USB drive and an update from the Hach website. Do a web search for "Hach DR XXXX software update," download the file for your instrument then read and follow the instructions.*

### Threshold conditions:

The following are thresholds generally related to common water quality limits. Fecal Indicator Bacteria results that are above threshold conditions will require further catchment investigation. See catchment investigation procedure in the IDDE plan.

| Test           | EPA Benchmark                | Concentration Levels Indicating Need for Further Investigation | Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>E.coli</i>  | > 235 <i>E. coli</i> /100 mL | >4000 <i>E. coli</i> /100 mL                                   | Undiluted wastewater will generally have <i>E. coli</i> levels an order of magnitude or more, higher than the EPA benchmark. Pet waste, wildlife sources and regrowth of bacteria in storm drains have been shown to contribute to elevated <i>E. coli</i> levels above the benchmark.                                                                                                                                                                                                                                                                                                               |
| Ammonia        | > 0.5 mg/L                   | >0.5 mg/L                                                      | In the absence of other wastewater indicators, follow-up investigation is performed when the ammonia concentration is 0.5 mg/L or higher. If other wastewater indicators are present, then a 0.25 mg/L benchmark is used. Decomposing vegetation under anoxic conditions can release ammonia to water, which can be misleading.                                                                                                                                                                                                                                                                      |
| Surfactants    | > 0.25 mg/L                  | Presence                                                       | Detection of low concentrations (0.1- 0.3 mg/L) of surfactants is common at stormwater outfalls. Most detections are not correlated with other wastewater indicators and do not lead to a definite source. These detections may be attributable to outdoor vehicle or building washing.                                                                                                                                                                                                                                                                                                              |
| Total Chlorine | > Reporting Limit            | >0.50 mg/L                                                     | The field test used for total chlorine analysis is sufficiently sensitive to detect municipal potable water sources diluted by groundwater or runoff approximately 3 to 10 fold, depending on the strength of the potable chlorine residual and type of chlorination used. Total chlorine is a decent indicator of treated drinking water leaks and potentially graywater sources, but may also be permitted non-stormwater discharges. If high levels are consistently identified in a sample without other wastewater indicators, such as bacteria or ammonia, then discussions with water utility |

|                      |     |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------|-----|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |     |                              | should precede comprehensive investigation of drainage area.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Specific Conductance | N/A | >600 $\mu\text{S}/\text{cm}$ | Specific conductance alone is not a reliable indicator of wastewater contamination. Road salt and metals from pipe corrosion often result in levels in the 1,000-5,000 $\mu\text{S}/\text{cm}$ range. However, flows contaminated with wastewater generally have specific conductance above 600 $\mu\text{S}/\text{cm}$ . Very high level (>5,000 $\mu\text{S}/\text{cm}$ ) may indicate an industrial illicit connection.                                                                       |
| Total Phosphorus     | N/A | >0.3 mg/l                    | Phosphorus alone is not a reliable indicator of wastewater sources. High levels of phosphorus may be present in stormwater discharges due to erosion in the drainage area or other natural sources. Treated drinking water may also be high in phosphorus to meet anti-corrosion requirements in drinking water distribution systems and may be identified during dry weather sampling if a water line flushing activity or other drinking water discharge is present in the storm drain system. |
| Total Nitrogen       | N/A |                              | Naturally occurring levels of nitrate and total nitrogen vary substantially across the country, and statistical analyses of water quality data suggest that appropriate reference levels range from 0.12 to 2.2 mg/L total N.                                                                                                                                                                                                                                                                    |

## USER MANUALS

### **Ammonia, Chlorine, Conductivity, Salinity, Temperature**

YSI Pro Plus: <https://www.ysi.com/File%20Library/Documents/Manuals/605596-YSI-ProPlus-User-Manual-RevD.pdf>

### ***E. coli/ Enterococci***

Quanti-Tray Sealer: <https://123.idexx.com/resource-library/water/quant-tray-sealer-plusmanual-en.pdf>

Colilert: <https://www.idexx.com/files/colilert-procedure-en.pdf>

Enterolert: <https://www.idexx.com/files/enterolert-procedure-en.pdf>

### ***Total Nitrogen***

Hach Nitrate TNT 836: <https://www.hach.com/asset-get.download.jsa?id=19556239158>

Hach Total Kjeldahl Nitrogen (TKN) TNT 880: <https://www.hach.com/asset-get.download.jsa?id=19556239178>

## TABLES AND SOFTWARE

IDEXX 51-Well MPN table: <https://www.idexx.com/files/qt51mpntable.pdf>

IDEXX MPN generator software: <https://www.idexx.com/en/water/resources/mpn-generator/>

Appendix: Survey 123 questions  
MS4 2020 Dry Weather Inspections

1) Facilities ID

**1** **Facilities ID**  
This should be printed on your map or found in Collector / uCAT

2) Reason for Inspection

- a. Initial Inspection
- b. Follow-up Inspection
- c. Dry Run
- d. Other

**2** **Reason for Inspection**

-Please Select- ▼

3) Is Outfall Accessible?

- a. Yes
- b. No

**3** **Is Outfall accessible?**

☐ Yes ☐ No

4) Dry Weather Flow?

- a. No – No signs of dry weather flow
- b. No – Signs of dry weather flow
- c. Yes – Is flowing
- d. Other

**4** **Dry Weather Flow?**  
Is there anything flowing from the outfall?

## 5) Characteristics of Flow

- a. Example – color sheen, foam, odor, sediment, cloudiness, etc.

5 **Characteristics of flow**  
Color, sheen, foam, odor, sediment, cloudiness, etc....



## 6) Characteristics of outfall

- a. Example – physical condition

6 **Characteristics of outfall**  
Physical condition of outfall, etc....



## 7) Photo 1

7 **Photo 1**

Select image file 

## 8) Photo 2

8 **Photo 2**

Select image file 

## 9) Photo 3

9 Photo 3

Select image file



## 10) Photo 4

10 Photo 4

Select image file



## 11) Photo 5

11 Photo 5

Select image file



## 12) Notes

12 Notes

## 13) Date/Time

13 Date/Time

8/27/20 3:15 PM

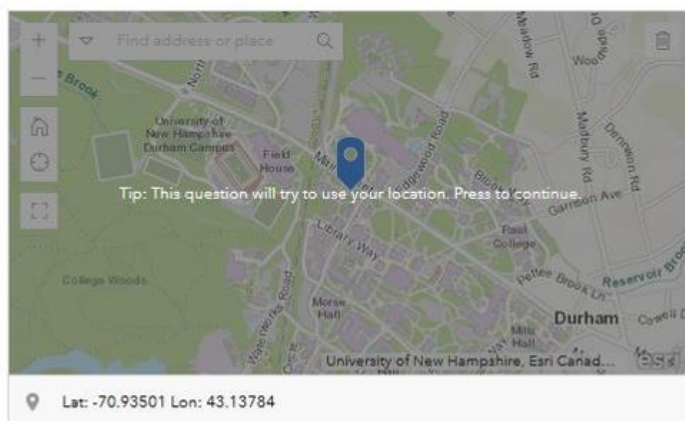
## 14) Inspector Name

14 Inspector Name

## 15) Map Location

15

## Map Location



Submit

## Appendix F

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### IDDE Employee Training Record

**Illicit Discharge Detection and Elimination (IDDE)  
Employee Training Record**

**Town of Seabrook**

| Date       | Type of Training                            | Participants |
|------------|---------------------------------------------|--------------|
| 12/10/2026 | Illicit Discharge Detection and Elimination | DPW Staff    |
|            |                                             |              |
|            |                                             |              |
|            |                                             |              |
|            |                                             |              |
|            |                                             |              |
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|            |                                             |              |

## Appendix G

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Source Isolation and Confirmation Methods:  
Instructions, Manuals, and SOPs

|                                         |                                                                                                                           |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Standard Operating Procedure for:       |                                                                                                                           |
| <b>IDDE: Inspections During Mapping</b> |                                                                                                                           |
| Purpose of SOP:                         | This SOP provides a basic checklist for managers and field crews conducting illicit discharge inspections during mapping. |

Always:

Characterize the outfall by recording information on the Storm Drain Characteristic Form.

- Conduct inspections during dry weather periods using the Dry Weather Outfall Inspection Form.
- Follow procedure below if an illicit discharge is encountered (such as raw sewage, paint, etc.).
- Conduct inspections with at least two staff per crew.
- Carry a list of emergency phone numbers.

#### Whenever Possible:

- Conduct inspections during low groundwater and leaf off conditions.
- Photograph the outfall with a digital camera (use dry erase or chalk board to identify outfall).
- Identify and label the outfall with a unique identifier. For example, "SWO-013".
- If dry weather flow is present at the outfall, and the flow does not appear to be an illicit discharge attempt to identify the source of the flow (intermittent stream etc.), then document the discharge for future comparison.
- Carry an authorization letter.
- Collect samples of flowing discharges before and after source removal. (Contact NHDES for technical assistance.)

#### Never:

- Never put yourself in danger.
- Never enter private property without permission

#### Equipment list for mapping:

1. Existing paper maps
2. Field sheets
3. Camera (preferably digital) on pole
4. GPS Unit
5. Spray paint (or other marker)
6. Cell phones or hand-held radios
7. Clip boards and pencils
8. First aid kit
9. Flash light or head lamp
10. Surgical gloves
11. Tape measure
12. Temperature probe
13. Waders
14. Watch with a second hand
15. Five 1-liter sample bottles
16. Dry erase board (for photos)
17. Hand sanitizer
18. Sampling pole
19. Mirror (for light)
20. Safety vests

#### Procedures to follow if illicit discharge is detected:

- ☐ Call dispatch / supervisor.
- ☐ Use the Dry Weather Outfall Inspection Form to document observations.
- ☐ Visually inspect general area for possible sources.
- ☐ Take photos.
- ☐ Estimate flow/collect samples if instructed to do so.

#### Dry Weather Discharge

The CWP defines **dry weather** as a 48 hour period with no runoff-producing rainfall. NEIWPCC defines dry weather as a 48-72 hour period with less than 1/10-inch rainfall.

## Dry Weather Outfall Inspection Form

### Location Information

Date:

Inspector:

Time: \_\_\_\_\_

Outfall ID:

Outfall Location:

Receiving Waterbody: \_\_\_\_\_

Photo Taken: Yes No Photo ID:

Weather: Clear Cloudy Approximate Temp: Wind Present: Yes No

Precipitation in the past 3 days: No Yes inches

Pipe Flow: None Trickle Steady 1/4 pipe flow or more

Seepage Flow: None Trickle Steady 1/4 pipe flow or more

Color (if flow is present):

Obvious Debris/Pollution: Odor: Water Clarity:

None 0 None/Natural 0 Clear 0

Foam 3 Musty 5 Cloudy 5

Staining 5 Sewage/septic 10

Floating Green Scum 8 Petroleum 10 Opaque 10

Oil / Film 9

Vegetative Mat/or Gray Mat 9

Sewage Solids 10

TOTAL

TOTAL

TOTAL

GRAND TOTAL SCORE =

Sediment Condition: Open 1/4 Full 1/2 Full 3/4 Full Plugged  
Structure Condition: Yes No Excellent Good Fair Poor  
Trash/litter present: Yard waste observed: Yes No  
General Comments:

Potential Sources / Actions Taken:

Sample collected? Yes No

By whom?

Parameters:

Results:

Follow up required: Yes No

NOTE: Sketch site map/note on back.

## **Inspection order select all that apply:**

**Odor** – Most strong odors, especially gasoline, oils, and solvents are likely associated with high responses on the toxicity screening test.

*Stale sanitary wastewater:* sewage

*Detergent, perfume:* Laundromat or household laundry

*Sulfur (“rotten eggs”):* industries that discharge sulfide compounds or organics (meat packers, canneries, dairies)

*Oil and gas:* facilities associated with vehicle maintenance or petroleum product storage (gas stations) or petroleum refineries

*Rancid-sour:* food preparation facilities (restaurants, hotels)

**Color** – Important indicator of inappropriate industrial sources. Dark colors, such as brown, gray, or black are the most common.

*Yellow:* chemical plants, textile, and tanning plants

*Brown:* meat packers, printing plants, metal works, stone and concrete, fertilizers, and petroleum refining facilities [note: can be from natural organic acids if a wetland is upstream]

*Green:* chemical plants, textile facilities

*Red:* meat packers [note: can be from organic acids if a wetland is upstream]

*Gray:* dairies

**Turbidity** – The cloudy appearance of water caused by the presence of suspended or colloidal matter. In dry weather, high turbidity is often a characteristic of undiluted industrial discharges.

*Cloudy:* sanitary wastewater, concrete or stone operations, fertilizer facilities, automotive dealers

*Opaque:* food processors, lumber mills, metal operations, pigment plants

**Floatable matter** – a contaminated flow may contain floating solids or liquids directly related to industrial or sanitary wastewater pollution. Floatables of industrial origin may include animal fats, spoiled food, oils, solvents, sawdust, foams, packing materials, or fuel.

*Oil sheen:* petroleum refiners or storage facilities and vehicle service facilities. [note: there is a type of bacteria that looks like an oil sheen. If you take a stick and swirl around the sheen, it will break up into blocky pieces if it is the bacteria. A true oil sheen will quickly re-form and not look blocky.]

*Toilet paper bits, fecal bits, food particles:* sanitary wastewater

*Soap suds:* if white or a clear sheen, laundry discharge (check odor) [note: can also occur from natural surfactants; usually off-white or tan with an earthy-fishy odor.]

**Deposits and Stains** – Any type of coating near the outfall, usually a dark color. Deposits and stains will often contain fragments of floatable substances.

*Lots of sediment:* construction site erosion, sand and gravel pits, winter road applications

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*Oil stain:* petroleum storage, vehicle service facilities, petroleum refineries  
*Rusty:* precipitates from iron-rich water (natural or industrial) [note: if slimy and clumpy, it could be iron bacteria]  
*Grayish-black deposits and hair:* leather tanneries  
*White crystalline powder:* nitrogenous fertilizer waste

**Vegetation** – Vegetation surrounding an outfall may show the effects of industrial pollutants. Decaying organic materials coming from various food product wastes would cause an increase in plant life, while the discharge of chemical dyes and inorganic pigments from textile mills could noticeably decrease vegetation. It is important not to confuse the adverse effects on high storm water flows on vegetation with highly toxic dry-weather intermittent flows.

*Excessive growth:* food product facilities, fertilizer runoff (lawns, golf courses, and farms)

*Inhibited growth:* high storm water flows, beverage facilities, printing plants, metal product facilities, drug manufacturing, petroleum facilities, vehicle service facilities, and automobile dealers

**Damage to Outfall Structures** – Outfall damage can be caused by severely contaminated discharges that are very acidic or basic in nature. Primary metal industries have a strong potential to cause outfall structure damage because their batch dumps are highly acidic. Poor construction, hydraulic scour, and old age can also negatively affect the condition of all outfall structure.

*Concrete or spalling (breaking off into chips or layers):* industrial flows

*Peeling paint:* industrial flows

*Metal corrosion:* industrial flows

This sheet was courtesy of the NHDES (modified from Pitt et al., 1993 Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide. EPA Office of research and Development, EPA/600/R-92/238).

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