Illicit Discharge Detection and Elimination (IDDE) Plan

Town of Seabrook, NH

99 Lafayette Road NH 03874

Permit Year 1

EPA NPDES Permit Number NHR041033

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1 IDDE Program Implementation Timeline

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

2 Authority and Statement of IDDE Responsibilities

2.1 Legal Authority

The Town of Seabrook has adopted a Sewer Ordinance 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.

The Town of Seabrook will review its current Sewer Ordinance and related land use regulations and policies for consistency with the 2017 MS4 Permit. The current Ordinance can be found at the following address:

Section 2.1, https://seabrooknh.info/wp-content/uploads/SewerOrd2005.pdf

2.2 Statement of Responsibilities

The Department of Public Works is the lead municipal agency or department 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.
- Engineering Department (Town Engineer)- Shall assist the Town of Seabrook with review, guidance, and oversight of new construction to verify the requirements of the MS4 permit and supporting documents are being met. Shall assist in preparing the required MS4 documentation.
- Planning Board Chairperson – Shall only approve stormwater management system designs conforming to MS4 standards.

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. The Department of Public Works (DPW) 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**.

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.

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.

4 Sanitary Sewer Overflows (SSOs)

The Town of Seabrook has no Sanitary Sewer Overflows (SSOs).

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.

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.

5.2 Outfall and Interconnection Inventory and Initial Ranking

The DPW and/or the consultant, AECOM will complete an initial outfall and interconnection inventory and priority ranking to assess illicit discharge potential based on existing information. The initial inventory and ranking will be completed within one (1) year from the effective date of the permit. An updated inventory and ranking will be provided in each annual report thereafter. The inventory will be updated annually to include data collected in connection with dry weather screening and other relevant inspections.

Outfalls and interconnections will be classified into one of the following categories:

1. **Excluded outfalls**:
   - Outfalls/interconnections that do not discharge to an impaired waterbody or are not listed in Part II Summary of Receiving Waters in the NOI.
   - Outfalls/interconnections with no potential for illicit discharges including 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.

2. **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 ≥ 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.

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 **Appendix C** .

3. **Low Priority Outfalls**: Outfalls/interconnections determined by the permittee as low priority based on the characteristics listed below or other available information.

Outfalls will be ranked into the above priority categories (except for excluded outfalls, which may be excluded from the IDDE program) based on the following characteristics of the defined initial catchment areas, where information is available. To prioritize initial mapping and outfall assessment work the permittee is using location-specific characteristics of water body impairments to focus initial work as included in **Appendix B**. It is understood that not all currently excluded catchments will remain excluded throughout the 10-year assessment period, however for initial outfall ranking and catchment investigations this approach will target the worst areas first.

- **Previous screening results** – previous screening/sampling results indicate likely sewer input (see criteria above for Problem Outfalls).

- **Past discharge complaints and reports.**

- **Poor receiving water quality** – the following guidelines are recommended to identify waters as having a high illicit discharge potential:
  - 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, car dealers; car washes; gas stations; garden centers; and industrial manufacturing areas.

- **Age of development and infrastructure** – Industrial areas greater than 40 years old and areas where the sanitary sewer system is more 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.

- **Sewer conversion** – Contributing catchment areas that were once serviced by septic systems, but have been converted to sewer connections may have a high illicit discharge potential.

- **Historic combined sewer systems** – Contributing areas that were once serviced by a combined sewer system, but have been separated may have a high illicit discharge potential.

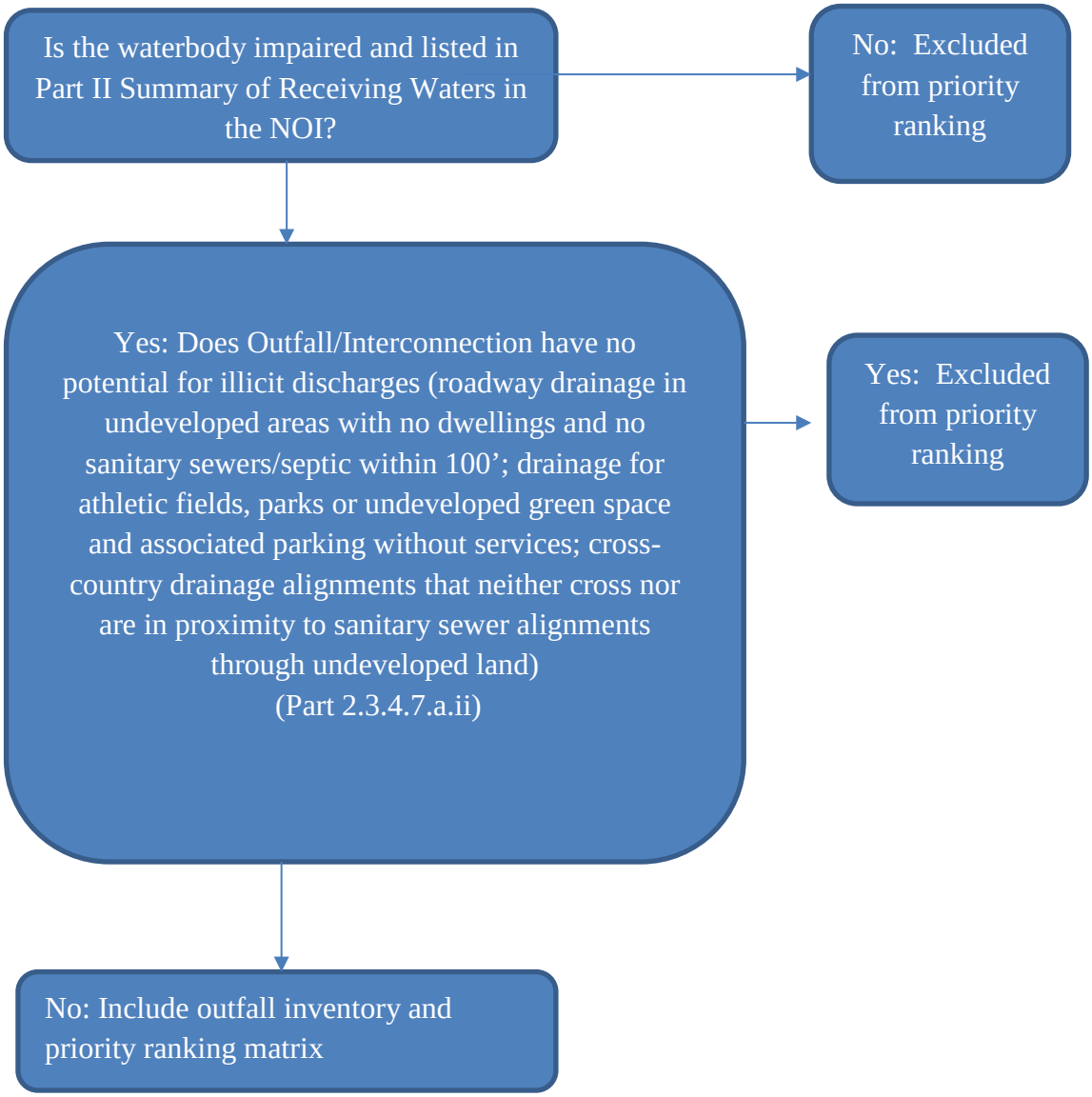
- **Surrounding density of aging septic systems** – Septic systems thirty years or older in residential land use areas are prone to have failures and may have a high illicit discharge potential.

- **Culverted streams** – Any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.

- **Water quality limited waterbodies** that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.

The following is an initial outfall prioritization flowchart, see Appendix C for an outfall inventory and priority ranking matrix:

Figure 1-1. IDDE Investigation Procedure Framework



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. The Seabrook DPW 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 trace the source of the potential discharge within the outfall catchment area. Catchment investigation techniques include but are not limited to review of maps, historic plans, and records; manhole observation; dry and wet weather sampling; video inspection; smoke testing; and dye testing.

Catchment Investigations shall be completed in accordance with Part 2.3.4.8 of the MS4 Permit. A written catchment investigation procedure shall be developed and incorporated into this plan within 18 months of the permit effective date. Investigations of catchments associated with Problem Outfalls shall begin no later than two (2) years from the permit effective date and shall be completed within seven (7) years.

7.1 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.

8 Training

Annual IDDE training will be made available to employees involved in the IDDE program. This training will at a minimum include information on how to identify illicit discharges and SSOs and may also include additional training specific to the functions of particular personnel and their function within the framework of the IDDE program. Training records will be maintained in **Appendix F**. The frequency and type of training will be included in the annual report.

9 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
- 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

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.

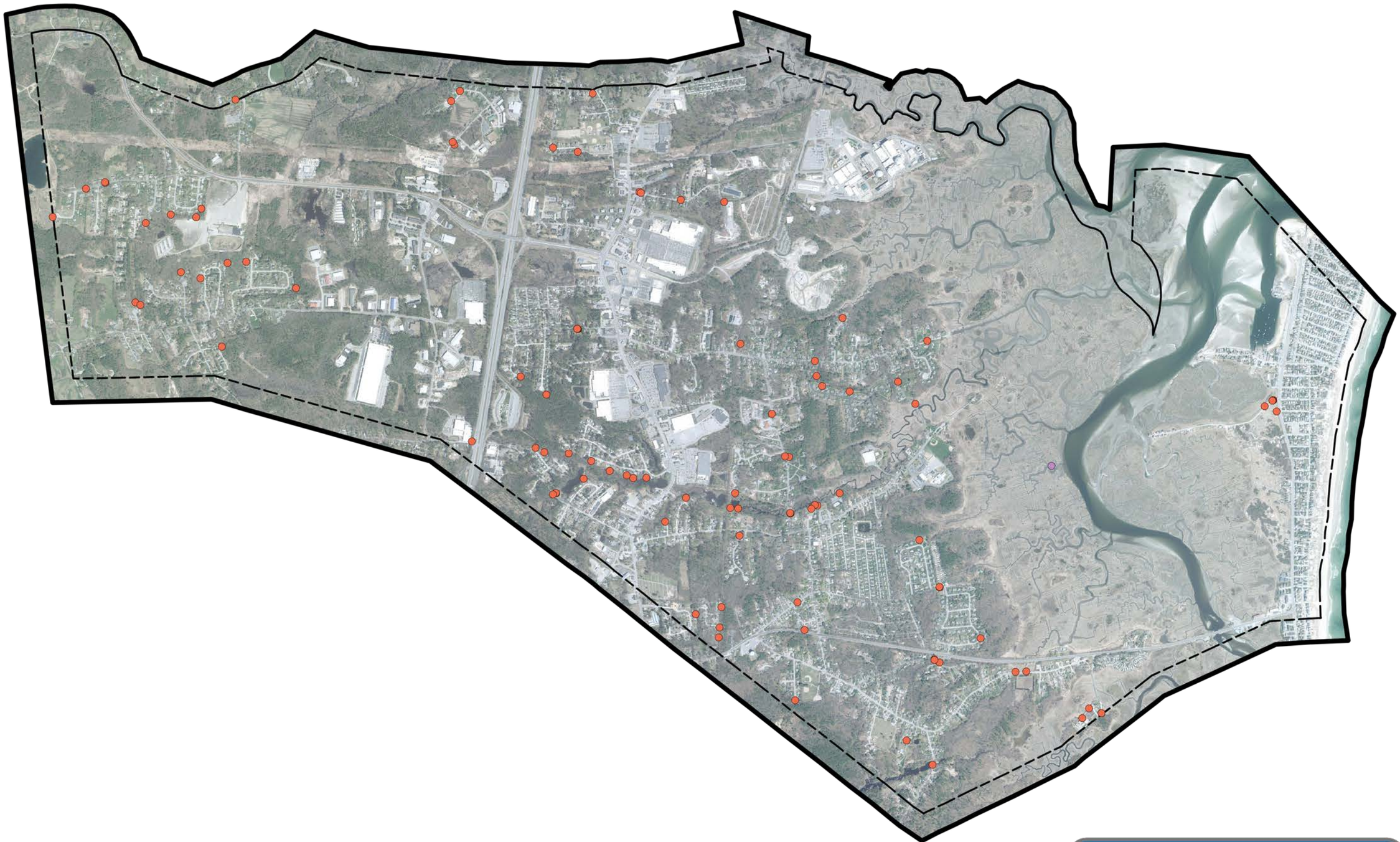
Use Of Storm Sewers. Storm water and all other unpolluted drainage shall be discharged only to such sewers as are specifically designed as storm sewers, or to natural outlets approved by the Board of Selectmen. Industrial cooling water, process waters, or storm water runoff generated in areas of industrial 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

Storm System Mapping



Outfall Map

Town of Seabrook
NH 03874

Scale: 1" = 2000'

June 21, 2019

TEC
146 Dascomb Road
Andover, MA 01810
169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
t: (978) 794-1792
TheEngineeringCorp.com

Summary of Receiving Waters:

Table B-1

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Atlantic Ocean - Seabrook Town Beach	1	☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Mercury, Polychlorinated biphenyls
Atlantic Ocean - Seabrook WWTP Outfall	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Mercury, Polychlorinated biphenyls
Back Creek		☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Blackwater River	14	☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Blood Creek		☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Brown's River (Lower)		☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Brown's River (Upper)	6	☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Cain's Brook	20	☐	☐	☒	☐	☐	☐	☐	☐	☐	pH
Cain's Brook - Noyes Pond	2	☒	☐	☒	☐	☐	☐	☐	☐	☐	pH
Cain's Brook - Unnamed Brook	2	☐	☐	☐	☐	☐	☐	☐	☒	☐	pH, Mercury
Folly Mill Brook	1	☐	☐	☐	☐	☐	☐	☒	☐	☐	Iron, Mercury, pH
Fish Coop 150ft Sz		☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Hampton/Seabrook Harbor		☐	☐	☐	☐	☐	☐	☐	☐	☐	Aluminum, DDD, Dieldrin, Dioxin (including 2,3,7,8-TCDD), Mercury, Polychlorinated biphenyls, Fecal Coliform, Lindane, trans-Nonachlor
Hunts Island Creek (Lower)	3	☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Hunts Island Creek (Upper)		☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Mill Creek	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Seabrook Harbor Beach		☐	☐	☐	☐	☐	☐	☐	☐	☐	Polychlorinated biphenyls
Secord Pond Dam		☐	☐	☐	☐	☐	☐	☒	☐	☐	pH, Mercury

Waterbody segment that receives flow from the MS4	Number of outfalls into receiving water segment	Chloride	Chlorophyll-a	Dissolved Oxygen/ DO Saturation	Nitrogen	Oil & Grease/ PAH	Phosphorus	Solids/ TSS/ Turbidity	E. coli	Enterococcus	Other pollutant(s) causing impairments
Unnamed Brook – to Cains Mill Pond	5	☐	☐	☐	☐	☐	☐	☐	☒	☐	Mercury
Gove Brook	7	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Lucy Brook	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Hampton Falls River	8	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Shepard Brook	4	☐	☐	☐	☐	☐	☐	☐	☐	☐	
		☐	☐	☐	☐	☐	☐	☐	☐	☐	
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Appendix C

Outfall Inventory and Priority Ranking Matrix

Outfall and Interconnection Inventory and Initial Ranking

The Department of Public Works has completed an initial 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 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 ≥ 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.

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.

1. **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.

2. **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.

3. **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.

4. 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 that the roadway have a tendency for higher Illicit discharge potential

Table C-1 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.

Table C-1. Outfall Inventory and Priority Ranking Matrix – The Town of Seabrook, New Hampshire – Revision Date 06/17/2019 (Continues on next three pages)

Outfall ID	Receiving Water	Previous Screening Results Indicate Likely Wastewater Input?[1]	Discharging to Area of Concern to Public Health?[2]	Frequency of Past Discharge Complaints	Receiving Water Quality[3]	Density of Generating Sites[4]	Age of Development/ Infrastructure[5]	Historic Combined Sewer?	Aging Septic?[6]	Long Culverted Streams?[7]	Dry Weather Flow?[8]	Additional Characteristics	Score	Priority Ranking
Information Source->		Outfall Inspections and Sample Results	GIS Maps, Recreation Areas, Recreational Uses	Town Staff	Impaired Waters List, TMDLs, Downstream Waters	Land Use/GIS Maps, Aerial Photography	Land Use Information, Visual Observation, Town Staff	Town Staff, GIS Maps	Land Use, Town Staff	GIS Maps, Town Pipe Data	Previous Outfall Inspections in Areas with High Water Table			
		Yes = 15 (Problem Outfall)	High = 5	Frequent = 3	Poor = 6	High = 6	High = 3	Yes = 5	Many = 6	Yes = 3	Heavy Flow = 8	Notes		
Scoring Criteria->		No = 0	Low = 0	Occasional = 2	Fair = 2	Medium = 3	Medium = 2	No = 0	Few = 2	No = 0	Light Flow = 4			
				None = 0	Good = 0	Low = 1	Low = 1		None = 0		No Flow = 0			
OF-43	Cains Brook	0	0	0	6	2	2	0	0	0	4		**14**	High Priority
OF-38	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-56	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-57	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-59	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-60	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-61	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-62	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-63	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-64	Cains Brook	0	0	0	6	1	2	0	0	0	4		**13**	High Priority
OF-72	Cains Brook	0	0	0	6	5	2	0	0	0	0	Next to I-95 and Henkel Loctite facility	**13**	High Priority

OF-01	**Salt Marsh**	**0**	**0**	**0**	**1**	**3**	**2**	**0**	**0**	**0**	**4**		**10**	**High Priority**
OF-103	Cains Brook	0	0	0	6	1	2	0	0	0	0		**9**	Low Priority
OF-11A	Cains Brook	0	0	0	6	1	2	0	0	0	0		**9**	Low Priority
OF-12C	Cains Brook	0	0	0	6	1	2	0	0	0	0		**9**	Low Priority
OF-31	Cains Brook	0	0	0	6	1	2	0	0	0	0		**9**	Low Priority
OF-32	Cains Brook	0	0	0	6	1	2	0	0	0	0		**9**	Low Priority
OF-34	Small Unnamed Stream	0	0	0	1	2	2	0	0	0	4		**9**	Low Priority
OF-39	Cains Brook	0	0	0	6	1	2	0	0	0	0		**9**	Low Priority
OF-11B	Cains Brook	0	0	0	6	1	1	0	0	0	0	Drain MH Directly Discharges into Culvert	**8**	Low Priority
OF-40	Small Wetland	0	0	0	0	2	2	0	0	0	4		**8**	Low Priority
OF-86	Small Stream	0	0	0	1	5	2	0	0	0	0	Near transfer station	**8**	Low Priority
OF-54	Small Unnamed Stream	0	0	0	2	3	2	0	0	0	0		**7**	Low Priority
OF-13	Small Unnamed Stream	0	0	0	1	3	2	0	0	0	0		**6**	Low Priority
OF-17	Small Unnamed Stream	0	0	0	0	4	2	0	0	0	0		**6**	Low Priority
OF-68	Browns River	0	0	0	1	3	2	0	0	0	0		**6**	Low Priority
OF-82	Detention Pond	0	0	0	0	1	1	0	0	0	4		**6**	Low Priority
OF-87	Swale to Detention Pond	0	0	0	0	1	1	0	0	0	4		**6**	Low Priority
OF-33	Small Tidal Stream	0	0	0	1	2	2	0	0	0	0		**5**	Low Priority
OF-58	Small Unnamed Stream	0	0	0	2	1	2	0	0	0	0		**5**	Low Priority
OF-06	Small Unnamed Stream	0	0	0	1	1	2	0	0	0	0		**4**	Low Priority
OF-08	Mill Creek Salt Marsh	0	0	0	1	1	2	0	0	0	0		**4**	Low Priority

OF-14	Small Wetland	0	0	0	0	2	2	0	0	0	0		**4**	Low Priority
OF-15	Small Unnamed Stream	0	0	0	0	2	2	0	0	0	0		**4**	Low Priority
OF-36	Salt Marsh	0	0	0	1	1	2	0	0	0	0		**4**	Low Priority
OF-07A	Small Unnamed Stream	0	0	0	1	1	1	0	0	0	0		**3**	Low Priority
OF-07B	Small Unnamed Stream	0	0	0	1	1	1	0	0	0	0		**3**	Low Priority
OF-104	Cains Brook	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-16	Small Wetland	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-19	Small Wetland	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-41	Small Unnamed Stream	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-42	Small Wetland	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-50	Small Unnamed Stream	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-51	Small Stream Next to Railroad Tracks	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-52	Small Stream Next to Railroad Tracks	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-53	Small Stream Next to Railroad Tracks	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-69	Small Unnamed Stream	0	0	0	0	1	2	0	0	0	0		**3**	Low Priority
OF-10	Shepherd Brook	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority
OF-107	Winkley Brook	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority
OF-27	Small Wetland	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority

OF-30	Farm Brook Wetland	0	0	0	0	1	1	0	0	0	0	Swale accepting run-off from a small area of roadway	**2**	Low Priority
OF-45	Small Wetland	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority
OF-49	Small Stream Next to Railroad Tracks	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority
OF-83	Small Wetland	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority
OF-88	Detention Pond Near Stream	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority
OF-89	Swale to Small Stream	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority
OF-90	Swale to Small Stream	0	0	0	0	1	1	0	0	0	0		**2**	Low Priority
OF-71	Small Wetland	0	0	0	0	1	0	0	0	0	0	Discharges to swale before wetland	**1**	Low Priority
OF-74	Large Wetland	0	0	0	0	1	0	0	0	0	0	Swale to large wetland	**1**	Low Priority

[1] Previous screening results indicate likely wastewater input if any of the following are true:

- 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

[2] Outfalls/interconnections that discharge to or in the vicinity of any of the following areas: public beaches, recreational areas, drinking water supplies, or shellfish beds

[3] Receiving water quality based on latest version of NHDES Integrated List of Waters (303d list).

- Poor = Waters with approved TMDLs (Category 4a Waters) where illicit discharges have the potential to contain the pollutant identified as the cause of the impairment
- Fair = Water quality limited waterbodies that receive a discharge from the MS4 (Category 5 Waters)
- Good = No water quality impairments
- Outfalls that discharge to impaired waters were automatically given a High Priority ranking.

[4] Generating sites are institutional, municipal, commercial, or industrial sites with a potential to contribute to illicit discharges (e.g., Automotive repair shops, car washes, gas stations, garden centers, industrial manufacturing, etc.)

[5] Mean age of development and infrastructure as prescribed by EPA:

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

[6] Aging septic systems are septic systems 30 years or older in residential areas as prescribed by EPA.

[7] Long culverted streams are culverts than are significantly longer than the roadway crossing.

[8] Dry weather flow was assessed during previous outfall inspections. Light flow includes any flow up to 5 gpm.

Appendix D

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

Appendix to include copies of the following field sampling documents once fully developed in accordance with the 2017 MS4 Permit:

- Dry weather outfall inspection/sampling form
- Wet weather outfall inspection/sampling form
- Manhole inspection form
- Example sample labels (provided by laboratory)
- Example chain-of-custody form(s) (provided by laboratory(s))

Appendix E

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

Appendix to include copies of water quality analysis instructions, procedures, and SOPs for all sample parameters and all meters or field test kits that are used for analysis once fully developed in accordance with the 2017 MS4 Permit. This includes the manufacturer's instructions for how to use field test kits as well as the manufacturer's instructions or user's manual for any field instrumentation.

Appendix F

IDDE Employee Training Record

Illicit Discharge Detection and Elimination (IDDE)
Employee Training Record

Town of Seabrook

Date	Type of Training	Participants

Appendix G

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

Appendix to provide manufacturer instructions, manuals and procedures and any in-house SOPs used to perform source isolation and confirmation for illicit discharges once fully developed in accordance with the 2017 MS4 Permit.

Standard Operating Procedure for:	
IDDE: Inspections During Mapping	
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

Oil stain: petroleum storage, vehicle service facilities, petroleum refineries
Rusty: precipitates from iron-rich water (natural or industrial) [note: if slimey 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 al 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)**.**