

**The Delaware Department of Natural Resources  
and Environmental Control  
Division of Water**



**NPDES Permit No: DE0020028  
Rehoboth Beach WWTP  
October 19, 2016**

**Tony Hummel, PE  
Environmental Engineer  
Surface Water Discharges Section**

# Total Maximum Daily Load (TMDL)

- The TMDL for Indian River, Indian River Bay, and Rehoboth Bay required “Systematic Elimination” of all point source nutrient discharges.
- Environmental Impact Statement (EIS) determined that an ocean outfall was the best option.
- NPDES Permit will have 2 Phases:
  - Phase 1 – Continue Outfall 001 discharge to the Lewes-Rehoboth (L-R) Canal, Effective Date through Outfall Completion Date but no later than May 31, 2018.
  - Phase 2 – Commence Outfall 002 discharge to the Atlantic Ocean, Outfall Completion date but no later than June 1, 2018.

# NPDES Permit Overview

- National Pollutant Discharge Elimination System (NPDES).
- Authorizes discharge of treated sanitary wastewater to waterbody (L-R Canal/Atlantic Ocean)
- Subject to Effluent Limitations, Monitoring Requirements, and other conditions specified in the permit.
- Effluent Limitations must be based on the **most restrictive** applicable standards, regulations, or guidelines.

# NPDES Permit Overview

Applicable Standards can include:

- State of Delaware Surface Water Quality Standards (SWQS)
- Regulations Governing the Control of Water Pollution (RGCWP)
- Total Maximum Daily Loads (TMDLs)
- Federal Effluent Limitation Guidelines (ELGs)
- Facility Performance

# Proposed Effluent Limitations

## Flow:

- Removed Flow Limit for both Phases 1 and 2
- Flow is limited by the hydraulic capacity of the treatment facilities (3.4 MGD)
- Flow is monitored continuously
- Flow data used to calculate pollutant loadings

## pH:

- pH must be between 6 – 9 at all times.
- Based on Sec. 7.7.3 of RGCWP
- Retained from current permit for both Phases 1 and 2

## Dissolved Oxygen (DO):

- DO shall not be less than 5 mg/L at any time
- Performance based and consistent with SWQS
- Retained from current permit for both Phases 1 and 2

# Proposed Effluent Limitations

## Enterococcus:

- Daily Average limit of 10 colonies/100mL
- Based on Sec. 11.6 of SWQS (8/11/99)
- Sec. 4.5.7.1 of Current SWQS allows 35 col./100 mL
- Based on facility performance, retaining the more stringent limit for both Phases 1 & 2

# Proposed Effluent Limitations

## BOD<sub>5</sub>:

- 15 mg/L Daily Average, 23 mg/L Daily Maximum

### Phase 1

- Based on Sec. 7.7.3 of RGCWP
- More stringent than current performance based limit

### Phase 2

- Sec. 7.2.1 & 7.7.1 of RGCWP allows less stringent limits for BOD<sub>5</sub> of 30 mg/L Daily Average, and 45 mg/L Daily Maximum
- Based on facility performance, retaining the more stringent limits for Phase 2
- 85% Removal requirement based on 40CFR133.102(a)(3) added to permit (Special Condition No. 15)

# Proposed Effluent Limitations

## Total Suspended Solids (TSS):

- 15 mg/L Daily Average, 23 mg/L Daily Maximum

### Phase 1

- Based on Sec. 7.7.3 of RGCWP
- Retaining the current limit

### Phase 2

- RGCWP allows less stringent limits for TSS of 30 mg/L Daily Average, and 45 mg/L Daily Maximum
- Based on facility performance, retaining the more stringent limits for Phase 2
- 85% Removal requirement based on 40CFR133.102(a)(3) added to permit (Special Condition No. 15)

# Proposed Effluent Limitations

## Total Nitrogen (TN) and Total Phosphorus (TP):

### Phase 1

- Retain Current load limits of 24,300 lb/yr TN and 5,308 lb/yr TP
- Moving 12-Month Cumulative Loads
- Based on Pre-1998 Facility Performance reduced by 25% in current permit
- Retaining the current limits while continuing to discharge to the L-R Canal
- Effective Date through Completion of Ocean Outfall Project, but no later than May 31, 2018

# Proposed Effluent Limitations

## TN and TP:

### Phase 2

- No applicable numeric regulatory standards for nutrients in the Atlantic Ocean
- Atlantic Ocean is designated as waters of Exceptional Recreational or Ecological Significance (ERES)
- Degradation of water quality is prohibited in ERES waters
  
- Facility performance (July 2013 – June 2016):
  - 6.2 mg/L TN
  - 0.32 mg/L TP
- Background Nutrient Concentrations:
  - 0.37 mg/L TN
  - 0.06 mg/L TP

# Proposed Effluent Limitations

## TN and TP:

- Effluent must undergo minimum of 1:17 dilution to reach background nutrient concentrations.
- Minimum worst case dilution based on EIS Modeling is 1:82 (Most common is 1:930)
- Dilution is more than adequate to reach background nutrient concentrations upon initial dilution
- No Degradation of Water Quality

# Proposed Effluent Limitations

## TN and TP:

### Phase 2

- No Numeric Effluent Limitations
- Retain Monitoring Requirements
- Special Condition No. 14 added to require permittee to maintain current treatment and effluent quality

# Other Requirements

## New Special Conditions

- Electronic Discharge Monitoring Reporting (eDMR)
- Biomonitoring Requirements for Phase 2
- Ocean Outfall Maintenance and Inspection
- Emergency Power Generation
- Maintain Treatment Efficiency
- TSS and BOD5 85% Removal

Thank you for attending!

