

**Village of Ridgefield Park Supplemental CSO Team**

**Meeting Number 6**

Commissioner's Conference Room

Village of Ridgefield Park Municipal Building

October 1, 2018, 9:00 am

Group Meeting Minutes

1. Introduction
  - a. Meeting began at 9:00 am
  - b. John Rolak opened the meeting with a safety discussion about Fall driving conditions.
  - c. John Rolak reviewed the topics discussed at the last quarterly meeting held on June 11, 2018 and asked if there were any questions on the previous meetings. Mark Olson asked if there was any chance that the rain garden program, currently in place in Ridgefield Park, might be used as credit under the current CSO requirements. John Rolak explained that currently the rain garden program would not be formally approved because the rain gardens would have to meet the NJDEP's specifications.
2. Presentation by John Rolak about the Development and Evaluation of Alternative Controls (see PowerPoints).
3. Discussion and Questions
  - a. The group was asked to make suggestions about potential locations for Green Infrastructure in the village. Some suggestions were discussed including possibly repaving the tennis courts with pervious pavement. John Rolak will send PDF copies of Ridgefield Park maps for the members to mark up with their suggestions.
  - b. Members of the group suggested that the Fricke property, owned by SP Equity is currently available but is under consideration for sale. John Rolak indicated that the location of that property would be ideal for a storage tank. John will send a letter to the town explaining this.
  - c. After the presentation about the pilot study of treatment options, members asked if operating a treatment facility in Ridgefield Park might be an option. John Rolak explained that it would be an option to consider. First, we would have to determine the size, location and cost of this option and compare it to the other available options.
4. Meeting concluded at 10:15 am

Minutes submitted by Donna Gregory

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## Development and Evaluation of Alternative Controls – Overview

Ridgefield Park Supplemental CSO Team  
Meeting #6

October 1, 2018



### Safety Topic

Fall Driving Conditions


#### Hazards

- Sun Glare
- Wet Leaves
- Fog
- Deer

#### Recommendations

- Slow down
- Increase following distance
- Check vehicle headlights, taillights, tires and defogger
- Take extra care at dawn and dusk

Adapted from PennDOT



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2

October 1 2018

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## Ridgefield Park Supplemental CSO Team

Meeting No. 6 Agenda

Refresher – In meeting #5 we covered:

- Sewer System Characterization Report
  - Receiving Waters
  - Collection System
  - Use of Prior Data
  - Modeling
  - Typical Year Rainfall and Analysis
  - Sensitive Areas

Submitted to NJDEP On Time!



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3

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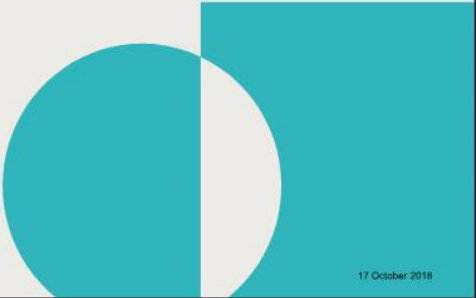
## Ridgefield Park Supplemental CSO Team

Meeting No. 6 Agenda

Development and Evaluation of Alternatives

- What is the Goal of Alternative Control?
- What are the Regulatory Requirements?
- This Leads us to:
  - Overview of Alternatives
  - Treatment of CSO discharge

Bayonne Pilot Study



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Meeting No. 6 Agenda

When considering alternatives we must first consider,  
“What is the Pollutant of Concern for CSOs?”

# Pathogens

Other pollutants should be considered  
but are not the focus of the LTCP.



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## Regulatory Requirements

What does the permit say?

The permittee shall evaluate a reasonable range of CSO control alternatives that will meet the water quality-based requirements of the CWA	The Development and Evaluation of Alternatives Report shall include a list of control alternative(s) evaluated for each CSO enabling the permittee, ...to select the alternatives to ensure the CSO controls will meet the water quality-based requirements of the CWA	The permittee shall evaluate the practical and technical feasibility of the proposed CSO control alternative(s), and water quality benefits and give the highest priority to controlling CSO discharges to sensitive areas	The permittee shall select either the Demonstration or Presumption Approach
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## Ridgefield Park Supplemental CSO Team

So what are the alternatives?

- Green Infrastructure
- Increased Storage Capacity
- Infiltration and Inflow Reduction
- Sewer Separation
- Satellite Treatment of CSO Discharge
- Bypass of Secondary Treatment at STP
- Treatment Plant Expansion

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## Green Infrastructure

We previously reviewed:

- Rain gardens
- Bioswales
- Pervious Pavement
- Green Roofs



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## Increased Storage Capacity

- Inline Storage
- New and Larger Sized Sewer Pipes
- Underground Storage Tanks
- Tunnels



## Inflow and Infiltration Reduction

- Sump pump disconnections
- Sewer lining or repairs
- Grout leaking joints
- Manhole rehabilitation

Issue – Previous studies have found that a large percentage of the I/I comes from private property.

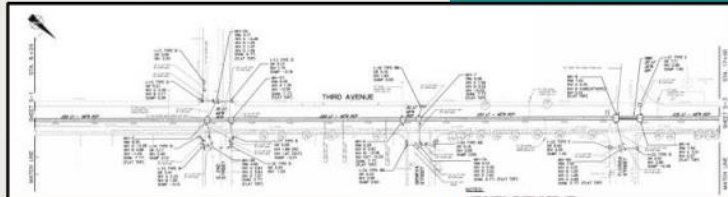


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### Sewer Separation

- New Storm Sewer
- New Sanitary Sewer

Issue – Stormwater contributes to pollution of the receiving waters and will eventually need to be treated or controlled.



### Satellite Treatment of CSO Discharges

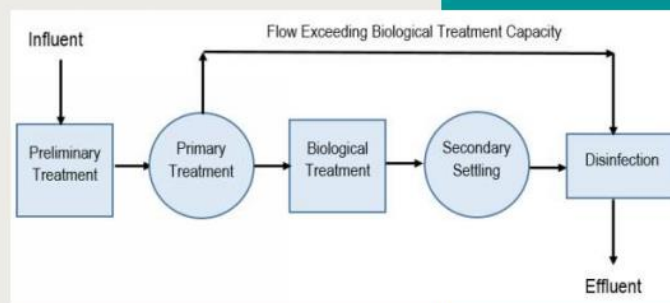
- Wet Weather Facility
- End of Pipe Treatment



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### Bypass of Secondary Treatment at Sewage Treatment Plant (Blending)

- Primary Treatment and Disinfection



### Increased Treatment Plant Capacity

- Increased conveyance to plant
- Full treatment expansion
- Wet weather facility



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## Bayonne Pilot Study

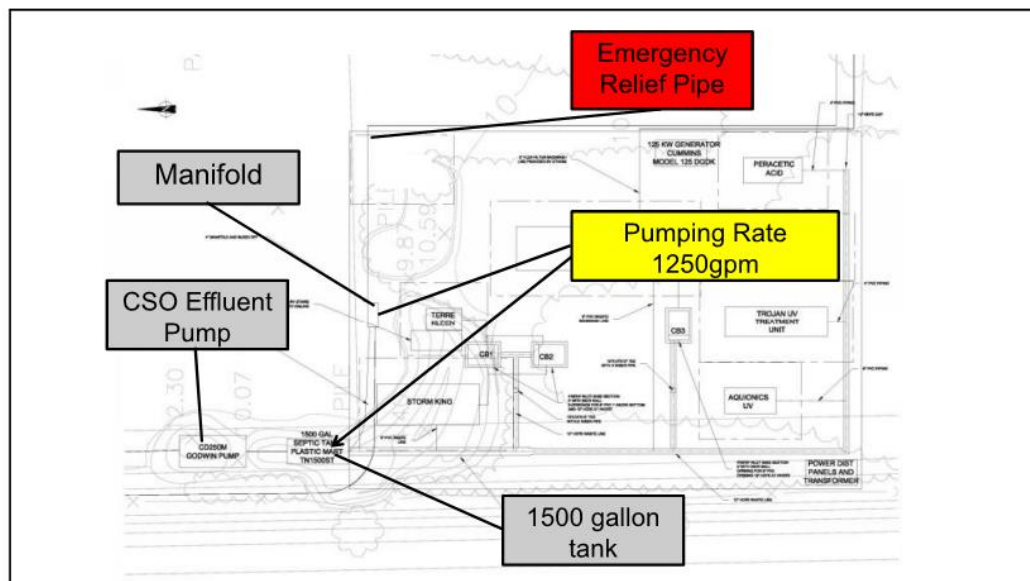
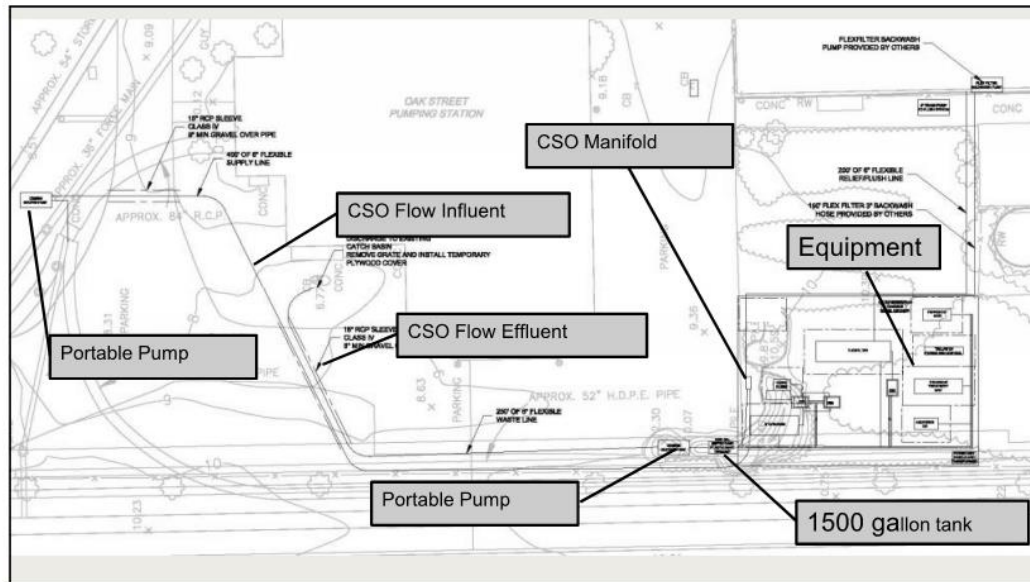
### Project objective:

- The goal and objective of the project is to develop performance data to evaluate the effectiveness of CSO treatment technologies and to gain an improved understanding of their potential use as satellite end of pipe water quality treatment for wet weather discharges including CSOs.



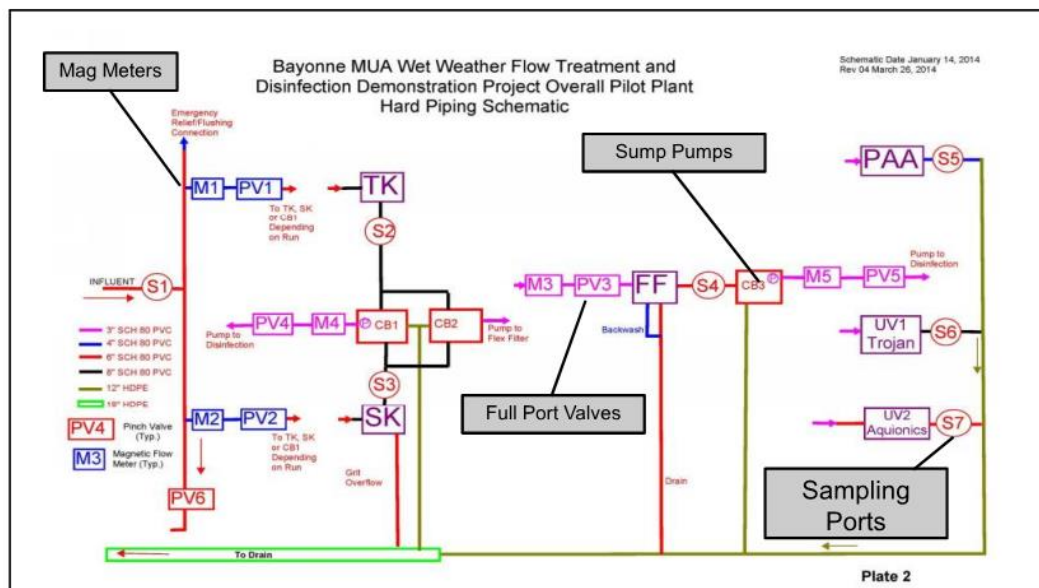
Bayonne Oak Street Pumping Station former Treatment Plant

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17/10/2018



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23

17 October 2018

### Testing goals:

Goal for nine successful storm events – obtained

- Seven (7) wet weather events
- Two (2) simulated events

Rainfall volume needed – at least 0.4 – 0.5 inches

Monitoring was conducted for 2 – 4 hours following the start of an overflow.

Rainfall events were conducted any day or time



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## Summary of Results:

### Course Solids Must Be Controlled!

- Course Screening should precede any treatment scenarios.
- The NJPDES Permit requires removal of all solids/floatables equal to, or greater than ½ inch so any screening must meet this requirement.



## Summary of Results:

### Volatile Suspended Solids Removal Is Required for Effective Disinfection

- Suspended Solids in CSOs are Present in Two Forms –
  - Fix Suspended Solids (FSS), which is primarily grit; and
  - Volatile Suspended Solids (VSS), which are organic suspended solids.



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## Summary of Results:

### TSS (Total Suspended Solids) Removal

- Terre Kleen
- Storm King
- Flex Filter



### Terre Kleen

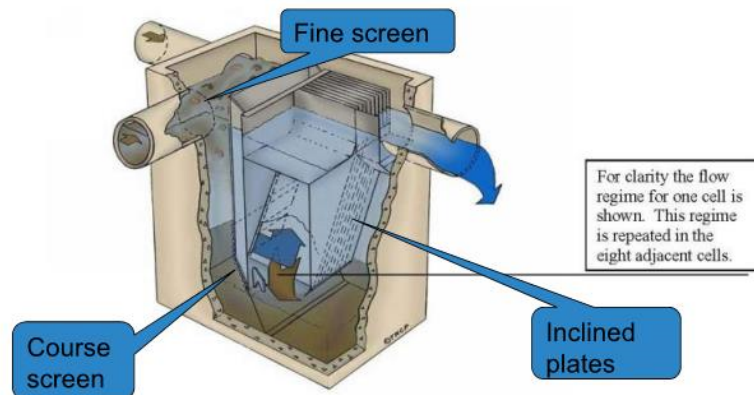
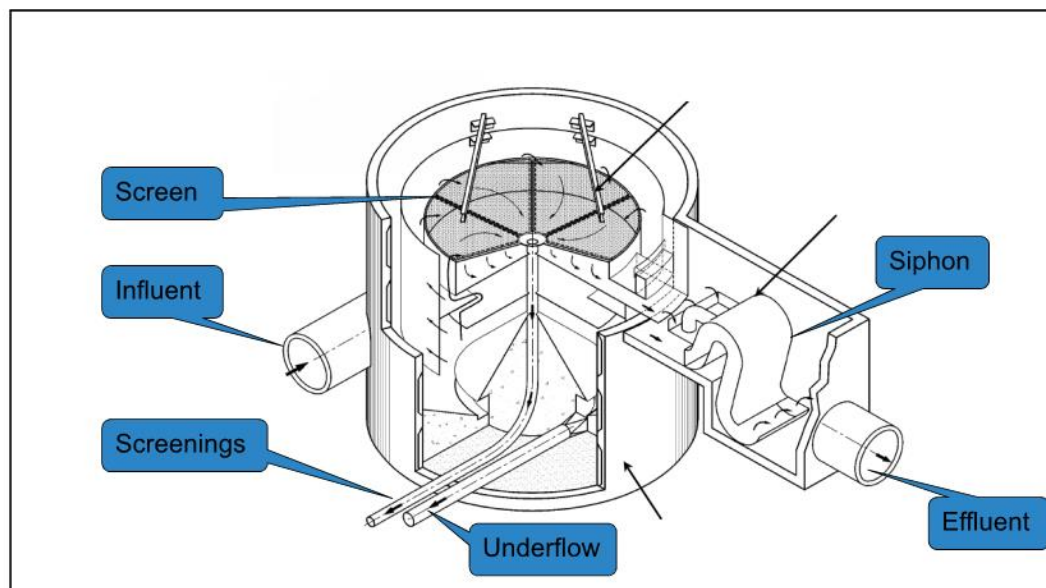


Figure 1. Schematic of the Terre Kleen™ TK09



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## Summary of Results:

### Volatile Suspended Solids Removal Is Required for Effective Disinfection

- Terre Kleen and Storm King units
  - Demonstrated poor VSS removal of less than 10% in all but one test run.
  - Would be ineffective on their own with UV disinfection.
  - Relatively low removal rates for other pollutants.
  - Effective for girt removal.



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## Summary of Results:

### Volatile Suspended Solids Removal Is Required for Effective Disinfection

- Flex Filter was tested at hydraulic loading rates (HLR) greater than those recommended by the manufacturer. (3-4 times recommended HLR)
- Filter was effective, but required shorter run time and frequent backwash due to the loading rate.
- Average TSS (FSS + VSS) removal in most CSO runs close to 90%.
- Effective on its own for UV pretreatment.
- Also effective at removal of other pollutants.



## Summary of Results:

### Disinfection

- Low Pressure UV
- Medium Pressure UV
- Peracetic Acid (PAA)



18

17/10/2018



19

17/10/2018

### Aquionics Medium Pressure UV



## Summary of Results:

### UV Disinfection:

- UV Transmittance (UVT) of >40% is recommended
- Majority of samples had UVT of 20 – 50%
- Lower UVT requires higher UV output (more bulbs)
- The low pressure system provided better results than medium pressure system.
- Both low and medium pressure UV units are capable of achieving water quality objectives for pathogen reduction, but only preceded by compressed media filter (Flex Filter)



20

17/10/2018



## Summary of Results:

### Peracetic Acid (PAA):

- PAA appears to be an effective disinfectant at comparable or lower dosages from chlorination.
- PAA contact time of 3 to 6 minutes were effective as compared by typical 30 minutes for chlorine.
- A significant relationship was detected between COD present in wastewater and log reduction in pathogens.
- Less toxic than chlorine disinfection (no by products) and no dichlorination requirements.
- However, more corrosive and costly.



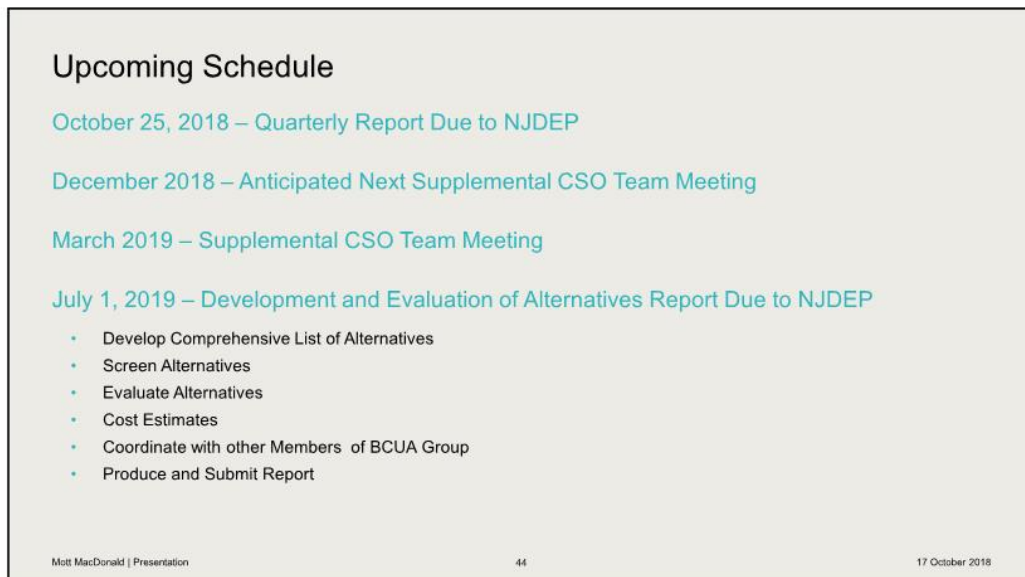


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Questions  
on Pilot  
Study?

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Upcoming Schedule

October 25, 2018 – Quarterly Report Due to NJDEP

December 2018 – Anticipated Next Supplemental CSO Team Meeting

March 2019 – Supplemental CSO Team Meeting

July 1, 2019 – Development and Evaluation of Alternatives Report Due to NJDEP

- Develop Comprehensive List of Alternatives
- Screen Alternatives
- Evaluate Alternatives
- Cost Estimates
- Coordinate with other Members of BCUA Group
- Produce and Submit Report

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17/10/2018

