



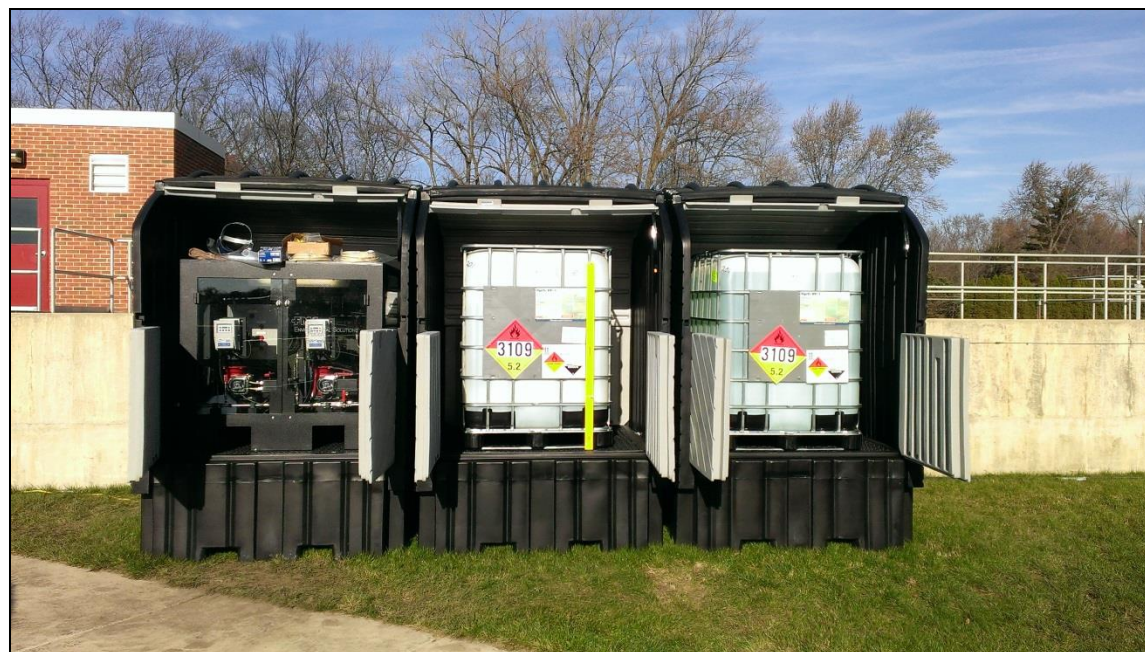
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Peracetic Acid Disinfection Pilot

**Peracetic
Acid
Disinfection
Pilot**

**2015
Lab
Seminar**

April 14, 2015



Presented by: Allison Yates
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- **DeKalb WWTP**
 - **Design Avg/Max Flow = 8.63 MGD / 18.1 MGD**
 - Screening, Grit Removal, Primary Clarification
 - 80% Trickling Filters, RBC's, Sand Filters
 - 20% Activated Sludge
 - Sodium Hypochlorite Disinfection



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- **Peracetic Acid (PAA) Disinfection**
 - **PAA = mixture of peracetic acid, acetic acid, hydrogen peroxide & water.**
 - **Manufacturers: PeroxyChem, PERAGreen**





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- DSD Pilot – Main Plant Flow
 - From 11/7/13 to 4/16/14

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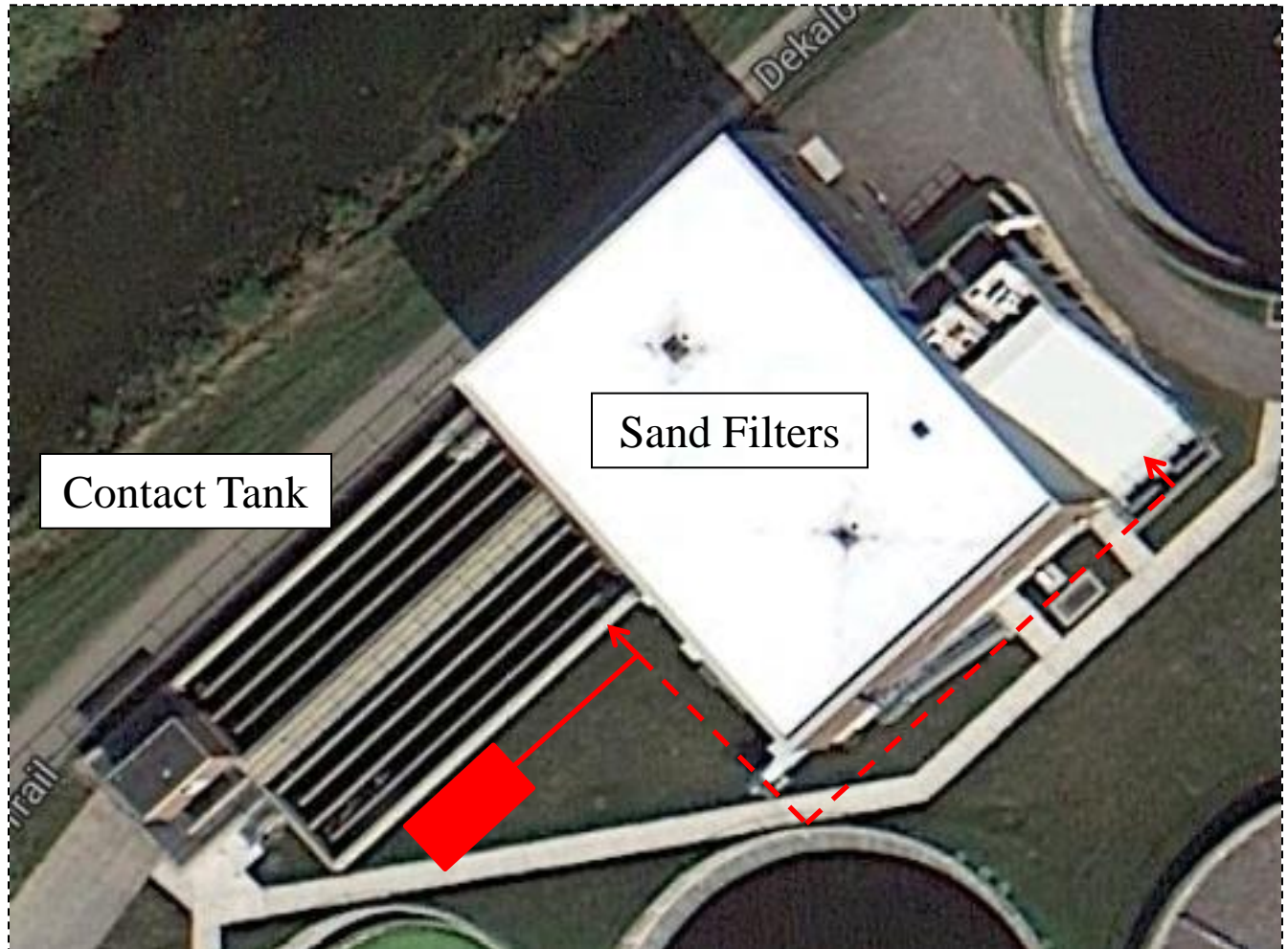
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■ DSD Pilot – Main Plant Flow





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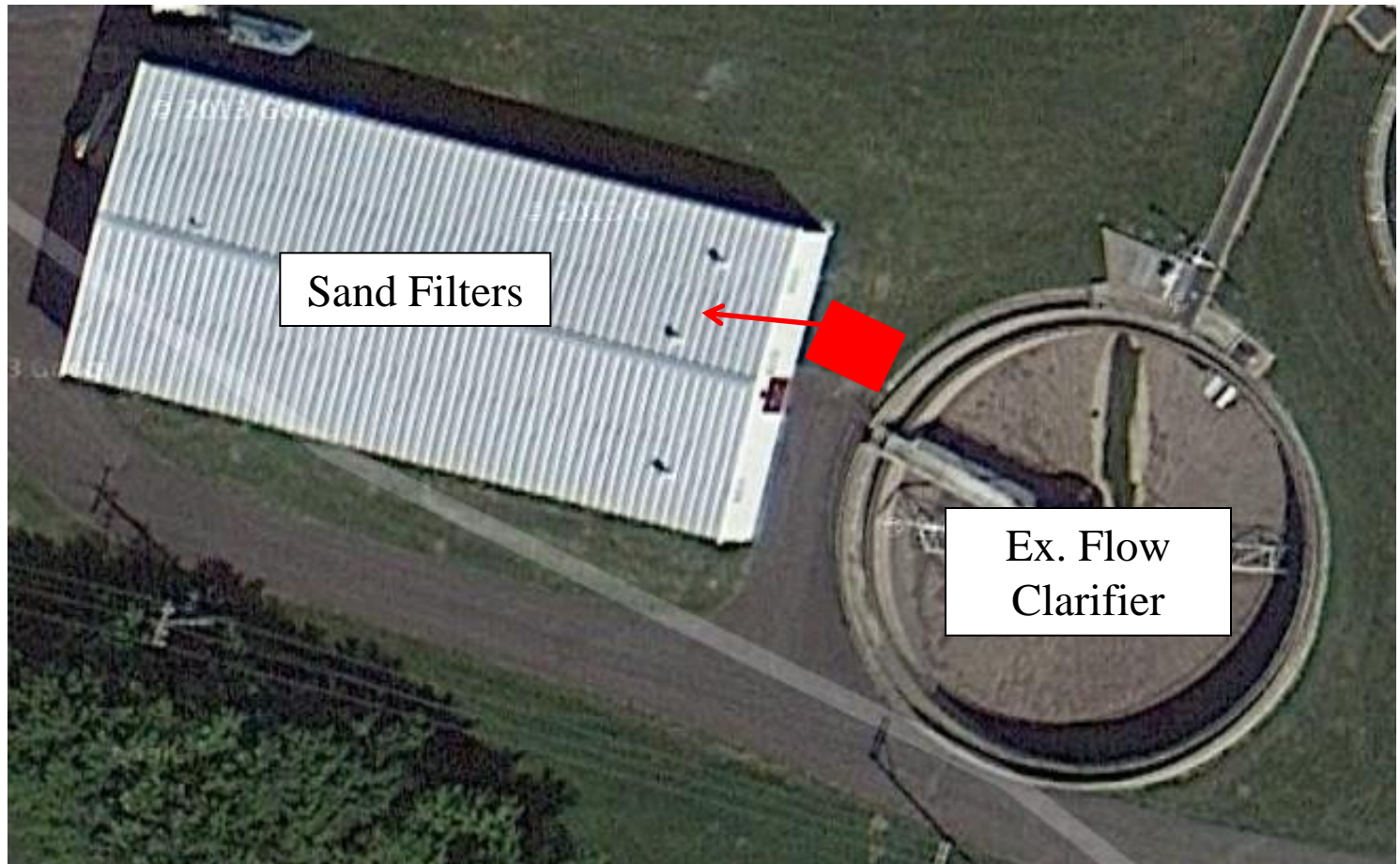
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■ DSD Pilot – Excess Flow





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■ **DSD Pilot – Main Plant Flow**

- **Average Flow 5.98 MGD**
- **Fecal & E. Coli Testing**
 - 85.2 Avg. Fecal Colonies / 62.8 Avg. E. Coli
 - Regrowth not an issue
- **Whole Effluent Toxicity (WET) – 100% Survival**
- **Used 20-30 gallons/day**
 - Compare to 140 gpd Cl / 30 gpd bisulfite
- **0.1 ppm Avg. Effluent Residual**

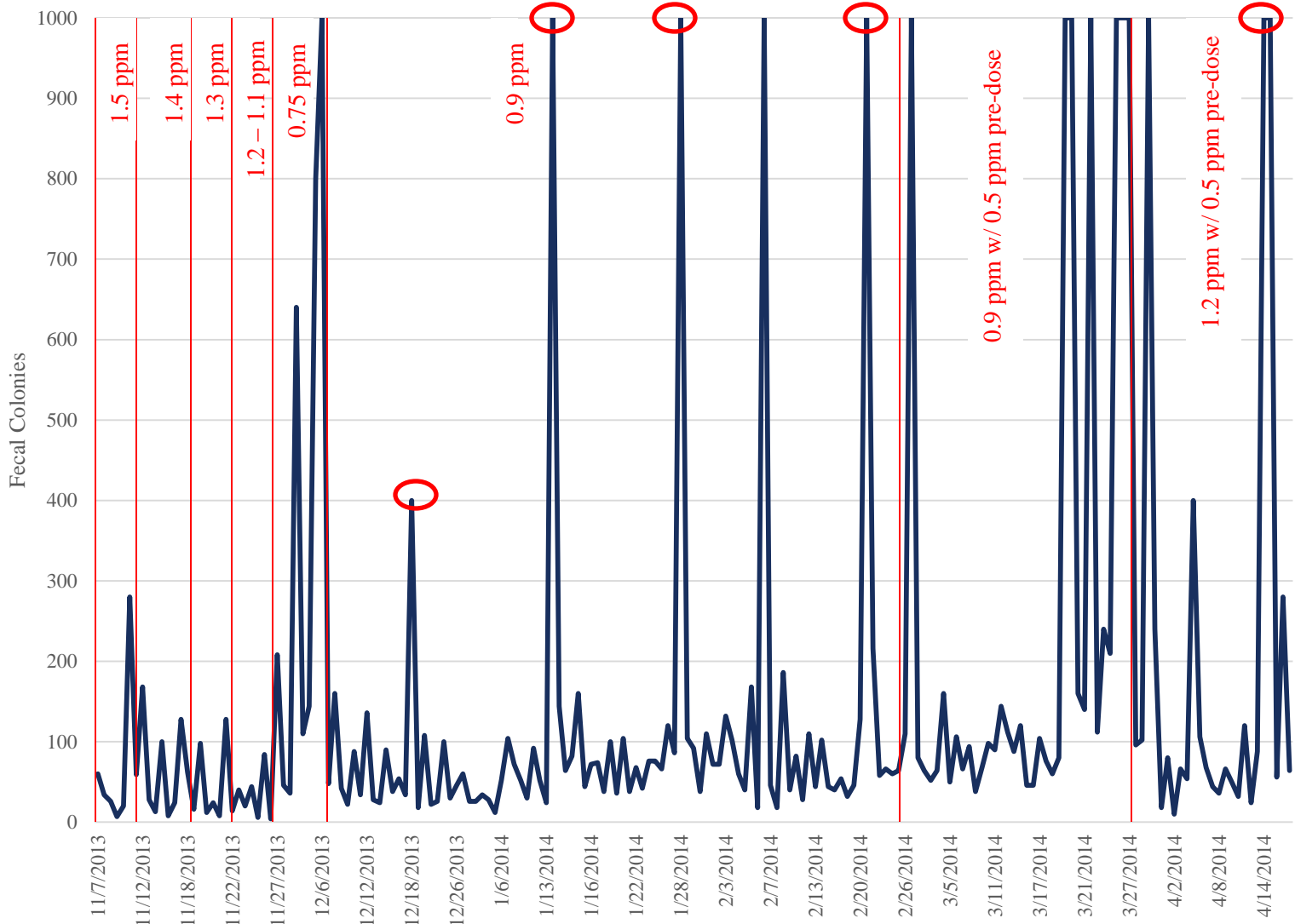


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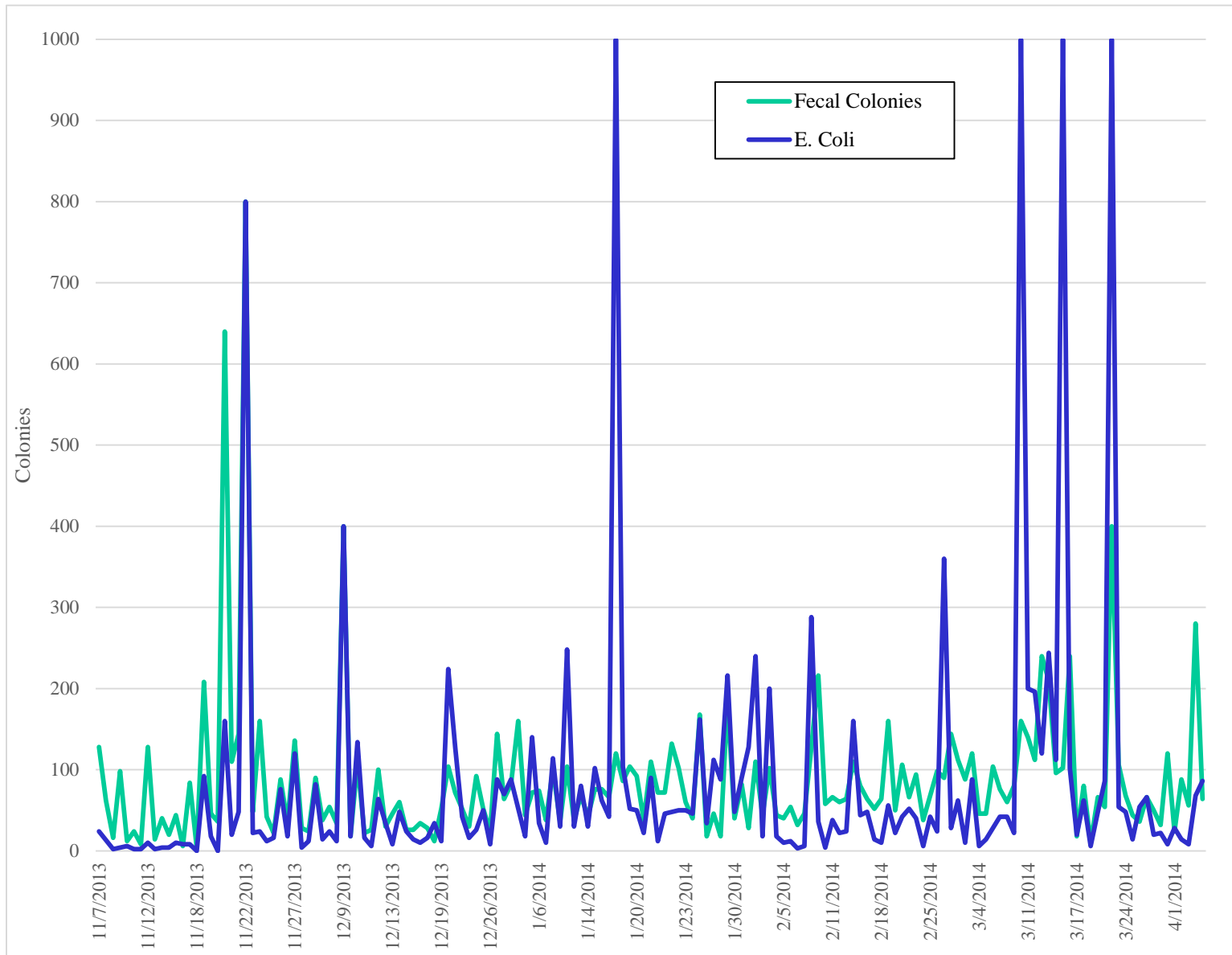


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■ DSD Pilot – Excess Flow

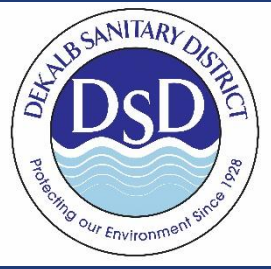
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DATE	TIME	FLOW	PAA DOSE	PAA RES.	PAA RES.	FECAL COLIFORM	COMMENTS
		MGD	ppm	ppm	ppm	colonies/100 ml	
		INF	Pre-Filter	Pre-Filter	Filter EFF	EFF	
3/11/14	11:40 AM	1.25	4.5	3.08	0.41	TNTC	Test run from 11-12 approx.
3/12/14	10:00 AM	1.25	4.5	2.89	0.10	240	Test run from 9-12
	11:00 AM	1.25	6.4	2.87	0.49	296	
	12:00 PM	1.25	6.4	1.69	0.80	6	
3/13/14	8:45 AM	2.1	4.75	1.14	0.00	TNTC	Test run from 8:10 - 11:45
	9:45 AM	2.1	4.75	1.50	0.72	44	
	10:45 AM	2.1	4.75	2.54	0.14	46	
	11:45 AM	2.1	4.75	1.63	0.01	14	
4/11/14	9:00 AM	2.0	4.00	1.29	0.00	TNTC	Test run from 8:30 - 11:00
	10:00 AM	2.0	4.00	0.44	0.00	TNTC	
	11:00 AM	2.0	4.00	0.03	0.00	TNTC	
4/15/14	10:30 AM	2.0	5.00	0.00	0.00	TNTC	Test run from 9:00 - 1:30
	11:30 AM	2.0	6.00	1.71	0.00	TNTC	
	12:30 PM	2.0	6.95	2.81	0.00	TNTC	
	1:30 PM	2.0	7.95	3.11	0.00	TNTC	





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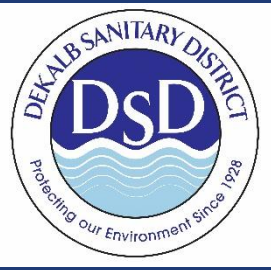
■ Potential Benefits

- Environmentally Friendly
- Reduced Contact Time
- No Additional Chemicals (de-chlor)
- Product Stability (Low Degradation)
- Low Storage Cost

■ Disadvantages

- Cost





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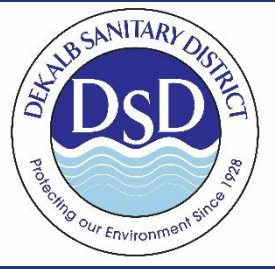
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- **Future Considerations**
 - **Better Controls**
 - Flow Pacing-reducing lag time
 - Residual Analyzer-(inf. contact tank)
 - **Additional Piloting**
 - Higher Excess Flow Dose
 - Normal plant eff.(extended time)
 - **Effect on Sand Filters**
 - dirty filters/sand
 - **Effect on contact tank**
 - algae growth



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- **Conclusions**

- **It works...does it work for you?**

- Chemical vs. Offsetting (Building/Water/Etc) Costs

Questions?

