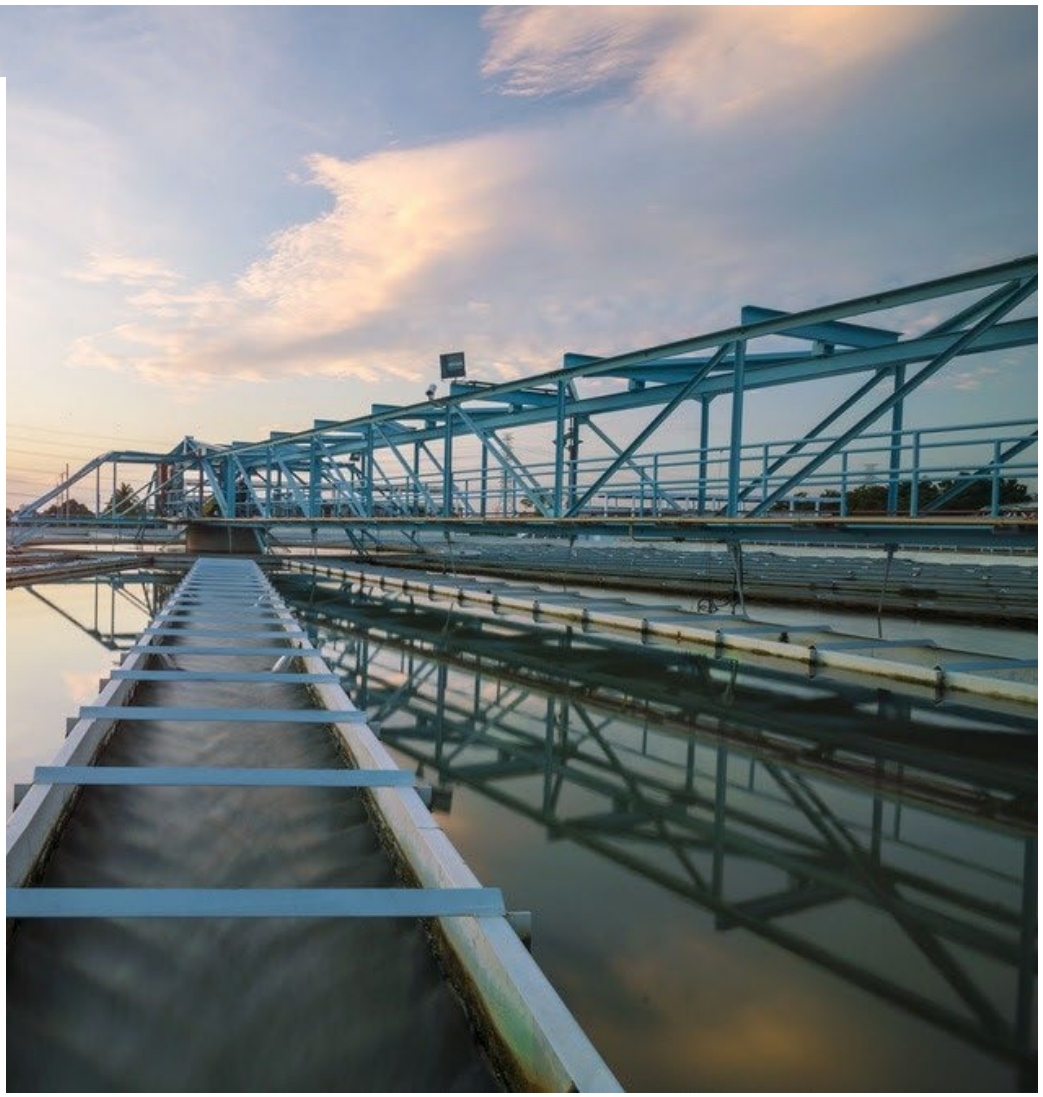
UTILITY REPORT



DECEMBER 2023

King George County Service Authority

Authored by:
Inboden Environmental Services, Inc.

INTRODUCTION

This Utility Report provides information on operations, facility performance, equipment issues, and regulatory compliance for the month prior. Information includes items related to water facility productions and wastewater effluent discharge volumes, laboratory analytical data, operations notes, and compliance auditing.

WATER

Operational Notes:

- Collected all Presence Absence tests for the month. All passed.
- Contracted company has begun work on the water tower.
- All quarterly samples for all wells currently running have been collected.
- Continuing to backwash greensand filters to maximize Iron and manganese capture and keep water use/loss down.
- Flushed wells A and D at Hopyard water systems.
- Continuing to effectively dose sodium hypochlorite to well sites as required.

Canterbury Subdivision – PWSID 6099085

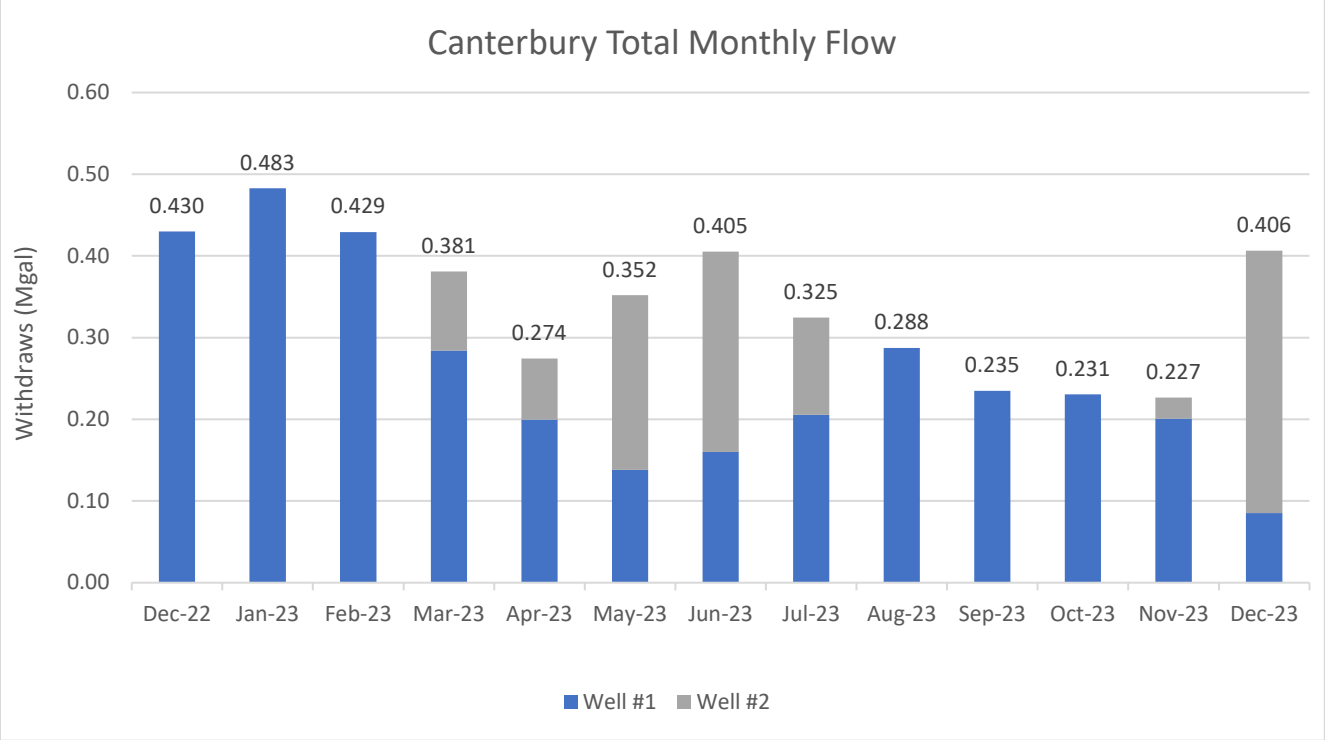
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
010	12466 Kent Road	12/16/2023	Absent
	Well 1 Discharge Line	12/20/2023	MPN < 1
	Well 2 Discharge Line	12/20/2023	MPN < 1

System Production:



Circle – PWSID 6099100

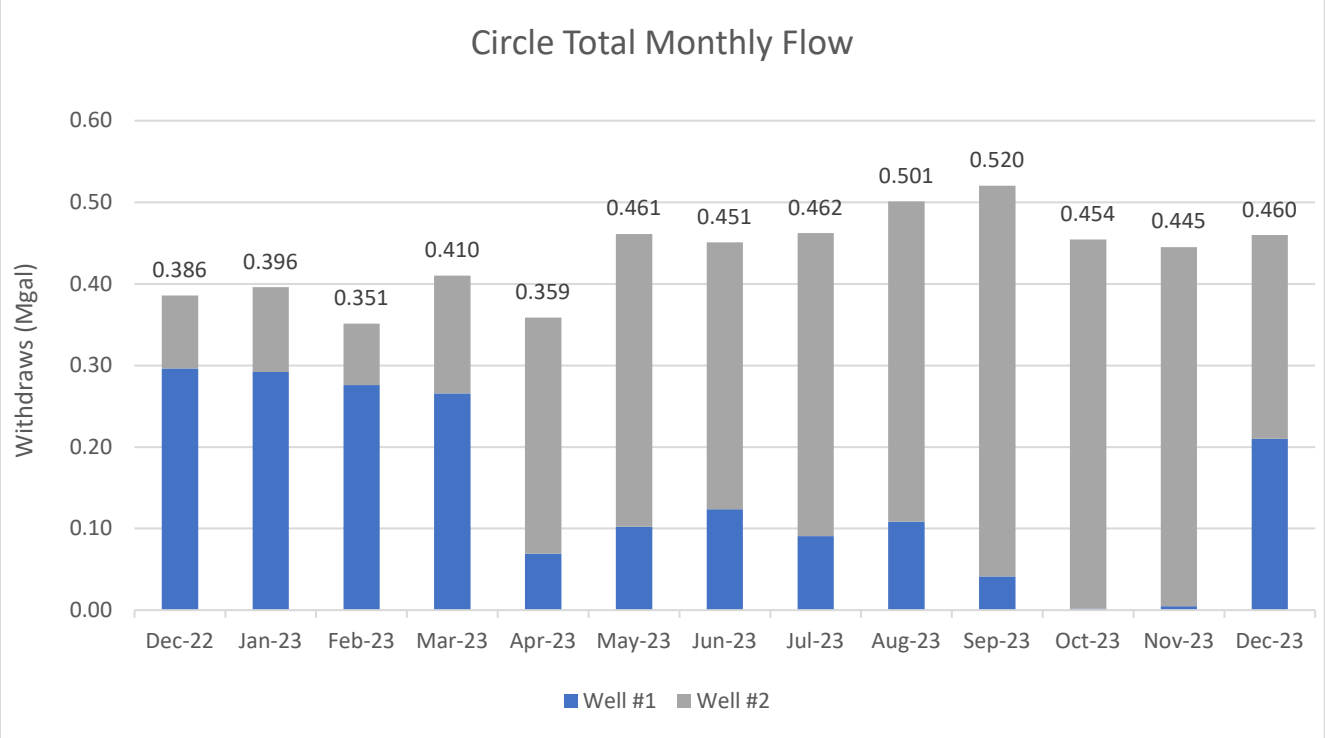
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
030	11053 Vernon Woods Dr.	12/16/2023	Absent
	Circle 1 Raw Tap	12/20/2023	MPN < 1
	Circle 2 Raw Tap	12/20/2023	MPN < 1

System Production:



KGC Courthouse – PWSID 6099050

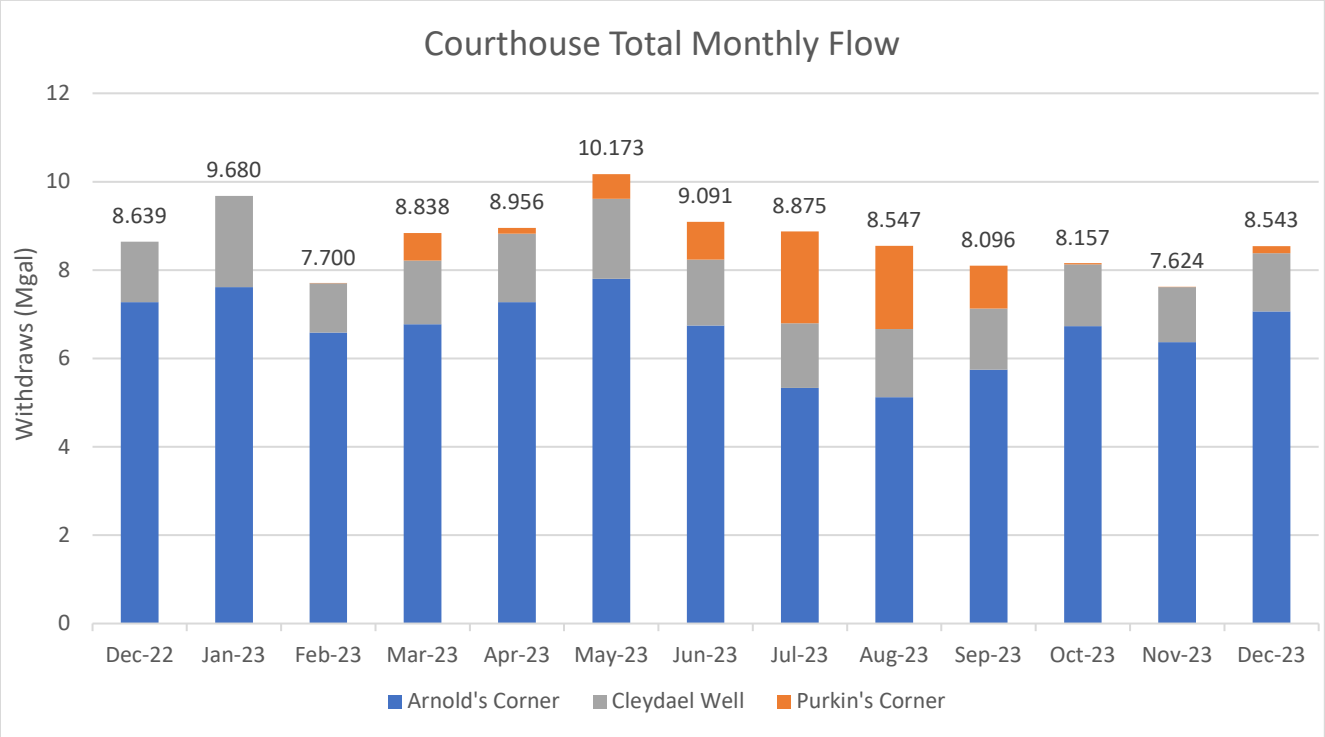
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
06	12156 Ward Road	12/16/2023	Absent
012	9333 Inaugural Dr.	12/16/2023	Absent
014	9290 Dahlgren Road	12/16/2023	Absent
	Arnolds Corner Well Raw Tap	12/20/2023	MPN < 1
	Purkins Corner Well Raw Tap	12/20/2023	MPN < 1
011	8352 Kennedy Drive	12/21/2023	Absent
015	9207 King's Highway	12/21/2023	Absent
	Cleydael Raw Tap	12/21/2023	MPN < 1

System Production:



Dahlgren – PWSID 6099295

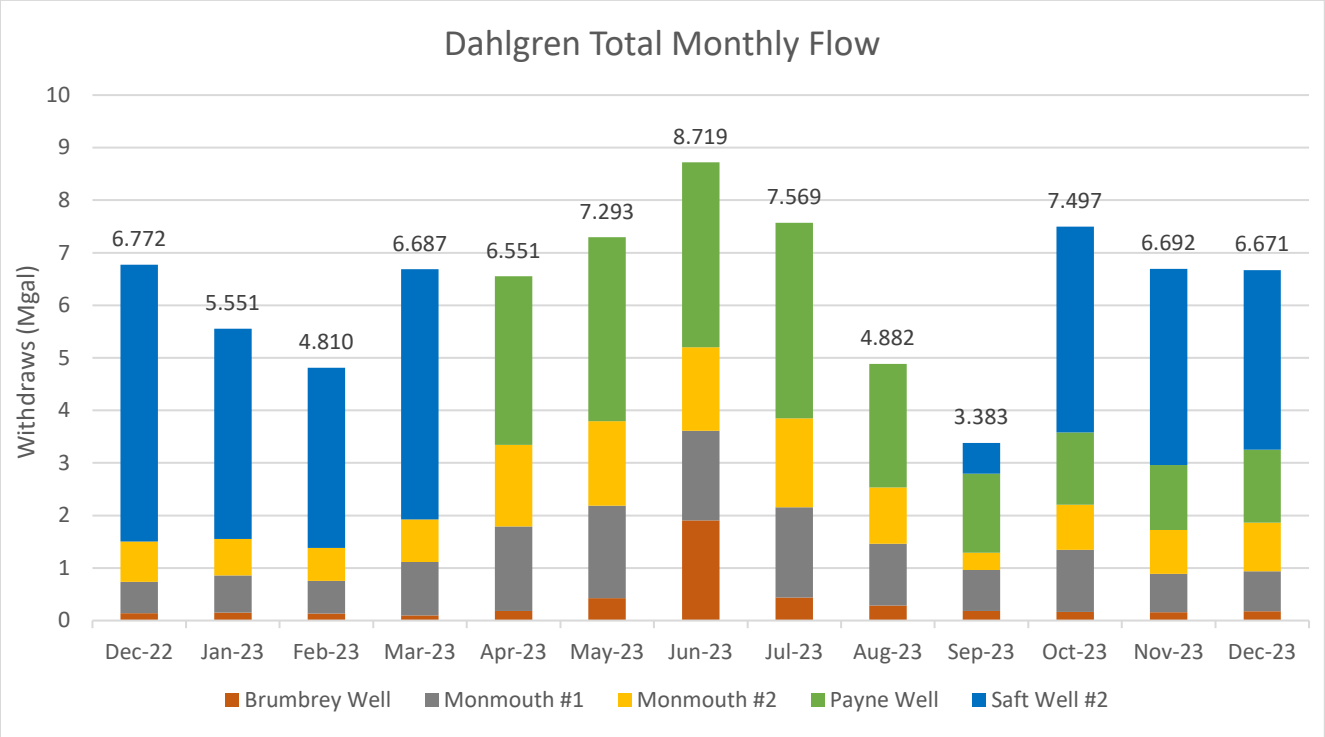
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
	Brumbrey Raw Tap	12/21/2023	MPN < 1
	Saft Well Raw Tap	12/21/2023	MPN < 1
	Monmouth 1 Well Raw Tap	12/21/2023	MPN < 1
	Monmouth 2A Well Raw Tap	12/21/2023	MPN < 1
	Payne Well Raw Tap	12/21/2023	MPN < 1
08	4483 James Madison Pkwy.	12/21/2023	Absent
02	5134 Mallard's Landing Dr.	12/16/2023	Absent
09	17014 Village Lane	12/16/2023	Absent

System Production:



Fairview Beach – PWSID 6099250

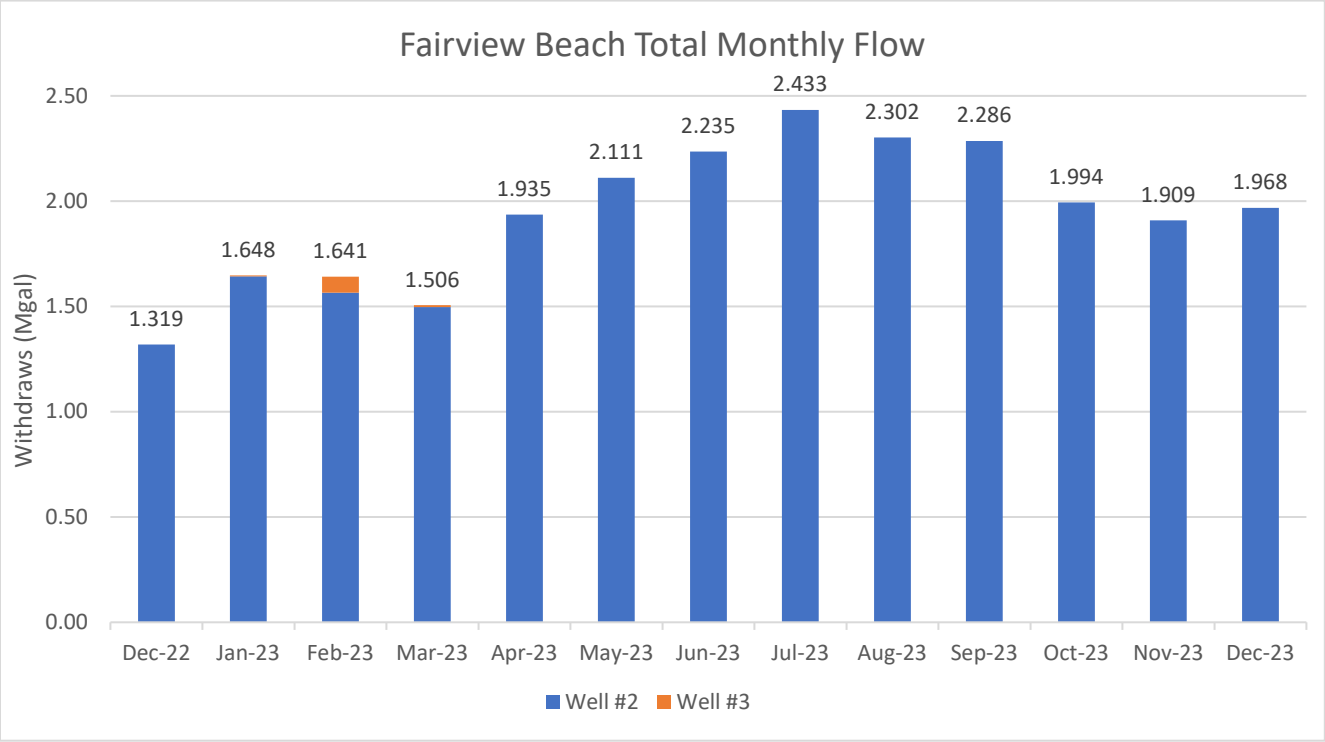
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
	Raw Tap Well 2A	12/20/2023	MPN < 1
020	6081 Sixth Street	12/21/2023	Absent

System Production:



Hopyard Farm – PWSID 6099283

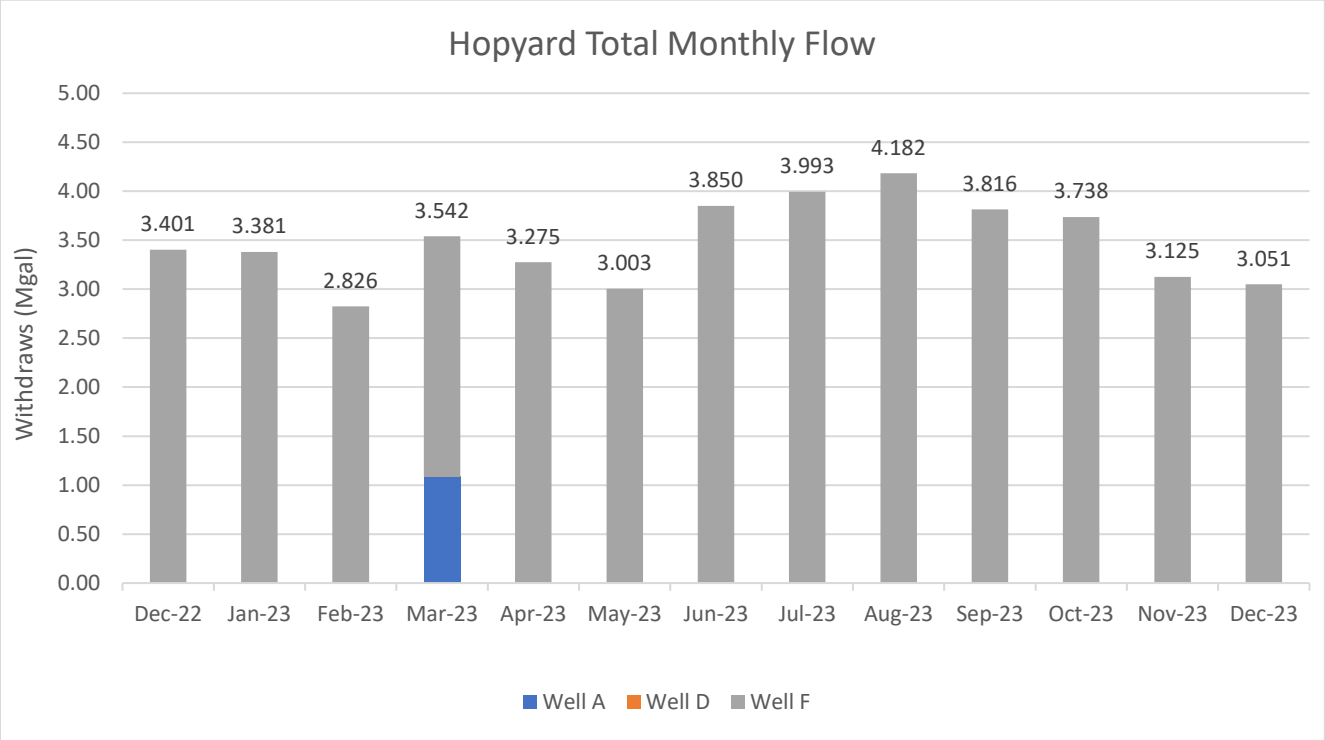
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
	Well F Raw Tap	12/20/2023	MPN < 1
	Well D Tap	12/20/2023	MPN < 1
	Well A Raw Tap	12/21/2023	MPN < 1
050	5217 Spinnaker Lane	12/21/2023	Absent
020	11660 Hopyard Dr.	12/22/2023	Absent

System Production:



KGC School Board Office – PWSID 6099296

Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
010	9100 St. Anthony's Road – Custodial Closet 1st floor	12/21/2023	Absent

System Production:

- Total well yield for December – 11,100 gallons

Ninde's Store – PWSID 6099300

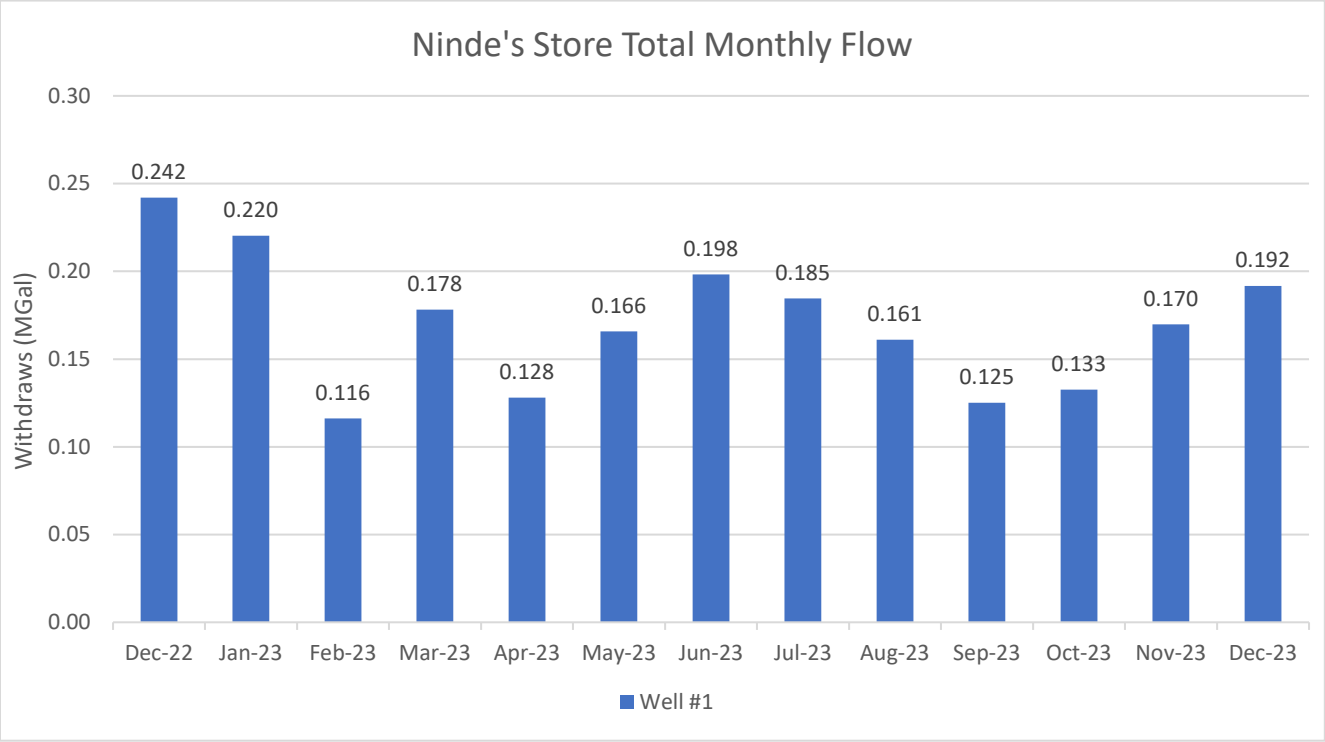
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
	Well Discharge Line	12/20/2023	MPN < 1
010	16195 Ridge Road	12/16/2023	Absent

System Production:



Oakland Park – PWSID 6099350

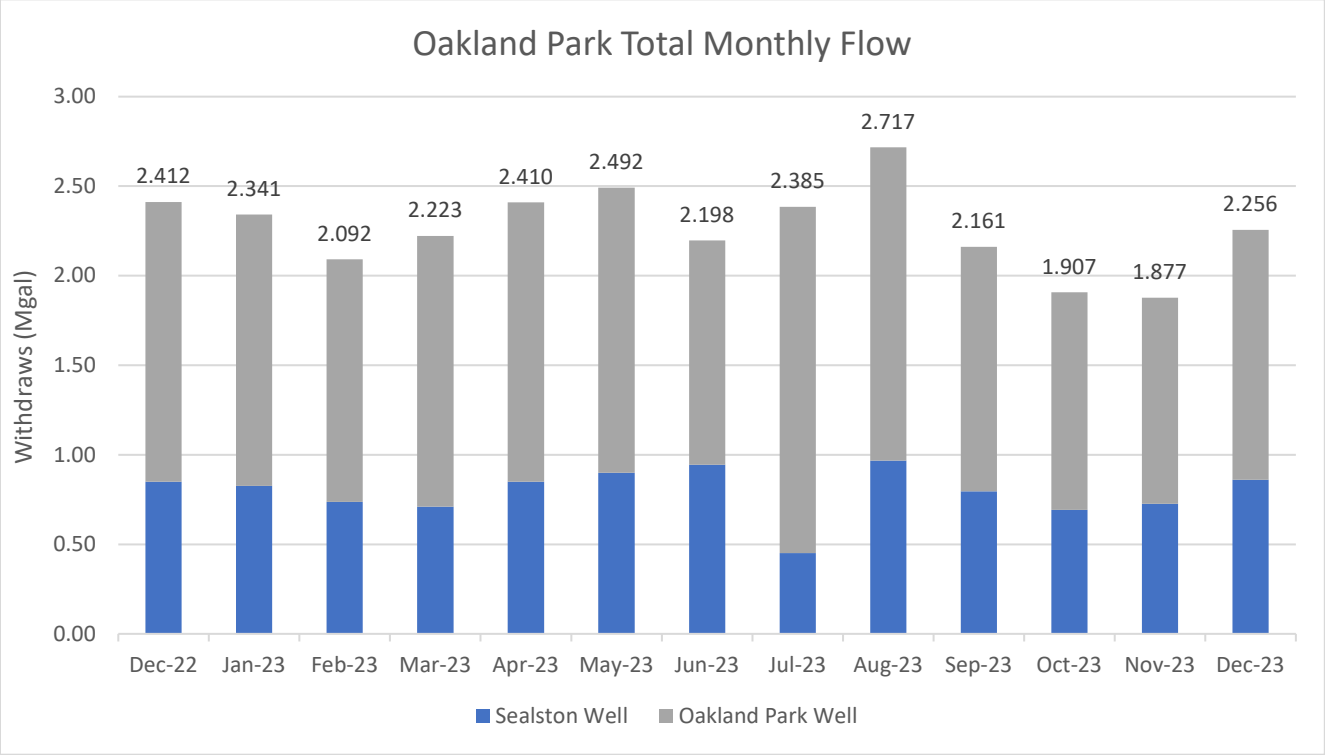
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
04	1139 French Court	12/21/2023	Absent
06	8895 Mullen Road	12/21/2023	Absent
	Well 2 Raw Tap	12/20/2023	MPN < 1
	Well 3 Raw Tap	12/20/2023	MPN < 1

System Production:



St. Paul's/Owens – PWSID 6099550

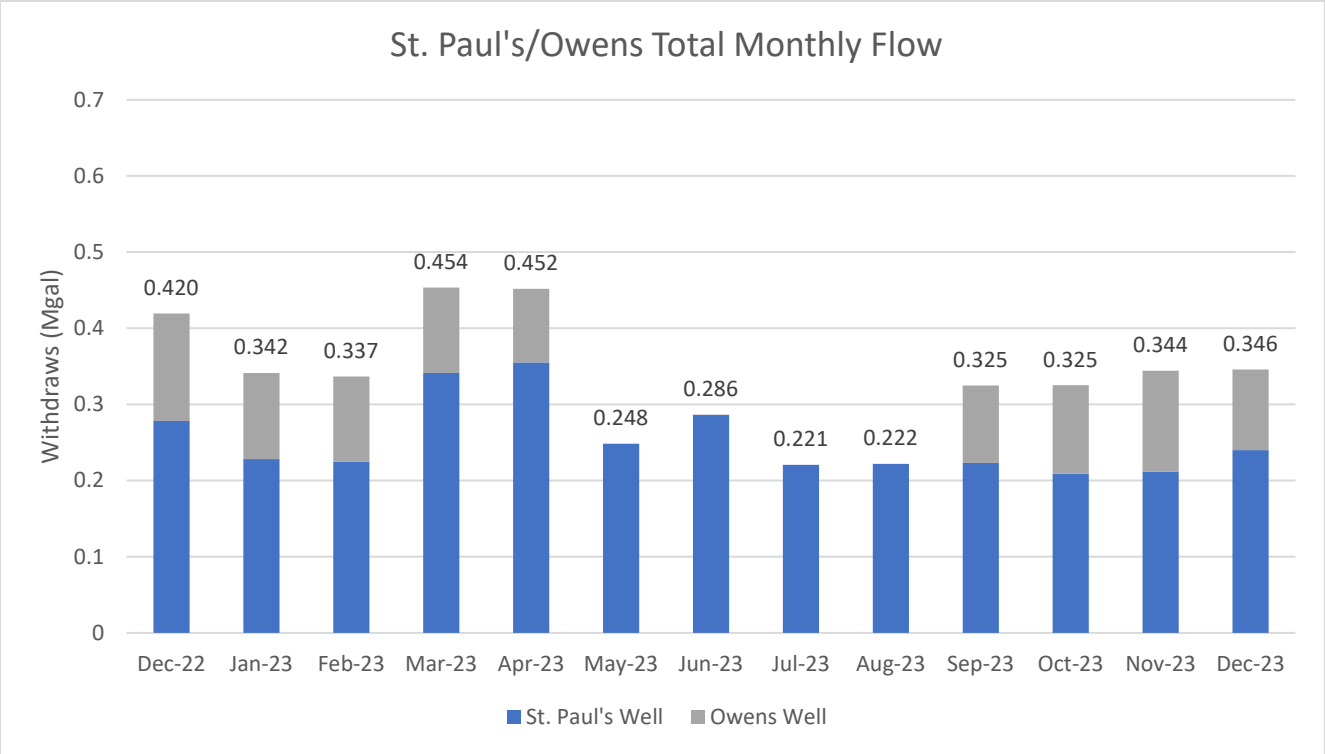
Water Quality:

The Water Treatment facility and distribution system maintained compliance with all required sampling. Routine bacteriological sample results are shown in the table below.

Bacteriological Analysis:

Location Code	Location Address	Date	Result
	St. Paul's Raw Tap	12/21/2023	MPN < 1
	Owens Raw Tap	12/21/2023	MPN < 1
020	5268 Thompson Hill Road	12/16/2023	Absent

System Production:



WASTEWATER

Items Affecting All WWTP's:

- Aluminum sulfate 50% has proven to be an inferior product to Coag 1850 due to its harsher characteristics.
- Soda ash dense has proven to be inferior to soda ash lite in both its effectiveness (upon being dosed) and constantly causing clogs.
- Aluminum sulfate's increased usage has also increased the soda ash usage to compensate for the acidic nature of aluminum sulfate. Plants that were not feeding soda ash or were feeding very little are now feeding soda ash and plants that were feeding it have increased soda ash usage.
- Higher flows have impacted every wastewater plant to some degree, some more than others.

Dahlgren WWTP

Effluent Quality:

The wastewater treatment facility operated well and maintained compliance with all permit-required sampling.

Wastewater Treatment:

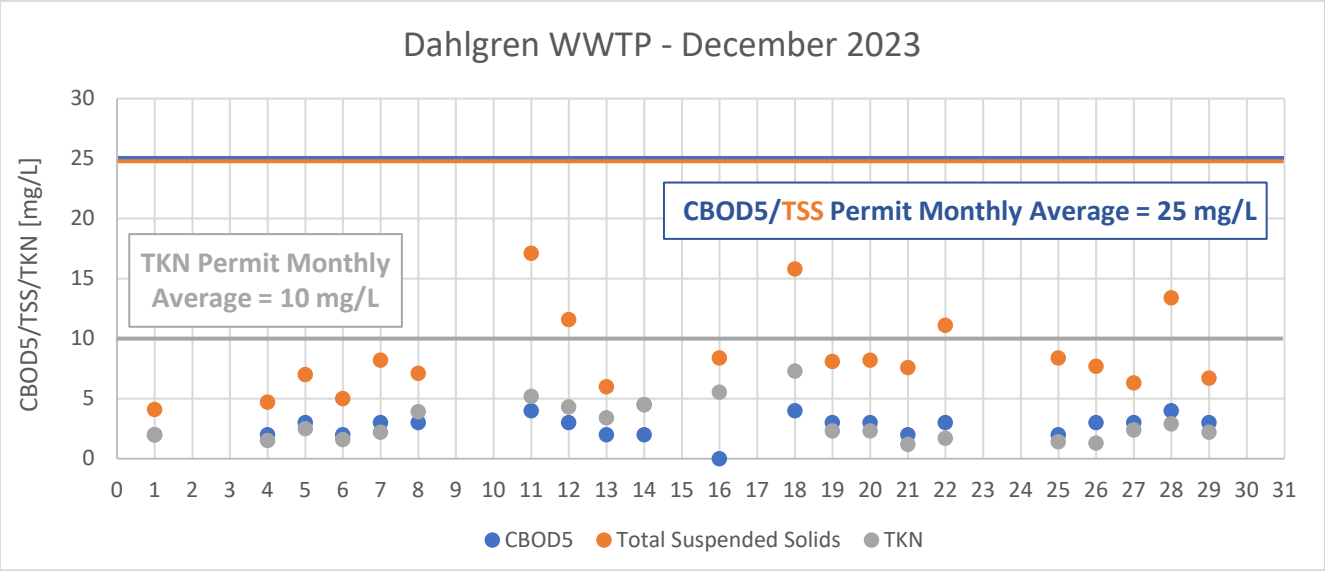
The Dahlgren WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.324 MGD for a total monthly discharge of 10.055 MG.

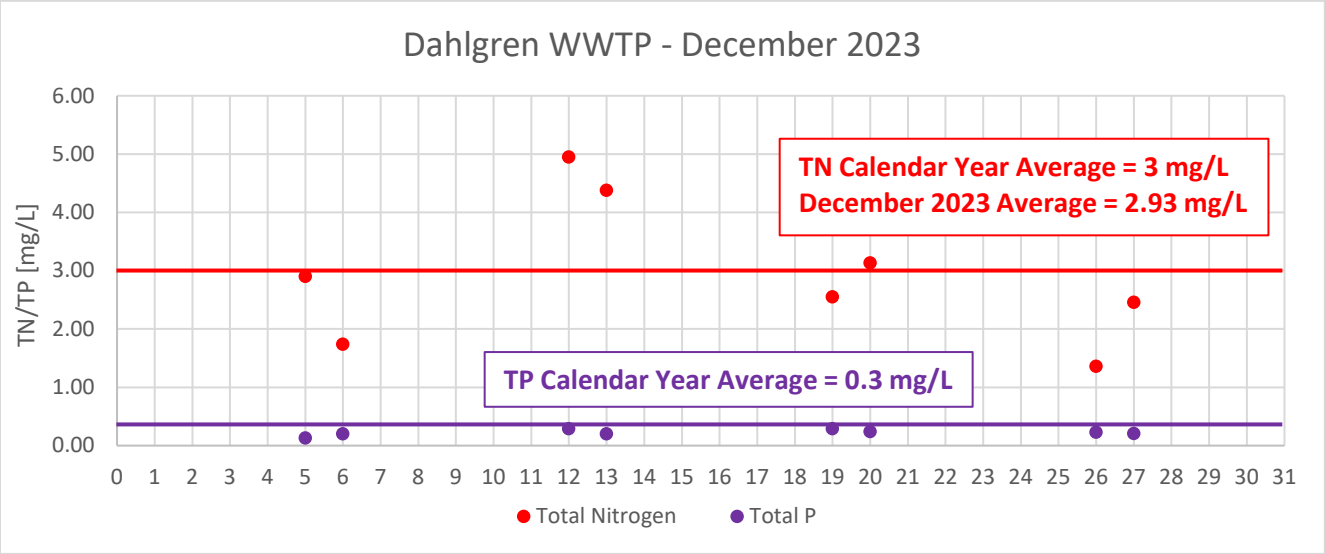
Operational Notes:

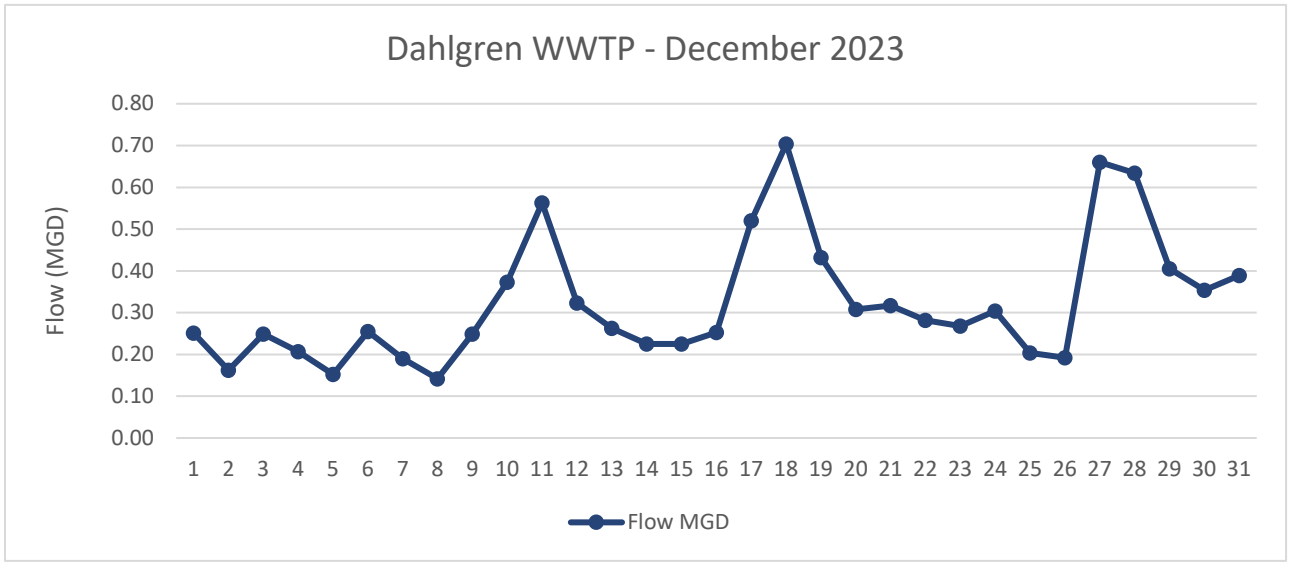
- Flows doubled to the facility for several weeks. This seems as though it is contributed by a large influx of people to the area.
- Rotor 2 coupler broke and left the rotor inoperable. IES notified King George Maintenance and it was repaired while operational changes were made to allow for the repair.
- Booster pump on the reuse water system has been replaced and the other booster pump has been sent off for repair. This has positively affected pressing operations.

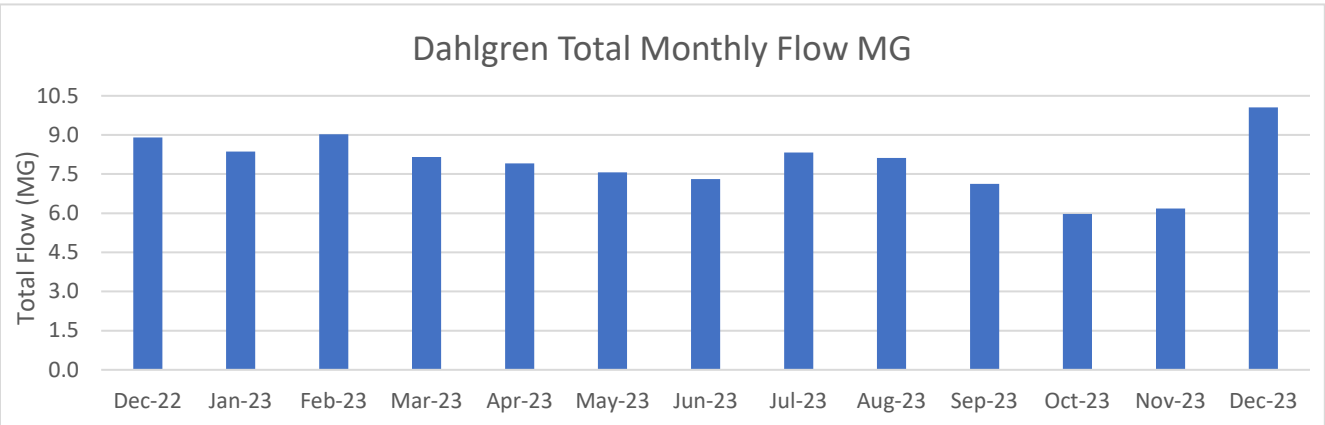
Data Trending:

The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.




Dahlgren WWTP - December 2023
TN/TP [mg/L]
6.00
5.00
4.00
3.00
2.00
1.00
0.00
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
TN Calendar Year Average = 3 mg/L
December 2023 Average = 2.93 mg/L
TP Calendar Year Average = 0.3 mg/L
Total Nitrogen
Total P


Dahlgren WWTP - December 2023
Flow (MGD)
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Flow MGD


Dahlgren Total Monthly Flow MG
Total Flow (MG)
10.5
9.0
7.5
6.0
4.5
3.0
1.5
0.0
Dec-22
Jan-23
Feb-23
Mar-23
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23

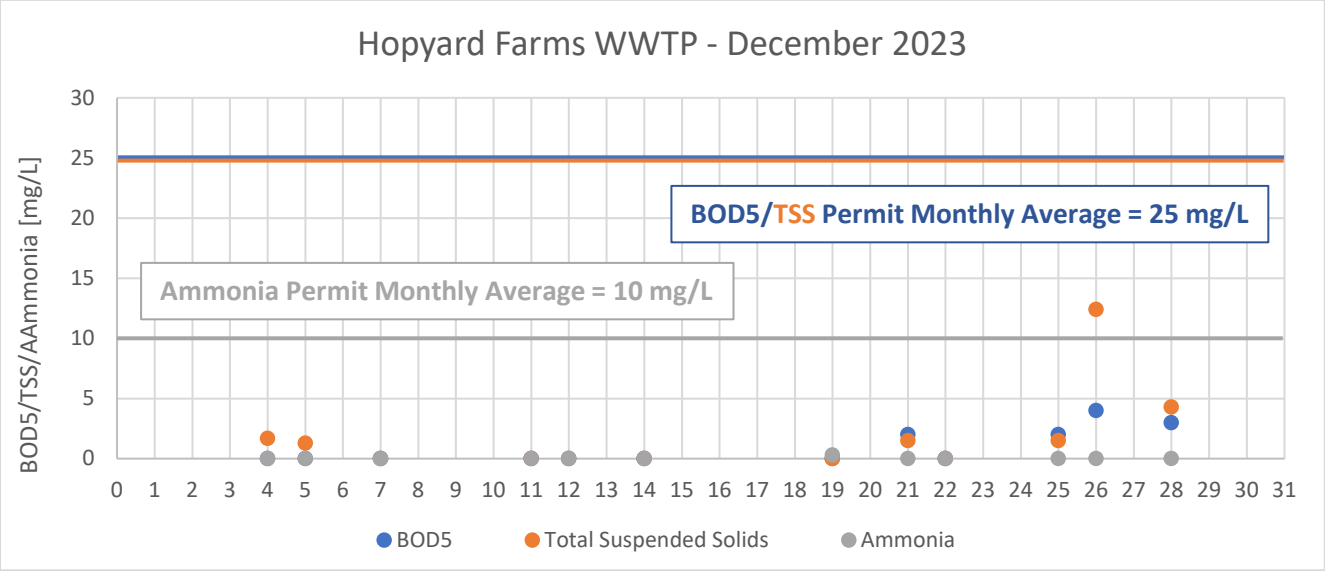
Hopyard Farms WWTP

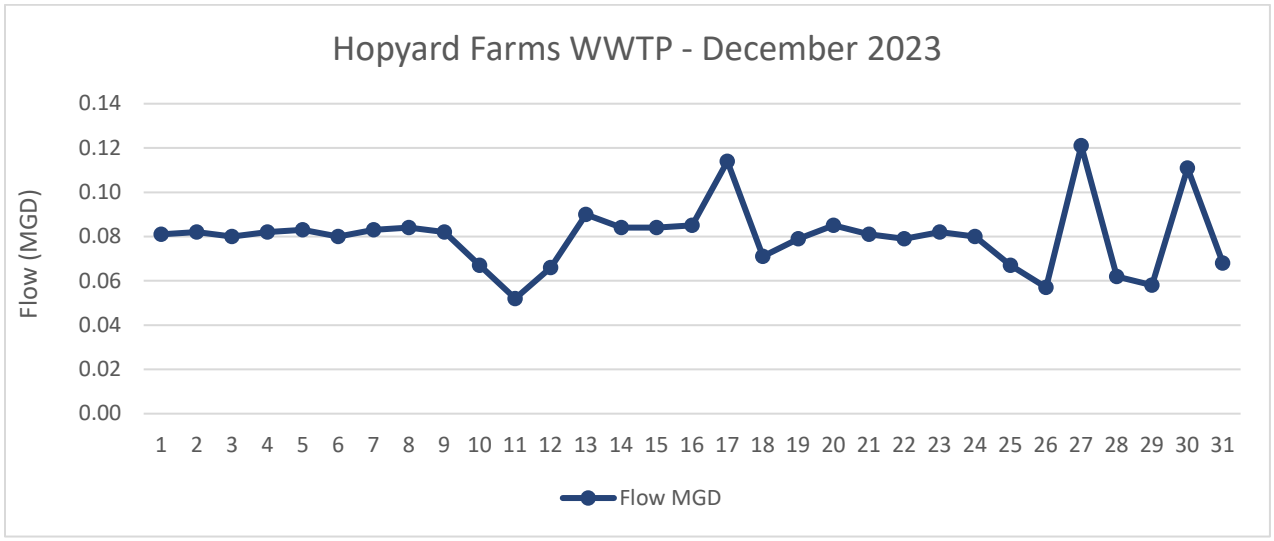
Effluent Quality:
The wastewater treatment facility operated well and maintained compliance with all permit-required sampling.

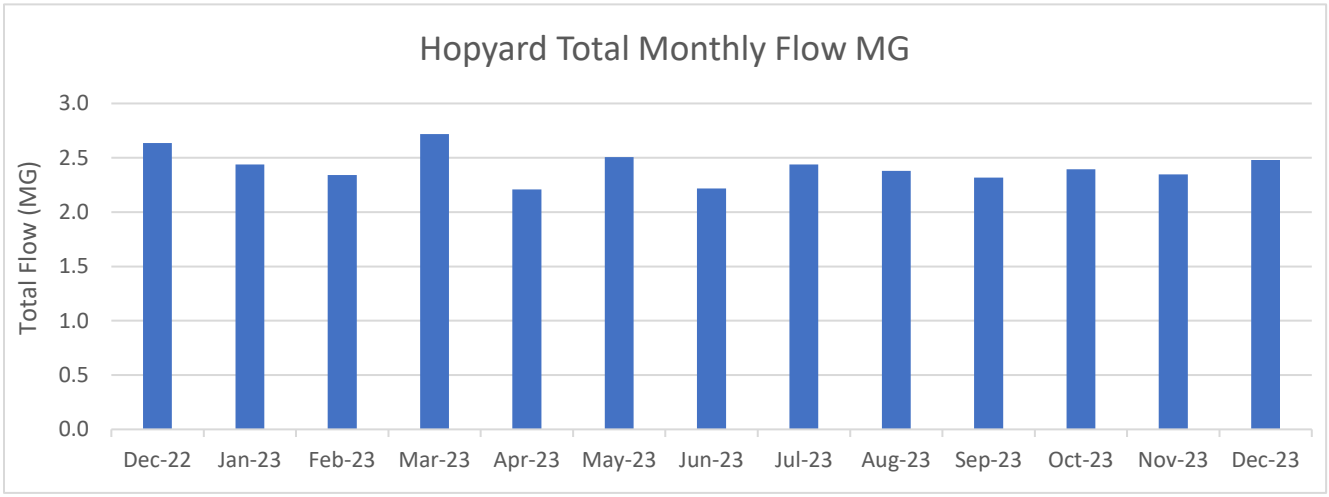
Wastewater Treatment:
The Hopyard Farms WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.080 MGD for a total monthly discharge of 2.480.

Operational Notes:
- We are seeing higher than normal flows, that is now requiring double shifts for IES staff to keep ahead of flow. There has been a lift station identified and King George maintenance has investigated this month.
- IES staff have staffed according to the flow needs to prevent overflowing of any tanks.
- Alum feed line clogged up and King George Maintenance repaired/replaced the lines.
- Mixer was replaced in SBR 1 and worked momentarily; it seems some hardware is still needed.
- Program issues need to be ironed out by Aqua Aerobics to get some automatic features back.

Data Trending:
The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.




Hopyard Farms WWTP - December 2023
Flow (MGD)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Flow MGD


Hopyard Total Monthly Flow MG
Total Flow (MG)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Dec-22
Jan-23
Feb-23
Mar-23
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23

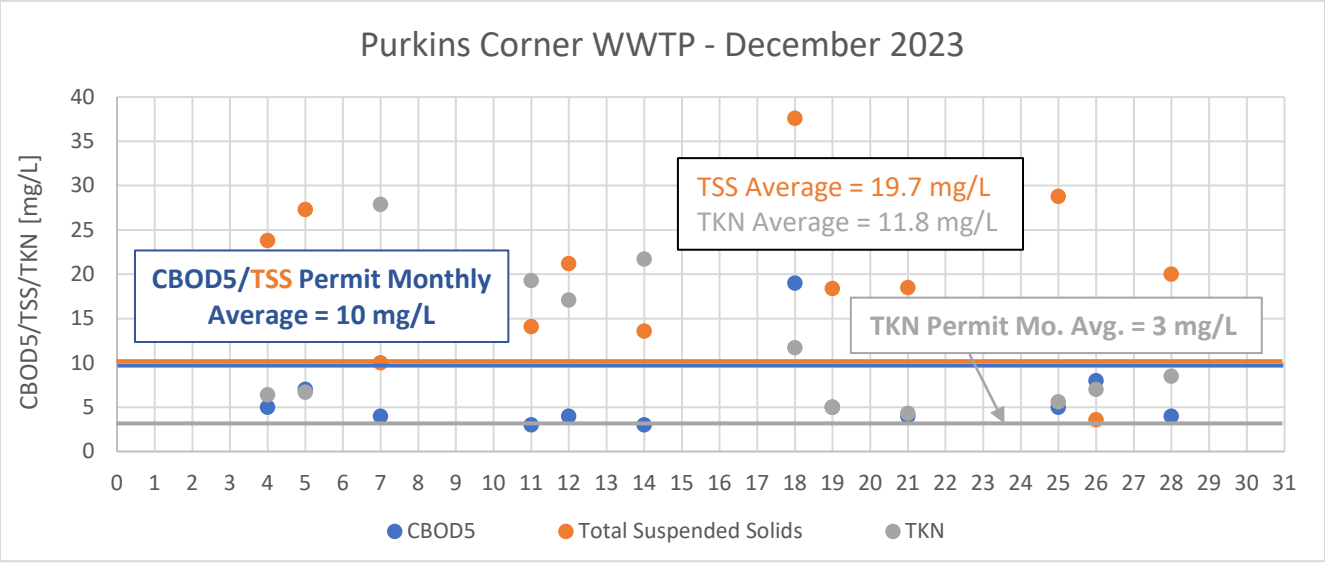
Purkins Corner WWTP

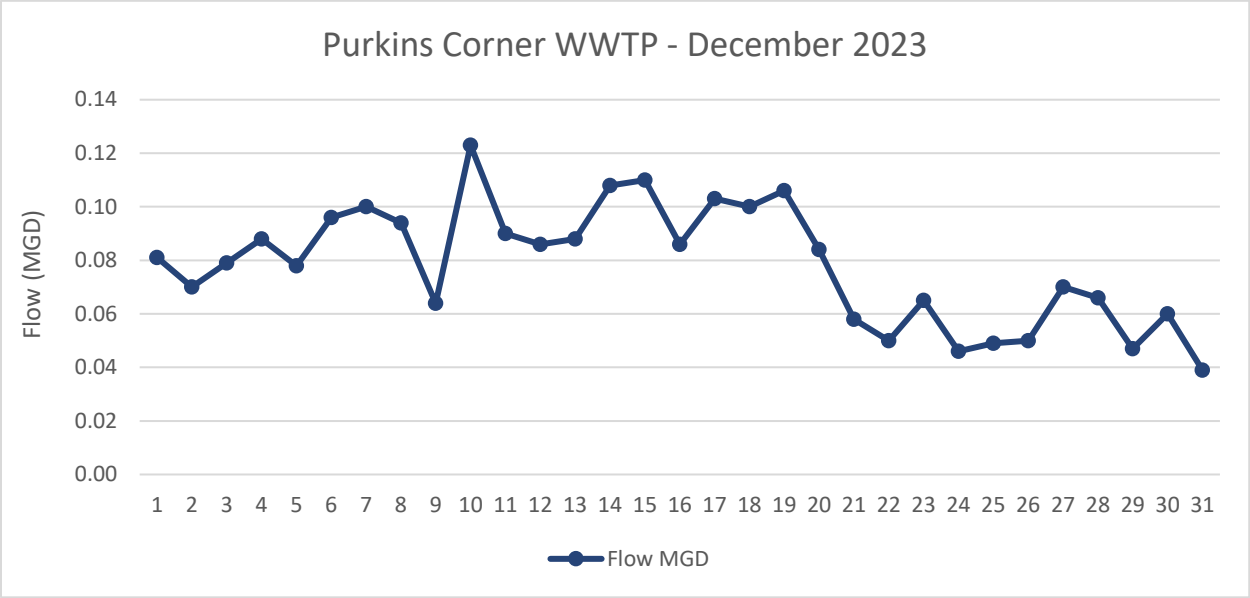
Effluent Quality:
The wastewater treatment facility operated well and maintained compliance with all permit-required sampling.

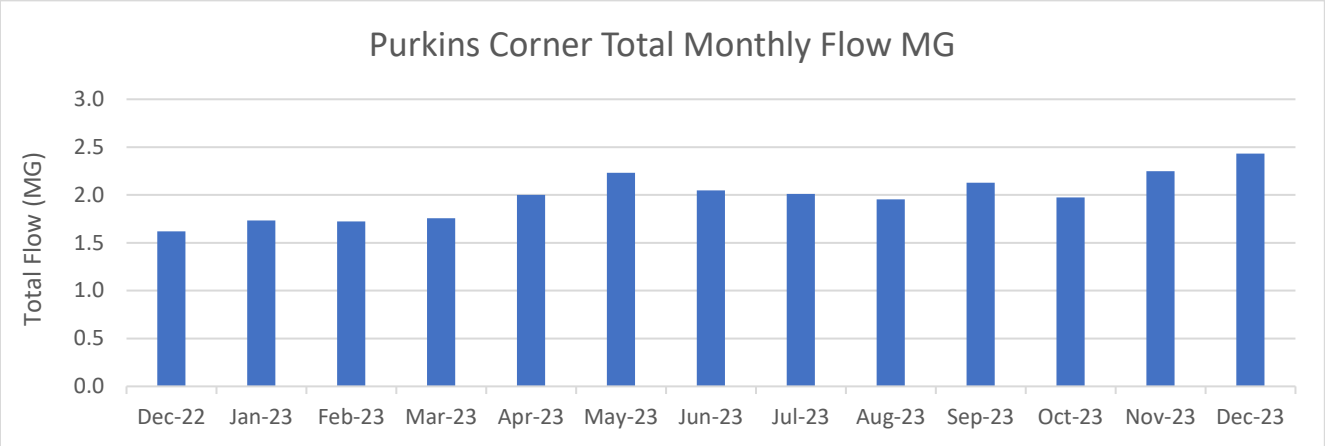
Wastewater Treatment:
The Purkins Corner WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.079 MGD for a total monthly discharge of 2.434.

Operational Notes:
- Flows doubled at the facility which seems to be in relation to an influx of people to the area for the holidays. This also caused the plant to receive flows that it has not seen since last year.
- The level transducer was replaced in the surge tank to allow for accurate real time monitoring of the water level.
- Had to seed B plant multiple times due to incoming wastewater characteristics and fluctuations.

Data Trending:
The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.




Purkins Corner WWTP - December 2023
Flow (MGD)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Flow MGD


Purkins Corner Total Monthly Flow MG
Total Flow (MG)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Dec-22 Jan-23 Feb-23 Mar-23 Apr-23 May-23 Jun-23 Jul-23 Aug-23 Sep-23 Oct-23 Nov-23 Dec-23

Oakland Park WWTP

Effluent Quality:

The wastewater treatment facility operated well and maintained compliance with all permit-required sampling.

Wastewater Treatment:

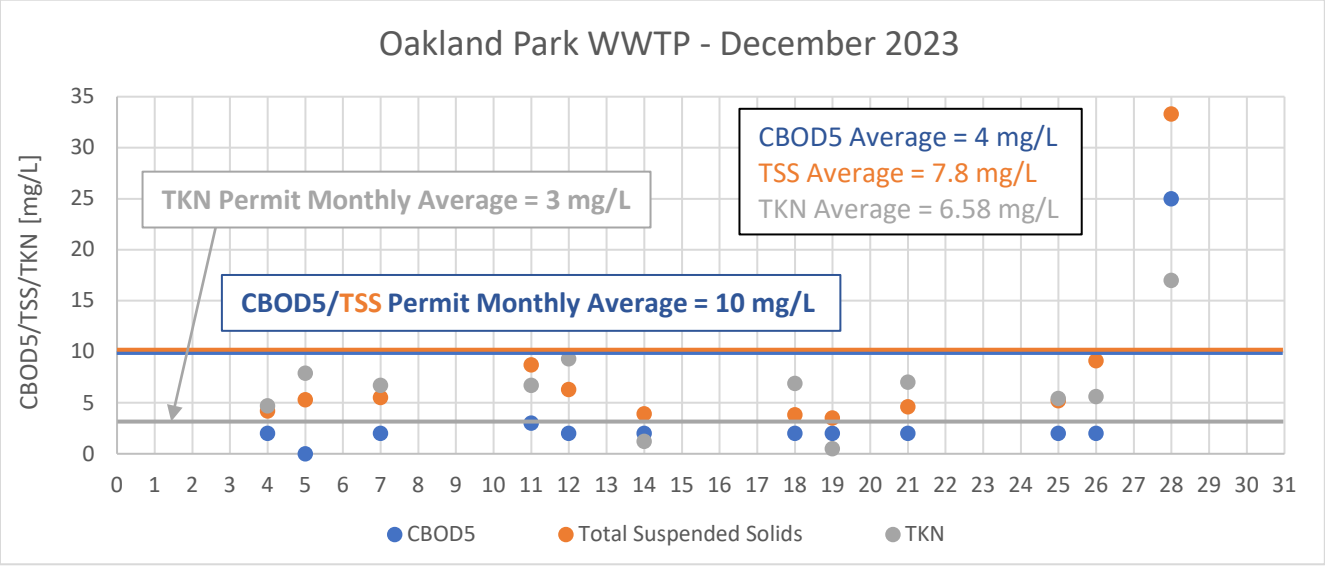
The Oakland Park WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.053 MGD for a total monthly discharge of 1.644 MG.

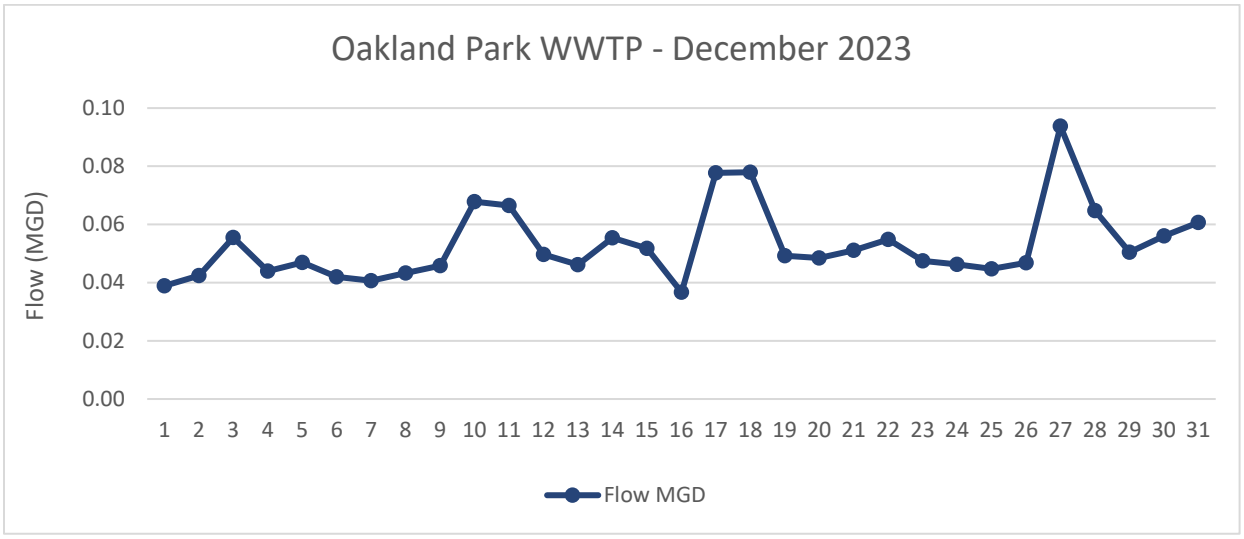
Operational Notes:

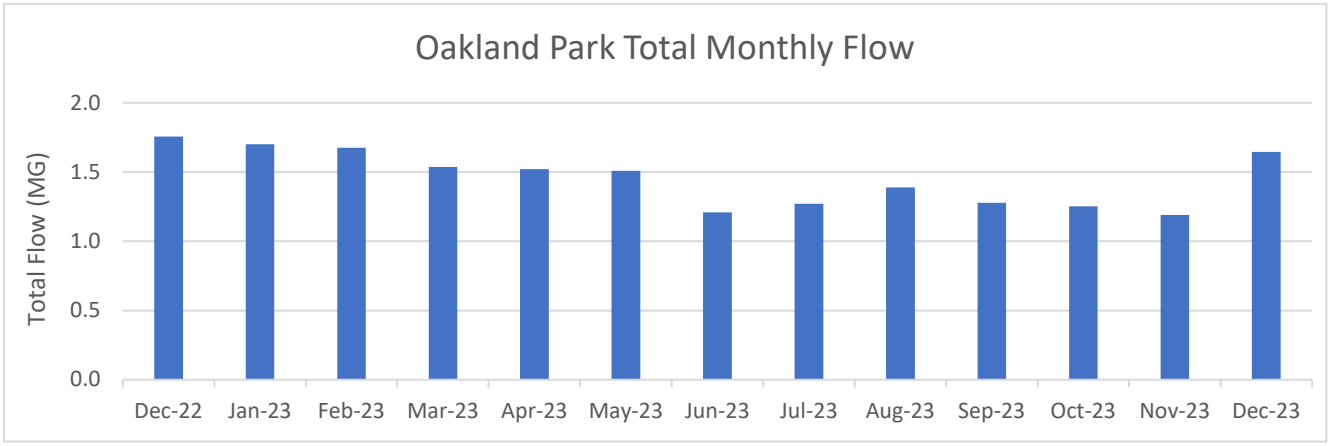
- Mixer stopped working due to a severed cord last month. This month it was reinstalled and seems to be in good working condition.
- B plant EQ pump impeller was replaced, and the operation of that pump is now consistent.
- Both A and B plant had to be reseeded due to mechanical changes (that have been improved upon) throughout the month.

Data Trending:

The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.




Oakland Park WWTP - December 2023
Flow (MGD)
0.10
0.08
0.06
0.04
0.02
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Flow MGD


Oakland Park Total Monthly Flow
Total Flow (MG)
2.0
1.5
1.0
0.5
0.0
Dec-22
Jan-23
Feb-23
Mar-23
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23

Fairview Beach WWTP

Effluent Quality:

The wastewater treatment facility operated well and maintained compliance with all permit-required sampling.

Wastewater Treatment:

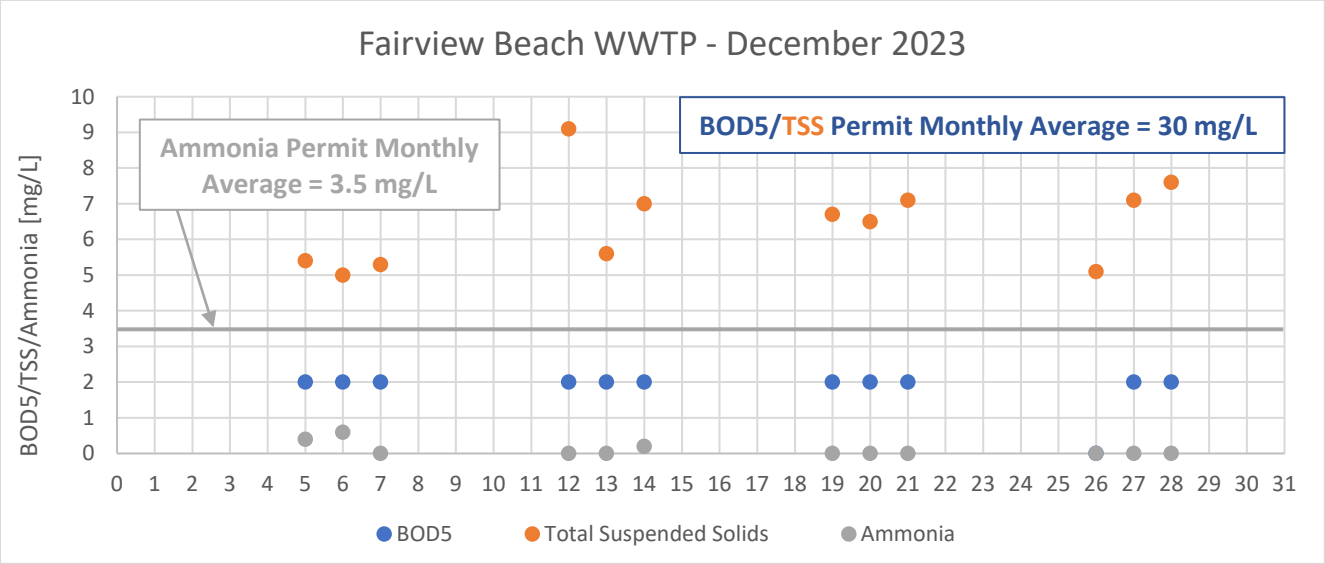
The Fairview Beach WWTP met the sewer service area's sanitation demand with an average daily discharge of 0.107 MGD for a total monthly discharge of 2.252 MG.

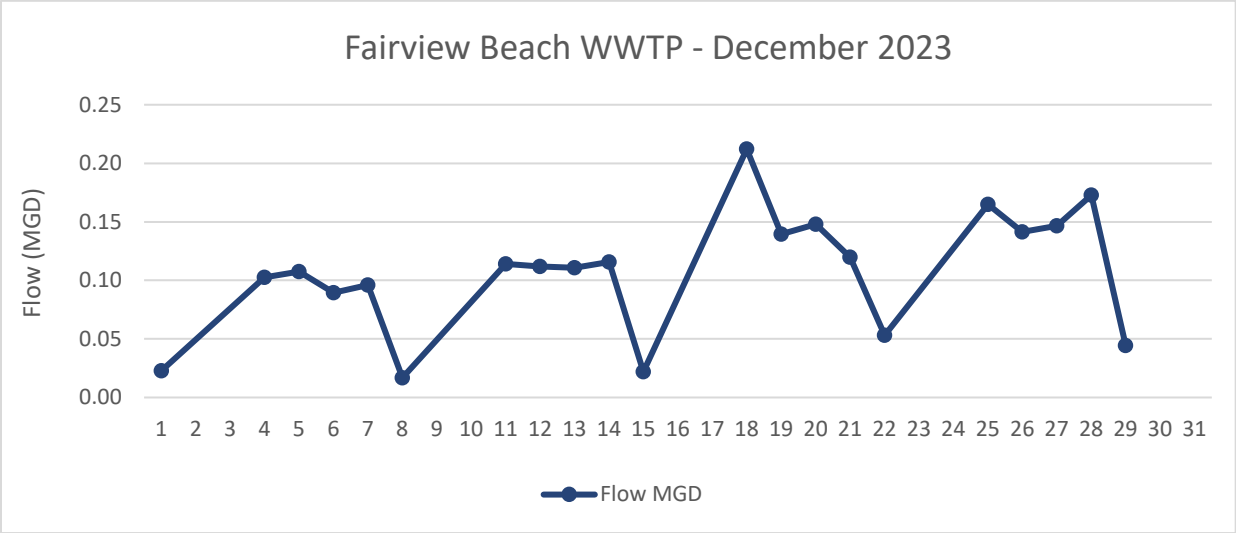
Operational Notes:

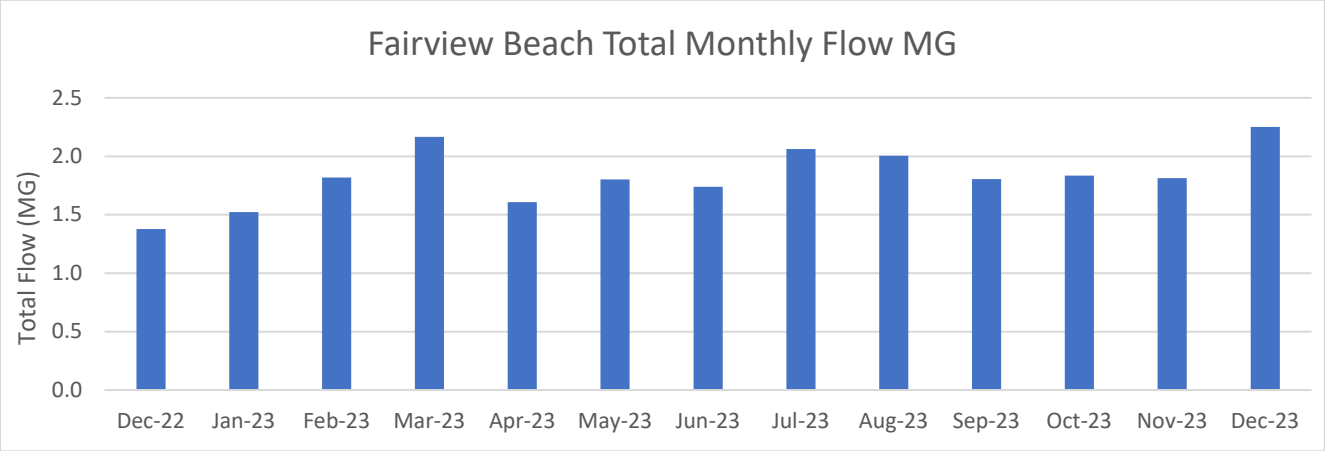
- During some rain events, we have experienced higher than normal Inflow and Infiltration to the plant that has resulted in a change in operations to contain the flows. IES staff have noted that pieces of sewer pipe have been found at the headworks and is a cause of concern for the collection system.
- High level float tripped that John Eisinbeis responded to and notified the project manager; it was found to be ok until IES staff started their shift.
- Alum line clogged up due to the new chemical composition.

Data Trending:

The following charts depict a graphical analysis of effluent quality monitoring and treatment plant daily and total monthly flows.




Fairview Beach WWTP - December 2023
Flow (MGD)
0.25
0.20
0.15
0.10
0.05
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Flow MGD


Fairview Beach Total Monthly Flow MG
Total Flow (MG)
2.5
2.0
1.5
1.0
0.5
0.0
Dec-22
Jan-23
Feb-23
Mar-23
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23