

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



December 2022

Executive Summary

	Green	Yellow	Red
Headworks			
Oxidation Ditch			
Filters			
Generator			
Weather			
Solids Handling			
NPDES Parameters			
Pump Stations			
Personnel			
Safety			
Compliance			

(New information in bold font)

- Headworks- **Inframark continues to utilize the dewatering roll off container to capture screening while the Lipactor is offline.**
- Oxidation Ditch-Cracks were identified in the concrete tank walls. BPW is working with their consultants to determine the best path to resolve. **BPW is soliciting quotes to make repair. Inframark developing procedures to pump down and bypass Tank 2.**
- Filters- De-ragging UF Train 4 was completed during the week of 12-27-2021. De-ragging UF Train 1 was completed during the week of 5-16-2022. UF Train 2 De-ragging completed week of 6-27-2022. UF Train 3 De-ragging completed 8-24-2022. Citric Acid and Sodium Hypochlorite Recovery Cleans were completed for all 4 trains during October and the first week of November 2022.
- A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. Pump and valve replacement proposals are being evaluated for PS3 by BPW Staff. Inframark continues to visit PS3 daily to top off oil to Pump 2 and ensure it has maintained prime. Approval for a proposal to replace wet well piping in PS2 is required. Frequent control issues have occurred at PS17 over the past two years. An unusual configuration exists to supply single phase power to the station. Plans to rehabilitate the station should be considered in the immediate future. PS16 is currently being serviced by one pump. The second pump had been sent to Hills for repair evaluation. The cost of the repair the pumps exceeds its value. A second pump is being purchased by BPW and will be installed as soon as it is received. **New pump installed the week of 11-28-2022.** Bypass connections and valves have been installed as a backup while the pump station is serviced by one pump. Inframark has solicited proposals for a spare pump at PS13. The station utilizes a single pump and there is no spare. A PO was issued to STH for a new Grundfos Pump for PS13. **Pump received 11-17-2022.**
- Personnel- Jeffrey Kerin, DE Level IV Wastewater Treatment Operator started as Project Manager on 12-30-2022. David Weed and Michael Wolgemuth continue to be co-DRCs while Jeff is onboarding. The Electrician that was slated for the open position backed

out but we are in the process of interviewing several qualified candidates and expect to make an offer during the week of 1-16-2023.

Critical Issues

- Covid- Inframark is following CDC recommendations to ensure uninterrupted service to the BPW and the Lewes community. **Community levels in Sussex County remain high requiring our team to wear masks when social distancing is not possible.**
- Condition of headworks screening equipment is in critical need of repair or replacement to decrease excessive ragging of UF membranes.
- Spare pumps are not in stock for PS11, PS15, PS16, PS17, PS17B, PS18 and PS32. Inframark does not have maintenance records for existing pumps. Based on recommendations made in Severn Trent’s 2016 Annual Report, most pumps were in need of replacement within five years. We have found no evidence that these pumps had been replaced during the past five years. Many pump station control panels are in need of repair or replacement including PS1, PS2, PS5, PS6, PS7, PS9, PS10, PS11, PS12, P13, PS14, PS15, PS16, PS17, PS18, PS33, PS74 and PS83.

Projects

Project	Status	Priority Level	Approval	Est. Complete Date
Headworks Replacement	In design	High	BPW Project	
Repair Cracks in Oxidation Ditch	BPW soliciting quotes to make repair. Inframark developing procedures to pump down and bypass Tank 2	High	PW Project	QTR 2 2023
Replace Generator and ATS at PS4	GMB and Keystone are evaluating size based on future needs. Inframark soliciting quotes for temporary transfer switch.	High	BPW Project	
Rehab Pumps at PS3	Proposals to replace pumps under consideration. Inframark requested updated quote from Hills	High	BPW Project	QTR 1 2023
Replace wet-well piping PS2	Proposal from Sprig submitted to BPW, Inframark Soliciting Additional Quotes	High	Needed	QTR1 2023
Rehab PS17 Controls	Planning	High	Needed	
Electric Manhole Sump Pump power and control replacement	Soliciting Quotes	Medium	Needed	QTR1 2023
Megger Power Cables	Soliciting Quotes	Predictive	Needed	QTR1 2023

Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for December 2022. No violations will be reported for December 2022. The December DMR will be forwarded upon Completion.

- The average daily influent flow for December was 0.810 MGD with a maximum daily flow of 1.203 MGD. Precipitation totaled 4.45 inches for December with a maximum daily total of 2.0 inches.

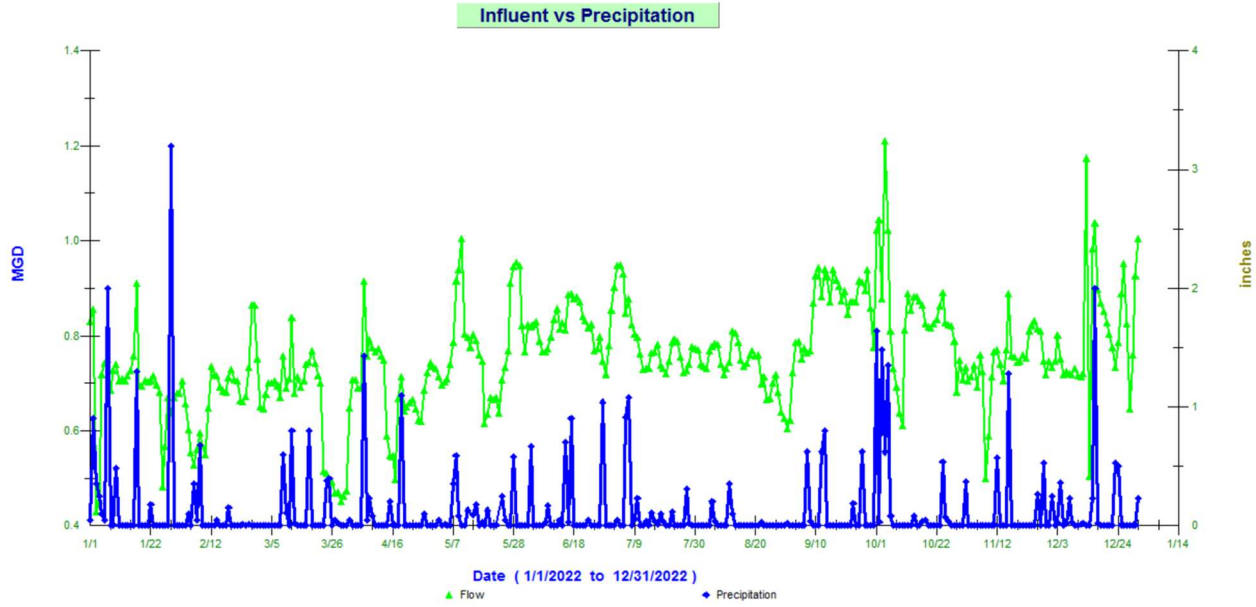
	Max	Sum			
Precipitation (inches)	2.00	4.45			
Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.810	0.607	1.203	
BOD (mg/L)		174	174	174	
TSS (mg/L)		150	150	150	
Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.821	0.639	1.160	N
Dissolved Oxygen (mg/L)		6.21	4.70	7.56	N
pH (SU)	Min 6/ Max 9	7.08	6.86	7.27	N
Enterococcus (col/100ml)	Avg 10/ Max 104	<1	<1.0	1.0	N
BOD (mg/L)	Avg 15/ Max 23	<2.5	<2.4	2.7	N
BOD Load (lbs)	Avg 188/ Max 288	<16	<15	18	N
BOD Removal (%)		98.6	98.6	98.6	
TSS (mg/L)	Avg 15/ Max 23	<0.6	<0.5	0.8	N
TSS Load (lbs)	Avg 188/ Max 288	<4	3	5	N
TSS Removal (%)		100	100	100	
Total Nitrogen (mg/L)	Avg 8	4.81	4.81	4.81	N
Total Nitrogen Load (lbs)	Avg 100	25.61	25.61	25.61	N
Total Phosphorous (mg/L)	Avg 2	0.05	0.05	0.05	N
Total Phosphorous Load (lbs)	Avg 25	0.31	0.31	0.31	N
Process		Average	Min	Max	
Bio #1 MLSS (mg/L)		11,167	10,900	11,500	
Bio #2 MLSS (mg/L)		12,600	11,400	13,200	
Train 1 MLSS (mg/L)		11,800	10,600	12,800	
Train 2 MLSS (mg/L)		10,533	6,800	12,700	
Train 3 MLSS (mg/L)		13,633	12,300	15,400	
Train 4 MLSS (mg/L)		7,933	3,700	12,400	
TSS Digester 1 (mg/L)		17,767	17,000	18,300	
TSS Digester 2 (mg/L)		18,633	18,200	19,000	
		Average	Max	Sum	
Sludge Wasted (gallons)		11,145	15,000	345,500	

Sludge Operations and Disposal

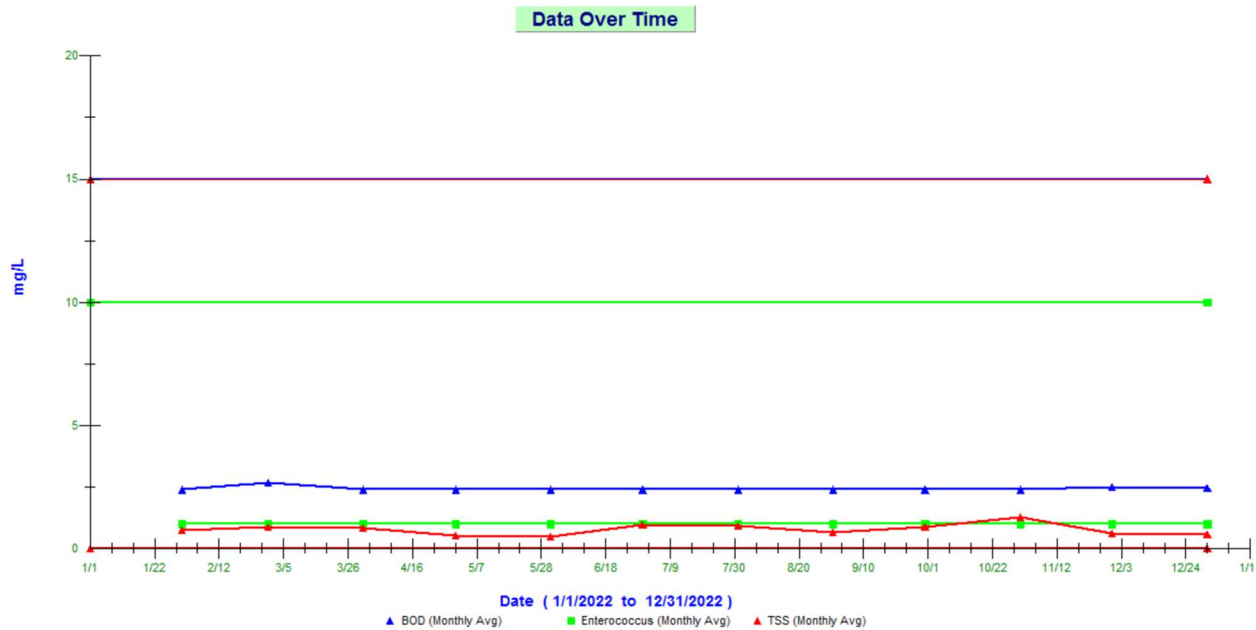
Liquid Hauled	228,000 Gallons	DELCORA
Cake Hauled	24.5 Wet Tons	Sussex County
Dewatering Container	13,500 Gallons	DELCORA

Trends

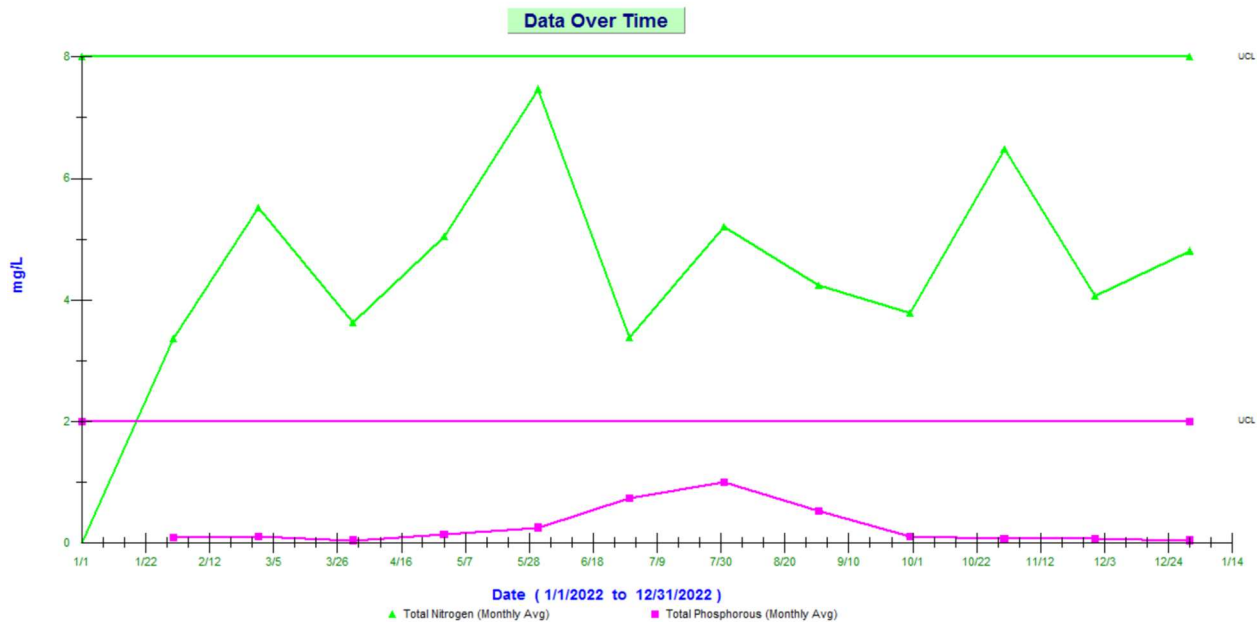
Influent vs Precipitation Trend Previous 12 Months



Effluent Biological Contaminants Trend Previous 12 Months



Effluent Nutrient Trends Previous 12 Months



Maintenance, Repair and Activities

12-01-2022- PS16- Inframark installed the new replacement Pump 1. KZ Mechanical hooked up the pump and checked rotation.

12-01-2022- PS16- Inframark replaced lamp in light fixture.

12-07-2022- PS74- Inframark replaced control panel handles and repaired gate latch.

12-07-2022- PS83- Inframark repaired control panel doors.

12-07-2022- PS1- Inframark repaired cedar panel doors on outside control panel.

12-07-2022- PS5- Inframark repaired cedar panel doors on outside control panel.

12-08-2022- PS17- Inframark repaired control panel door.

12-12-2022- PS16- KZ Mechanical onsite to troubleshoot Pump 1 fail to run. Master Electrician was unable to repair. KZ Mechanical forwarded a proposal to replace pump controls within existing panel.

12-13-2022- WWTP- Horney Industrial Electronics was onsite to calibrate plant flow meters including Influent, EQ and Effluent.

12-14-2022- WWTP- Fidelity Power Systems was onsite to troubleshoot a generator fail to run alarm. The Tech replaced a coolant hose and topped off the coolant.

12-21-2022- PS9- Received spare rebuilt pump from Hill's Electric Motor.

12-21-2022- WWTP- Fidelity Power Systems was out to complete annual service. A return visit was required to replace generator batteries.

12-21-2022- Freemire onsite to troubleshoot the Pistagrit. After replacing the compressor, they determined that the valve bladder needs replaced. They will return to replace once received.

12-27-2022- PS4- Inframark repaired the failed air relief valve to Pump 1.

12-29-2022- WWTP- Ironsource was onsite to repair the newly refurbished angle-broom for the Skid Steer.

Maintenance Budget

Monthly Budget	December 2022	Contract Year to Date	Over/Under
\$6,667	\$4,579.59	\$4,631.42	\$-75,368.58

Maintenance Expenditures

See attached December Expense Report

Afterhours Callouts

12-16-2022- Multiple call outs for pump stations and WWTP during a rain event.

Health & Safety

- As of December 31, 2022, Inframark staff and contractors have worked 803 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations – Winter Weather, PPE Policy

Personnel

Name	Title	DE Certification
Jerry Shupe Jr.	Regional VP	NA
Michael Wolgemuth	Regional Manager	DE Class IV WW
Jeffrey Kerin	Project Manager	DE Class IV WW
Paul Smith	Operator II	DE Class III WW
Vince Catalano	Lead Operator	DE Class II WW
Kurt Brittingham	Operator II	NA
Michael Mazzetti	Maintenance Technician III	NA
David Weed	PT Operator III	DE Class IV WW
Tom Callahan	Regional Safety Advisor	NA

Attachments

- December Sussex County Flow Totals
- Zenon Reports

December Expenses

DATE	INVOICE	REPORT	VENDOR	MEMO	AMOUNT
11/20/2022	00336409	Dec-22	Carter Machinery Co Inc	PS4 Generator Rental 11/4-12/1	\$1,768.68
12/2/2022	22-314	Dec-22	K & Z Mechanical, Inc.	Headworks pump failure service call - Electrical	\$665.00
12/2/2022	22-314	Dec-22	V5761 K & Z Mechanical, Inc.	Materials Costs	\$364.00
12/8/2022	3202	Dec-22	Best Ace Hardware	Tower Hill Pump station keys for fenced in enclosure	\$13.23
12/18/2022	RIN200342719	Dec-22	Carter Machinery Co Inc	PS4 Generator Rental 12/2-12/29	\$1,768.68
Monthly Total					\$4,579.59

Cap budget \$6,666.67
 Client Total (\$2,087.08)