

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



September 2024

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- The dewatering roll off container to capture screening is no longer in use. The EQ Tank repair is complete and the contractor has modified the floor grating to contain corrosive gases and odors within the wastewater conveyance channels. One additional section of grating is needed to go in place of the removed screenings box from the 5mm screen. The chute for the 5mm screen has been installed as well as the 2mm pump. The compactor and pista grit have both been brought online. **Awaiting additional grating to be delivered and installed for 100% completion.**
- **Completed chemical cleaning of Kubota membranes.**
- **Completed chemical cleans on Trains 1 & 2.**
- Pump Stations- A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. The BioAir Filter at PS4 was serviced and is online. **We have a quote for a new generator as well as 2 new bypass pumps to be permanently placed at the station. Had meeting with GMB. Looking at the option of generator with addition of 3rd pump.**
- **Electrical manhole drain work completed.**

Critical Issues

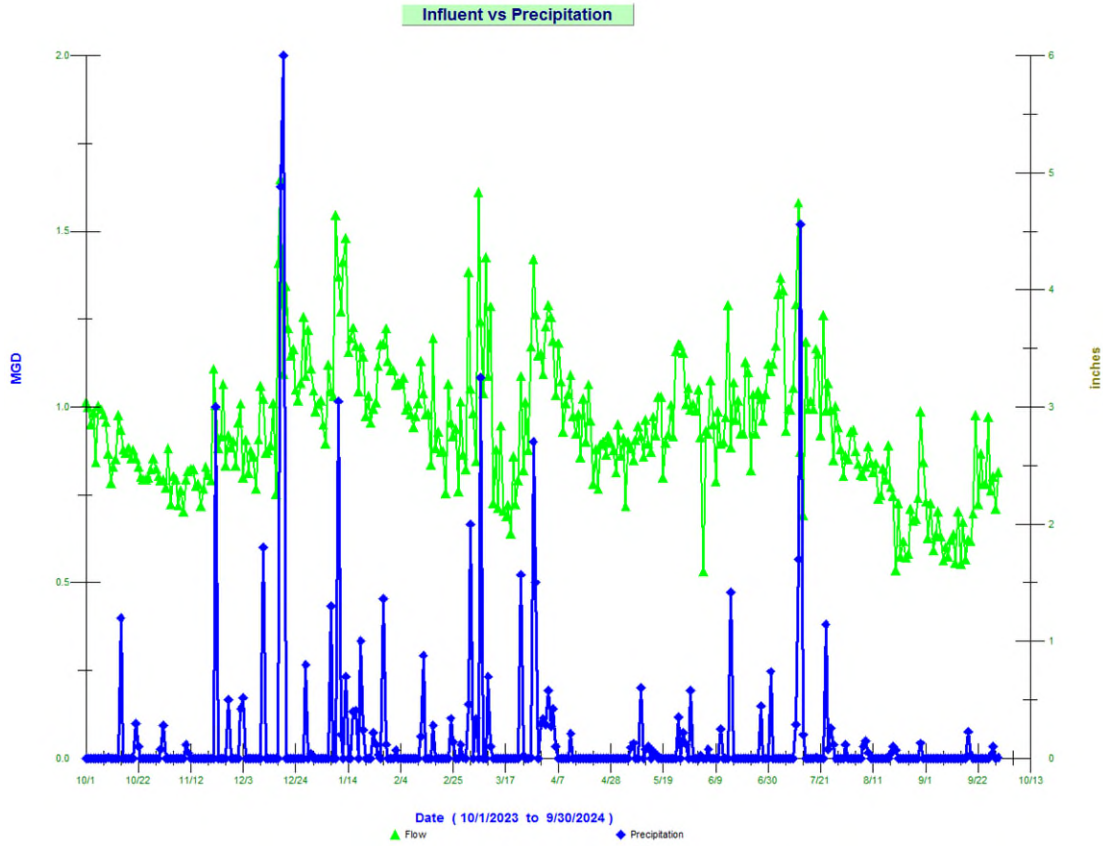
- Spare pumps are not in stock for PS11, PS15, PS16, PS17B, PS18 and PS32. Inframark does not have maintenance records for existing pumps. Based on recommendations made in Severn Trent's 2016 Annual Report, most pumps were in need of replacement within five years. We have found no evidence that these 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, PS17, PS18, PS33, PS74 and PS83.

Projects

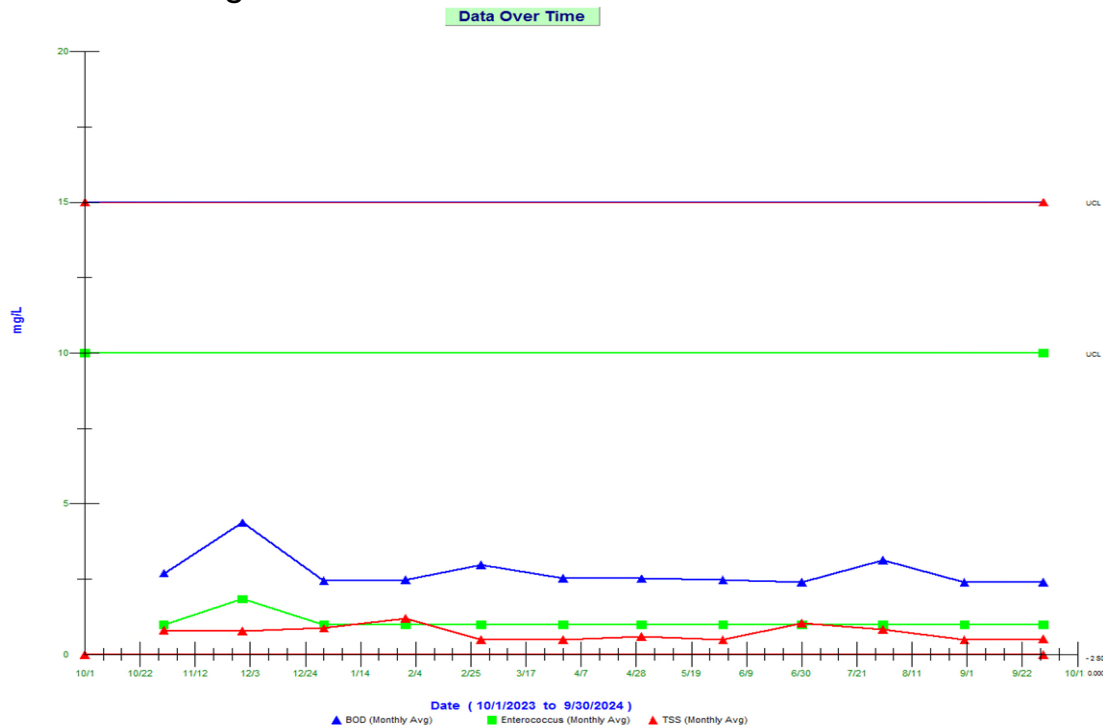
Project	Status	Priority Level	Approval	Est. Complete Date
Headworks Rehabilitation	All upgrades are complete. Awaiting grating on order for 100% completion.	High	BPW Project	QTR 3 2024
Replace Generator and ATS at PS4	Quotes received for generator and 2 bypass pumps. We had a meeting with GMB to discuss both possibilities. Looking at the option of generator with addition of 3rd pump.	High	BPW Project	
5 Ton Crane Repair	PO issued. Parts on order.	High	NA	QTR3 2024

Trend Charts

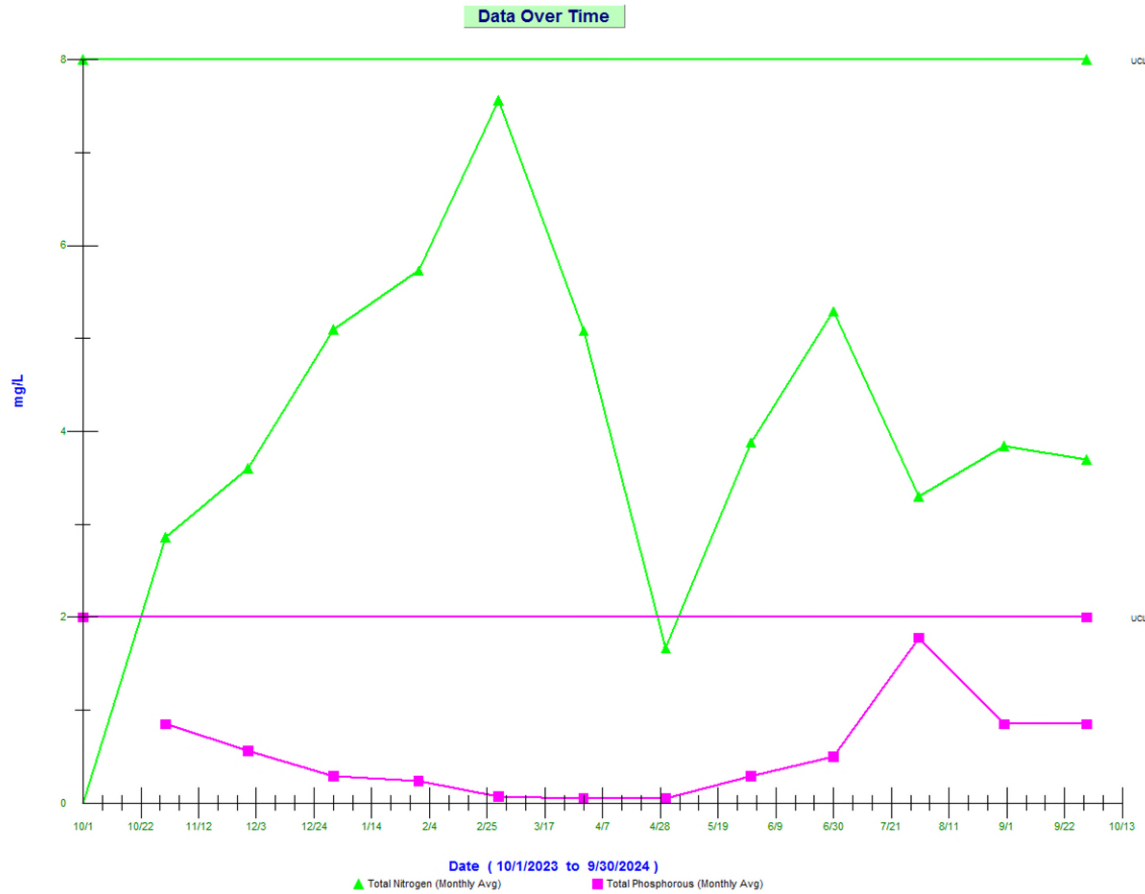
Influent vs Precipitation Trend Previous 12 Months



Effluent Biological Contaminants Trend Previous 12 Months



Effluent Nutrient Trends Previous 12 Months



Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for September 2024. The DMR will be forwarded upon completion.
- The average daily influent flow for September was 0.694 MGD with a maximum daily flow of 0.976 MGD. Precipitation totaled 0.39 inches with a maximum daily total of 0.23 inches on 9-18-2024.

	Max	Sum
Precipitation (inches)	0.23	0.39

Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.694	0.554	0.976	
BOD (mg/L)		220	220	220	
TSS (mg/L)		142	142	142	

Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.709	0.498	0.954	N
Dissolved Oxygen (mg/L)		3.05	2.32	4.91	N
pH (SU)	Min 6/ Max 9	7.23	7.10	7.36	N
Enterococcus (col/100ml)	Avg 10/ Max 104	<1	<1.0	<1.0	N
BOD (mg/L)	Avg 15/ Max 23	<2.4	<2.4	<2.4	N
BOD Load (lbs)	Avg 188/ Max 288	<12.5	<10	<16.3	N
BOD Removal (%)		98.9	98.9	98.9	
TSS (mg/L)	Avg 15/ Max 23	<0.53	<0.5	0.6	N
TSS Load (lbs)	Avg 188/ Max 288	<2.78	<2.1	4.1	N
TSS Removal (%)		99.6	99.6	99.6	
Total Nitrogen (mg/L)	Avg 8	3.7	3.7	3.7	N
Total Nitrogen Load (lbs)	Avg 100	15.36	15.36	15.36	N
Total Phosphorous (mg/L)	Avg 2	0.85	0.85	0.85	N
Total Phosphorous Load (lbs)	Avg 25	3.53	3.53	3.53	N
Process					
MLSS (mg/L)		7,820	6,100	10,400	
MLSS (mg/L)		7,760	5,100	11,100	
Train 1 MLSS (mg/L)		6,950	5,000	8,600	
Train 2 MLSS (mg/L)		7,275	6,200	9,600	
Train 3 MLSS (mg/L)		5,860	2,800	10,400	
Train 4 MLSS (mg/L)		7,920	6,600	10,000	
TSS Digester 1 (mg/L)		18,529	14,000	21,600	
TSS Digester 2 (mg/L)		15,140	12,500	19,700	

	Average	Max	Sum
WAS (gallons)	10,434	14,015	313,015

Sludge Operations and Disposal

Liquid Hauled	Gallons	161,000	Sussex County
Dewatering Container	Gallons	3500	DELCORA

Maintenance, Repair and Activities

During the month, Inframark completed routine preventive maintenance activities as recommended by equipment manufacturers and required by plant procedures. Maintenance activities are tracked utilizing a computerized maintenance management software (emaint). The report for the month is included with the report attachments.

Corrective Maintenance and Activities

- Installed new valves to allow isolation of Kubota membranes during cleaning
- Completed chemical cleans on Trains 1&2

- Completed chemical cleaning of Kubota membranes
- Replaced float on Digester 1 return pump
- Changed belts on air compressors
- Rebuilt air release valve on pump 1 at PS#4
- Swapped out and rebuilt bleach chemical pump for train cleanings

Work Order Statistics

Preventative Work Orders closed for month	74
Corrective, Reactive and Proactive Work Orders closed for month	6
Total Work Orders closed for month	80

Callouts

- 9-14-2024: High level PS15. Pump failure determined to be the cause of the issue. Pump pulled and sent to Hill's for repair
- 9-22-2024: Compactor fault alarm. Compactor reset. No issues have occurred since.

Maintenance Budget

Monthly Budget	September 2024	Contract Year to Date	Over
\$6,667	\$16,180.76	\$126,251.41	\$46,251.41

Maintenance Fee Expenditures

DATE	INVOICE	REPORT	VENDOR	MEMO	AMOUNT
8/25/2024	MF-13969	September	Carter Machinery Company, Inc	Equipment Rental	\$1,768.68
9/18/2024	MF-13970	September	V1400 Hill's Electric Motor Service Inc	Pump Brand:1, Info:230V, Pump Model:S4NRC100M2-6, Pump Ser:29277	\$2,966.60
9/21/2024	MF-13970	September	V1400 Hill's Electric Motor Service Inc	Pump Brand: HYDROMATIC, HP:1, Info::230V, Pump Model:S4NRC100M2-1, Pump Ser:29278	\$3,036.80
9/22/2024	MF-13969	September	Carter Machinery Company, Inc	Equipment Rental	\$1,768.68
9/4/2024	0152373	September	Freemire & Associates	Pump troubleshooting and rebuild	\$1,170

9/4/2024	0152374	September	Grainger	Shut off float for anoxic return pump	\$185
9/4/2024	0152375	September	Grainger	Push connector for chemical lines	\$77
9/4/2024	0152376	September	Grainger	Push connector for chemical lines	\$50
9/4/2024	PCARD	September	Grainger	Inspection tags for equipment	\$10
9/4/2024	PCARD	September	USA Bluebook	UV Bulbs for Trojan system, alkalinity test strips	\$1,917
9/4/2024	PCARD	September	Freemire & Associates	Alarm Check	\$68
9/4/2024	PCARD	September	ATCO Manufacturing Com	Bug spray and odor control fogger	\$559
9/4/2024	PCARD	September	Belair Road Supply	PVC parts to repair booster pump piping and for inventory supply	\$190
9/25/2024	PCARD	September	Grainger	Relays for pump stations	\$504
9/25/2024	PCARD	September	Harbor Freight Tools	Tools for pump stations 4 & 8	\$114
9/25/2024	PCARD	September	Home Depot	Tools for electrical work, parts for headworks project	\$31
9/27/2024	PCARD	September	302 Electrical Services	Replaced VFD at PS#4	\$845
9/27/2024	PCARD	September	Amazon	Gate remotes for BPW employees	\$50
9/27/2024	PCARD	September	Home Depot	Hose and pump for chemical transfer, hose adapter for piping	\$342
9/27/2024	PCARD	September	Factory Direct Hose	Hose for headworks chute	\$339
9/27/2024	PCARD	September	Lowes	Paint for Cabinets	\$30
9/27/2024	PCARD	September	Harbor Freight Tools	Tools for pump stations 4 & 8 maintenance bags	\$159

Health, Safety and Training

- As of September 30, 2024, Inframark staff and contractors have worked 1,442 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations –
 - Global Safety Short: Confined Space Hazards 2024

Personnel

Name	Title	DE Certification
Jeffrey Kerin	Project Manager	DE Class IV WW
Mathew Davis	Assistant Project Manager	DE Class IV WW
Paul Smith	Operator II	DE Class III WW
Kurt Brittingham	Operator II	DE Class II OIT WW
Joshua Owens	Maintenance Technician II	DE Class I OIT WW
Tariq Hacker	Maintenance Electrician	NA
Nathan Laucks	Regional Manager	DE Class IV WW
Jerry Shupe Jr.	Regional VP	NA
Ryan Langello	Regional Health & Safety Advisor	NA

Attachments

- September DMR
- List of Major Maintenance Expenses Contract Year to Date
- September eMaint Report
- September Sussex County Flow Totals
- Zenon Insight Report