

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



May 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 lipactor is offline.**
- 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 began during the week of 6-6-2022. Anticipated completion week of 6-27-2022.**
- **Pump Stations- Pump Station 8 Generator Transfer Switch replacement was completed 6-21-2022.** A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. **Sprig competed install of clean-outs to each pump suction line at PS4 during the week of 5-16-2022. PS9 wet-well pipe replacement and bypass install was completed during the week of 6-13-2022. Three Classic T8 rotating assemblies for PS3 were purchased from Freemire and Associates. The assemblies will be installed when additional parts for the rebuild are received. A contractor completed hydro-excavating at PS3 to locate the force main for future installation of bypass connections. Approval for a proposal to replace wet well piping in PS2 is required.**
- Personnel- Currently Inframark has 5 fulltime and one part-time employees assigned to the Lewes Facilities.

Critical Issues

- Covid- Inframark is following CDC recommendations to ensure uninterrupted service to the BPW and the Lewes community.
- 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, PS13, 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	QTR4 2022
Replace Generator and ATS at PS4	GMB and Keystone are evaluating size based on future needs	High	BPW Project	QTR2 2022
Replace ATS at PS8	Complete	High	Received	QTR2 2022
Rehab Pumps at PS3	Rotating assemblies received	High	Recieved	QTR3 2022
Replace wet-well piping PS2	Proposal from Sprig submitted to BPW	High	Needed	QTR3 2022

Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for May 2022. No violations will be reported for May. The DMR will be forwarded upon completion.
- The average daily influent flow for May was 0.766 MGD with a maximum daily flow of 0.996 MGD. Precipitation totaled 2.52 inches for May with a maximum daily total of 0.6 inches.

	Max	Sum
Precipitation (inches)	0.59	2.52

Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.766	0.605	0.996	
BOD (mg/L)		146	146	146	
TSS (mg/L)		85	85	85	

Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.779	0.653	0.999	N
Dissolved Oxygen (mg/L)		6.35	5.11	7.29	N
pH (SU)	Min 6/ Max 9	7.29	7.08	7.69	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	<15	<14	<17	N
BOD Removal (%)		98.4	98.4	98.4	
TSS (mg/L)	Avg 15/ Max 23	<0.5	<0.5	0.5	N
TSS Load (lbs)	Avg 188/ Max 288	<3	3	<4	N
TSS Removal (%)		99	99	99	
Total Nitrogen (mg/L)	Avg 8	7.47	5.73	9.21	N
Total Nitrogen Load (lbs)	Avg 100	40.45	31.02	49.87	N
Total Phosphorous (mg/L)	Avg 2	0.26	0.26	0.26	N
Total Phosphorous Load (lbs)	Avg 25	1.57	1.57	1.57	N
Process					
Bio #1 MLSS (mg/L)		8,950	8,000	10,100	
Bio #2 MLSS (mg/L)		9,125	8,200	10,200	
Train 1 MLSS (mg/L)		9,400	9,400	9,400	
Train 2 MLSS (mg/L)		9,275	7,700	10,200	
Train 3 MLSS (mg/L)		8,875	7,600	10,000	
Train 4 MLSS (mg/L)		10,000	9,500	11,000	
TSS Digester 1 (mg/L)		17,450	16,600	18,400	
TSS Digester 2 (mg/L)		16,700	15,700	17,400	

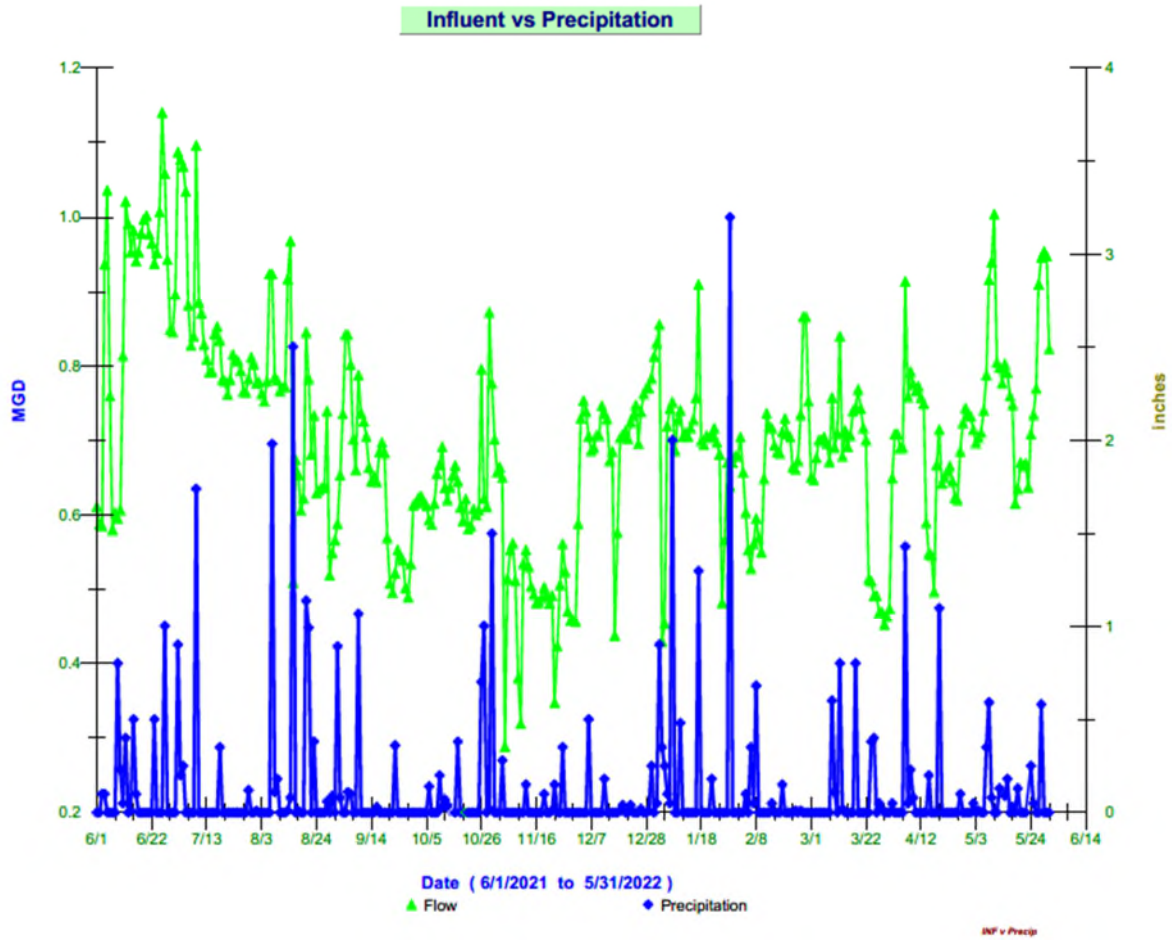
	Average	Max	Sum
Sludge Wasted (gallons)	10,761	23,698	322,834

Sludge Operations and Disposal

Liquid Hauled	65,000	Gallons	DELCORA
Cake Hauled	52.8	Wet Tons	Sussex County
Dewatering Container	5,300	Gallons	DELCORA

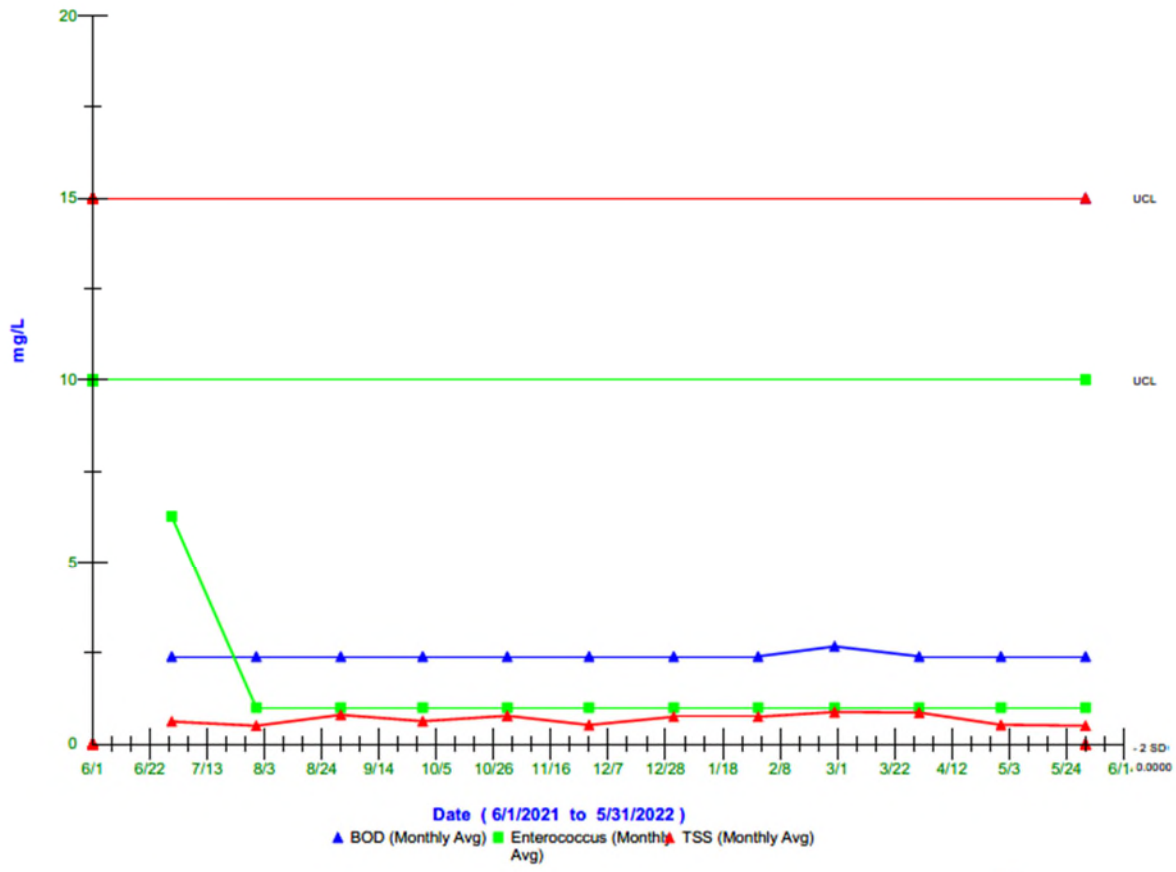
Trends

Influent vs Precipitation Trend Previous 12 Months

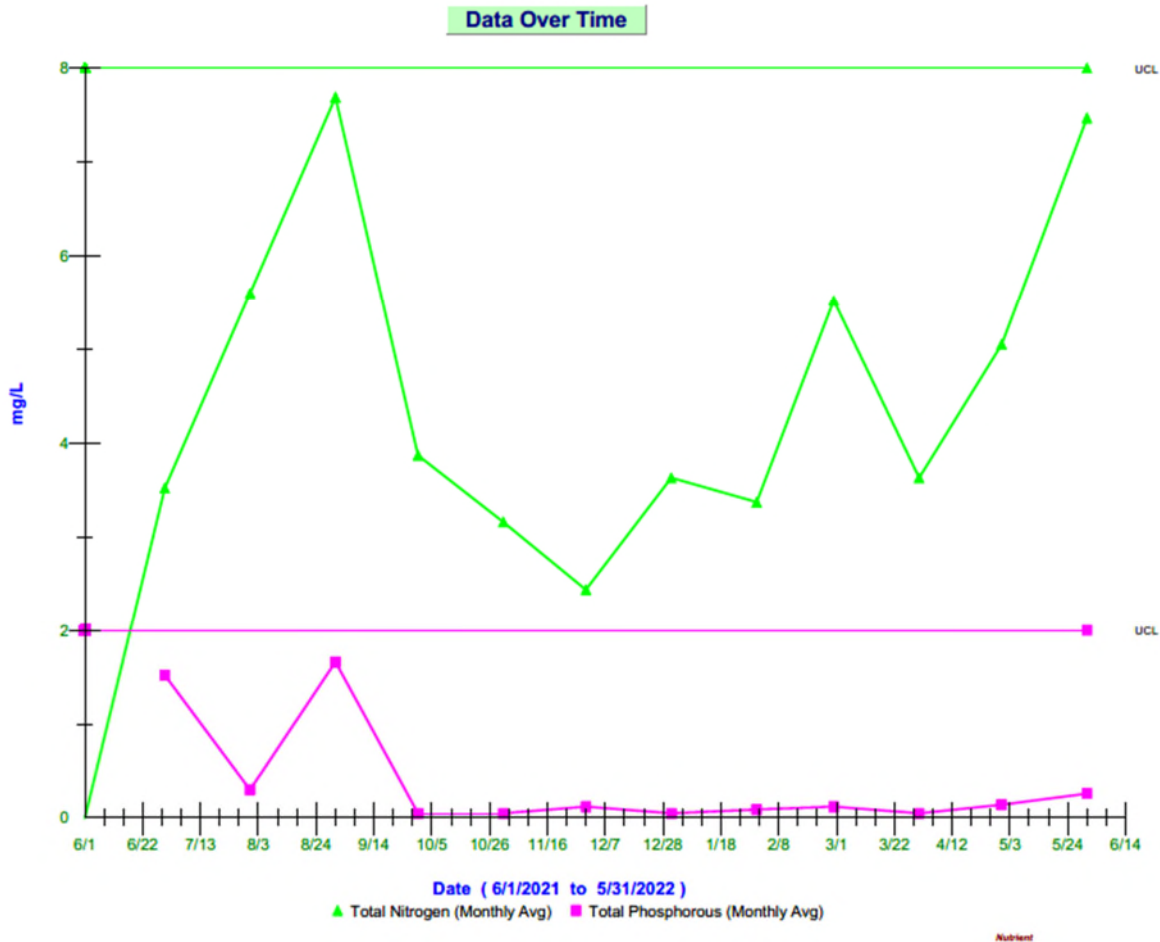


Effluent Biological Contaminants Trend Previous 12 Months

Data Over Time



Effluent Nutrient Trends Previous 12 Months



Maintenance, Repair and Activities

- 5-09-2022-WWTP- Inframark repaired feed line to CIP Sodium Hypochlorite Pump A.
- 5-09-2022-PS3- Inframark added oil to Pump 2.
- 5-10-2022-WWTP- Inframark relocated Process Caustic Feed Pump air bleeder valve to the discharge side of pump.
- 5-10-2022-PS4- Inframark unclogged Pump 2.
- 5-13-2022-PS4- Inframark discovered Pump 2 clogged again, removed ragging from the check valve and returned to service.
- 5-16-2022-WWTP- Inframark replaced chemical feed line to the Process Caustic Feed Pump.
- 5-23-2022-WWTP- Inframark repaired the discharge hose from the sump pump in MH 4.
- 5-24-2022-PS32- Inframark discovered Pump 2 clogged, removed rags from volute and returned to service.
- 5-27-2022-PS3- Inframark added oil to Pump 2, reprimed and returned to service.
- 5-31-2022-WWTP- Inframark replaced floats to sump pumps in MH4 and MH5.
- 5-31-2022-WWTP- Inframark replaced the sensor cap to LDO Probe 1B, calibrated and returned to service.
- 5-31-2022-PS3- Inframark added oil to Pump 2, reprimed and returned to service.

Afterhours Alarm Callouts

5-01-2022-WWTP- UF Train 2 High Turbidity Alarm
 5-07-2022-WWTP- UF Train 3 High Turbidity Alarm
 5-20-2022-WWTP- UF Train 1 High Turbidity Alarm
 5-28-2022-WWTP- UF Train 3 High Turbidity Alarm

Maintenance Budget

Monthly Budget	May 2022	Contract Year to Date	Over
\$6,667	\$ 12,793.95	\$128,999.95	\$48,999.95

Maintenance Expenditures

Vendor	Description	Expense
Xylem Dewatering Solutions, Inc.	Bypass pump rental August/September Emergency Opening Charge	410.00
Xylem Dewatering Solutions, Inc.	Bypass pump rental Nov/Dec Rental 11/07/2021 thru 12/04/2021	4,064.89
Hill's Electric Motor Service Inc	Gorman Rupp reuse water pump rotating assembly repair. Job # 56804	1,527.32
K & Z Mechanical, Inc.	Electrician; Disconnect and reconnect cord to RAS Pump; connect twist lock cord connectors for Grit System Vacuum Pump; Install new ground bar; Check 3-pole contactor of motor and change thermal overloads due to nuisance tripping.	665.00
K & Z Mechanical, Inc.	Materials: twist lock, male and female cord connectors, 4" ground terminals, thermal overloads	168.00
UNTD RNTLS	Rental Generator PS4	1,668.56
HACH COMPANY	Composite Sampler Tubing	101.74
USA BLUE BOOK	Replacement Composite Sampler Refrigerator Thermometers.	151.02
USA BLUE BOOK	Digital verification thermometers	144.04
FRESHWATERSYSTEMS	Membrane O-ring lubricant	106.14
THE HOME DEPOT	Drain covering for membrane cleaning	39.48
THE HOME DEPOT	Membrane sprinkler replacement.	45.96
FISHER AUTO PARTS	Oil absorbent	27.98
THE HOME DEPOT	Digester return pump replacement and parts	406.83
LOWES	Plumbing parts for chemical feed air relief caustic	23.50
LOWES	Chemical feed parts, caustic pump air purge	20.84
LOWES	Solid's dumpster tarp bungy cords & safety corners	25.96
Hill's Electric Motor Service Inc	Gorman Rupp Super T6 6" rotating assembly rebuild Job # 58437	3,196.69

Health & Safety

- As of May 31, 2022, Inframark staff have worked 589 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations
 - Offsite Arc Flash Electrical training for Maintenance Tech III
 - NFPA 70E Electric Safety in the Workplace
 - Incident Reporting Definitions and Responsibilities 2022

Personnel

Name	Title	DE Certification
Jerry Shupe Jr.	Regional VP	NA
Michael Wolgemuth	Regional Manager	DE Class IV WW
Richard Plack	Project Manager	DE Class IV WW
Paul Smith	Operator II	DE Class II WW
Vince Catalano	Lead Operator	DE Class II OIT 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

- May Sussex County Flow Totals
- April DMR
- Zenon InSight Report- 6-01-2022
- Zenon InSight Report- 5-18-2022