

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



April 2023

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. A replacement circuit breaker panel for the headworks building lighting has been ordered. Work will be scheduled pending receipt of the panel.**
- Oxidation Ditch-Cracks were identified in the concrete tank walls. BPW issued PO for work to be completed spring 2023. **Work was completed 5-11-2023 through 5-15-2023.**
- Filters- De-ragging UF Train 4 was completed during the week of 4-24-2023. **UF Train 1 de-ragging began on 5-4-2023. The upstream cassette to UF Train 1 has significantly more accumulated debris and sludging than the cassettes to UF Train 4.**
- A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. **PS3 pump and valve replacement completed 4-25-2023 through 4-27-2023. Wet well piping and isolation valve replacement completed at PS2 on 4/24/2023. Source electric issues required connection of a portable diesel generator at PS74 in the Cape Shores Development. A control panel and level pressure transducer were ordered to replace controls at PS16. An exterior junction box has also been ordered to eliminate the connections within the wet well.**

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, P13, PS14, PS15, PS16, PS17, PS18, PS33, PS74 and PS83.

Projects

Project	Status	Priority Level	Approval	Est. Complete Date
Headworks Replacement	Out to bid	High	BPW Project	
Repair Cracks in Oxidation Ditch	Complete	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	Complete	High	BPW Project	QTR 2 2023
Replace wet-well piping PS2	Complete	High	Received	QTR 2 2023
Sump Pump Repairs	Work started to replace pump electric connections with watertight plugs and to replace or reseal watertight junction boxes. 2 of 10 complete	Med	NA	QTR 2 2023
Electric panel inspections and pump cable megger testing	In Progress/working on Pump Stations	High	NA	Ongoing through 2023
WWTP Building power feed megger testing	Scheduled week of June 19, 2023	High	NA	July 2023
Liquid Sludge Loading Connection	GMB working on design	Med	NA	QTR3 2023
Old Drying Bed Valve Replacement (5,6&7)	Received pricing from Harry Caswell. BPW staff were onsite to review project.	Med	Needed	QTR3 2023

Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for April 2023. No violations will be reported for April 2023. The April DMR will be forwarded upon completion.
- The average daily influent flow for April was 0.881 MGD with a maximum daily flow of 1.371MGD. Precipitation totaled 6.1 inches for April with a maximum daily total of 2.5 inches.

	Max	Sum
Precipitation (inches)	2.50	6.13

Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.881	0.678	1.371	
BOD (mg/L)		186	186	186	
TSS (mg/L)		162	162	162	

Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.907	0.793	1.260	N
Dissolved Oxygen (mg/L)		5.35	4.27	6.67	N
pH (SU)	Min 6/ Max 9	7.09	6.91	7.34	N
Enterococcus (col/100ml)	Avg 10/ Max 104	<1	<1.0	2.0	N
BOD (mg/L)	Avg 15/ Max 23	<2.5	<2.4	2.8	N
BOD Load (lbs)	Avg 188/ Max 288	<18	<16	20	N
BOD Removal (%)		98.7	98.7	98.7	
TSS (mg/L)	Avg 15/ Max 23	<0.5	<0.5	0.6	N
TSS Load (lbs)	Avg 188/ Max 288	<4	<3	4	N
TSS Removal (%)		100	100	100	
Total Nitrogen (mg/L)	Avg 8	3.30	3.30	3.30	N
Total Nitrogen Load (lbs)	Avg 100	19.44	19.44	19.44	N
Total Phosphorous (mg/L)	Avg 2	<0.05	<0.05	<0.05	N
Total Phosphorous Load (lbs)	Avg 25	<0.37	<0.37	<0.37	N

Process	Average	Min	Max
Bio #1 MLSS (mg/L)	8,545	7,500	9,500
Bio #2 MLSS (mg/L)	8,570	8,100	9,100
Train 1 MLSS (mg/L)	9,785	6,100	11,800
Train 2 MLSS (mg/L)	9,068	6,100	10,600
Train 3 MLSS (mg/L)	9,640	6,160	11,400
Train 4 MLSS (mg/L)	10,850	10,850	10,850
TSS Digester 1 (mg/L)	19,163	18,300	19,700
TSS Digester 2 (mg/L)	16,183	9,430	19,100

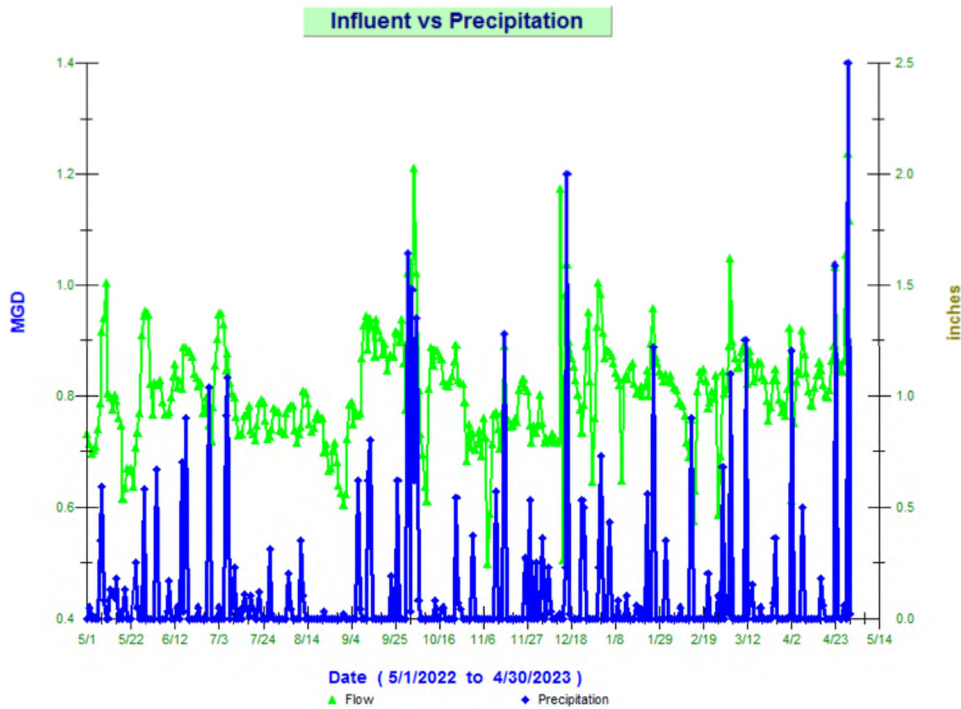
	Average	Max	Sum
Sludge Wasted (gallons)	16,000	16,000	464,000

Sludge Operations and Disposal

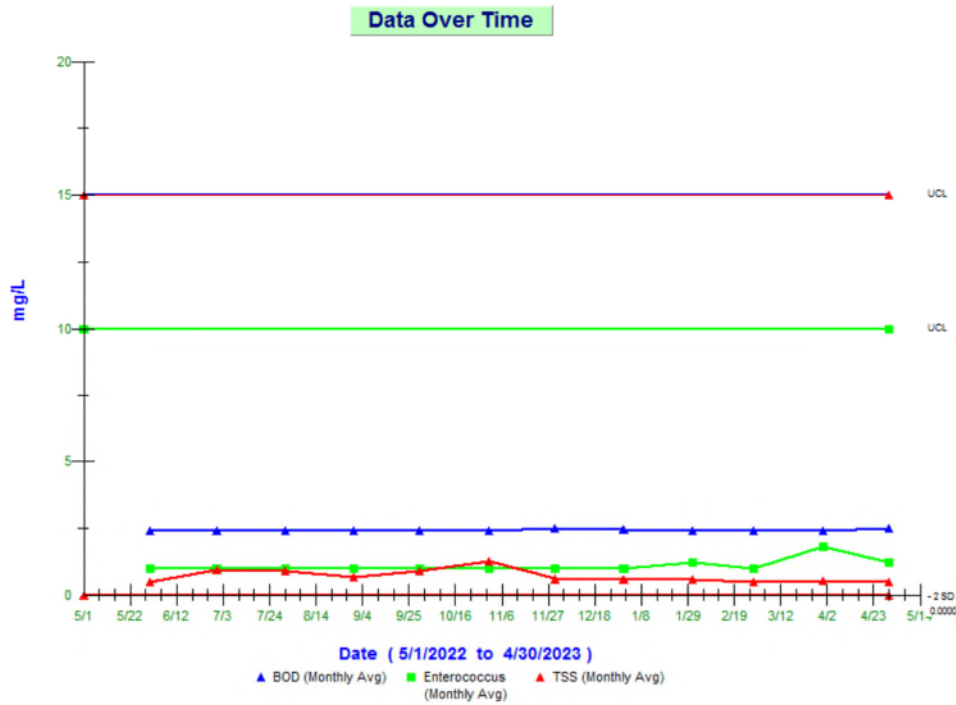
Liquid Hauled	Gallons	116,000	DELCORA
Cake Hauled	Wet Tons	38.7	Sussex County
Dewatering Container	Gallons	16,000	DELCORA

Trends

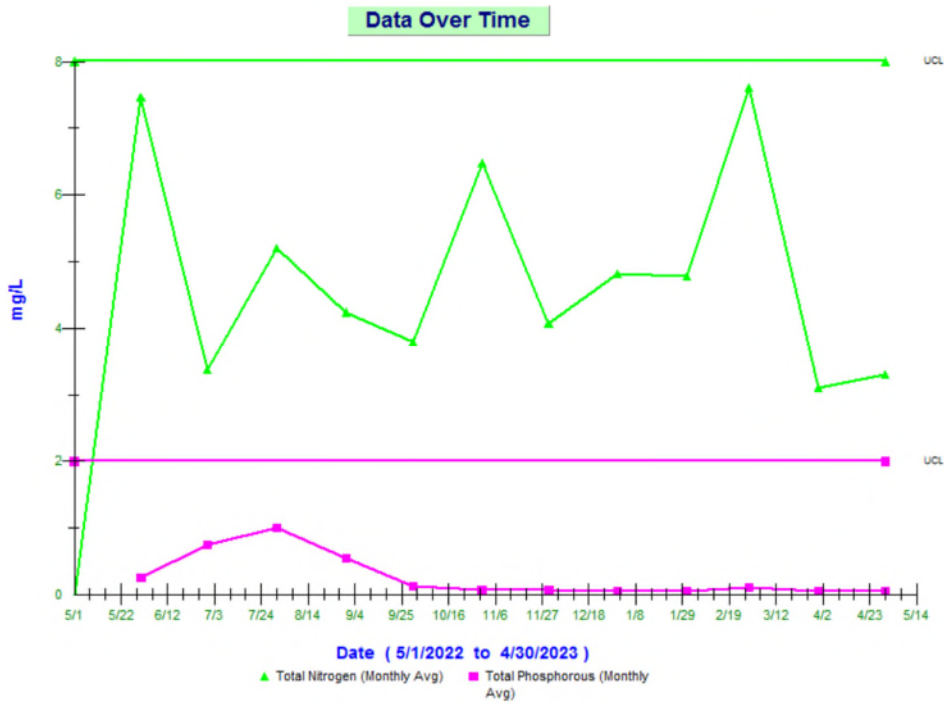
Influent vs Precipitation Trend Previous 12 Months



Effluent Biological Contaminants Trend Previous 12 Months



Effluent Nutrient Trends Previous 12 Months



Maintenance, Repair and Activities

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.

Work Order Statistics

Preventative Work Orders closed for month	87
Corrective, Reactive and Proactive Work Orders closed for month	10
Total Work Orders closed for month	97

Maintenance Budget

Monthly Budget	April 2023	Contract Year to Date	Over/(Under)
\$6,667	\$8,507	\$47,720	\$(32,279)

Maintenance Fee Expenditures

DATE	INVOICE	REPORT	VENDOR	MEMO	AMOUNT
2/12/2023	00354573	Apr 2023	Carter Machinery Co	PS4 Generator Rental	\$1,768.68
3/4/2023	0138976	Apr 2023	Hill's Electric Motor Service	Replace Digester Recycle Pump 2kw Hidrostal	\$3,631.46
4/3/2023	614390	Apr 2023	Horney Industrial Electronics	Siemens: Wall Mounting Kit for Compact IP67/NEMA4 X/6 Versions	\$389.00
4/9/2023	RIN200367310	Apr 2023	Carter Machinery Co	PS4 Generator Rental	\$1,768.68
4/22/2023	PCARD	Apr 2023	WEIS MARKETS	Distilled water for lab vinegar for caustic spill	\$28.08
4/22/2023	PCARD	Apr 2023	HOME DEPOT	Cleaning materials & supplies for moving flow meter	\$249.01
4/22/2023	PCARD	Apr 2023	PAYPAL - IGCG	Air release valves for trains	\$313.10
4/22/2023	PCARD	Apr 2023	HOME DEPOT	30% vinegar for caustic neutralization	\$218.80
4/22/2023	PCARD	Apr 2023	HOME DEPOT	Light bulbs for plant	\$317.10
4/22/2023	PCARD	Apr 2023	HOME DEPOT	Electrical tape and hubs for exhaust fan repairs	\$39.65
4/22/2023	PCARD	Apr 2023	HACH COMPANY	Junction box for new Hach composite sampler	\$333.90
4/22/2023	PCARD	Apr 2023	BESTS ACE HDWE	batteries and wasp spray for plant	\$53.75
4/22/2023	PCARD	Apr 2023	SHERWOOD LOGAN ASSOC	Foam pump gasket kit	\$199.20
4/22/2023	PCARD	Apr 2023	HOME DEPOT	Bolts for foam pump	\$16.40
4/22/2023	PCARD	Apr 2023	227 RENT	Drain snake rental for Pista grit	\$89.59

4/22/2023	PCARD	Apr 2023	227 RENT	Refund for early return	(\$16.80)
4/22/2023	PCARD	Apr 2023	WEIS MARKETS	Vinegar for caustic leak	\$36.90
4/22/2023	PCARD	Apr 2023	HOME DEPOT	Screens for process building drain and dump pit	\$93.81
4/27/2023	PCARD	Apr 2023	AMAZON	2mm screen pump, failed, replaced, failed, returned for refund	(\$1,226.09)
4/27/2023	PCARD	Apr 2023	AMAZON	Calibration Gas for BPW Multi-gas Meter	\$203.00

Afterhours Callouts

- 4-21-2023-PS6-High level alarm-Low level float failed.
- 4-29-2023-WWTP-High level UF Trains – Heavy rain event.
- 4-29-2023-PS13-High level- Heavy rain event.

Health & Safety

- As of April 30, 2023, Inframark staff and contractors have worked 923 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations –
 - Heat Illness
 - Cyber Security
 - Password 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
Mathew Davis	Lead Operator	DE Class IV WW
Paul Smith	Operator II	DE Class III WW
Vince Catalano	Lead Operator	DE Class II WW
Kurt Brittingham	Operator II	DE Class I WW
Andrew Courtney	Lead Maintenance Electrician	NA
Michael Mazzetti	Lead Maintenance Technician	OIT
Jack Masella	VP Health and Safety	NA

Attachments

- March DMR
- April eMaint Report
- April Sussex County Flow Totals