

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



June 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. Inframark replaced the lighting panel and breakers in the Headworks Building.**
- Filters- De-ragging UF Train 4 was completed during the week of 4-24-2023. **UF Train 1 de-ragging complete and returned to service 7-2-2023. UF Train 1 Permeate Pump VFD was replaced on 6-20-2023. UF Train 1 RAS Pump VFD was replaced on 6-27-2023. UF System Blower B Motor failed and is beyond economical repair. A new motor has been received and will be installed during the week of 7-24-2023.**
- A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. A control panel and level pressure transducer were received to replace controls at PS16. Work to PS16 will be scheduled for Q3. **Station housekeeping and weed control completed during June.**

Critical Issues

- 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 Rehabilitation	Bids received/ low bid accepted	High	BPW Project	QTR1 2024
Replace Generator and ATS at PS4	GMB and Keystone are evaluating size based on future needs.	High	BPW Project	
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	Started week of 7-17-2024/ Anticipated completion during the week of 7-24-2023	High	NA	July/August 2023
PS16 Control Panel Replacement	Received materials	High	NA	July 2023
Liquid Sludge Loading Connection	GMB working on design	Med	NA	QTR3 2023
Old Drying Bed Valve Replacement (5,6&7)	BPW Staff to replace when available.	Med	NA	QTR3 2023
Foam Pump Modifications	GMB working on design	Med	NA	QTR3 2023

Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for June 2023. No violations will be reported for June 2023. The June DMR will be forwarded upon completion.
- The average daily influent flow for June was 0.734 MGD with a maximum daily flow of 0.880 MGD. Precipitation totaled 2.8 inches for June with a maximum daily total of 0.8 inches.

	Max	Sum
Precipitation (inches)	0.75	2.76

Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.734	0.614	0.880	
BOD (mg/L)		188	188	188	
TSS (mg/L)		238	238	238	

Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.788	0.694	0.895	N
Dissolved Oxygen (mg/L)		3.01	2.24	4.03	N
pH (SU)	Min 6/ Max 9	7.11	6.94	7.31	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	<15	<16	N
BOD Removal (%)		98.7	98.7	98.7	
TSS (mg/L)	Avg 15/ Max 23	<0.5	<0.5	0.5	N
TSS Load (lbs)	Avg 188/ Max 288	<3	<3	3	N
TSS Removal (%)		100	100	100	
Total Nitrogen (mg/L)	Avg 8	1.70	1.70	1.70	N
Total Nitrogen Load (lbs)	Avg 100	5.79	5.79	5.79	N
Total Phosphorous (mg/L)	Avg 2	0.19	0.19	0.19	N
Total Phosphorous Load (lbs)	Avg 25	1.20	1.20	1.20	N

Process	Average	Min	Max
Bio #1 MLSS (mg/L)	8,272	7,440	8,840
Bio #2 MLSS (mg/L)	8,292	7,400	9,080
Train 1 MLSS (mg/L)			
Train 2 MLSS (mg/L)	8,134	6,040	9,760
Train 3 MLSS (mg/L)	10,398	8,640	13,190
Train 4 MLSS (mg/L)	8,044	4,530	9,600
TSS Digester 1 (mg/L)	19,638	18,150	21,120
TSS Digester 2 (mg/L)	14,947	13,500	16,440

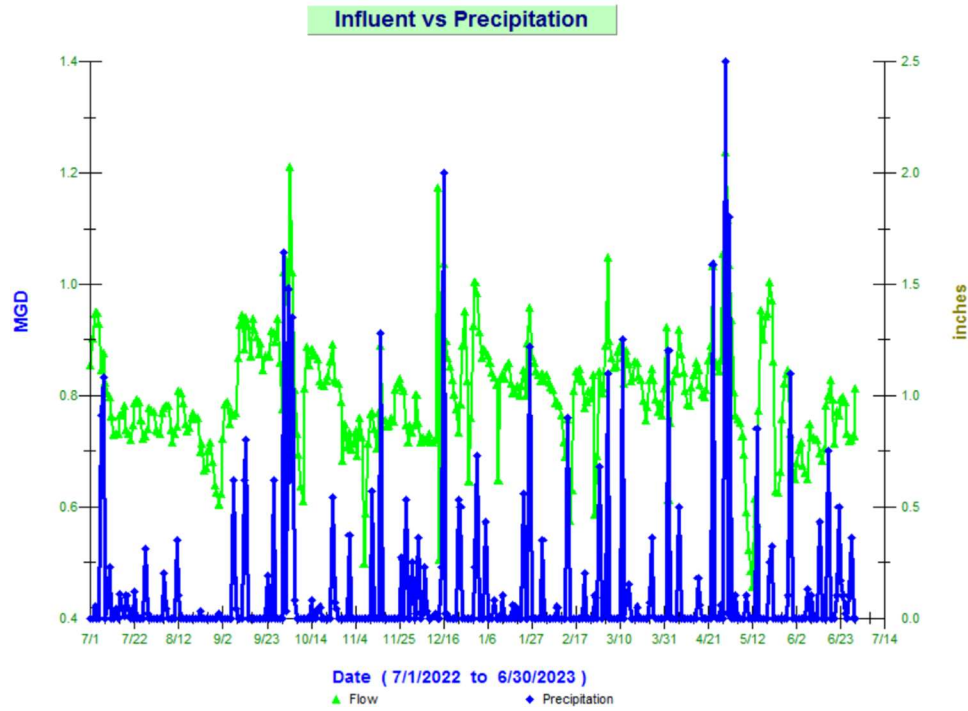
	Average	Max	Sum
Sludge Wasted (gallons)	11,131	17,166	333,926

Sludge Operations and Disposal

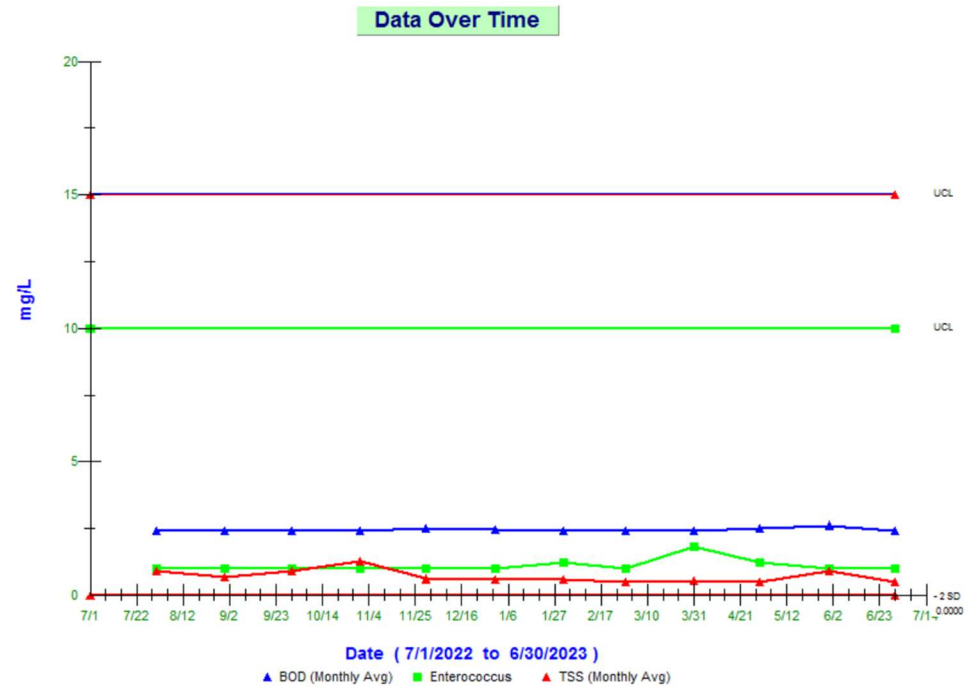
Liquid Hauled	Gallons	4,800	DELCORA
Cake Hauled	Wet Tons	18.9	Sussex County
Dewatering Container	Gallons	12,500	DELCORA

Trends

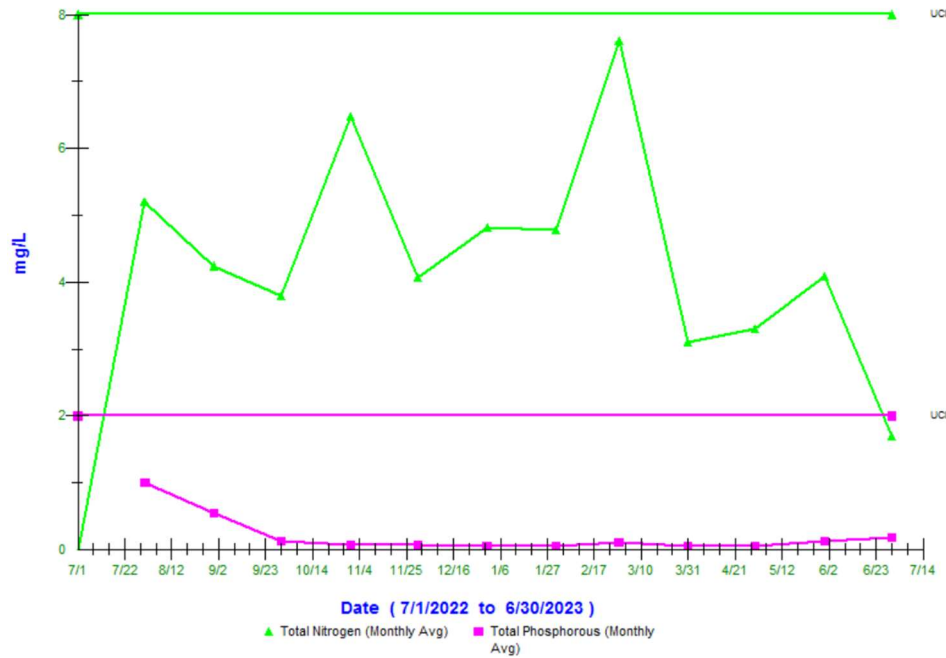
Influent vs Precipitation Trend Previous 12 Months



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.

Corrective Maintenance June

- WWTP- Replaced Caustic feed valves and tubing.
- WWTP- Quarterly Hypo CIP Digester Membranes
- WWTP- Replaced UF Train 1 Permeate Pump VFD
- WWTP- Replaced UF Train 1 RAS Pump VFD
- WWTP- Replaced lighting panel and breakers in Headworks Building.
- PS3- Repaired valve box cover in driveway at PS3.
- PS3- Repaired exterior light photocell.
- PS7- Replaced lighting lamp and photocell.
- PS12- Installed GFIC Outlet with bubble cover.
- PS15- Replaced broken 8x8 junction box cover.
- PS19- Replaced gate latch.
- PS74- Replaced electric meter can.

Work Order Statistics

Preventative Work Orders closed for month	91
Corrective, Reactive and Proactive Work Orders closed for month	12
Total Work Orders closed for month	103

Maintenance Budget

Monthly Budget	June 2023	Contract Year to Date	Over/(Under)
\$6,667	\$19,301.48	\$81,375.14	\$1,375.14

Maintenance Fee Expenditures

DATE	INVOICE	REPORT	VENDOR	MEMO	AMOUNT
4/17/2023	S105681725.002	Jun 2023	United Electric Supply Company	Electric panel - head works	\$338.20
4/17/2023	S105681725.003	Jun 2023	United Electric Supply Company	Grounding Rod	\$147.56
4/24/2023	S105681725.004A	Jun 2023	United Electric Supply Company	Electric panel - head works - return	(\$673.52)
6/4/2023	RIN200380996	Jun 2023	Carter Machinery Co Inc	PS4 Generator Rental	\$1,768.68
6/23/2023	PCARD	Jun 2023	HOME DEPOT	Fly traps for office	\$14.91
6/23/2023	PCARD	Jun 2023	HOME DEPOT	Drill bits/ maintenance supplies	\$86.09
6/23/2023	PCARD	Jun 2023	HOME DEPOT	Dewalt battery for string trimmer/ gate latches for lift stations	\$331.60
6/23/2023	PCARD	Jun 2023	AQUAFLOW PUMP & SUPPLY	Pumps and floats for electric manholes/ pressure gauge for caustic	\$752.54
6/23/2023	PCARD	Jun 2023	ADVANCED AUTO PARTS	Mirror for skid steer	\$16.99
6/23/2023	PCARD	Jun 2023	HOME DEPOT	Maintenance supplies/ pb blaster/greased lightning cleaner/ bit	\$176.74
6/23/2023	PCARD	Jun 2023	PETCO	Fish tank cleaning supplies	\$18.98
6/23/2023	PCARD	Jun 2023	PENCO CORP	Check valve and PVC parts for electric manholes	\$31.87
6/23/2023	PCARD	Jun 2023	PENCO CORP	Check valve and PVC parts for electric manholes	\$123.76
6/24/2023	PCARD	Jun 2023	AQUAFLOW PUMP & SUPPLY	3 sump pumps 2 floats for manholes	\$891.18
6/24/2023	PCARD	Jun 2023	UNITED ELECTRIC	Megohmmeter to test the electrical lines	\$542.26
6/24/2023	PCARD	Jun 2023	LOWES	Junction Box, waterproof plug ends for manholes, GFI Cover for P.S. 12	\$131.74
6/24/2023	PCARD	Jun 2023	AMAZON	Commercial Pressure Washer	\$1,099.99

6/24/2023	PCARD	Jun 2023	LOWES	Junction box, waterproof connectors, Plug ends for manholes.	\$442.28
6/24/2023	PCARD	Jun 2023	CARTER MACHINERY	Retrieval cost to have generator picked up by Carter CAT	\$150.00
6/24/2023	PCARD	Jun 2023	GRAINGER	GRAINGER : 4 inch screws to anchor grates down over trains	\$51.95
6/24/2023	PCARD	Jun 2023	PYRZ WATER SUPPLY	Back Pressure Valve and Rebuild Kit for MR Caustic Pump	\$815.50
6/24/2023	PCARD	Jun 2023	LOWES	Junction box waterproof connectors, plug ends..	\$156.10
6/24/2023	PCARD	Jun 2023	HOME DEPOT	Bushings, Butt Splices, Junction Box for manholes	\$46.26
6/24/2023	PCARD	Jun 2023	SP FIREHOSEDIRECT	Firehoses for dumpster and cleaning	\$373.09
6/24/2023	PCARD	Jun 2023	PUMP PRODUCTS	Overload Protection for new control panel PS16	\$192.89
6/24/2023	PCARD	Jun 2023	HOME DEPOT	LED lamps, waterproof connectors& Junction box for manholes, Plug ends	\$549.58
6/24/2023	PCARD	Jun 2023	HITCHENS TIRE SERVICE	New tires for the skid loader	\$1,105.50
6/24/2023	PCARD	Jun 2023	HOME DEPOT	THE HOME DEPOT Junction box for manhole	\$20.31
6/24/2023	PCARD	Jun 2023	UNITED ELECTRIC	Meter can for PS#74	\$137.56
6/24/2023	PCARD	Jun 2023	AQUAFLOW PUMP & SUPPLY	3 sump pumps 4 floats manholes	\$1,004.77
6/24/2023	PCARD	Jun 2023	HOME DEPOT	Nuts and Bolts hole saw bit for meter at P.S.74	\$71.94
6/24/2023	PCARD	Jun 2023	HOME DEPOT	Extension cords, oil for pressure washer, weed eater line	\$298.89
6/24/2023	PCARD	Jun 2023	AMAZON	return Pressure Washer damaged	(\$1,099.99)
6/24/2023	PCARD	Jun 2023	EUA	30HP VFD for blower	\$5,400.00
6/26/2023	S105768066.001	Jun 2023	United Electric Supply Company	VFD - TRAIN 1 RAS PUMP	\$3,568.92
6/27/2023	S105768066.002	Jun 2023	United Electric Supply Company	DOOR MOUNTING KIT/FACE PLATE - TRAIN 1 RAS PUMP	\$216.36

Afterhours Callouts

WWTP- 6/12 Dewatering screen tank high level. No issues found.

WWTP- 6/20 UF Train 2 shut down had to be reset.

WWTP- 6/27 UF Train 2 shut down had to be reset.

Health & Safety

- As of June 30, 2023, Inframark staff and contractors have worked 984 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations –
 - Inframark Control of Hazardous Energy
 - Civil Treatment Workplace for Leaders

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

- May DMR
- June eMaint Report
- June Sussex County Flow Totals
- UF InSight Report