

LEWES BPW

Howard Seymour Water Reclamation Plant

Operation and Maintenance Report



July 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.**
- 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 underway.**
- A rental emergency generator is online at Pump Station 4 while plans for a permanent solution are being evaluated. **Three Classic T8 rotating assemblies for PS3 have been received. Upon delivery it was determined that the assemblies will not work with the pump casing styles at PS3. A quote has been received to provide pump casings that will work with the new assemblies. Inframark is working with BPW to explore the best and most cost-effective option to move forward.** A contractor completed hydro-excavating at PS3 to locate the force main for future installation of bypass connections. **Work to install bypass valves is being scheduled for after Labor Day weekend.** Approval for a proposal to replace wet well piping in PS2 is required. **Inframark continues to visit PS3 daily to top off oil to Pump 2 and ensure it has maintained prime.**
- 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	???
Replace Generator and ATS at PS4	GMB and Keystone are evaluating size based on future needs	High	BPW Project	QTR4 2022
Rehab Pumps at PS3	Rotating assemblies received. Sprig to cut in bypass valves during September.	High	Received	QTR3 2022
Replace wet-well piping PS2	Proposal from Sprig submitted to BPW	High	Needed	QTR3 2022
Electric Manhole Sump Pump power and control replacement	Soliciting Quotes	Medium		QTR4 2022
Megger Power Cables	Soliciting Quotes	Predictive		QTR4 2022

Operations

NPDES Permit Compliance

- Please review the following tables that summarize NPDES reporting criteria for July 2022. No violations will be reported for July. The DMR will be forwarded upon completion.
- The average daily influent flow for July was 0.794 MGD with a maximum daily flow of 1.169 MGD. Precipitation totaled 3.1 inches for July with a maximum daily total of 1.1 inches.

	Max	Sum			
Precipitation (inches)	1.08	3.12			
Influent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.794	0.702	1.169	
BOD (mg/L)		217	217	217	
TSS (mg/L)		100	100	100	
Effluent	Limit	Average	Min	Max	Vio
Flow (MGD)		0.793	0.188	1.092	N
Dissolved Oxygen (mg/L)		5.15	4.57	5.85	N
pH (SU)	Min 6/ Max 9	7.36	7.10	7.53	N
Enterococcus (col/100ml)	Avg 10/ Max 104	<1.0	<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	<16	<14	<19	N
BOD Removal (%)		98.9	98.9	98.9	
TSS (mg/L)	Avg 15/ Max 23	<0.9	<0.5	<2.0	N
TSS Load (lbs)	Avg 188/ Max 288	<6	<3	<13	N
TSS Removal (%)		99	99	99	

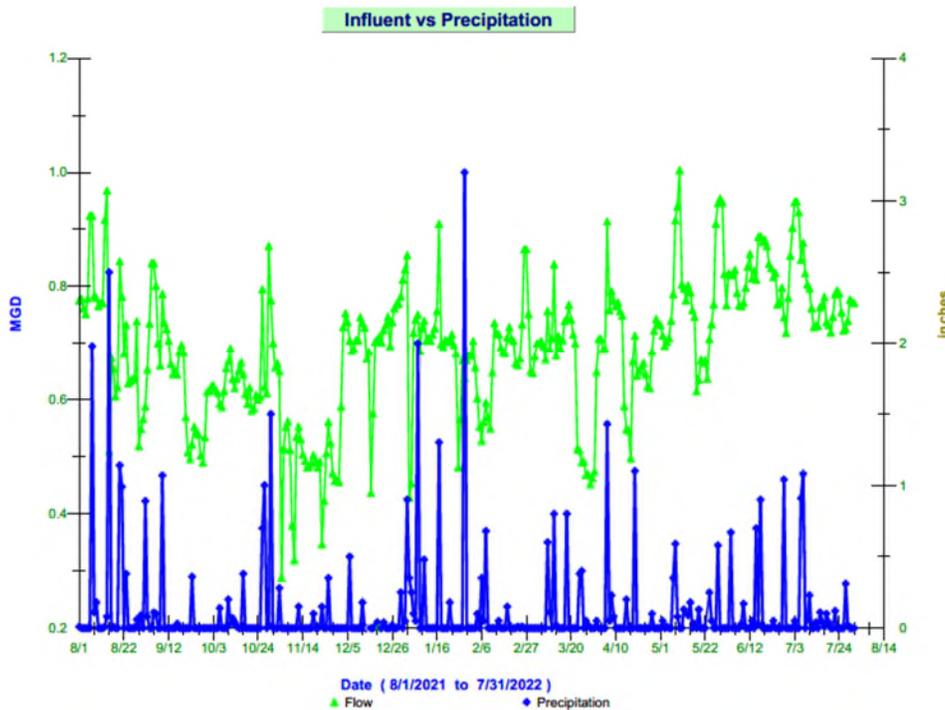
Total Nitrogen (mg/L)	Avg 8	5.20	5.20	5.20	N
Total Nitrogen Load (lbs)	Avg 100	36.09	36.09	36.09	N
Total Phosphorous (mg/L)	Avg 2	1.01	1.01	1.01	N
Total Phosphorous Load (lbs)	Avg 25	7.98	7.98	7.98	N
Process		Average	Min	Max	
Bio #1 MLSS (mg/L)		10,200	9,100	11,400	
Bio #2 MLSS (mg/L)		10,850	10,600	11,100	
Train 1 MLSS (mg/L)		14,100	11,000	18,700	
Train 2 MLSS (mg/L)		13,267	10,200	19,000	
Train 3 MLSS (mg/L)		9,900	9,100	10,700	
Train 4 MLSS (mg/L)		11,333	10,200	12,000	
TSS Digester 1 (mg/L)		17,925	10,800	20,500	
TSS Digester 2 (mg/L)		14,800	9,400	18,200	
	Average	Max	Sum		
Sludge Wasted (gallons)	12,077	18,090	374,377		

Sludge Operations and Disposal

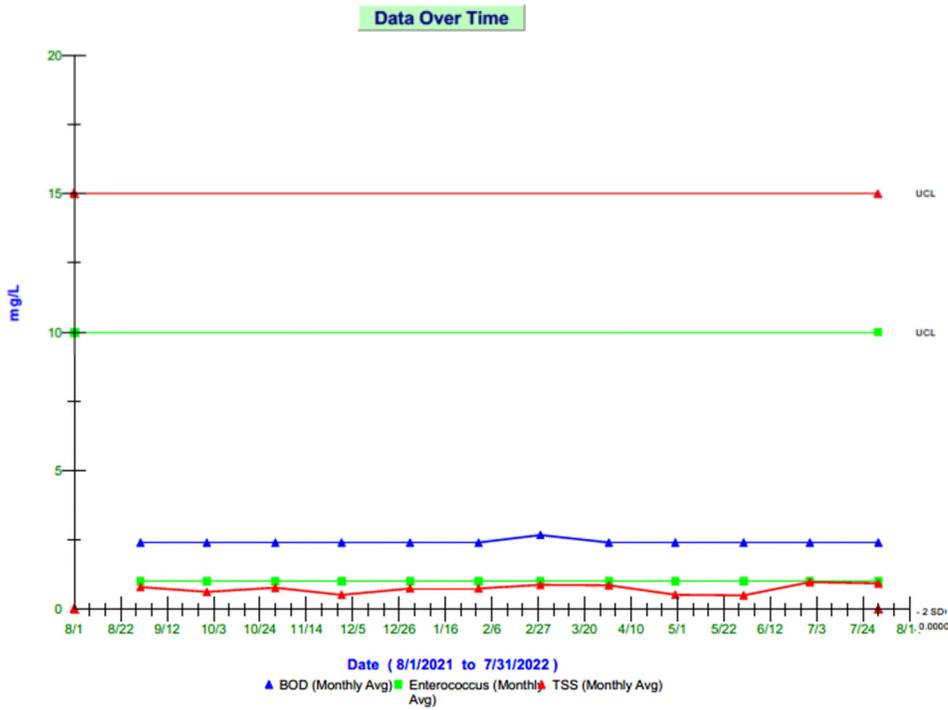
Liquid Hauled	56,000 Gallons	DELCORA
Cake Hauled	68.3 Wet Tons	Sussex County
Dewatering Container	11,500 Gallons	DELCORA

Trends

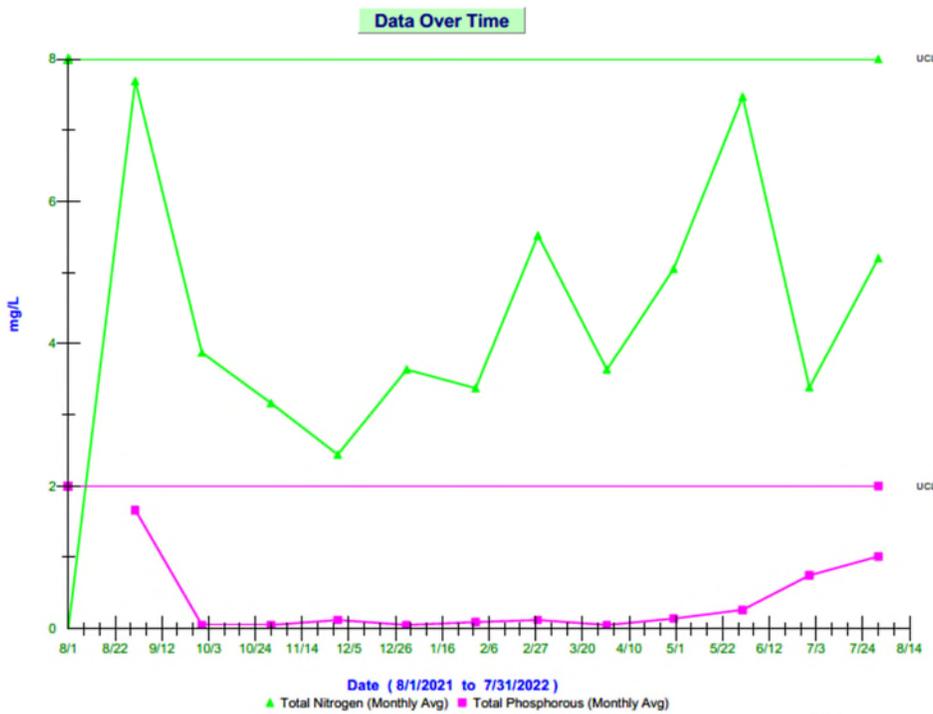
Influent vs Precipitation Trend Previous 12 Months



Effluent Biological Contaminants Trend Previous 12 Months



Effluent Nutrient Trends Previous 12 Months



Maintenance, Repair and Activities

7-1-2022-WWTP- Inframark replaced oil to all three solids blowers.

7-1-2022-WWTP- Inframark replaced drive belts to all three solids blowers.

7-8-2022-WWTP- BPW Information Technology Personnel onsite to troubleshoot Zenon communications issues.

7-12-2022-WWTP-Zenon communications module sent back to Suez for repair or replacement.

7-14-2022-WWTP-Inframark completed quarterly hypochlorite clean in place to Kubota Digester Membranes.

7-19-2022-WWTP- Inframark replaced drive belts to all three Gorman Rupp EQ Pumps.

7-26-2022-PS4-Inframark replaced the air pump to the level sensor bubbler system to the station controls.

7-26-2022-WWTP-Inframark installed new air filter elements to all three biological process blowers.

7-26-2022-WWTP-Inframark installed new air filter elements to all five UF Membrane Blowers.

7-26-2022-WWTP-Inframark installed new air filter elements to all three solids blowers.

7-28-2022-PS17-CDI onsite to clean wet well. Inframark pulled both pumps, cleaned, inspected and installed new lifting chains.

Afterhours Alarm Callouts

7-16-2022-Point Watch alarms to PS2, PS10, PS14, PS15 and PS19 for power failure.

7-16-2022-PS2- Point Watch alarm for power failure.

7-27-2022-PS17-High wet well level

Maintenance Budget

Monthly Budget	July 2022	Contract Year to Date	Over
\$6,667	\$ 17,719.96	\$156,387.2	\$76,387.20

Maintenance Expenditures

Vendor	Description	Expense
AMAZON	Oil transfer pump for equipment oil changes	\$187.38
AUTOMATIONDIRECT.COM	Drive coupling spider spares	\$56.00
BELAIR ROAD SUPPLY CO	Sewer plug for PS4	\$1,542.06
BELAIR ROAD SUPPLY CO	Materials for PS3 temporary emergency bypass	\$280.90
BELAIR ROAD SUPPLY CO	Bypass Fittings and plugs needed for PS 9 piping install	\$647.29
BESTS ACE HDWE	Plumbing materials	\$4.77
BESTS ACE HDWE	Digester polymer injection repair parts	\$24.74
BESTS ACE HDWE	Materials to secure citric acid chemical fill	\$8.98
BESTS ACE HDWE	Fittings for 3-inch pump	\$16.17
BESTS ACE HDWE	Materials to repair polymer injection for sludge beds	\$12.16
Carter Machinery Co Inc	PS4 Generator Rental February	\$1,768.68
Carter Machinery Co Inc	PS4 Generator Delivery January 28, 2022	\$300.00
Carter Machinery Co Inc	PS4 Generator Rental March	\$1,768.68
Carter Machinery Co Inc	PS4 Generator Rental April	\$1,768.68
Carter Machinery Co Inc	PS4 Generator Rental May	\$1,768.68
Carter Machinery Co Inc	PS4 Generator Rental June	\$1,768.68
Carter Machinery Co Inc	PS4 Generator Rental July	\$1,768.68

GEORGE SHERMAN CORP	Office AC Repair	\$149.00
GRAINGER	Ball valves for chemical feed pumps and hose fittings	\$191.74
GRAINGER	Belts for Aerzen blower annual service	\$537.85
HAZZARD AUTO PARTS	Aerzen blower oil for annual service	\$579.98
HAZZARD AUTO PARTS	PS8 Generator battery replacement	\$179.99
HAZZARD AUTO PARTS	Oil for blower annual service	\$422.29
K & Z Mechanical, Inc.	Emergency Call to troubleshoot relay issue to PS17	\$380.00
K & Z Mechanical, Inc.	Emergency Call to troubleshoot electrical issue PS5. Control conductors failed. Bypassed to get pump working.	\$380.00
LOWES	Materials required to outfit 24-inch sewer plug for PS4 wet well bypass	\$168.64
LOWES	Drying bed maintenance materials and brush	\$85.07
LOWES	Spare keys for Tower Hill PS locks and key organizational tags	\$37.10
LOWES	Tower Hill PS flush parts for detention time reduction	\$174.88
LOWES	Parts needed to bypass PS9 for piping installation	\$90.42
SAMSClub	Portable AC Unit for Maintenance Office	\$372.94
THE HOME DEPOT	Pump needed for 90 replacement at PS4	\$389.00
THE HOME DEPOT	Tools for station checks and maintenance	\$118.32
THE HOME DEPOT	Hose for pumping electric manholes	\$16.78
THE HOME DEPOT	Returned pump	\$(389.00)
THE HOME DEPOT	Chemical feed materials	\$52.66
USA BLUE BOOK	Chemical feed materials	\$89.77

Health & Safety

- As of July 31, 2022, Inframark staff have worked 650 days at the Lewes Facilities without a lost time injury.
- Inframark Training and Presentations -Annual Pause Program Refresher

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

- July Sussex County Flow Totals
- June DMR