LEWES WASTEWATER TREATMENT PLANT

Influent Flow Report

Influent Flow

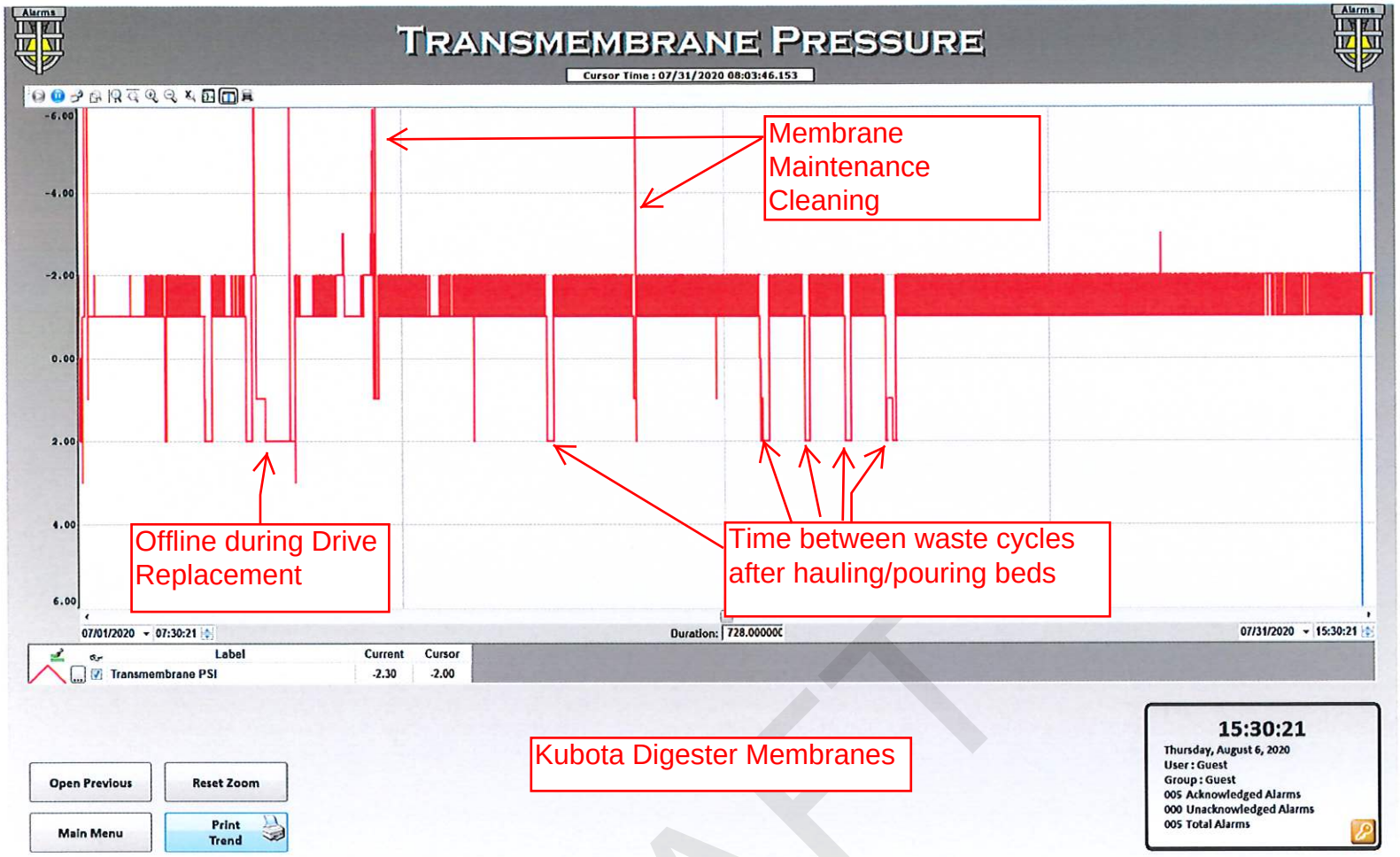
Time	Flow
7/1/2020	984600
7/2/2020	1015300
7/3/2020	861900
7/4/2020	1040100
7/5/2020	1158100
7/6/2020	1019200
7/7/2020	960200
7/8/2020	889800
7/9/2020	894200
7/10/2020	1631300 ← Peak Day
7/11/2020	1238000
7/12/2020	1218600
7/13/2020	1094300
7/14/2020	1054700
7/15/2020	1015700
7/16/2020	1014200
7/17/2020	1087300
7/18/2020	1083300
7/19/2020	1079000
7/20/2020	1043400
7/21/2020	1010500
7/22/2020	948700
7/23/2020	880400
7/24/2020	800800
7/25/2020	830600
7/26/2020	813600
7/27/2020	780200
7/28/2020	762300
7/29/2020	754500
7/30/2020	762900
7/31/2020	782300
Total Flow :	30510000

LEWES WASTEWATER TREATMENT PLANT

Effluent Flow Report

Effluent Flow

Time	Flow
7/1/2020	966400
7/2/2020	975800
7/3/2020	901000
7/4/2020	963100
7/5/2020	1101900
7/6/2020	1085400
7/7/2020	986500
7/8/2020	881900
7/9/2020	939100
7/10/2020	1401500 ← Peak Day
7/11/2020	1177400
7/12/2020	1209700
7/13/2020	1198600
7/14/2020	1041700
7/15/2020	998400
7/16/2020	996600
7/17/2020	1073300
7/18/2020	1070000
7/19/2020	1069800
7/20/2020	1030500
7/21/2020	994500
7/22/2020	941500
7/23/2020	912000
7/24/2020	796100
7/25/2020	831000
7/26/2020	814800
7/27/2020	776500
7/28/2020	764300
7/29/2020	759200
7/30/2020	763700
7/31/2020	785500
Total Flow :	30207700



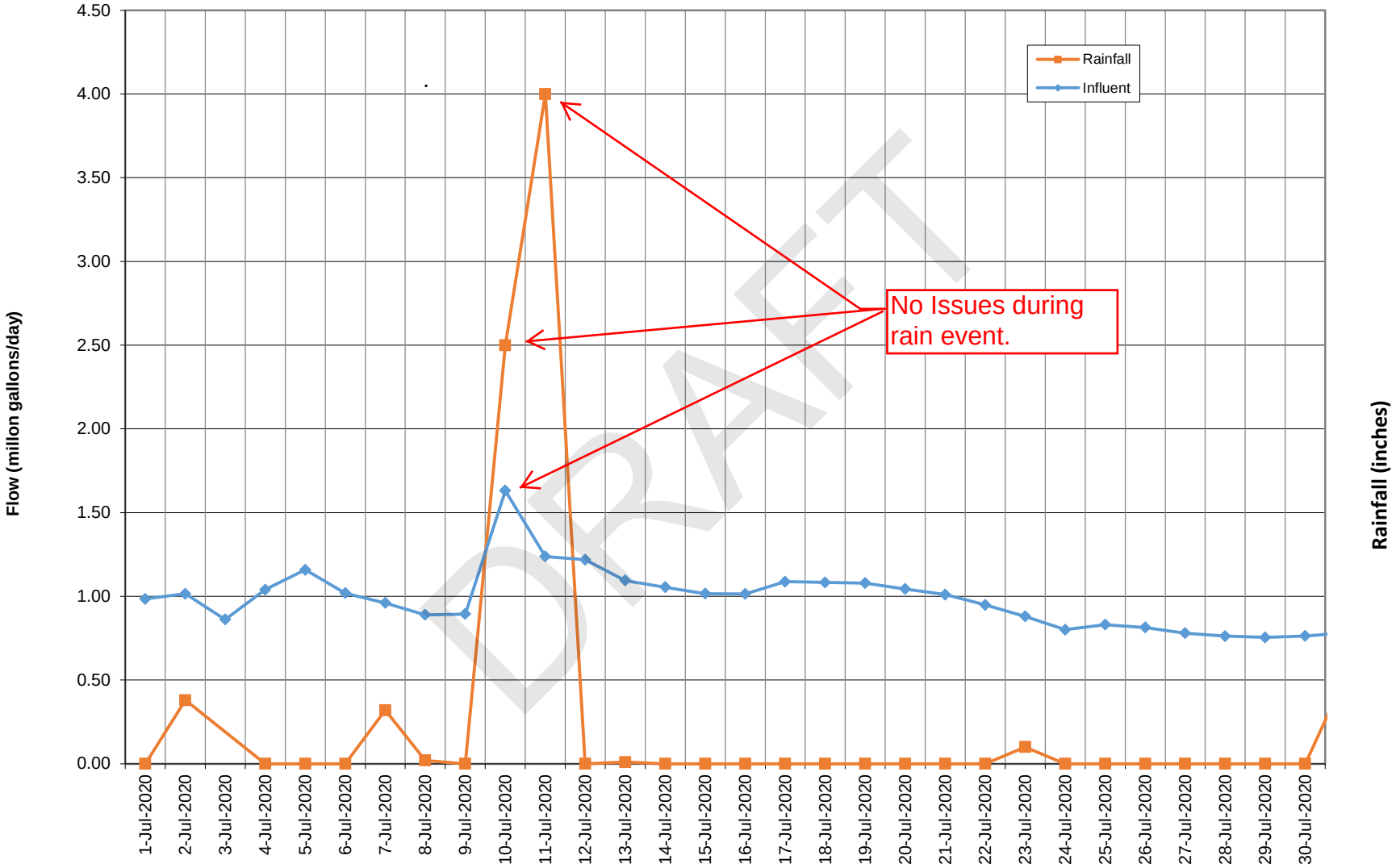
Kubota Digester Membranes

Open Previous | Reset Zoom | Main Menu | Print Trend

15:30:21
Thursday, August 6, 2020
User : Guest
Group : Guest
005 Acknowledged Alarms
000 Unacknowledged Alarms
005 Total Alarms

Lewes WWTP

Influent Flow Vs. Rainfall



8/12/2020

LEWES BPW WWTP Biweekly InSight Report

Date: **8/12/2020**

From: Erin Horocholyn - Suez Water Technologies & Solutions
To: Dave Weed, Darrin Gordon
cc: Matt Stapleford - Suez Water Technologies & Solutions

System Equipment

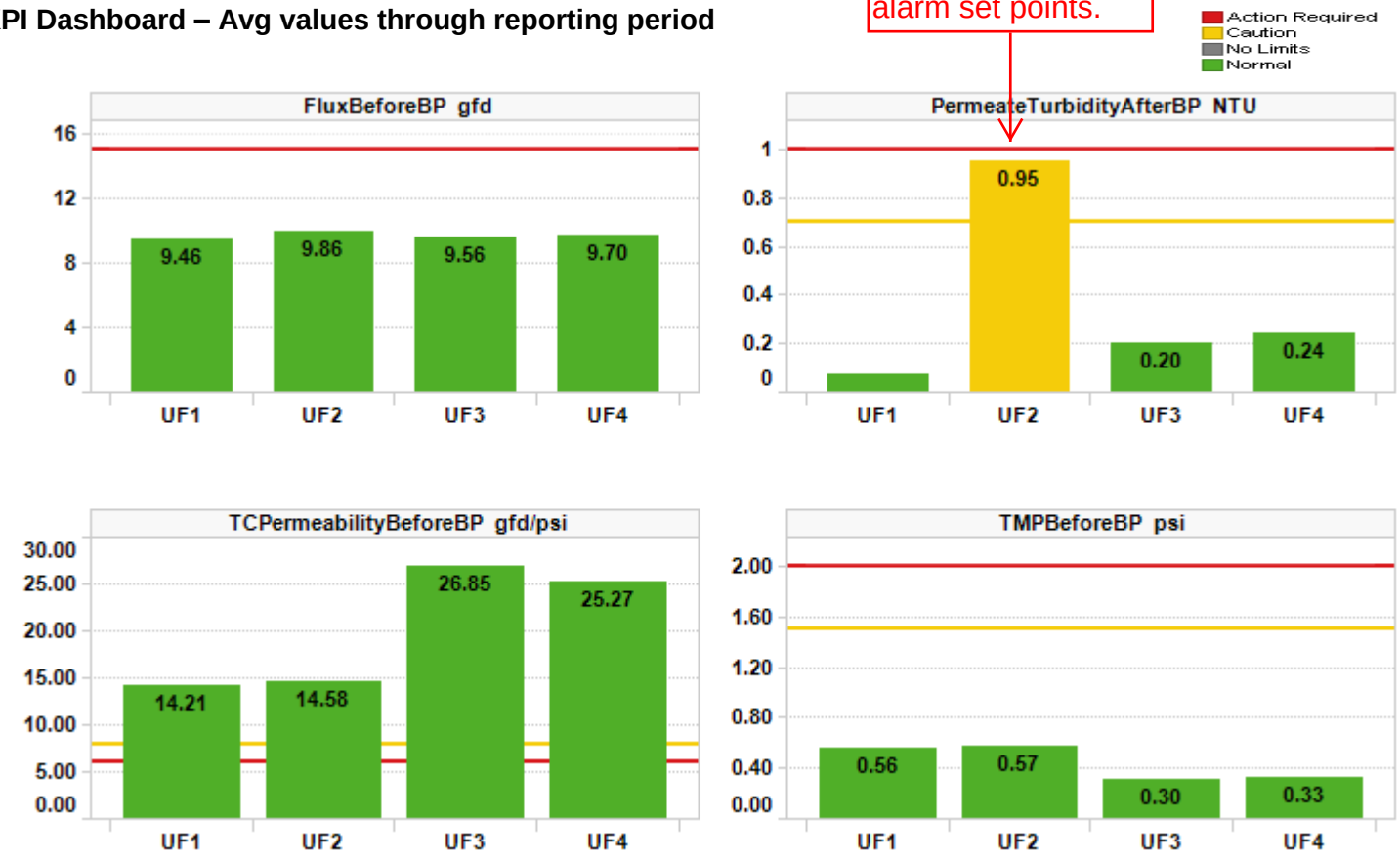
4 × ZW trains, each train consists of 4 - 500D cassettes, 120 modules x 370 sq. ft. per train (surface area 44,400 sq. ft. per train)
Replacement membranes installed Q1 2020 on all 4 trains

Cleaning Strategy

Recovery cleaning - 2 NaOCl @ 2000 ppm dose/1000 ppm soak per year, 1 Citric acid @ 2000 ppm per year
Maintenance cleaning - 1 NaOCl per week @ 200 ppm, 1 Citric acid per week @ 2000 ppm

KPI Dashboard – Avg values through reporting period

Investigating cause of higher levels. Level is under alarm set points.



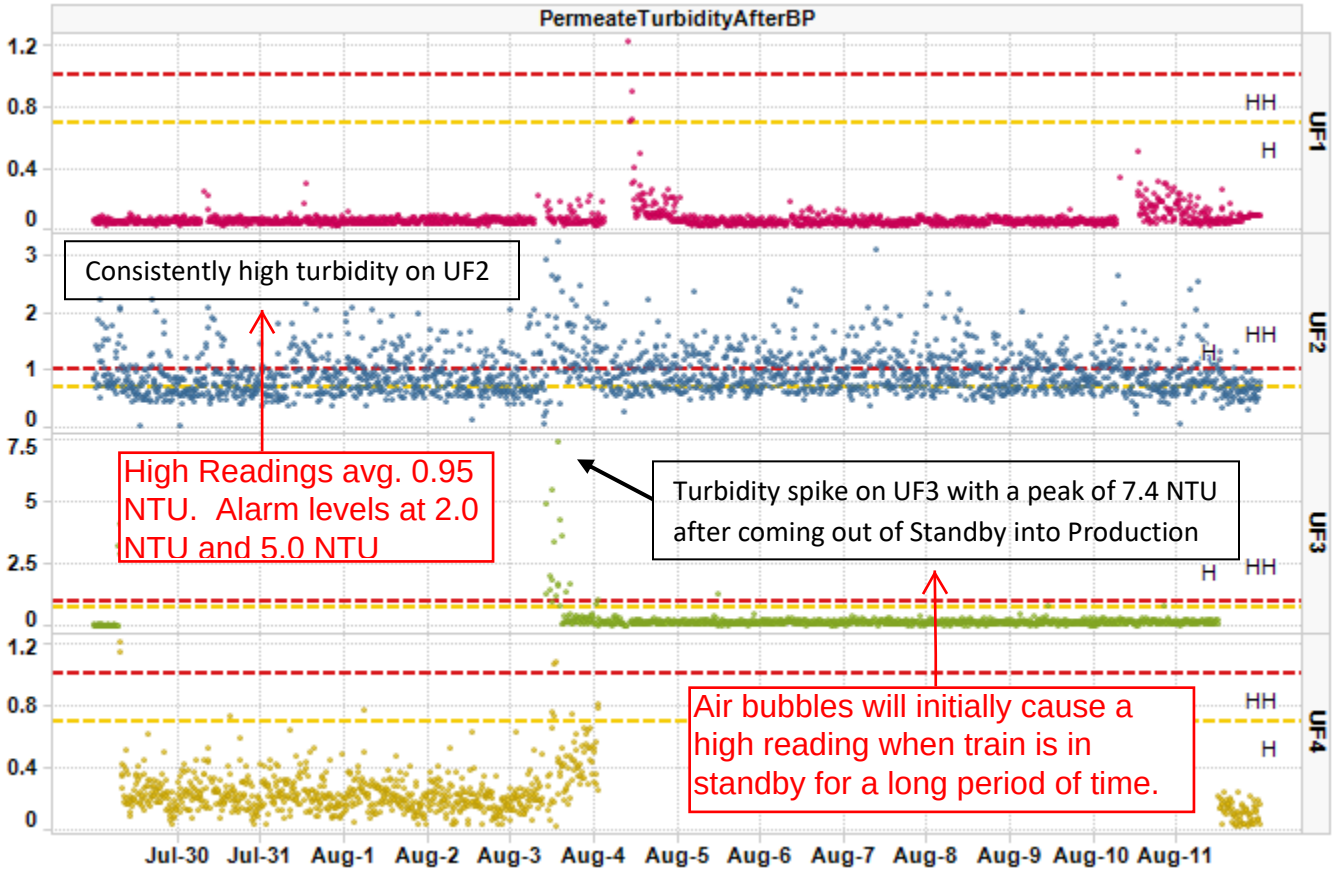
Plant Summary

Acronyms:

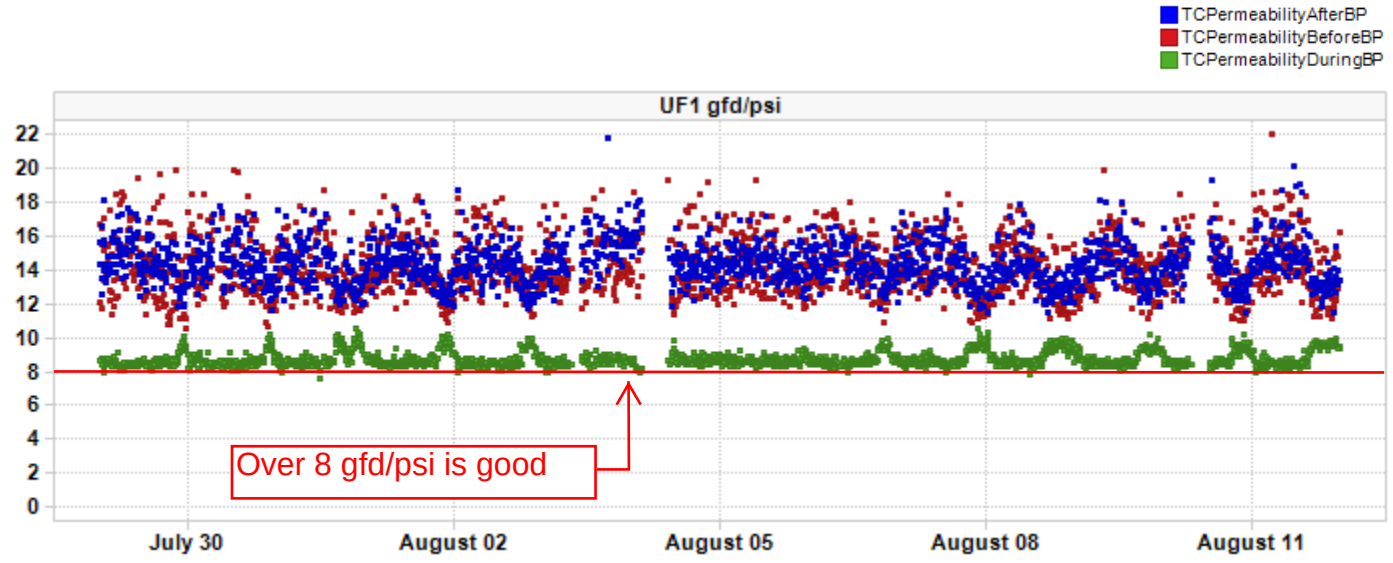
- TC = temperature corrected
- BBP = before backpulse
- RC = recovery clean
- TMP = trans membrane pressure

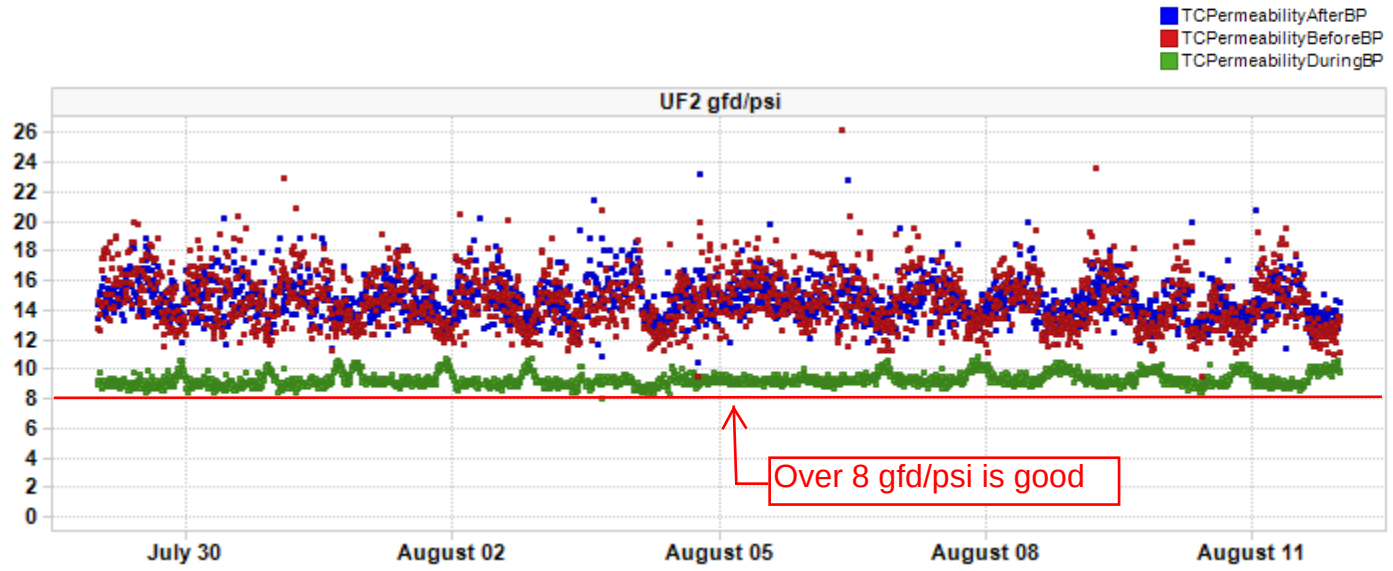
Overall, the plant operated well in terms of permeability and TMP. Train UF2 is seeing turbidities around 1 NTU, which is high. It would be good to verify this with a hand-held reading if possible, and check the turbidimeter tubing to see if there is any biogrowth in the UF2 tubes.

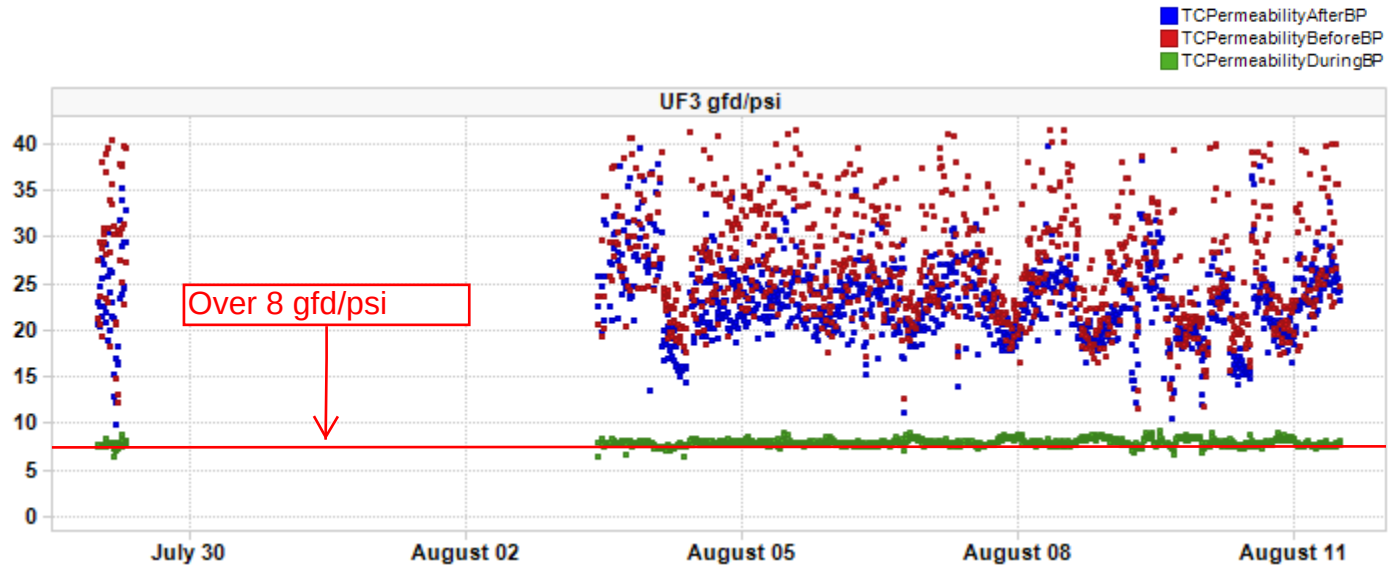
- Daily permeate production averaged 848 kgal on days where there was significant permeate production (Jul 30, Aug 5; see Daily Permeate Flow plot on page 5 of this report). Maximum permeate flow was 850 kgal on July 30th
- TC permeability BBP was good on all trains, and excellent on trains UF3 and UF4. UF1 and UF2 averaged 14.21 and 14.58 gfd/psi respectively. UF3 and UF4 averaged 26.85 and 25.27 respectively. For reference, TC permeability BBP is considered good above 8 gfd/psi.
- TMP was great on all trains. UF1 and UF2 averaged 0.56 – 0.57 psi, while UF3 and UF4 averaged 0.30 and 0.33 psi. For reference, excellent TMP is below 1.0 psi
- Permeate turbidity was excellent on UF1, averaging 0.07 NTU. UF3 had a turbidity spike with a peak of 7.4 NTU on Aug 3 when the train came out of standby into production, and after this short spike the train averaged 0.16 NTU which is good. UF4 averaged 0.24 NTU which is also good. UF2 had the highest permeate turbidity, averaging 0.95 NTU, which is just shy of the current HH limit of 1.0 NTU. For reference, excellent turbidity is less than 0.1 NTU, and good turbidity less than approximately 0.3 NTU

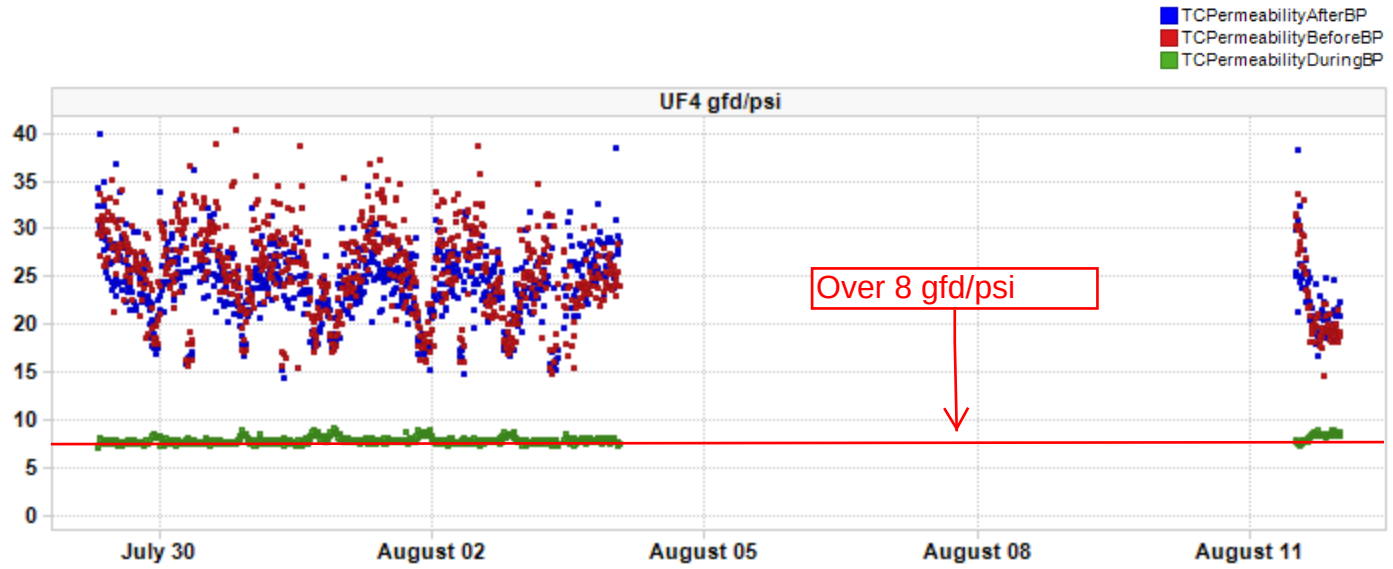


TC Permeability Trends By Train

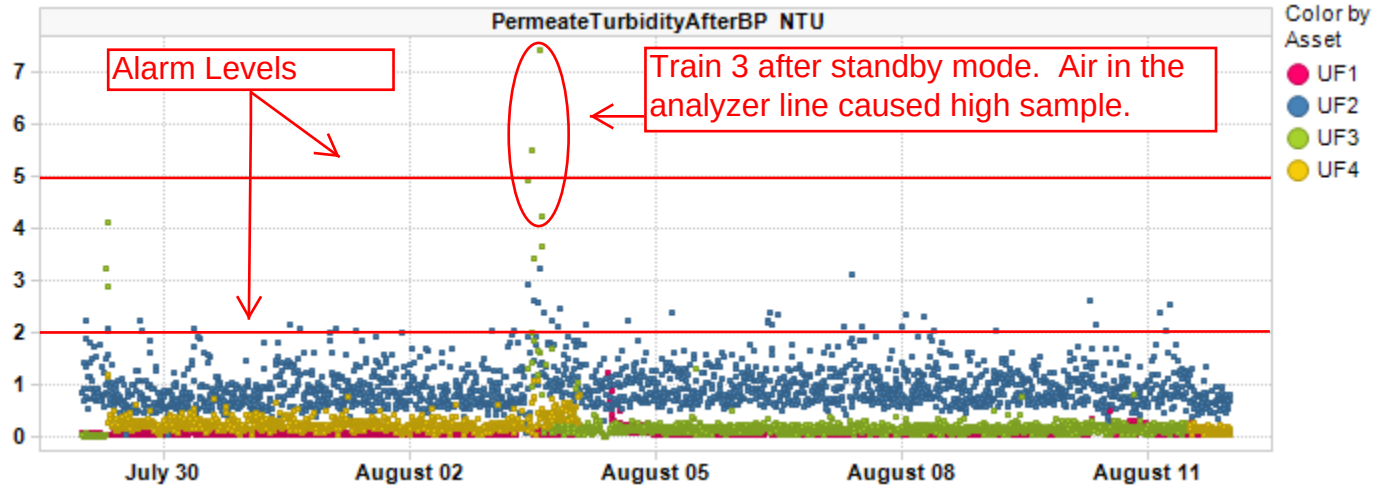




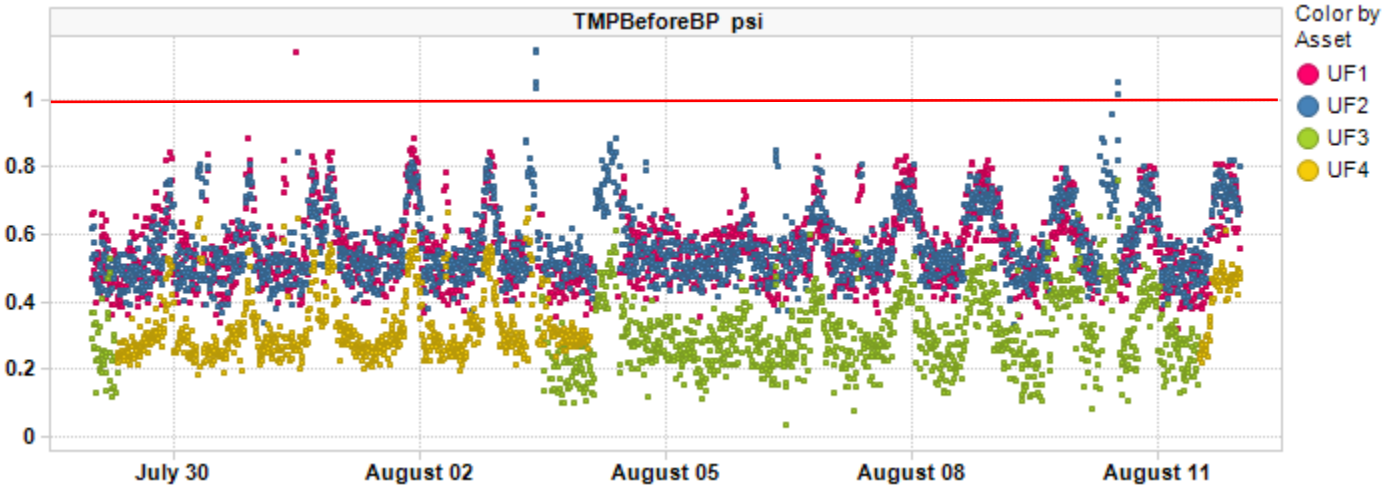




Permeate Turbidity Trend

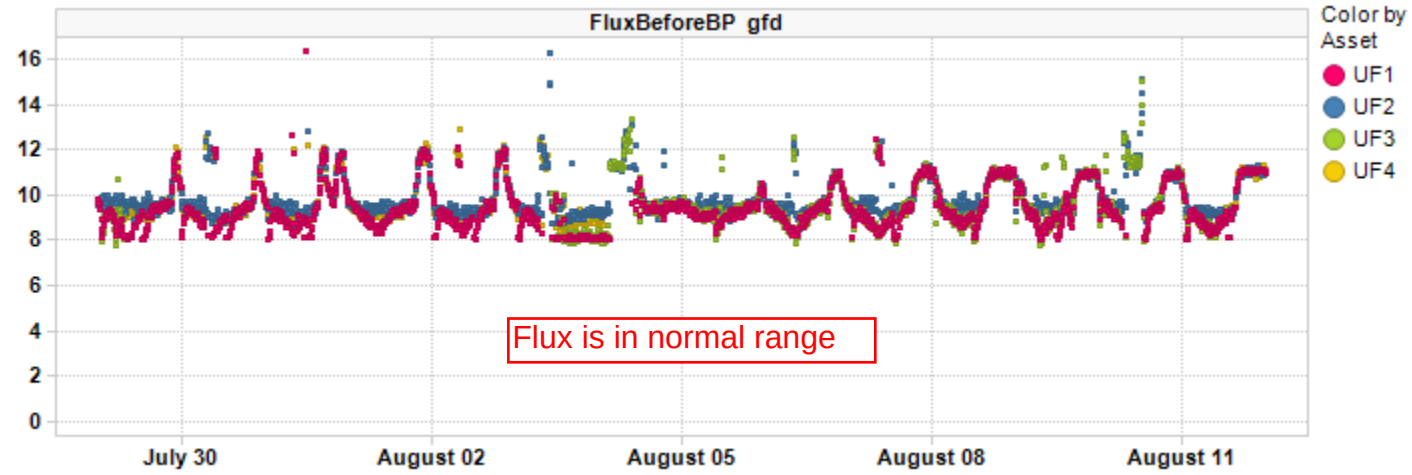


Before BPTMP Trend

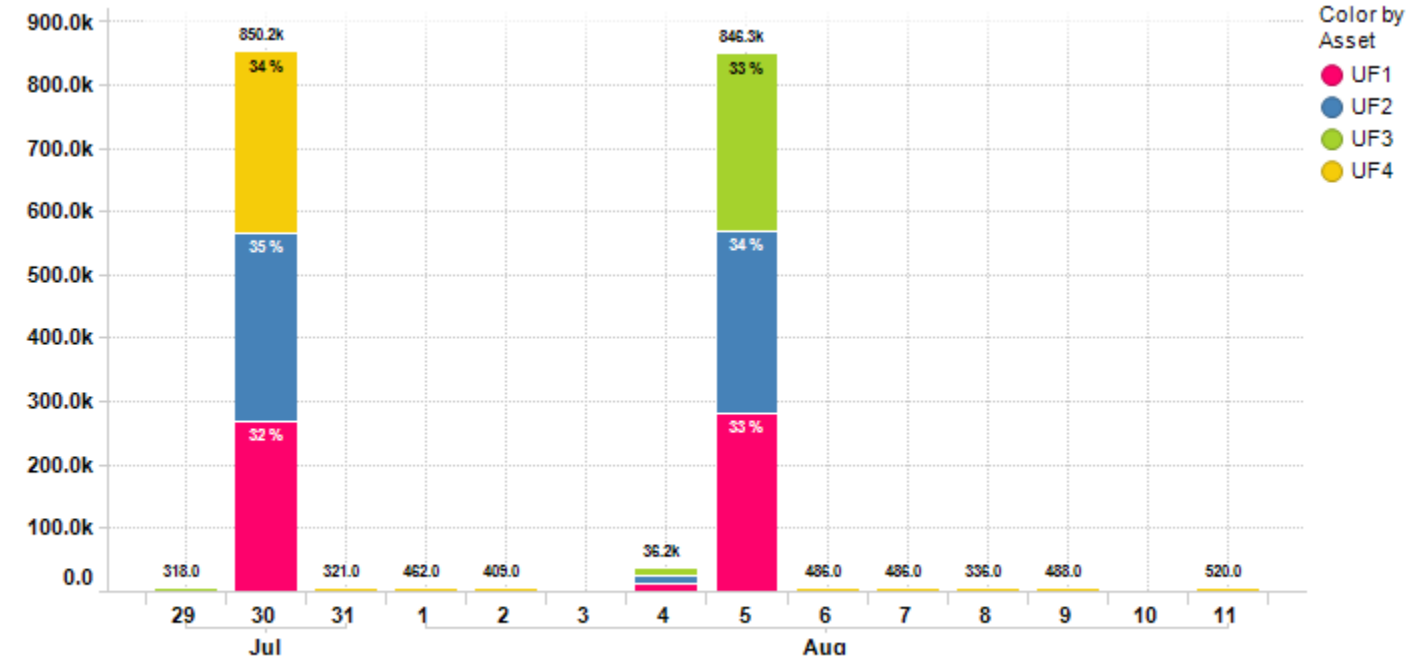


Below 1 psi is good

Before BP Flux Trend



Daily Permeate Flow



Average Daily permeate flow from 7/29/2020 to 8/11/2020 is 144.6k gal with a maximum daily flow of 850.2k gal.

Plant Summary

KPI Parameters	Value/Change	UF Plant
TotalPermeateFlowDaily gal	Value	165.65k
	Change	50.95 %

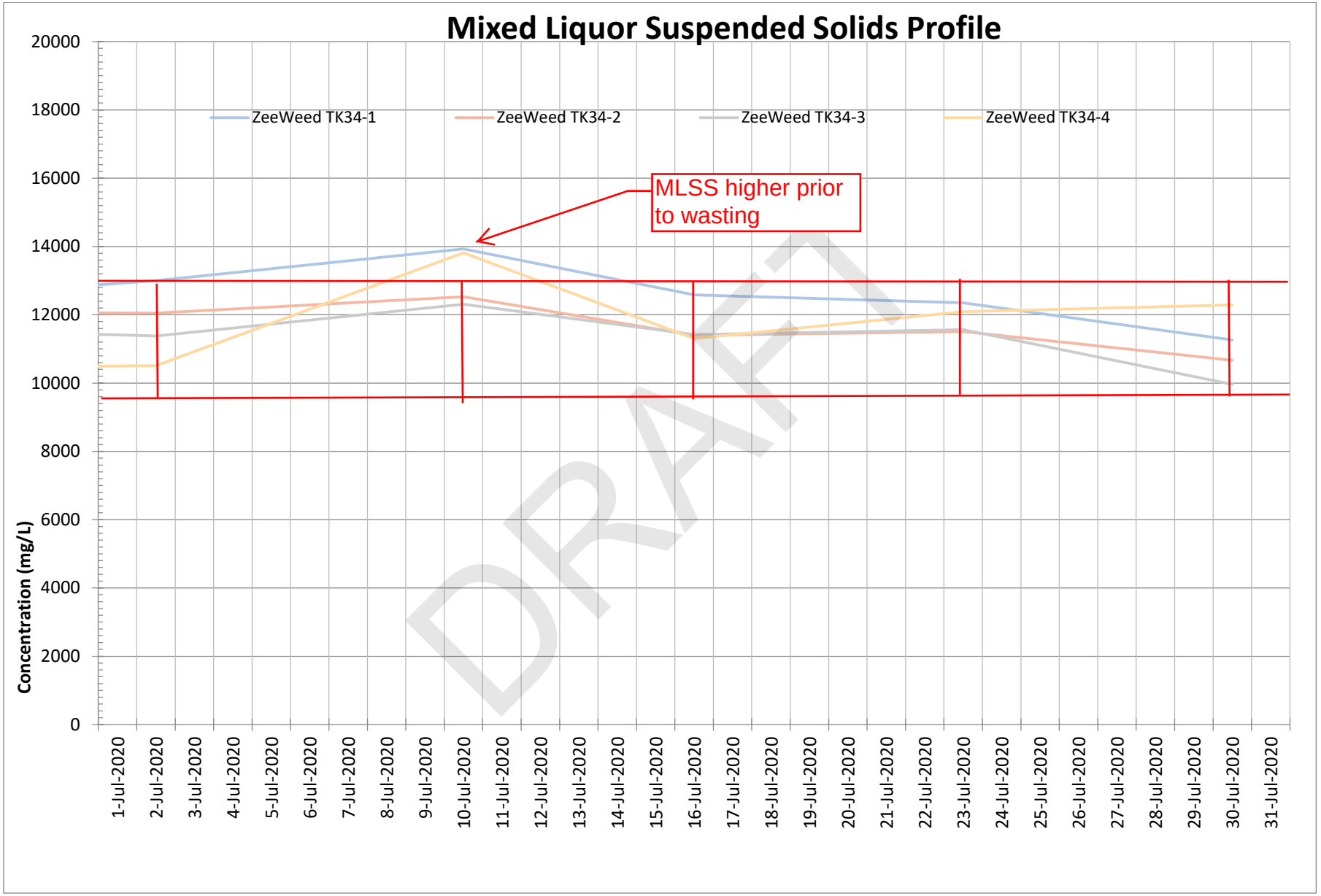
Asset Summary

KPI Parameters	Value/Change	UF1	UF2	UF3	UF4
FluxBeforeBP gfd	Value	9.46	9.86	9.56	9.70
	Change	-1.48 %	-1.83 %	2.45 %	-1.46 %
FluxDuringBP gfd	Value	18.82	18.54	18.66	18.78
	Change	7.22 %	4.94 %	8.89 %	7.91 %
PermeateTurbidityAfterBP NTU	Value	0.07	0.95	0.20	0.24
	Change	5.74 %	-5.03 %	85.69 %	100.00 %
TCPermeabilityBeforeBP gfd/psi	Value	14.21	14.58	26.85	25.27
	Change	12.97 %	8.54 %	15.78 %	17.56 %
TMPBeforeBP psi	Value	0.56	0.57	0.30	0.33
	Change	-19.89 %	-17.16 %	-23.45 %	-27.33 %
TotalPermeateFlowDaily gal	Value	51.28k	59.52k	24.29k	25.98k
	Change	42.70 %	56.38 %	-2.01 %	98.67 %

Contract Expiry Date : **(Empty)**

For InSight technical assistance please email insight.src@suez.com or please call technical support at 1 866 271 5425 or 905 469 7723 and follow the prompts, if you require after hours assistance please contact the 24/7 Emergency number provided in your plant documentation. This email is a summary of issues identified during a manual review of InSight data from the time period above. This review is an analysis of data that is logged by InSight and identifies key plant performance issues determined from this data. This data review was not focused on minor data issues but on identifying possible existing and/or upcoming critical operational issues.

This review was prepared by SUEZ Water Technologies & Solutions solely to assist water treatment plant owners and/or operators in analyzing and optimizing plant performance and is not intended to be used or relied upon for regulatory compliance or any other purpose. The content of this review is based in whole or in part on operation data obtained from the plant using InSight software. SUEZ Water Technologies & Solutions makes no representations or warranties as to the accuracy of the plant data utilized in the preparation of this review. SUEZ Water Technologies & Solutions accepts no liability for consequences or actions taken in whole or in part by any person on the basis of this review or its contents


Mixed Liquor Suspended Solids Profile
ZeeWeed TK34-1
ZeeWeed TK34-2
ZeeWeed TK34-3
ZeeWeed TK34-4
MLSS higher prior to wasting
Concentration (mg/L)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1-Jul-2020
2-Jul-2020
3-Jul-2020
4-Jul-2020
5-Jul-2020
6-Jul-2020
7-Jul-2020
8-Jul-2020
9-Jul-2020
10-Jul-2020
11-Jul-2020
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23-Jul-2020
24-Jul-2020
25-Jul-2020
26-Jul-2020
27-Jul-2020
28-Jul-2020
29-Jul-2020
30-Jul-2020
31-Jul-2020

PUMP STATION 196

Jul-20		PS 196	
		METER READING	24 HOUR FLOW
WED	1	62955700	0.355823
THUR	2	63311523	0.375857
FRI	3	63687380	0.160350
SAT	4	63847730	0.419590
SUN	5	64267320	0.418850
MON	6	64686170	0.444510
TUE	7	65130680	0.310790
WED	8	65441470	0.280510
THUR	9	65721980	0.272020
FRI	10	65994000	0.250580
SAT	11	66244580	0.353130
SUN	12	66597710	0.369000
MON	13	66966710	0.344270
TUE	14	67310980	0.340260
WED	15	67651240	0.334410
THUR	16	67985650	0.341410
FRI	17	68327060	0.363650
SAT	18	68690710	0.371590
SUN	19	69062300	0.358920
MON	20	69421220	0.367410
TUE	21	69788630	0.308530
WED	22	70097160	0.301630
THUR	23	70398790	0.212550
FRI	24	70611340	0.128750
SAT	25	70740090	0.138360
SUN	26	70878450	0.134370
MON	27	71012820	0.123390
TUE	28	71136210	0.117610
WED	29	71253820	0.119020
THUR	30	71372840	0.123100
FRI	31	71495940	0.129190
		71625130	
TOTAL			8.669430
COUNT			31
AVERAGE			0.279659
MINIMUM			0.117610
MAXIMUM			0.444510

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if different):

NAME Howard Seymour Water Reclamation Plant

ADDRESS 116 American Legion Road, Lewes, DE 19958 US

FACILITY Howard Seymour Water Reclamation Plant

LOCATION 116 American Legion Road, Lewes, DE 19958 US

DE0021512 — PERMIT NUMBER

001 — DISCHARGE NUMBER

MONITORING PERIOD FROM 2020 07 01 TO 2020 31

REPORT DESIGNATOR	A
DATA ENTRY COMPLETE	8/10/2020
REPORT SUBMITTED BY	jmarion@tuiwater.com
STATUS OF SUBMISSION	Submitted for Signature

#	PARAMETER		NDI	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
				AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
1/1	Flow	SAMPLE MEASUREMENT		**0.9745**	**1.4016**	**Mil Gal/Day**				--	**0**	**99/99**	**RCOTOT**
	Gross Effluent (50050)	PERMIT REQUIREMENT	-	No Limit | Monitoring Reqd	No Limit | Monitoring Reqd	Mil Gal/Day	No Monitoring Required	No Monitoring Required	No Monitoring Required	--	--	99/99	RCOTOT
1/2	Dissolved oxygen (DO)	SAMPLE MEASUREMENT				--	**1.93**		**4.4**	**mg/l**	**0**	**99/99**	**Imersion**
	Gross Effluent (00300)	PERMIT REQUIREMENT	-	No Monitoring Required	No Monitoring Required	--	No Limit | Monitoring Reqd	No Monitoring Required	No Limit | Monitoring Reqd	mg/l	--	99/99	Imersion
1/3	pH	SAMPLE MEASUREMENT				--	**7.2**		**7.6**	**Std pH Units**	**0**	**01/01**	**Grab**
	Gross Effluent (00400)	PERMIT REQUIREMENT	-	No Monitoring Required	No Monitoring Required	--	6	No Monitoring Required	9	Std pH Units	--	01/01	Grab
1/4	Enterococcus	SAMPLE MEASUREMENT				--		**<1**	**<1**	**CFU/100 ML**	**0**	**01/07**	**Grab**
	Gross Effluent (31639)	PERMIT REQUIREMENT	-	No Monitoring Required	No Monitoring Required	--	No Monitoring Required	10	104	CFU/100 ML	--	01/07	Grab
1/5	BOD5	SAMPLE MEASUREMENT		**<2.45**	**<20.85**	**lbs/Day**		**<2.4**	**<2.4**	**mg/l**	**0**	**01/07**	**Composite 24**
	Gross Effluent (00310)	PERMIT REQUIREMENT	-	188	288	lbs/Day	No Monitoring Required	15	23	mg/l	--	01/07	Composite 24
1/6	BOD5	SAMPLE MEASUREMENT				--		**186.5**	**212**	**mg/l**	**0**	**01/30**	**Composite 24**
	Raw Sewage (00310)	PERMIT REQUIREMENT	-	No Monitoring Required	No Monitoring Required	--	No Monitoring Required	No Limit | Monitoring Reqd	No Limit | Monitoring Reqd	mg/l	--	01/30	Composite 24
1/7	TSS	SAMPLE MEASUREMENT		**<0.91**	**<16.45**	**lbs/Day**		**<0.88**	**<2**	**mg/l**	**0**	**01/07**	**Composite 24**
	Gross Effluent (00530)	PERMIT REQUIREMENT	-	188	288	lbs/Day	No Monitoring Required	15	23	mg/l	--	01/07	Composite 24

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

[ATTACH DIGITAL SIGNATURE RECEIPT FROM CROMERR]

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

DATE

YEAR	MO	DAY
2020	08	10

NDI (No Data Indicator) Reasons: 8 - No Sample (Other); 9 - No Sample (Monitoring Not Required this Monitoring Period); B - Not Detected; C - No Sample (No Discharge)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (include Facility Name/Location if different):

NAME Howard Seymour Water Reclamation Plant
ADDRESS 116 American Legion Road, Lewes, DE 19958 US
FACILITY Howard Seymour Water Reclamation Plant
LOCATION 116 American Legion Road, Lewes, DE 19958 US

PERMIT NUMBER DE0021512
DISCHARGE NUMBER 001
MONITORING PERIOD FROM 2020 07 01 TO 2020 07 31

REPORT DESIGNATOR A
DATA ENTRY COMPLETE 8/10/2020
REPORT SUBMITTED BY jmarion@tuiwater.com
STATUS OF SUBMISSION Submitted for Signature

#	PARAMETER		NDI	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
				AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
2/1	TSS	SAMPLE MEASUREMENT				--		108.75	186	mg/l	0	01/30	Composite 24
	Raw Sewage (00530)	PERMIT REQUIREMENT	-	No Monitoring Required	No Monitoring Required	--	No Monitoring Required	No Limit | Monitoring Reqd	No Limit | Monitoring Reqd	mg/l	--	01/30	Composite 24
2/2	Total Nitrogen	SAMPLE MEASUREMENT		9.43	10.08	lbs/Day		1.16	1.16	mg/l	0	01/30	Composite 24
	Gross Effluent (00600)	PERMIT REQUIREMENT	-	100	No Limit | Monitoring Reqd	lbs/Day	No Monitoring Required	8	No Limit | Monitoring Reqd	mg/l	--	01/30	Composite 24
2/3	Phosphorus, Total	SAMPLE MEASUREMENT		11.74	22.5	lbs/Day		1.45	2.59	mg/l	0	02/30	Composite 24
	Gross Effluent (00665)	PERMIT REQUIREMENT	-	25	No Limit | Monitoring Reqd	lbs/Day	No Monitoring Required	2	No Limit | Monitoring Reqd	mg/l	--	01/30	Composite 24

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

~~TYPED OR PRINTED~~

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[ATTACH DIGITAL SIGNATURE RECEIPT FROM CROMERR]

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE

DATE 2020 (YEAR) 08 (MO) 18 (DAY)

NDI (No Data Indicator) Reasons: 8 - No Sample (Other); 9 - No Sample (Monitoring Not Required this Monitoring Period); B - Not Detected; C - No Sample (No Discharge)

LEWES WWTF

NUTRIENT OFFSET REPORT

MONTH	Days	Average Monthly Flow	Monthly Average TN	Total Monthly TN Discharged	TN Based 11.8 lbs Manure Offset Required	Poultry Manure Relocated		Poultry Manure Offset Balance	Monthly Average TP	Total Monthly TP Discharged	TP Based 11.8 lbs Manure Offset Required
		MGD	mg/L	Lbs.	Lbs.	Tons	Lbs.	Lbs.	mg/L	Lbs.	Lbs.
Carry Over								3,195,312.26			
January	31	0.6789	7.74	1358.55	16030.85		-	3,179,281.41	0.15	26.33	310.68
February	29	0.8255	1.16	231.60	2732.88		-	3,176,548.53	0.06	11.58	136.64
March	31	0.8058	1.15	239.58	2827.06		-	3,173,721.47	0.07	14.58	172.08
April	30	0.6604	0.90	148.71	1754.76		-	3,171,966.70	0.51	84.27	994.37
May	31	0.7431	2.52	484.15	5712.91		-	3,166,253.79	1.71	328.53	3876.62
June	30	0.9442	1.97	465.39	5491.61		-	3,160,762.18	1.31	309.47	3651.78
July	31	0.9745	1.16	292.26	3448.65		-	3,157,313.53	1.45	365.32	4310.82
August	31			0.00	0.00		-	3,157,313.53		0.00	0.00
September	30			0.00	0.00		-	3,157,313.53		0.00	0.00
October	31			0.00	0.00		-	3,157,313.53		0.00	0.00
November	30			0.00	0.00		-	3,157,313.53		0.00	0.00
December	31			0.00	0.00		-	3,157,313.53		0.00	0.00
Year Balance								3,157,313.53			

Comments:

Authorized Signatory

8/10/2020
DATE

WHITE MARSH ENVIRONMENTAL SYSTEMS, INC.
MONTHLY OPERTAING REPORT - LEWES WASTEWATER TREATMENT PLANT
ROOT CAUSE REPORT - CORRECTIVE ACTIONS SUMMARY - JULY 2020

Action Item	Due Date	Action Owner	Status Open/ Complete/ Ongoing	Comments/Notes
1. Replace all four trains of filter membranes	May 2020	BPW	Complete	Installation is complete.
2. Reset Turbidity set-point to Manufacture recommended setting	February 2020	WMES	Complete	Reset as of February 13, 2020.
3. Replace all four Turbidity monitors with new models that have additional functionality, including the ability to alarm on loss of flow.	February 2020	WMES	Complete	New model turbidity monitors installed as of February 13, 2020.
4. Have the BPW consulting engineers and BPW staff perform Quarterly WWTF walk through to evaluate the field condition, maintenance records, compliance records and the operation and maintenance of the WWTF.	February 2020	BPW	Complete	GMB performed their first walkthrough for the BPW on February 18, 2020. Paul Peris of WMES accompanied GMB on the walkthrough. WMES received a copy of the report from the first walkthrough on 4-30-20. Second walkthrough was performed on 5-19-20.
5. Review and update the plant Operation and Maintenance Manual to ensure that the current plant configuration is captured, including other updates such as Suez's recommendation on chemical and mechanical cleaning	5/1/2020	BPW	Complete	Darrin Gordon issued an Updated Suez O and M Manual in electronic format to WMES representative on March 3, 2020. WMES is maintaining the electronic version and a hard copy desk version on-site at the Howard H. Seymour Water Reclamation Facility.
6. Issue Contract with Suez to remotely collect data (Insight-Pro) and provide cloud-based access to the data for BPW and plant operator. Suez will monitor and trend data, provide bi-weekly reporting and cleaning recommendations. Suez will provide an annual summary report.	5/1/2020	BPW	Complete	Suez notified the BPW and WMES that the PLC was shipped on April 29, 2020. When the PLC is received by the BPW, it will be installed by the BPW's consultant (Keystone) in consultation with Suez. Programming of new panel scheduled for week of 6-15-20. Suez technician was onsite 6/15/20 to upload the programming for the new control panel. The Insight system is no online due to communication issues. BPW, Josh Gritton, is working with Suez and Keystone to solve the issue.
7. Perform an engineering analysis of the entire plant to identify ways to improve redundancy and reliability of the plant, including:	6/30/2020	BPW	Open	
a. Review current screen design to determine if there is a way to remove more of the "soft and spongy" material to reduce filter	6/30/2020	BPW	Open	
b. Potential for splitting the four filter trains to have them operate in a redundant parallel configuration	6/30/2020	BPW	Open	
c. Configuration of turbidity meters to provide better protection against use of dirty water during back flush cycle	6/30/2020	BPW	Open	
8. WMES to establish an improvement program for monitoring of plant performance to be evaluated and accepted by BPW. The Corrective Actions contained in the WMES report are not detailed enough to provide assurance to BPW that the plant is being operated to industry Best Practices	5/16/2020	WMES	Complete	Included in April Monthly Report to BPW.

WHITE MARSH ENVIRONMENTAL SYSTEMS, INC.
MONTHLY OPERTAING REPORT - LEWES WASTEWATER TREATMENT PLANT
ROOT CAUSE REPORT - CORRECTIVE ACTIONS SUMMARY - JULY 2020

Action Item	Due Date	Action Owner	Status Open/ Complete/ Ongoing	Comments/Notes
9. Improve reporting requirements from WMES to BPW for:	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
a. Off-normal conditions at the plant	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
b. Discharges outside of Permit limits	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
c. OHSA accidents	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
d. Details included in monthly reports (to include trending of performance data, trending of equipment failures, preventative maintenance required, suggested capital improvements and other concerns)	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
e. WMES to present their report at the monthly BPW meeting	5/16/2020	WMES	Complete/Ongoing	Started in April Monthly Report to BPW.
f. Require, as per the contract, a detailed yearly reporting on the operation of the plant to include the items listed in a. through d.	1/15/2021	WMES	Open	To be included in Annual Report to BPW beginning with the 2020 Annual Report.
10. BPW staff to strengthen its oversight of Operators performance				
a. Through the review of trending data in monthly and annual reports	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
b. Schedule routine plant walk through with plant WMES management	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
c. Annual review of WMES Policies and Procedures	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
d. Reporting to the BPW Board of condition of the plant	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
e. Developing of an open Item tracking system	5/16/2020	BPW	Complete/Ongoing	BPW indicates that its staff will commence this as part of the April monthly report process.
11. BPW Board of Directors to review its oversight function of the operation of the BPW. a. Continue to use outside subject matter experts such as Sargent and Lundy, Suez, GMB, etc. to provide the Board with guidance on the condition of the BPW systems b. Perform audit by a sub-group of the Board of the BPW operation and management systems	Annually	BPW	Open	To be completed annually by BPW. Schedule to be determined and added to tracking list that will be developed in Corrective Action 10. e.
12. WMES to develop plans for operating plant in off-normal conditions. BPW provided WMES with a Best Practices template and copy of the prior operating company plan. This should include, but not be limited to:	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
a. Loss of filter membrane	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
b. Digesters	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
c. Other critical equipment	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
d. Loss of Power	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
e. Storm response	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
f. Security Breach	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.
g. Terrorist/cyber terrorist attack	4/16/2020	WMES/BPW	Complete/Open	WMES portion complete, to be submitted as part of the amended March 2020 Monthly Report to the BPW. BPW portion Open; to be done by BPW Engineering Consultant.

WHITE MARSH ENVIRONMENTAL SYSTEMS, INC.
MONTHLY OPERTAING REPORT - LEWES WASTEWATER TREATMENT PLANT
ROOT CAUSE REPORT - CORRECTIVE ACTIONS SUMMARY - JULY 2020

Action Item	Due Date	Action Owner	Status Open/ Complete/ Ongoing	Comments/Notes
13. BPW to look at other areas of its operation to determine if there are generic implications from the failure at the WWTF a. Evaluate the operation of the Water Department, electrical department and other areas of BPW operation to determine where improvements in Management practices are needed.	Undetermined	BPW	Open	Status: In process – Sargent & Lundy is currently performing a review of the BPW electrical system and will provide input to BPW for future capital projects and areas of improvement. Review quarterly at monthly BPW meeting
14. Require all WMES operational staff to have appropriate training by Suez on the proper operation and maintenance of the filters and plant	5/16/2020	WMES	Open	Information included in April Monthly Report to BPW. WMES continues to follow-up with Suez on any training opportunities. Covid-19 pandemic has caused previously scheduled opportunites to be cancelled. Suez is looking at potentially having virtual training sessions. Suez will notify WMES if this becomes available. **Suez providing training on the Insight system on August 13, 2020**
15. WMES to review its safety manual to verify they are complying with the appropriate CDC guidelines and industry best practices for sanitary conditions. Post the appropriate areas of the plant as no-smoking/no-eating	4/16/2020	WMES	Complete	Commitment due as part of the March 2020 Monthly Report to the BPW.
16. WMES to review its safety practices and plant conditions to determine what changes may be required. Note: The Temporary cabling that was installed to protect employees appears to create other safety concerns.	4/16/2020	WMES	Complete	Commitment due as part of the March 2020 Monthly Report to the BPW.
17. BPW to audit WMES safety procedures and practices to included:				
a. Lock-out/Tag-out of equipment	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
b. Confined entry permit	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
c. Personal Protective Equipment	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
d. General Housekeeping	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
e. Chemical control and handling	April 2020	BPW	Complete	Documents are in a binder at the Lewes WWTP
18. WMES to provide a monthly update on its Corrective Actions to BPW	4/16/2020	WMES	Ongoing	Started as part of the March 2020 Monthly Report to the BPW.
19. BPW Staff to provide an update on the status of the above Corrective Actions at routine monthly BPW meetings. This will be part of the standing agenda for the meetings	4/16/2020	BPW	Ongoing	Initially due as part of the review process of the March 2020 Monthly Report to the BPW.

Rec. #		
~~MWC-022420-13~~	~~Process Building – A horizontal lifeline~~ system has been installed by contractor who is performing work over the grates. Request engineering documents from the contractor that include details about this system and ensure that it is installed properly.	
Notes: Permanent lifeline was purchased. Will be installed following completion of membrane upgrades.		
STATUS: Corrected 7/16/20 Estimated Completion Date		
MWC-022420-14	Process Building - A horizontal lifeline system has been installed by contractor who is performing work over the grates. Request engineering documents from the contractor that include details about this system and ensure that it is installed properly.	
Notes: Complete		
STATUS: Corrected 7/16/20 Estimated Completion Date		
~~MWC-022420-15~~	~~Process Building – Housekeeping in~~ this building is very poor. Trip hazards are abundant due to poor material storage practices.	
Notes: Hazards were removed.		
STATUS: Corrected 4/30/20 Estimated Completion Date		