



HULL WATER POLLUTION CONTROL FACILITY

April 2020

MONTHLY OPERATING REPORT



David Wilson

Why did you choose this profession?

My stepfather retired from a career in wastewater and he urged me to consider this profession. In the U.S. Navy, I operated and maintained shipboard SONAR systems. As a Harley-Davidson mechanic, I enjoyed building and maintaining all kinds of bikes. I've been with Woodard & Curran for almost three years and this position is a great fit for me.

What does a typical day on the job look like for you?

During our morning meeting, we review and assign the tasks for the day. If that includes maintenance with confined space entry or lock out/tag out, we review procedures and JSAs for the work. Plant rounds and pump station checks are done early in the day so we can use the rest of the day to finish preventative maintenance tasks, close out work orders, and plan for future work.

How has your job changed during the pandemic?

We are maintaining physical distance from each other, screen contractors who come on site, wash our hands and disinfect work areas more frequently, wear N95 masks, and adapt our schedules to minimize the exposure risk.

How do you find your work important?

We are helping the Town of Hull update and maintain their investment in the wastewater treatment plant while also protecting the local ecosystem.

What do you find rewarding about your job?

Maintenance work is rewarding to me. I enjoy understanding the function of a system, identifying the failure, and making the repair. I also like to drink clean water, eat seafood, and swim safely without being exposed to pollution.

In your down time, what are some things you enjoy?

I enjoy riding my Harley-Davidson, teaching my kids, and spending time outdoors fishing, hiking, and gardening.



NPDES NO. MA0101231

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COMMITMENT & INTEGRITY DRIVE RESULTS

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Cover pictures:

[top] Aerial photo of Hull [off internet - images of Hull]

[bottom] Dave Wilson – O&M Tech 2 was featured in W&C O&M Spotlight Feature 4/28/20

1 EXECUTIVE SUMMARY

This Monthly Operating Report provides a summary of the pertinent information and activities that occurred at Hull WPCF during the month of April 2020.

- No lost-time incidents for the month of April.
- Covid-19 Safety planning and operating with a separated/reduced staff scheduling plan. Most scheduled projects were implemented, following Town, State and Company mandated safety protocols due to the Covid-19 Emergency.
- There were 144 effluent samples taken in the month of April. Please see page (8) for details. There were no permit violations.
- The average daily flow for the month was 2.23 MGD. A total of 7.32 inches of rainfall was recorded. There were several rain events that occurred during the month that caused for the higher flows to the facility. Facility readiness plans reviewed due to rainy and windy weather conditions. The facility was staffed 4/13-14 for 10+ additional hours during the Town-wide power loss.
- The plant and collection system odors continued to be very low [expected for this time of year]. The Bioxide system was not in service. 2020 planning continued with Evoqua. Some bioxide product was delivered and working to schedule the upgraded Vapor-Link system controls, remote data monitoring and adjustments for the chemical feed system.
- The 05M Asset Management Accounts checkbook summary and the updated planned expenses sheets are attached [updated 5/26/20]. Nearing the close out of the year 5 accounts.
- The W&C SCADA Group installed the new PLC and controls for the aeration blower operation.
- There were 2 grinder pump call outs during the month of April [two pumps were replaced].
- W&C O&M continued as normal and continued to increase their work load in April assisting on many Engineering projects including: Facility Planning Report Reviews, SSES yard piping, headworks and PS Structural, Gunrock/Atlantic Ave and the extension of the Interceptor lining work for the headworks effluent pipe coordination with engineering and GMPS, and the CMOM annual report.
- There was ongoing work on the Artificial Intelligence project, as well as the associated data management and daily rounds improvements with the “DMZ” computer capabilities.
- Sludge holding tank #1 [SHT1] was cleaned out by WindRiver Environmental [WRE] – their Confined Space Team, and vactor truck. A small sanitary system overflow was reported on 4/14/20, when their vactor truck high level shut down malfunctioned.
- All Pump station wet wells were inspected. Two wet wells were cleaned.
- The stairwell roof replacement was completed in April with the metal flashing installations, as well as the pump station ladder replacements.

Woodard & Curran strives to deliver a high-quality operations service and is responsive to our customers concerns. Please feel free to request any modifications to the format or content of this report.

2 FLOWS AND LOADINGS

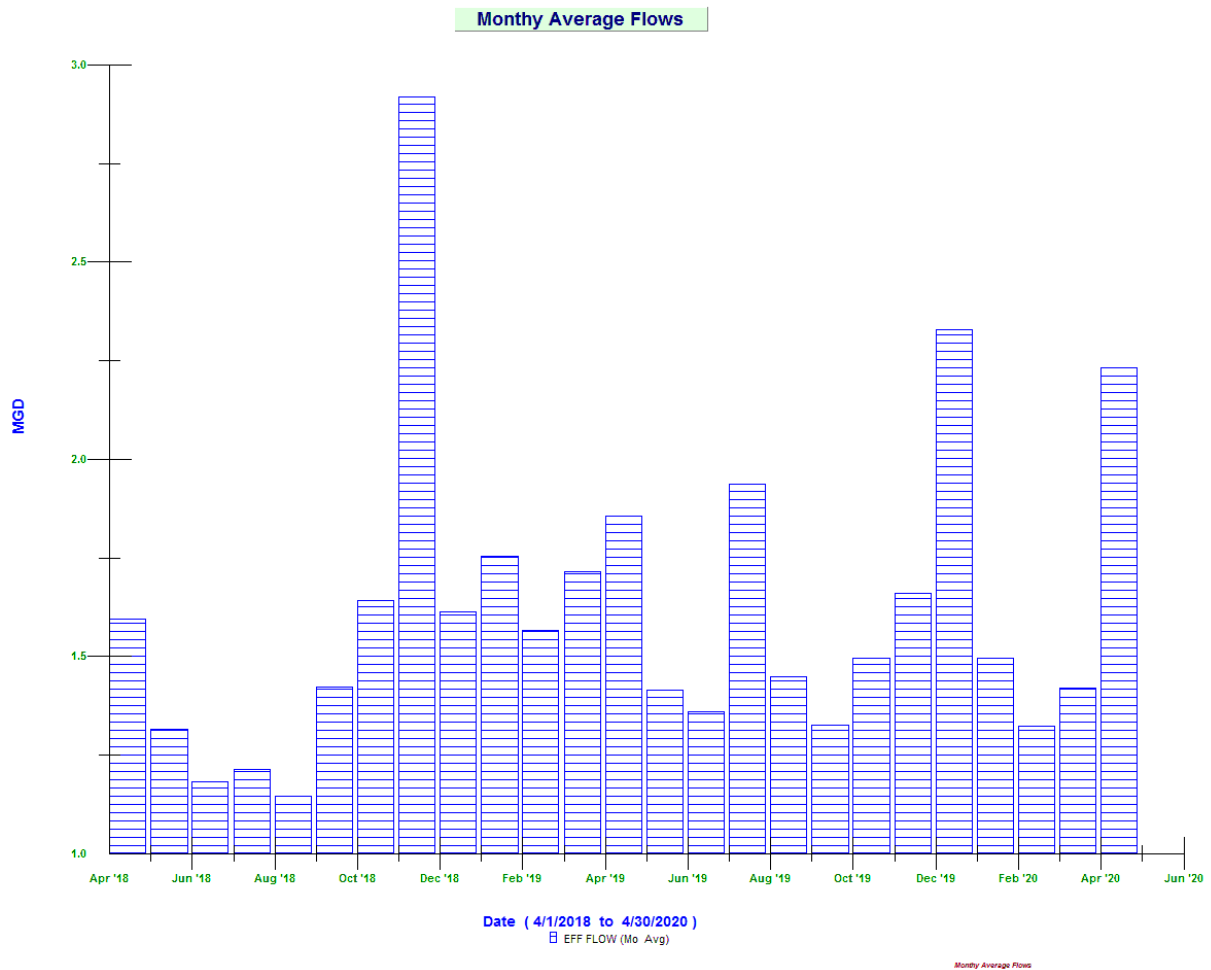


Average Daily Flows and Loadings for the Month:

	Eff Flow MGD	Inf Flow MGD	Inf BOD LBS	Inf TSS LBS	Eff BOD LBS	EFF TSS LBS
April 2018	1.596	1.891*	1274	1962	72	163
April 2019	1.856	2.202*	1246	1835	101	168
April 2020	2.231	2.438*	1839	2564	65	156

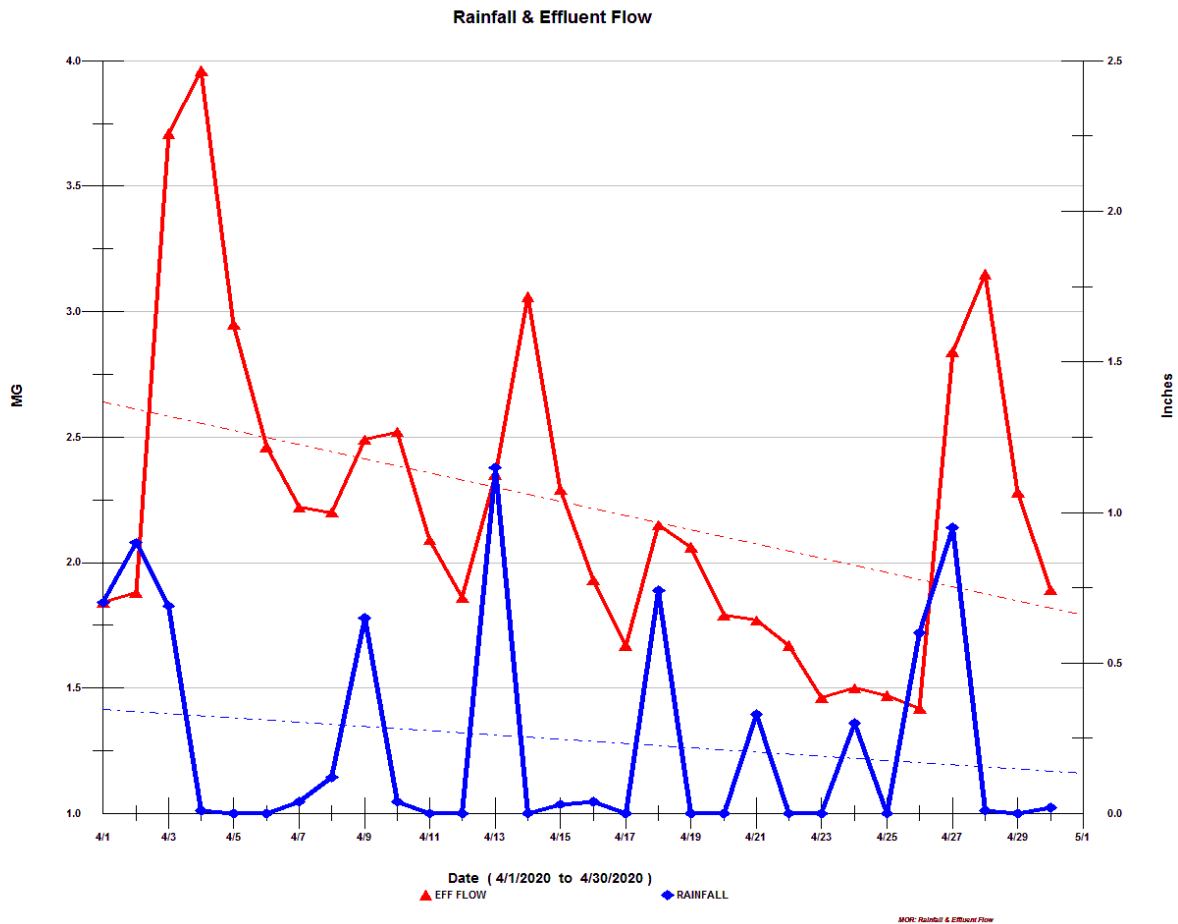
* Meter drift – influent flow meters are strap on doppler flow meters, and the internal pipe condition prevents getting a strong signal. The staff adjusts accordingly and utilizes the area velocity meter in the aeration tank inlet channel as needed. All loadings are based on the effluent flow meter. There is an additional flow meter installed in the headworks over the Parshall flume that is monitoring influent sewage flows. This meter is now tied into the Scada system so that influent flows can be monitored from this location also.

2.1 AVERAGE EFFLUENT MONTHLY FLOWS – TWO YEAR COMPARISON

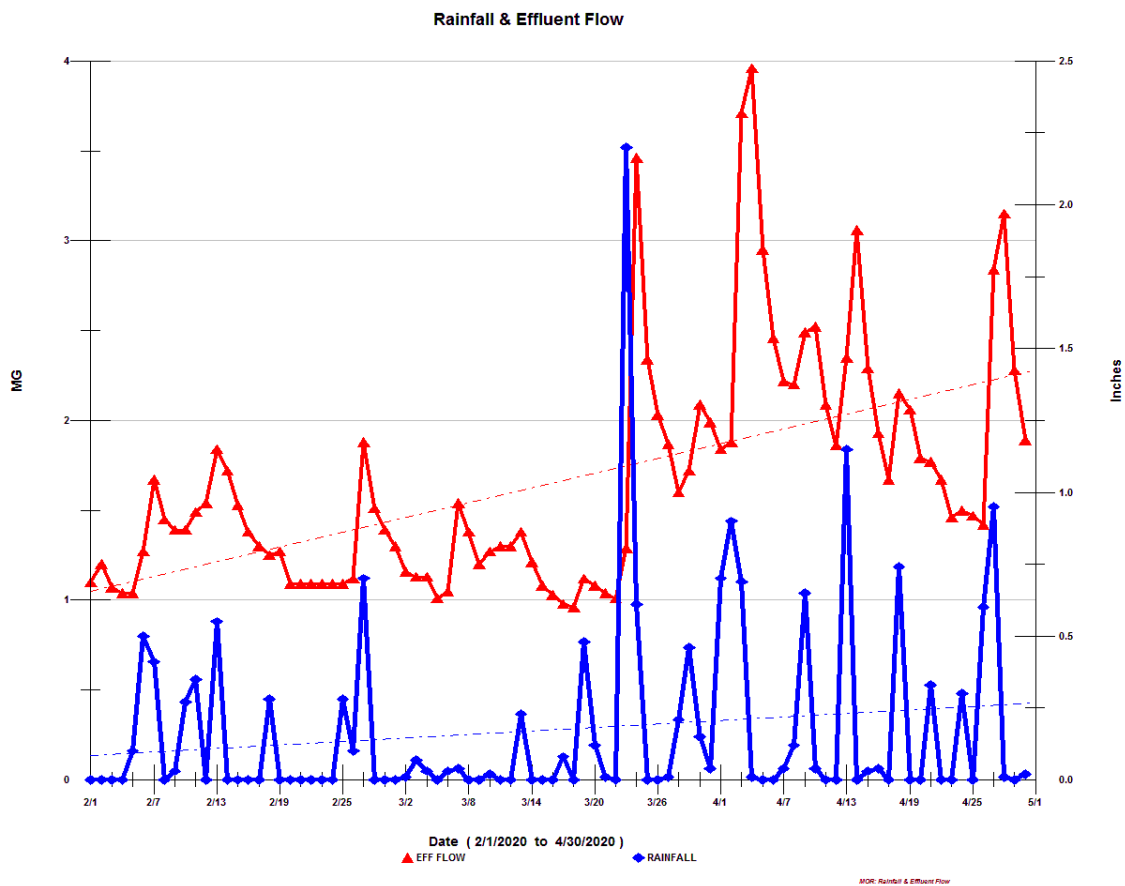


Monthly average flow for April was 2.23 MGD. There were four wet weather periods in April. The total precipitation for the month was 7.32 inches. The graph shows a 2-year summary of the monthly average flows.

2.2 MONTHLY SUMMARY OF RAINFALL AND THE INFLUENCE ON EFFLUENT FLOWS



This graph shows the days where plant flows were higher due to rainfall [Blue Peaks]. This graph provides the time where flows increased due to the wet weather conditions. There were many wet days in April and the rainfall caused an increase in plant flows. Inflow and Infiltration [I&I] out in the collection system has been noted in the past with the increased flow when it rains. The recent manhole and interceptor lining projects have had a positive impact and reducing some I&I.



This graph shows the last 3 months: Feb, March & April, and the impacts of rainfall/precipitation on plant flows. April was a very wet month.

3 COMPLIANCE



➤ Plant Effluent

- There were no permit exceedances in the month of April.
- Plant process conditions continued to be stable Overall primary and secondary sludge wasting rates were higher, due to the higher flows, and additional sludge trucks scheduled to maintain the gravity thickener sludge blanket. Planning is underway to transition sending the waste activated sludge [WAS] to the sludge holding tank for eventual thickening using the rotary drum thickener. Also, as flows subside, to transition to summer process mode with taking the primary clarifier and gravity thickener off-line. Effluent clarity remained very good during the month, even with the higher flows, with typical results less than 4 NTU [turbidity units]. Both secondary clarifiers and the primary clarifier were kept on-line for the entire month, due to the higher and variable plant flows. Sludge settleability remained good and no chlorination of the RAS was needed. The aeration process mode remained in contact stabilization mode, with limited flow into aeration tank #1 and there were no changes in the current flow splits. The aeration blower mode was in “timed ON-OFF” mode with air being cycled according to a 24-hour scheduler that was recently added to the blower system controls.



Aeration tank #1- moderate foam



Aeration Tank #3



Secondary Clarifier

- A Copy of the NPDES report for April 2020 was submitted to the EPA & DEP and then forwarded to the Hull Sewer Dept.
- CMOM files updated where requested for the 2019 report. Provide data to Town as requested.
- Corporate team [Frank C & Alan F] - ongoing work with the Scada to Hach Wims data management computer data export and transitioning data sharing between SCADA, HACH, and Power BI for analysis. AI project also requiring some data exports. See power BI graphs below.
- SPCC: Regular monthly inspection of the above ground fuel storage tank [AST], fuel day tank, and waste oil storage areas was completed. Updated file.
- There was one sanitary system overflow incident at the plant on 4/14/20. A mechanical issue arose with the WRE vactor truck, when a high level shut-off malfunctioned, while they were vacuuming out the sludge from the underground sludge storage tank. A small area adjacent to the truck was sprayed with sludge and contained to the immediate area. WRE cleaned up the area. [pictured below: WRE cleanup operation, area impacted, aerial view of the work area]

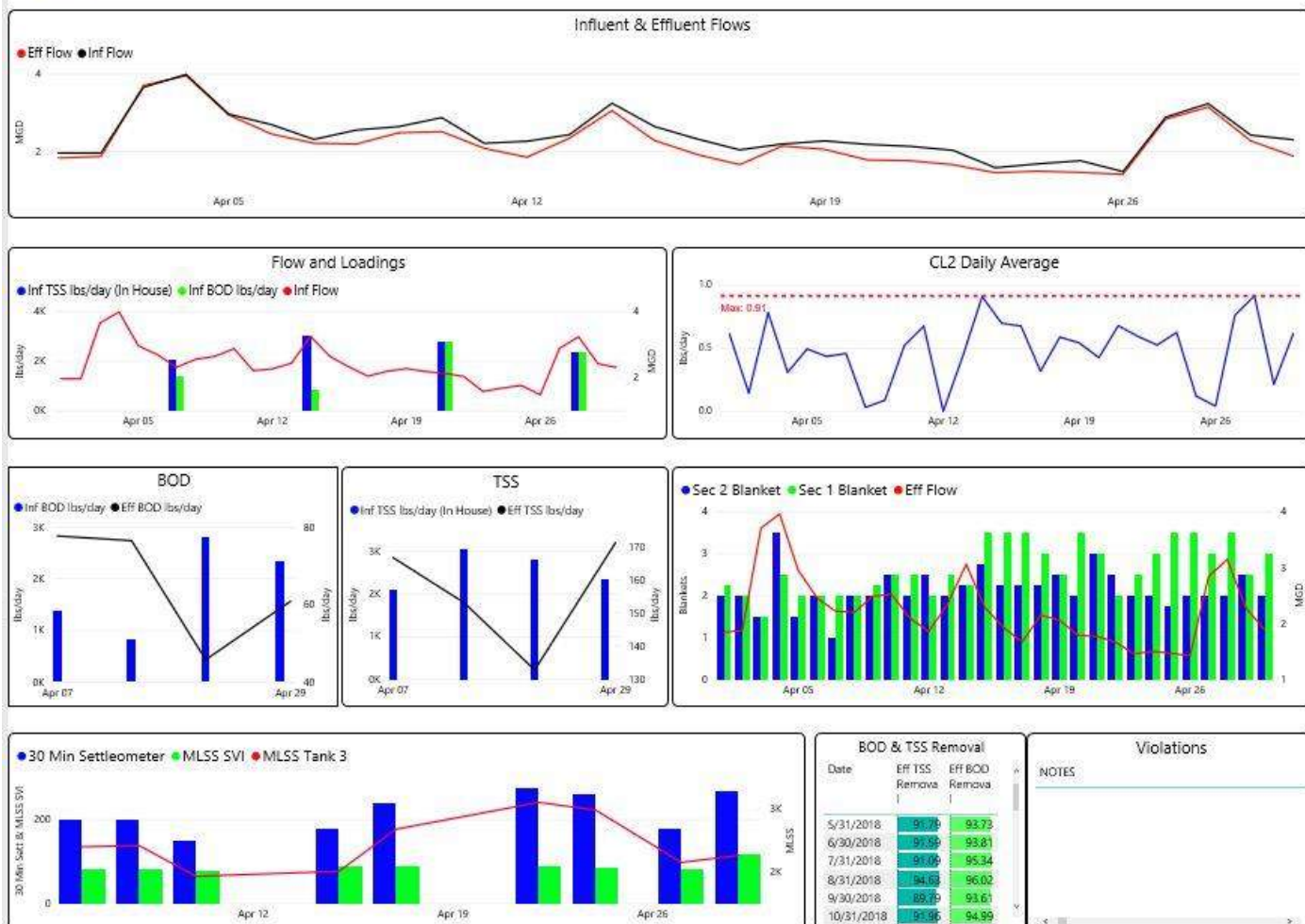




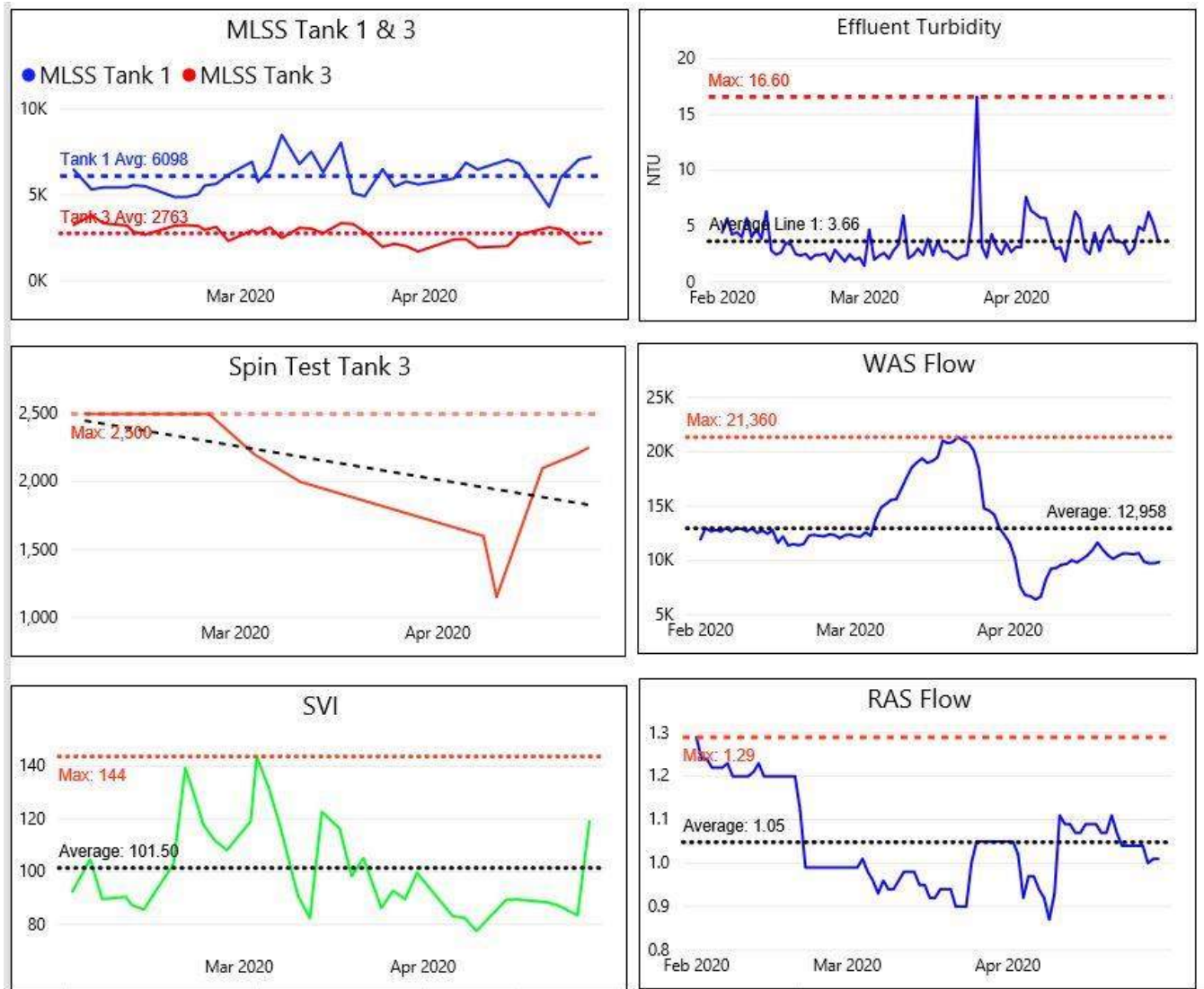
Hull Wastewater Treatment Facility

4/1/2020

4/30/2020



Process Summary graphs from power BI – April 2020.



Graphs shows trending of secondary processes using Power BI for 3-month period ending on 4/30/20. The tank solids levels under aeration are stable. SVI sludge volume index is up & down due to changes in solids under aeration. The wasting adjustments made in late March helped maintain the process solids levels.

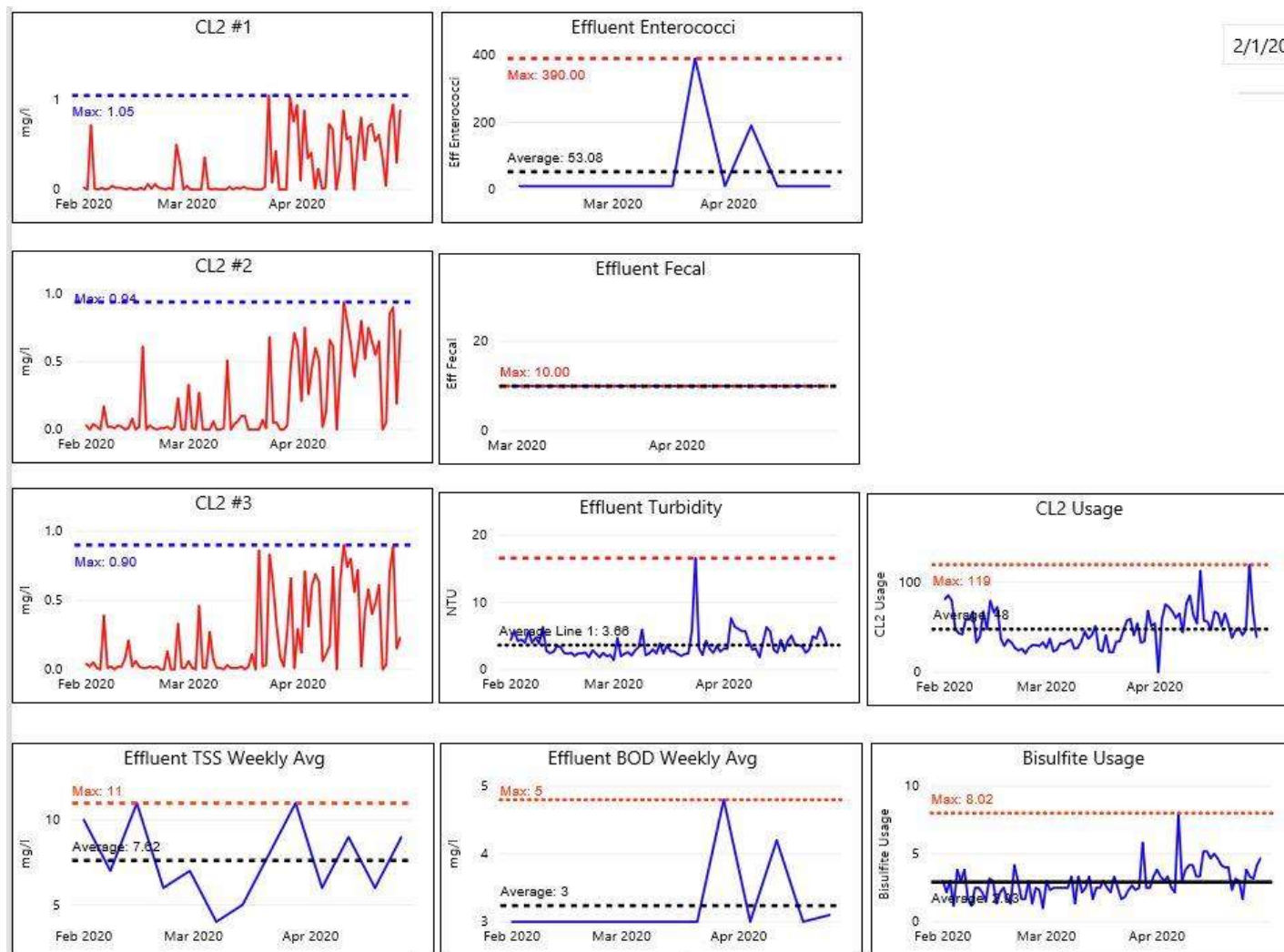
4 KEY PERFORMANCE INDICATORS



4.1 WATER QUALITY – APRIL 2020

Parameter Info		Permit Requirements					Results				
Parameter	Units	Daily Allowed Max in month	Min %	Weekly Avg. Max Allowed in month	Monthly Avg	Freq	Period Monthly Avg.	Period Weekly Min	Period Daily Max	# of Samples	# of Violations
Eff TSS	MG/L	50		45	30	1 X Week	8.3	6.0	9.0	4	0
Eff TSS	LBS			1152	768	1 X Week	155.9	132.9	171.1		0
% TSS Rem	%		85			1 X Month	93.5				0
Eff BOD	MG/L	50		45	30	1 X Week	3.4	3.0	4.2	4	0
Eff BOD	LBS			1152	768	1 X Week	65.2	45.8	77.8		0
% BOD Rem	%		85			1 X Month	96.5				0
Eff Chlorine	MG/L	1.0			0.7	3 X Day	0.47	0.00	0.91	90	0
Eff Fecal	#/100 ML	260			88	1 X Week	10	10	10	4	0
Eff pH	SU	8.5	6.5			1X Daily	7.0	6.7	7.2	30	0
Enterococci	CFU/100 ML	276			35	1 X Week	21	10	10	4	0

There were **144** effluent samples taken in the month of April

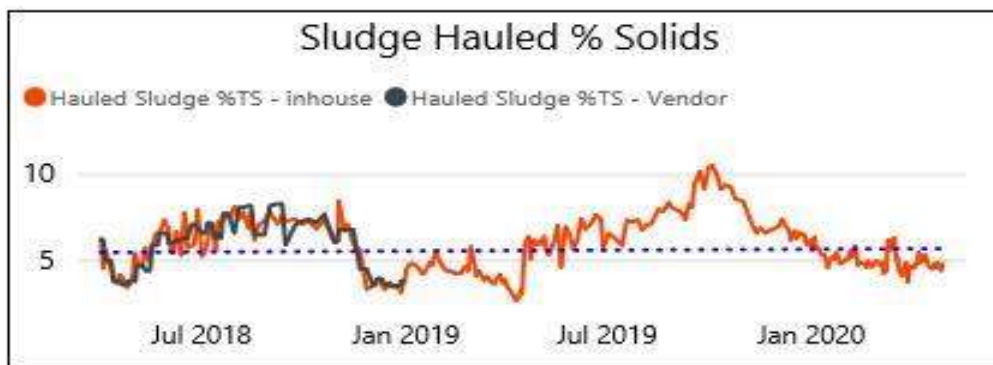
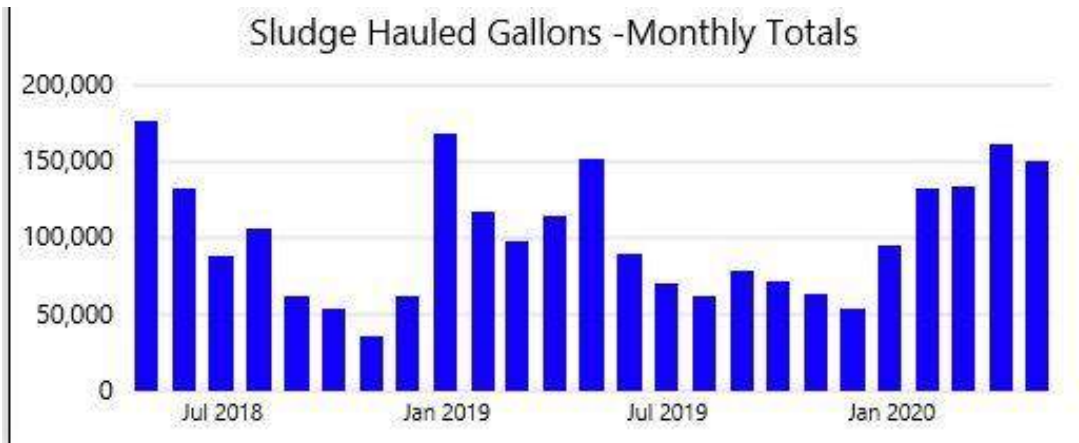


Power BI graphs showing effluent compliance for the last 3 months, chlorine residuals, effluent compliance, & chemical use.

Gallons Treated vs Sludge Disposed

Month	Effluent Treated, MG	Sludge Disposed, Gals
April 2018	47.89	177,000
April 2019	55.69	152,000
April 2020	66.93	150,500

Power BI graphs for sludge solids & gallons hauled for past three years



5 ODOR CONTROL

There were no odor complaint calls during the month of April. The gravity thickener and primary clarifier both were on-line for the month. Sludge thickening was by gravity thickener only. No change - the above ground sludge storage tank and rotary drum thickener [RDT] remained offline in April. Other plant operations – i.e. scum well pumping, tank cleaning, aeration trough flushing was conducted regularly to avoid/minimize odors.

- The Evoqua 2020 plan is still on track to utilize Bioxide again, with new “Vapor Link” system controls in place for remote monitoring of the odor loggers and the chemical feed system adjustments. The target date for the receipt of the new equipment is early May. The Evoqua technician was on site 4/28/20 and set up one of the odor loggers at “XYZ-Nantasket” manhole. The second unit installation is delayed due to on-going manhole rehab along Nantasket at Water Street.
- “In-Pipe” bacteria addition continued with all 24 dosing stations operational. The inspection/replacement with full bottles was delayed approximately 10 days due to the Covid-19 crisis and rescheduled for early May. The work is being tracked in the Utility Cloud [UC]. Note that the full monthly bacteria unit replacements for April will show up on the May UC report due to the work occurring in May.
- Continued the bi-weekly change outs of the bacteria bottles at three lift stations Microbe Dosing Stations (MDU's) with installation just in front of the three largest pump stations [in the wet wells or manhole just prior to the station. [PS 3, PS 5, PS 9]. Done 4/1/20.
- Mixing systems/aerators all functional at the pump stations, except for pump station #3. No changes.
- New Scrubber hydrogen sulfide monitoring units [H₂S] are recording and being trended on the odor scrubber for monitoring inlet and outlet H₂S levels. Working on the calibration issues with the probes. [pictured odor logger in manhole at Nantasket Ave and XYZ Street]



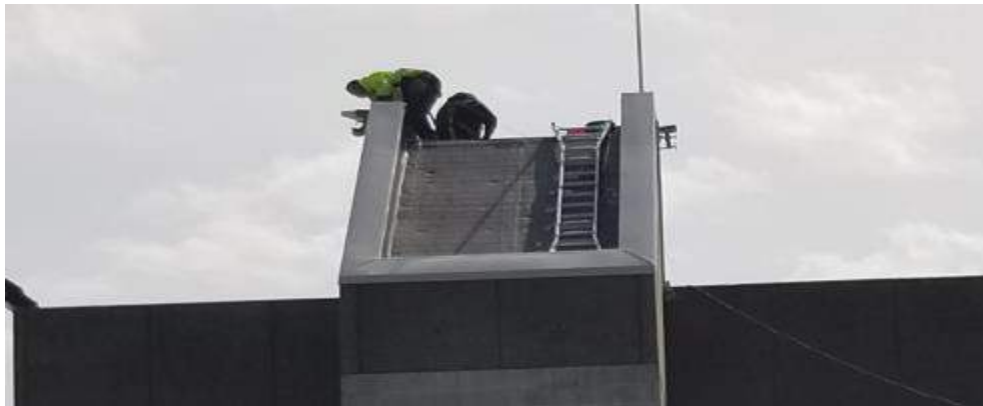
6 MAINTENANCE SUMMARY

6.1 TASKS COMPLETED THIS MONTH

The SEMS monthly work order summary for April is compiled and attached for review.

Key items of note are listed below.

- 1) Tecta America Roofing contractor completed the stairwell roofing repairs. The rubber roofing membrane work was completed in March and the final steel coping for the final cap was completed in April.



- 2) Ladder replacements at LS A [one section]; PS 6 [one section] completed in April by Boston Forging and Welding.

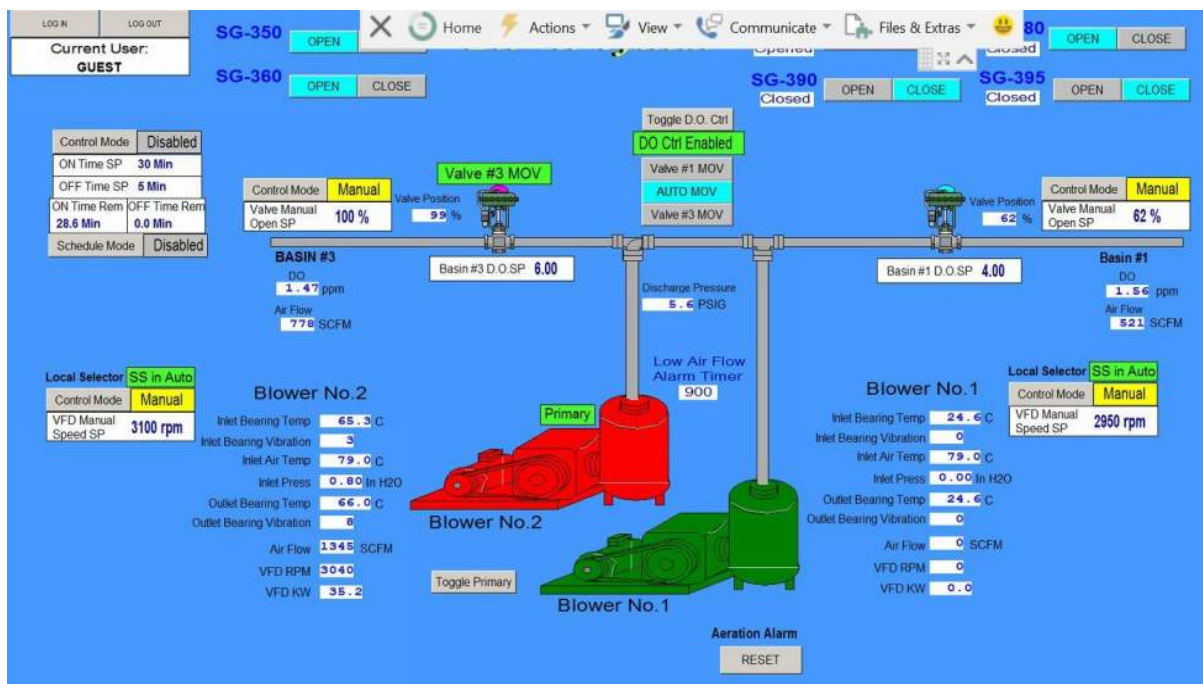


- 3) Sludge Holding Tank #1 – tank cleaned out by Windriver Environmental. [pictured: old abandoned tank mixing equipment in the tank].



- 4) Sludge Holding Tank #2 – tank inspection done by W&C with O&M support staff & sludge piping inspected with the push camera. See SEMS summary.
- 5) D- Street – modify portable pump connections to accept either a 4-inch or 6-inch pump connection. Portable pump set up for one storm event due to likelihood of power loss.
- 6) Various yard clean-up projects – spring clean-up, screening box prep, McDougal – trailer area clean up, grade & seed.
- 7) Annual Hoist inspections completed by Applied Industrial.
- 8) Semi-Annual Fire Alarm testing completed by Hart/Automatic Alarm.
- 9) PS 1 – clean/de-rag both pumps due to high flows and lower pump output flows
- 10) Annual lab equipment calibration completed.
- 11) An electrical wiring short caused some issues in the CCT area of the facility -instrumentation, bisulfite shed, effluent sampler was affected. Fellows Electrical found the cause and corrected. An additional wiring circuit was added for the area receptacles.

- 12) Aeration Blower panel upgrade by W&C SCADA group. [pictured top - inside cabinet – new programmable logic controller [PLC] and the various screens on the operator interface [OIT] on blower panel; pictured bottom – SCADA screen on main computer where operator can see blower system and make adjustments as necessary]



- 13) Chlorine contact tanks cleaned. [Pictured: portable trash pump set up on tank #2 with hoses. Dewater/hose out the tank contents back to the headworks.



- 14) Floor drain piping from second floor – repairs completed [pictured rotted pipes in ceiling of garage]



- 15) The rotary drum thickener [RDT] - polymer system blending unit cleaned, and general equipment and area clean up completed. Unit ready for May start-up.



6.2 ASSET MANAGEMENT ACCOUNTS

Please see the attached summary of the Asset Management accounts for contract year (5). Most recent through **05/26/20**

**Updates & notes made to the planned expenditures list.
Items grouped by task – 101A, 102B, 103A**

Projected costs and actual costs combined total are close to completion and near the 05M budget, and final adjustments being made. All receipt copies are being collected and placed in a project binder for presentation to the HSD. The final updates to the 05M planned list will be made in late May. There were several items shaded in the comment section that are being reviewed and targeted for the next contract year [06M]. A planned 06M maintenance schedule will be presented in the May MOR.

All capital projects that were completed have the costs to complete noted under “final cost.”

7 SAFETY



It is Woodard & Curran's policy to maintain a safe and healthy work environment for every employee and to comply with applicable occupational health and safety regulations.

- No lost time incidents reported for April.
 - Monthly PM's - Emergency eyewash and shower inspections, fire extinguisher and emergency lighting inspections completed.
 - Coronavirus Covid-19 updates discussed – staff separation planning, facility visitors, personal hygiene & company initiatives. Participation in weekly calls with MADEP and USEPA.
 - Ongoing - Daily safety briefing meetings, review site safety policies with sub-contractors, safety tailgate topics. Pure Safety topic– April – *Preparing for Pandemic Influenza*.
 - Monthly staff safety meeting conducted on 4/30/20 RH prepared a PowerPoint safety meeting for remote viewing by staff. Reminders for daily safety briefing topics and discussion points & documentation. Review "Lessons Learned" from March 2020, Near misses and incidents from other company projects.
 - New product SDS's reviewed for various wipes and disinfectants.
- Review with staff various staff separation scheduling for April and plan for May. Reminded staff of updated BBP and pandemic plan updates, and in site specific binder.
- Assist HSD with ordering of PPE supplies for staff & others due to the Covid19 emergency.
 - With warmer weather – tick safety reminders.
 - Review Back Safety Job aid.

8 STAFF DEVELOPMENT

Training is an important part of any operation to ensure employee health and safety is assured, quality standards are maintained, staff skills are improved, career opportunities become available, and higher productivity is achieved.

Listed is a general outline of training that the staff received over the course of the month:

- Monthly staff Safety training – completed – Pure Safety and monthly safety meeting. W&C “near-miss” incidents at all projects for March discussed.
- Regular operational updates and process control discussions, pump station operations, especially with all sewer projects going on in the town, dig-safes, etc.
- Declan Baggett’s return to work as a part-time employee for the summer months, was delayed and on hold due to the Covid-19 emergency. The Company HR department will advise for a start date.
- Aram V completed self-study training contact hours [8 hours] for hoisting engineers licenses 2B & 3A

Staffing related items:

- Staff schedule modified so that the staff was divided into two groups, in order to maintain social distancing and separation.
- Mass Maritime [MM] internship program on hold due to the Covid-19 emergency. Will possibly review for a candidate in Fall 2020.
- No changes on the Sunday schedule plan. Coverage by Aram V., Roger B., Bill B., and Joe B. If Bill or Aram are not scheduled for a Sunday, they will be working on a Monday-Friday schedule.
- Supplementing staff needs with O&M tech support where needed. Very limited due to Covid-19 emergency. Jody S providing coverage when staff levels are lower due to sickness, vacation, or training. Richard [Dick] Gould from the Linden Ponds project is available for various fill-in coverage as needed.

9 COLLECTION SYSTEM

9.1 WET WELL CLEANING

The actual schedule for wet well cleaning: May 2019 to April 2020:

(X-Cleaned) - (Orange – Inspected) - (Green – See notes) - (blank – no work done)

Frequency of cleaning	Pump Station							
	A	1	3	4	5	6	9	D
May, 2019				X	X			
June, 2019								
July, 2019								
Aug., 2019	X			X	X		X	
Sept. 2019								
Oct.,2019	X		X	X				
Nov, 2019								
Dec., 2019								
Jan., 2020	X		X		X			
Feb., 2020				X	X			
March 2020								
April 2020	X				X			

All pump stations except for Pump Station 3 and Station D have an aerator/mixer in the wet wells

9.2 COLLECTION SYSTEM MAINTENANCE

Woodard & Curran assisted/conducted camera work and sewer system support in the Hull collection system at the following areas during the month of April. and these are noted in the UC summary.

- In-Pipe units – battery change out, dosing unit cleaning and inspection and circuit board troubleshooting and replacement as needed.
- All Pump station generator loaded, and non-loaded generator runs were done for the month.
- Two grinder pumps replaced – see utility cloud summary

Manholes:

- Staff continues to respond to rattling manhole covers, because of on-going work by GMPS and SSES projects. Replace manhole cover cushion rings as needed.

Dig Safe mark outs:

- Dig-Safe mark outs were completed throughout the Town of Hull to assist/facilitate emergency gas repairs, broken water mains, other town projects.
- Eric S assisted with a sewer connection inspection on 4/20/20 at 193 Nantasket Ave for TD Development per request of the HSD.



Collection system work is being documented and tracked in Utility Cloud and a summarized report for the month of April has been included as an attachment with the Monthly Operating Report.

10 PROJECT MANAGEMENT & ADMINISTRATION



10.1 ON-GOING PROJECTS AND SUPPORT ITEMS

- On-going issue – continue to add oil [fluidized “000” grease] to the secondary clarifier gear boxes and gravity thickener gear box. All the existing Amwell units have leaks, as previously documented. PC2 is operating with a slight upper gear box leak that will be addressed once the clarifier is taken off-line for the summer months. The gravity thickener drive unit as noted recently is running rough and the leakage amount has significantly increased, with almost daily addition necessary. The unit will be taken out of service as soon as the tank is not required, and the sludge is pumped out. Anticipate late May 2020.
- Staffed facility [Bill B and Ryan H] during the town-wide power outage on 4/13 at 7pm to 4/14 4am. All facility pump station generators and plant generator ran on back-up emergency power with no issues. The portable trash pump was set up at D Street stormwater station and ran during the peak precipitation periods and during the high tide period, since the station has no back-up emergency power there.
- The current summary 05/26/20 for the account status for and the year 5 asset management accounts, and the 05M checkbook spreadsheet with updated maintenance task plan for the year are attached to this monthly report. The accounts are being reviewed & updated every few days, as the project year is in the final month of the contract year. The closing account totals will be close to budget and the HSD is updated regularly.
- Amwell gear drives installation and installation planning is still on hold until plant flows have dropped, headworks cleaning and screenings box plans are finalized. A mid-June 2020 installation is currently anticipated. Both awarded contractors have been informed of the current plant status.

- The portable generator, that the HSD purchased through the “Sourcewell” purchasing contract is scheduled for early May delivery. Once the generator is delivered, the electrical upgrades needed at LS A will be presented.
- D Street stormwater pump station - The checkmate tide flex valves, one for the D street outfall pipe and the other for the K Street outfall pipe are due in May 2020, with installation by W&C staff & O&M Tech support.
- During the month of April Operations supported continued coordination between the T&B HVAC project, HSD, and the facility planning work.
- Continued coordination for changes and logistics of the SSES yard piping assessment. Significant increase in Rap-O ring (MH cover silencers/cushions) around town due to the amount of MH's being opened for I/I / MH investigations throughout Town.
- Bill has continued two weekly calls and other daily coordination and data review with the Aquasight team. Additional coordination in April to launch the secondary / process efficiency milestone.
- Continued Facility Planning work and coordination in April as the engineering teams complete planning documents for the Town and receive comments back for review. O&M has provided review of all facility planning reports to ensure all aspects of the Town infrastructure needs are met.
- Additional support and project planning between O&M, Engineering, & the town for the Headworks effluent pipe lining project in coordination with maintaining essential services and functionality of the plant to support the project. April had a lot of coordination with Green Mountain onsite for logistics and project planning.

Asset Management Accounts - Year 5							
Account		Actual to date			Projected for Final Estimate		
		Budgeted Amount	Spent to Date	Delta	Projected costs and incl PO's	Final est	Delta
05M-101A	Preventive Maint	\$206,323.41	\$136,305.21	\$70,018.20	\$1,150.00	\$137,455.21	\$68,868.20
05M-102B	Capital and Major Repairs	\$140,000.00	\$190,279.85	(\$50,279.85)	\$0.00	\$190,279.85	(\$50,279.85)
05M-103A	Major Sub Contractors	\$174,785.44	\$193,395.64	(\$18,610.20)	\$0.00	\$193,395.64	(\$18,610.20)
blank					\$0.00		
	Asset Management	\$521,108.86	\$519,980.70	\$1,128.16	\$1,150.00	\$521,130.70	(\$21.84)

\$1,128.16

Budget expended	Time Status	
	NOW=	5/26/2020
	Start	5/1/2019
66.1%	107.3%	41.2%
135.9%	107.3%	-28.6%
110.6%	107.3%	-3.4%
99.8%	107.3%	7.5%

05S	D Street	\$7,500.00	\$7,500.00	\$0.00	\$0.00	\$7,500.00	\$0.00
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100.0%	107.3%	7.3%
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05C	Odor Control Chemicals	\$100,000.00	\$99,355.23	\$644.77		\$99,355.23	\$644.77	99.4%		-99.4%
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For April 2020 M.O.R.

Hull 2019 - 05M Projects, Tasks, and Needs - 04-23-2019 (RS)

Maintenance Account - Year 5 - 05_01_19 to 04_30_20

\$1,160.00

5/26/2020 12:57

Priority	Description	Status	completed	Task	Estimates & funds remaining	Final Completed Cost	Lead	Comments
1	Mechanical Work Labor	On Going		101A				Jody St. George, Jim Gagliard, and WC Support Staff; orig budget \$40,000; approx \$3300/mo; delete \$2,000 - 3/9/20; adj by 2000 4/1/20; Adj to zero on 4/7
1	Pump and Motor Repairs	On Going		101A				to keep existing equipment running - utilize various outside contractor repair shops; orig budget \$25,000; approx \$2000/mo budgeted. [updated monthly] incl \$2,000 for Vaghan parts for PSL pumps; delete remaining \$4,000 budget [3/9/20]
1	Lubricants	On Going		101A	\$500.00			Various Suppliers for oil and grease, orig budget 4500; adj budget 1/20/20; pcard costs for March 2020; delete remaining placeholder funds - 3/11/20;
1	Generator Repairs [see item - line #92]	Completed		101A				General Repair Work - Placeholder, accounting for work done to date; received quote from Hughland Power for heat exchg Pm, and other. \$4450 will be on a purchase order.
1	Fire Alarm Inspections and Service	Completed		101A				Semi Annual - Hart Security completed in October
1	Fire Alarm Inspections and Service	Completed		101A				Semi Annual - Hart Security [April] due in 4/27; completed.
1	Fire Alarm Inspections and Service - Central Station	Completed		101A				Annual - Hart Security [deleted est cost of \$264]
1	Service the Snowplow	Completed		101A				Annual - Fal 2019 - pcard charge will apply \$1,500
1	Service the Forklift	Pending		101A				Annual; cost \$400 - will do in 06M
1	Overhead Hoist Inspection	Completed		101A				Annual - Applied Dynamics - PO usually is issued in April, but last insp was done May 2019; PO was issued 101238; due in 4/27; Completed, inv paid 4/29
1	Flow meter verification and calibration	Completed		101A				Annual - Ray Ferland 1 visit sept 2019; Orig budget \$1,000
1	Facility Building - Roof Inspection	Completed		101A				Annual - Established contract with Tecta America [year 2] PO in system as of 2/6/20 # 100823 - \$2850]
1	Pump Station #9 - Repairs Immediate	pending		101A				New valve, new check valve, replace pump assembly - Jody St. G. to assist; items rec'd [used up approx 50% of orig 4,000]; pending to be used if needed.
1	Jerome H2S Meter Inspection	Completed		101A				Annual Inspection - sent out includes annual service & calibration, unit no longer under service agreement, due to unit's age. As of 2/6 - committed to repairs - \$1,079.56 pcard March.
1	Portable Generator Spill Containment - SPCC	completed		101A		\$10,980.00		proposal by Vortex - supply and install; PO issued for \$11,000; orig budget \$5,500; on purchase order # 100510.
1	Godwin Pump Spill Containment - SPCC	Completed		101A				proposal by Vortex [see above]
1	Godwin Pump Inline Screening - Honeybucket	Completed		101A				proposal by Vortex - [see above]
1	Install an 1 1/2" water connection (?) from generator room to the outside for hose	Completed		101A				materials & Jody S time [deleted est cost of \$500]
1	Janitorial Supplies	Completed		101A				Estimated annual expenditures Orig budget \$750
1	Backflow device testing	On Going		101A				\$220 per Qtr, per water supplier [orig budget \$880]; 4/7 - most likely after May 1st
1	Manhole Inspections	On Going		101A				As required, and/or scheduled

For April 2020 M.O.R

Hull 2019 - 05M Projects, Tasks, and Needs - 04-23-2019 (RS)

Maintenance Account - Year 5 - 05_01_19 to 04_30_20

\$1,150.00

5/26/2020 12:57

Priority	Description	Status	completed	Task	Estimates & funds remaining	Final Completed Cost	Lead	Comments
2	General mechanical and electrical items/supplies	On Going		101A				Grainger, FWWWebb, EJP, Hoadley, McMasterCarr, etc. Orig budget \$20,000; reduce budget by expenses posted approx 40%; reduce monthly by \$2,000; adj on 2/6/20 as we have PO for RDT parts with Parkson \$[1,000]; 4/7 deleting remainig \$\$ here as bills getting paid from pcard & other
2	Vibration Analysis Survey	Pending		101A				Annual - 2 to 3 Days - Aeration System Blowers, Pump Station Pumps, etc./tbd; 1500/day; 10/21 readj budget to \$4500 - 06M target - remove \$4500 on 2/6/20
2	Valves	Pending		101A				Replacements and/or Service - On-Going - As Needed; Orig budget est \$4000; move costs to 06M
2	Hoses	On Going		101A				Replacements and/or Service - On-Going - As Needed; Orig budget est \$3000; unless needed wait until after 5/1/20
2	Sump Pumps	On Going		101A				Replacements and/or Service - On-Going - As Needed - orig budget \$2500.00; ytd = 1200
2	Install 6" or 8" drop pipes in secondary clarifier #1 and #2	Pending		101A				In-house staff to fabricate, could be item moved to 06M and go to 8" pipe? [delete the \$2,000 on 2/6/20]
2	Duperon Site Visit	Completed		101A				Coordinate a site visit with Service Tech when in the area [deleted est cost of \$1,500]; actual cost was \$2400.
2	Roof Exhaust Fan Motor Baldor EM3615T	Completed		101A				Need a spare [deleted est cost of \$600]
2	Misc. Materials	On Going		101A				Hardware Store - \$200.00 per month - reoccurring expense, orig total budget \$2400; reduce by monthly YTD; delete placeholder \$\$ left [500] pcard costs march
2	Rotating Sludge Thickener - Booster Pump	Completed		101A				Purchase (1) new replacements \$1000 each [deleted est cost of \$1,000]
2	PS 1 impellers/flow	Pending		101A				look at increasing size of impellers, after Gunrock work completed
2	Lift Station A	Pending		101A				Pump efficiency lower than desired
2	Lift Station A	On Going		101A				Emerg building repairs due to building settling and door frame deterioration; temporary repairs appear to be holding up well. [Done by Jody S]
3	Install new aeration channel angle iron for a slide gate or pri scrapers fabricate	Completed		101A				Jody St. George to install; pri clar scrapers completd. Channel slide gates still pending \$3000 est.
3	Install a flow meter on the generator cooling water system - plant water	Pending		101A				Have an estimate [Oct 2018]; possible after 5/1/20
3	Lockers for the staff - Install	Pending		101A				Orig est - \$600; Additional lockers to replace those removed years ago; may wait until after 5/1/20
3	Purchase (2) spare Euro drives for the RST; 1 new unit for thickened sludge pump	Completed		101A				spare part items - currently do not have; orig budget \$2500; 1 drive for the thickened sludge pump purchased Aug2019 [deleted est cost of \$1,250] Still no spare unit for drum drive or condit tank. May wait until 5/1/20
3	Purchase an LMI pump for the RST	Pending		101A				spare part items - currently do not have, May wait until after 5/1/20 \$1,600
3	Purchase an equipment lift or gantry	Pending		101A				planned cost \$2,500 for moving elec hoists around, & other equip - possiblyould wait until after 5/1/20
2 of 5	Dehumidifiers for pump stations PS1 & PS3	Completed		101A	2019_05_1_05M_Checkbook_YTD			ordered 2 for 2 pump stations (5 left to do); orig budget for 2= \$2200.00 - paid for already

05M Planned Costs

Hull 2019 - 05M Projects, Tasks, and Needs - 04-23-2019 (RS)

Maintenance Account - Year 5 - 05_01_19 to 04_30_20

\$1,150.00

5/26/2020 12:57

Priority	Description	Status	completed	Task	Estimates & funds remaining	Final Completed Cost	Lead	Comments
	Purchase Vaughan Pump parts for PC pumps #1 & 2	Completed		101A				Parts for repairs ordered, and received. Actual bill paid \$2,644.
	Lab Equip Calibration	Completed		101A				Annual service - usually Jan/Feb. Completed in April 2020 - \$600. Bill paid 4/21
	Parkson - parts for RDT - drive sprocket, chain, motor sprocket	Completed		101A				PO in system for \$956.00
	Mech seal[s] for RAS pumps 1 & 2	Pending		101A				Evaluating costs Estimated annual expenditures Orig budget \$750; could be approx \$1600, will wait until after May 1, 2020
	Batteries for PS Gen	Pending		101A				Pending, have not purchased yet [4/12/20]; estim cost \$1,100
	Purchase Two 8" valves for PS 4	On Going		101A				Purchased April 2020, valves rec'd, waiting for bill 4/22; Bill received & paid 4/29
	Purchase Two 6" valves for PS 4	Pending		101A				Pending, have not purchased yet [4/12/20]; Estim cost \$1450
1	Pump Station #5 Discharge Pipe - Replace with C900 Pipe and install a the force main Isolation valve	Completed		102B		\$38,905.12		Being looked at currently Dec/Jan - TDB if funds to come from 05M -Best time to complete - Insert the estim budget. On a PO # \$29,450; additional \$9,000 costs - chg porder 3/9/20
1	(GT) Steel rake mechanism inspection and needed repairs	Pending		102B				place holder estimate (2) guys for (3) days - welding and materials - coating - ?? If these would remain under 05M or go under bond account. Orig cost estimate \$7,500. Chg to spring 2020.
1	(SC#1) Steel rake mechanism inspection and needed repairs	Pending		102B				place holder estimate (2) guys for (3) days - welding and materials - coating - ?? If these would remain under 05M or go under bond account, Orig cost estimate \$7,500. Chg to spring 2020.
1	(SC#2) Steel rake mechanism inspection and needed repairs	Pending		102B				place holder estimate (2) guys for (3) days - welding and materials - coating - ?? If these would remain under 05M or go under bond account. Orig cost estimate \$7,500. Chg to spring 2020.
1	New Stander type Lawn Mower	Completed		102B		\$7,764.60		Purchase replacement off of State bid list [PO was issued in late October]Trade in greatDane
1	Odor Scrubber Sensors purchase	Completed		102B		\$5,027.55		Purchase one for the influent and effluent of scrubber. PO issued 1000484
1	Odor Scrubber Sensors - Installation Cost	Completed		102B		\$2,631.00		Electrician's Labor - 2 to 3 days. [planning for late Jan 2020] Glenn F; Srose cost?
1	Dynablend System is obsolete - mixing valve worn - need in kind or like system	Pending		102B				May or may not proceed with replacement, since unit still functioning, and polymer addition point changed and yielding good results. Removed cost \$11,000
2	Facility Building - Roof Repairs	Completed		102B		\$29,890.00		two stairwell roofs - South Shore Roofing not approved, since approval process not completed, Change to Tecta America.POI system as of 2/6/20 - \$29890; work 85% complete. Completed 4/15
2	Pump Station Ladders	Completed		102B		\$4,200.00		Orig budget \$42,000. Contracted Project - Bids - Initiated work with Boston Welding & Forging; 11/19/19 Update: PS #1 is complete, PS3 in process, part of this budget may wait until pstat structural work done and after 5/1/20; expect completed work at PS1,3,5,A in year 5; as of 2/6/20 - 1 project left to do under 05M; Ladders to be installed mid-April 2020. - 4/15 & 4/16 Completed
2	Sludge Holding Tank #1 - tank needs to be cleaned, evaluate condition, & replace the aeration system piping	Completed		102B		\$6,026.20		Assess Needs, determine labor, remove old equipment, replace the aeration line to the tank, waiting for WRE quote. Work completed on 416. Estim cost: \$7900.00
2	Replace 6" potable water valve in basement and misc. valves	Pending		102B				While doing project check/replace 1 1/4 valves as needed - Requires a water shutdown, may hold until after 5/1/20, orig planned cost \$3,000.

Hull 2019 - 05M Projects, Tasks, and Needs - 04-23-2019 (RS)

Maintenance Account - Year 5 - 05_01_19 to 04_30_20

\$1,150.00

5/26/2020 12:57

Priority	Description	Status	completed	Task	Estimates & funds remaining	Final Completed Cost	Lead	Comments
2	Purchase and Install (4) additional yard hydrants	On Going		102B				hydrants purchased, and materials & contractor installation [2 days]; hoadley parts & exp \$2600; hydrants rec's \$4700 removed; update 2/6/20 - could wait until after 5/1/20 for 06M? Remove cost from 05M - \$12,800 [3/9/20]
2	PS 4 valves, check valves, install FM isolation valve	Pending		102B				After structural work, replace. FM isolation valve installed already [outside]
3	Influent Distribution Box Gate Repairs	Pending		102B				Contracted Project - During Headworks Bypass or possibly move to after May 1st 2020
3	Influent Distribution Box - Aerate Primary/Influent D-Box/Overflow Project	Pending		102B				Contracted Project - need State Approval - Facility/Process modification. Facilities Plan possible modification
3	Odor log data loggers & calibr kit	Pending		102B				Current units obsolete and not supported by company, possibly look at under 05C if funds avail; remove the \$6,000 on 2/6/20 - 06C or 06M
1	Hellian Strainer	Completed		102B		\$18,502.00		Confirming quotes in order to get order in place; PO in system: 100421 for \$19,000; unit installed Jan2020, waiting for invoice.
	Rotating Sludge Thickener - Thickened Sludge Pump	Completed		102B		\$4,137.00		recommended new pump hopper purchase; PO issued 10/25/19, part on order; item received 02/11/20 - \$4,137.00; installation planned in mid-Feb 2020.
	hoses for new 8-inch portable pump	Completed		102B		\$18,349.00		purchase from Vortex, on order - PO#100591 [\$18,349.00]
	Effluent Pump Room heater & installation	Completed		102B		\$5,327.00		New 3ph heater, breaker at panel, conduit,wiring, etc. Work to be done by High Volyage Assoc.Estim cost \$6500. [heater \$1650, labormat \$4800]; work completed Jan 2020. waiting for final bill. All costs are in [2/6/20]
	Hi Voltage PS5 Emergency work	Completed		102B		\$5,916.84		PS5 Emergency electrical repairs/work, invoice paid \$5,916.84
	Roof mats - for walkway	Completed		102B		\$2,920.00		to be done at time of roof insp.Feb 2020; PO in system as of 2/6/20 - \$2920; completed.
1	Electrical Work	On Going		103A				Electricians: Pioneer Electric - Glen Fellows, other; orig budget \$50,000; ytd = \$12000; approx \$4000/mo budgeted. Adjust ytd - adjust down 2/6/20 - placeholder; readj budget for PS5 invoice. Glenn F invoices due for 4/21 & 4/22;
1	SCADA Work	On Going		103A				Steve Rose and the SCADA Support Team; orig budget \$30,000; adj YTD; adj remaining budget on 2/6/20 to 7500 - placeholder, adj down to \$5,000 on 3/9/20; reduced placeholder on 4/7 to \$3000. Delete placeholder on 4/22;
1	E-One Repairs and Replacement	Completed		103A				Based on 2017 and 2018 Costs - E1 repairs where cost-effective & new replacement pumps; orig budget \$25,000; reduce budget to budget left based upon YTD costs 2/6/20; As of 3/9/20 have all 8 spares & no outstanding units. Remove placeholder \$\$ left - \$2000 - 3/11/20; Add budget back on 4/7/20 - \$2500
1	Generator inspection and servicing	Completed		103A				Annual - Highland Power - Generator PM/Service work - due November; 11/19 update - work completed in early Nov. [waiting for invoice]
1	Automatic Transfer Switch inspection and servicing	Completed		103A				Annual Service planned for April 2020 - Highland Power - NETS - Transfer Switch; PO to be issued - #100981
1	Wetwell Inspections and Cleaning - Pump Stations	Completed		103A				As Required - \$2500 per day; orig budget \$12,500; reduce to \$10,000; Adj Jan 2020; adj Feb 2020; adj 3/9/20; Will need 1 day of service by either Jhoadley, BMC, or WRE; cleaning on 4/28
1	Wetwell Inspection and Cleaning- Plant	Pending		103A				Annual - pending until HW project gets underway; Orig budget \$4500; remove from targeted expenses 10/21/19. To be done under GMPS interceptor changeorder
1	Sewer Line Cleaning - Emergencies	Completed		103A				As required by various sub-contractors; orig budget \$25,000; readj budget down to 12,500 on 10/21; adj to 10,000 on 1/20/20; adj to \$6,000 on 2/6/20; adj to \$5k - 2 days of service. Placeholder \$\$ 4/19/20. Jhoadley bill expected. Bill paid 5/13/20
1	Collection System - CCTV work	On Going		103A				Currently under BMC purchase order. Work with Peter Lyons to coordinate activities [used up approx 50% of orig 20,000]

Hull 2019 - 05M Projects, Tasks, and Needs - 04-23-2019 (RS)

Maintenance Account - Year 5 - 05_01_19 to 04_30_20

\$1,150.00

5/26/2020 12:57

Priority	Description	Status	completed	Task	Estimates & funds remaining	Final Completed Cost	Lead	Comments
1	Collection System - Jetting Work	On Going		103A				Currently under BMC purchase order. Work with Peter Lyons to coordinate activities Determine how many Linear Feet and Locations to address [used up approx 50% of orig 20,000]
1	Pump Station #4 - camera work, cleaning and pumping	Completed		103A				National Water Main Rosano-Davis & WWSI [deleted est cost of \$5,155]
1	Aeration Blower PLC Upgrade - Hardware	Completed		102B				Equipment purchase to come from 05M on the Critical Spare List; based on latest quote from Doug Tirrell. \$14,200; Addit hardware cost \$900.00; 4/19 -adj down due to expenses coming in. Final costs to post w/e 4/24
	Aeration Blower PLC Upgrade - Installation	Completed		102B				labor to come from 05M on the Critical Spare List; based on latest quote from Doug Tirrell. \$11,500.00; Addit programming costs for aer controls. Adj down due to expenses coming in. Final costs to post w/e 4/24.
2	Low pressure sewer valve box insp & mtce	Pending		103A				placeholder for contractor inspections and potential repairs; still working to line up a contractor; 2/6/20 may investigate internally, move budget to 06M [delete the \$10,000]
2	Gridbee Aeration System - Pump Station #1	Completed		103A				Electrical wiring and tie into the SCADA system - Glen Fellows [deleted est cost of \$1,500]
2	Gridbee Aeration System - Pump Station #9	Completed		103A				Tie into the SCADA system - Glen Fellows [deleted est cost of \$1,500]
2	Regen Aeration System - Pump Station #5	Pending		103A				Orig est \$1,500 -Tie into the SCADA system - Glen Fellows; may wait until after 5/1/20
2	Sludge Holding Tank #1 - Clean Tank	Completed		103A				Orig budget - \$5,000 for Vac Truck, CSE Team, Debris disposal & O&M tech support; Some work done by W&C staff 1/16/20; disposal of debris an issue TBD; eval after 5/1/20
2	FRM - Control Panel for E-One & other spare parts	Completed		103A				for inventory if needed - orig budget \$2,000
2	Generators - Load Bank Testing	Pending		103A				Look at under 06M - PS#1, PS#3, PS#4, PS#5, PS#6, and PS#9 [\$3,000]
	Rosano-Davis Pumping for NWM Atlantic Ave MH rehab	Completed		103A				per HSD - 8 days at 9 hrs/day - \$1,800 per day rate; orig est \$14,400 readjusted down to actuals - estim; remaining funds; all bill are in 1/20/20;
	Engineering \$\$ to 05M	Completed		103A				TBD: YTD costs will post to detail report approx \$12,000 spent as of 10/21; Tim H, Nick V, Seth, Patrick H.,
	pump & haul for PS 5 work - planned for Jan/Feb 2020	Completed		103A		\$3,117.50		2 pump trucks for 1 day pumping - bills pending; bills processed 3/17/20
	Grit Pump room cleaning Vac & labor Jody S.	Completed		103A				Clean grit pump room - grit on floor from recent blockages in system
	Highland Power - Servicing the heat exchangers, fuel filters, etc	Completed		103A				Per proposal \$4,550.00; work completed march 2020, bill outstanding - on PO#100982
1	Replace the Gravity Thickener Drive							From Critical Spare SRF - Installation Funding to come from Bond Acct - estimate \$30,000
1	Replace the Secondary Clarifier #2 Drive							From Critical Spare SRF - Need installation money from 05m or other bond money? Funding from Bond Acct - estimate \$30,000
1	Replace the Secondary Clarifier #1 Drive							From Critical Spare SRF - Need installation money from 05m or other bond money? Funding from Bond Acct - estimate \$30,000
TOTAL					\$500.00			

Date	Asset ID	Asset Description	Asset Class	Name	Workflow Class	View
4/1/2020 10:39	25-110	47 MANOMET AVE	Hull Parcels	Sutton, Eric	Hull - Markout	View
4/1/2020 10:41	25-109	45 MANOMET AVE	Hull Parcels	Sutton, Eric	Hull - Markout	View
4/1/2020 14:56	Bateria UNIT #21	UNIT #21	Hull In Pipe Bacteria Unit	Sutton, Eric	Hull - In Pipe Bacteria Units	View
4/1/2020 14:57	Bateria UNIT #3	UNIT #3	Hull In Pipe Bacteria Unit	Sutton, Eric	Hull - In Pipe Bacteria Units	View
4/1/2020 14:59	Bateria UNIT #4	UNIT #4	Hull In Pipe Bacteria Unit	Sutton, Eric	Hull - In Pipe Bacteria Units	View
4/2/2020 11:30	17-002	45 A STREET	Hull Parcels	Sutton, Eric	Hull - Markout	View
4/7/2020 12:46	28-005	2 MALTA ST	Hull Parcels	Sutton, Eric	Hull - Markout	View
4/8/2020 13:51	77 Salisbury St	77 Salisbury St Grinder Pump	Hull Grinder Pumps	Sutton, Eric	Hull - Grinder Pump Maintenance	View
4/16/2020 10:03	31-067	7 CLIFTON AVE	Hull Parcels	Boornazian, Bill	Hull - Markout	View
4/20/2020 14:58	23-146	97 BEACH AVE	Hull Parcels	Sutton, Eric	Hull - Markout	View
4/20/2020 15:04	36-145	36 HAMPTON CIRCLE	Hull Parcels	Sutton, Eric	Hull - Sewer Backup	View
4/29/2020 15:20	MH-20477	MH-20477	Sanitary Manhole	Boornazian, Bill	MH Frame & Cover Inspection	View
4/29/2020 15:23	MH-20465	MH-20465	Sanitary Manhole	Boornazian, Bill	MH Frame & Cover Inspection	View
4/29/2020 15:25	MH-20370	MH-20370	Sanitary Manhole	Boornazian, Bill	MH Frame & Cover Inspection	View
4/29/2020 15:28	MH-20370	MH-20370	Sanitary Manhole	Boornazian, Bill	Manhole Inspection Hull	View
4/29/2020 15:31	MH-20351	MH-20351	Sanitary Manhole	Boornazian, Bill	MH Frame & Cover Inspection	View
4/30/2020 11:47	MH-20529	MH-20529	Sanitary Manhole	Boornazian, Bill	MH Frame & Cover Inspection	View
4/30/2020 13:56	06-012	124 SPRING ST	Hull Parcels	Boornazian, Bill	Hull - Sewer Backup	View



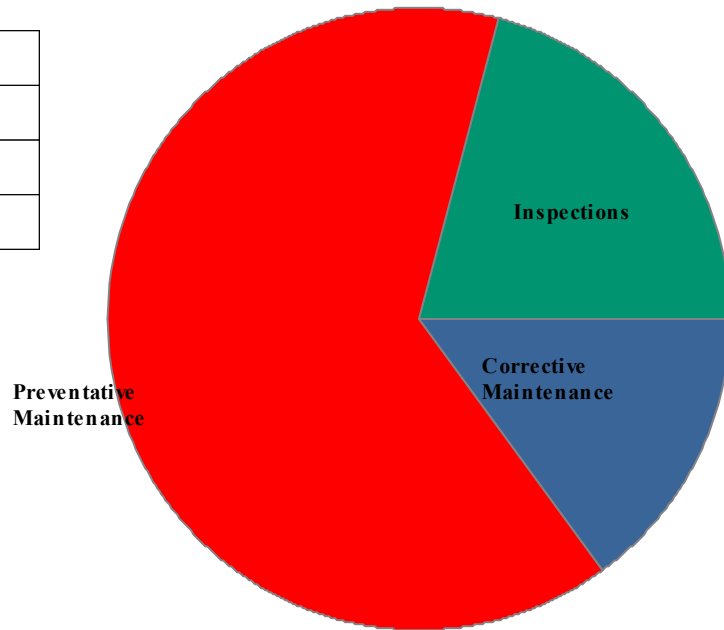
Maintenance History Report

Hull Wastewater

Start Date: 4/1/2020

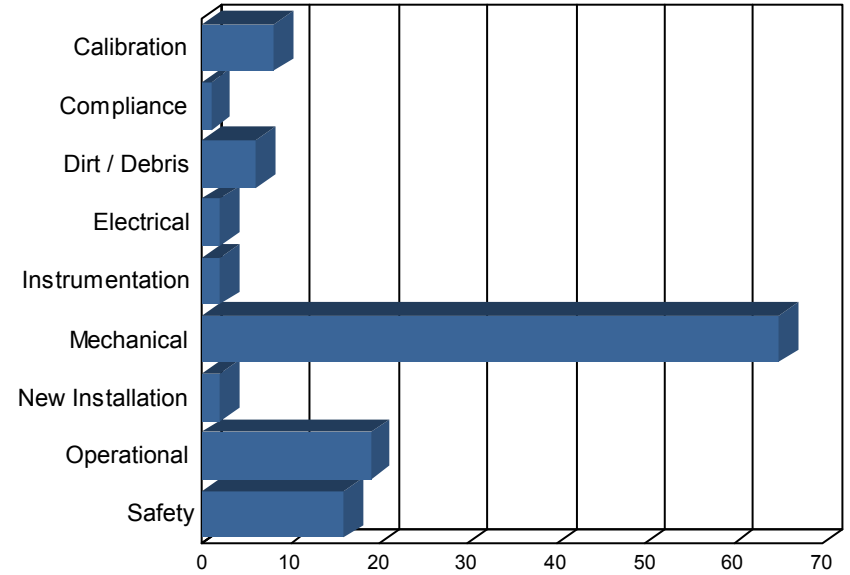
End Date: 4/30/2020

Work Order History By Type

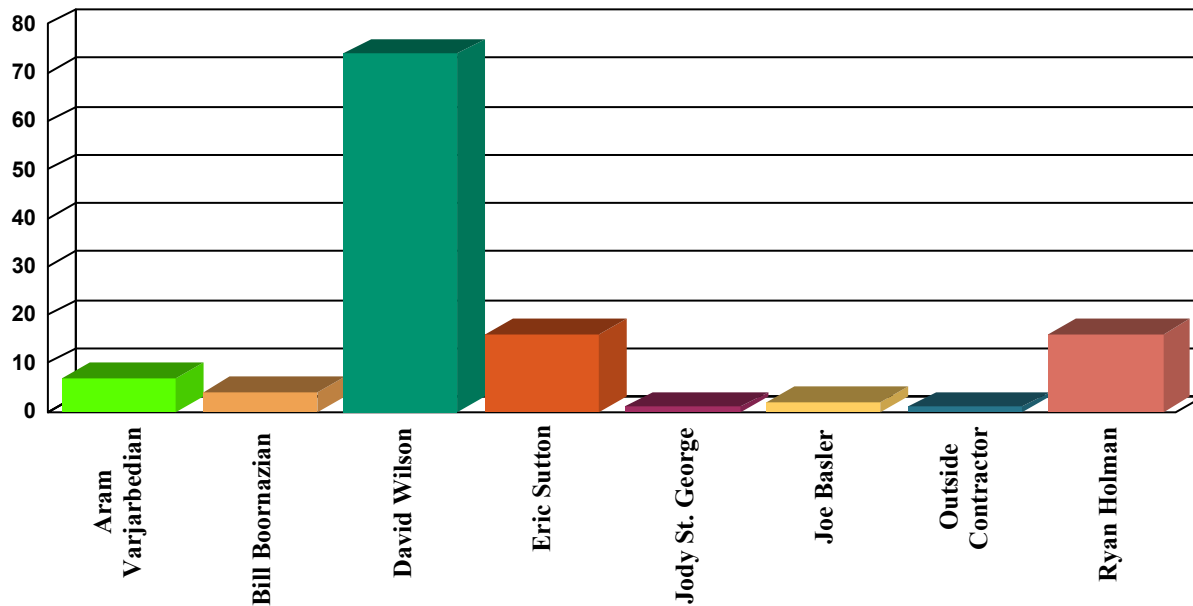


Corrective Maintenance	18
Inspections	25
Preventative Maintenance	77
Total Work Orders	120

Work Order History by Reason



Work Order History By Employee



Employee	WO Count	Labor Hours
Aram Varjarbedian	7	12
Bill Boornazian	4	7
David Wilson	74	41
Eric Sutton	16	52
Jody St. George	1	3
Joe Basler	2	1
Outside Contractor	1	8
Ryan Holman	15	11
Totals	120	135

Corrective Maintenance

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/6/20	11904	Truck 3 - 2015 Chevy 3500 HD	Serpentine belt replacement and top off of fluids.	Removed old belt from pulleys due to squealing. Installed new belt. Washer fluid low and filled(.5 gal). Oil level low and filled(.5 qt)	David Wilson	4/7/20	Completed
4/6/20	11905	Sludge Transfer Pump 2	Pump alignment and coupling replacement	LOTO of equipment. Measured shaft heights. Motor side lower by .125". Used washers to shim motor. Installed new coupling. Installed new hardware for shroud.	David Wilson	4/7/20	Completed
4/10/20	11907	RAS Pump 1	Cleaned ras 1	Derag pump 1 low out put half gallon removed of rags	Bill Boornazian	4/10/20	Completed
4/10/20	11908	RAS Pump 2	Cleaned pump	Derag pump 2 one gallon removed	Bill Boornazian	4/10/20	Completed
4/12/20	11909	Chlorine Contact Tank 2	Tank needs cleaning	BB,RH set up pump for tank cleaning on 4/10. AV, ES, DW clean tank. Switched out to 6 inch pump to finish cleaning. 4 inch pump not enough power.	Aram Varjarbedian	4/12/20	Completed
4/14/20	11910	PS D Piping and Valves	Change trash pump connection from 4" to 6" inside and out and install solid 6" drop pipe in wet well.	Completed	Jody St. George	4/14/20	Completed
4/15/20	11911	PS 6 Building	Top ladder replacement	Boston Forging and welding demo top ladder and replace with new custom aluminum ladder. Lower ladders already meet OSHA safety standards at ps 6.	Bill Boornazian	4/15/20	Completed
4/16/20	11912	PS A Building	Ladder replacement	Demo old ladder and install new custom aluminum with bilco ladder up	Outside Contractor	4/16/20	Completed
4/18/20	11913	Archive Chlorine Residual Probe	Chlorine probe cord and outlet located on the chlorine contact tank have failed. Both are singed and unusable.	Unplugged cords in the singed outlet. Ran an extension cord from the outlet next to the stairs leading up to the chlorine contact tank and and attached the effluent sampler which is now running.	Ryan Holman	4/18/20	In Process
4/19/20	11915	Bisulfite System	No power	Found shed with no power except 1 outlet. Electrical affected by yesterday`s power issue to CCT panel. Temporarily got power to 1 feed pump and heater. Set up temp power cords for residual monitor and channel mixing pump. Electrician contacted for Tuesday site visit. Sec bldg source was not tripped though.	Aram Varjarbedian	4/19/20	Completed
4/19/20	11914	Chlorine Contact Tank 1	Tank cleaning	Set up and isolate tank, pump to influent manhole with 6-inchinch trash pump. Clean out sludge and hose down. Return to service. AV & ES.	Aram Varjarbedian	4/19/20	Completed
4/20/20	11917	MH 20221	Evoqua install new GPS/data logger	Drilled new eye hook in MH to hang data logger	Eric Sutton	4/20/20	Completed
4/20/20	11916	22 - WW - sewers/pipes/force mains	Site inspection of 193 nantasket ave fascination	Site inspection for new lateral sewer at Fasionation/ Dalat area	Eric Sutton	4/20/20	Completed
4/27/20	11918	Influent Pump Room	Failed float switch on sump pump.	Electrically isolated pump. Replaced float switch and returned to service.	David Wilson	4/27/20	Completed
4/29/20	12047	Primary Clarifier 2	Scum pit cleaning	Coordinated with Hoadly combination truck to remove fog from primary scum pit. Removed 5 feet of solids with vacuum. Cleaned scum beach drain lineand scum pit with high pressure water. Pumped down water.	David Wilson	4/29/20	Completed

Corrective Maintenance

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/29/20	12050	MH 20889	Clean out solids from manhole.	Set up traffic cones. Removed manhole cover and bacteria unit. Used combintaion truck to vacuum out solids. Used high pressure water to clean walls.	David Wilson	4/29/20	Completed
4/29/20	12049	PS A Wet Well	Clean wet well	Disconnected portable generator. Moved out fo the way for combination truck. Isolated pumps. Used high pressure water to spray do wet well. Cleaned still pipe, transducer and aerator. Sprayed down wet well walls. Used combination truck to vacuum out solids. Returned station to service. Replaced and reconnected portable generator. Decanted combination truck. Offloaded solids at dump. Pit level high.	David Wilson	4/29/20	Completed
4/30/20	11919	Generator Room	Zip tie/ tamper proof ball valves on critical piping.	Zip tied fuel supply and return ball valves so they cannot be accidentally closed. Zip ties can be removed if needed for maintenance.	Bill Boornazian	4/30/20	Completed

Inspections

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/1/20	11275	Eyewash Stations	WWTF Eyewash Inspection - Weekly	Inspected and tested all emergency eye wash and shower stations.	Ryan Holman	3/29/20	Completed
4/6/20	11539	Truck 3 - 2015 Chevy 3500 HD	Monthly vehicle inspection on do-Forms	Completed vehicle inspection. No issues found	David Wilson	4/6/20	Completed
4/8/20	11906	Sludge Storage Tank 2	Clean and inspection of tank and pipes.	DW- Wind river in for tank cleaning. DW/JS- CSE into tank for diffuser system inspection . DW/DB- Removed elbow in sludge transfer room fo camera inspection of 6" pipe from SHT2 to Sludge transfer room. DW/JS Used push camera to inspect pupe. DW- Recorded video and forwarded to BB. Reinstalled elbow with new hardware and antiseize.	David Wilson	4/8/20	Completed
4/9/20	11428	Eyewash Stations	WWTF Eyewash Inspection - Weekly	Inspected and tested all emergency eye wash and shower stations. All in good order.	Ryan Holman	4/5/20	Completed
4/9/20	11433	Emergency Lighting & exit signs	Emergency Lighting Inspection - Monthly	Inspected and tested all emergency lighting. 8 found to not be working correctly. During previous inspections work orders for these 8 were made. No new issues found.	Ryan Holman	4/8/20	Completed
4/9/20	11517	Fire Extinguishers	WWTF Fire Extinguisher Inspections - Monthly	Inspected and cleaned all fire extinguishers located in the facility.	Ryan Holman	4/6/20	Completed
4/10/20	11540	Truck 4 - 2015 Nissan Frontier	Monthly vehicle inspection on do-Forms	99245 miles, Insp done and had oil and oil filter chg. At Topham Autom.	Aram Varjarbedian	4/6/20	Completed
4/13/20	11472	PS 1	PS #1 Inspection - Monthly	Inspected wet well and fire extinguisher. Tested sump pump and high level alarm. No issues found.	David Wilson	4/2/20	Completed
4/13/20	11473	PS 3	PS #3 Inspection - Monthly	Inspected wet well and fire extinguisher. Tested sump pump and high level alarm. No issues found.	David Wilson	4/2/20	Completed
4/13/20	11474	PS 4	PS #4 Inspection - Monthly	Inspected wet well and fire extinguisher. Tested sump pump and high level alarm. No issues found.	David Wilson	4/2/20	Completed
4/13/20	11475	PS 5	PS #5 Inspection - Monthly	Inspected wet well and fire extinguisher. Wet well has fat balls floating on surface. About 50% covered. Tested sump pump and high level alarm.	David Wilson	4/2/20	Completed

Inspections

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/13/20	11476	PS 6	PS #6 Inspection - Monthly	Inspected wet well and fire extinguisher. Wet well needs to be cleaned. Tested sump pump and high level alarm.	David Wilson	4/2/20	Completed
4/13/20	11477	PS 9	PS #9 Inspection - Monthly	Inspected wet well and fire extinguisher. Tested sump pump and high level alarm. No issues found.	David Wilson	4/2/20	Completed
4/13/20	11478	PS A	PS #A Inspection - Monthly	Inspected wet well and fire extinguisher. Wet well has about 60% surface solids. Tested sump pump and high level alarm.	David Wilson	4/2/20	Completed
4/16/20	11429	Eyewash Stations	WWTF Eyewash Inspection - Weekly	Inspected and tested all emergency eye wash and shower stations throughout the plant. Also recharged portable eye wash stations.	Ryan Holman	4/12/20	Completed
4/19/20	11530	Truck 2 - 2009 Chevy 2500 HD	Monthly vehicle inspection on do-Forms	Inspected vehicle. Topped off fluid levels and checked tire pressures.	David Wilson	4/6/20	Completed
4/24/20	11430	Eyewash Stations	WWTF Eyewash Inspection - Weekly	Tested and inspected all emergency eye wash and shower stations throughout the plant.	Ryan Holman	4/19/20	Completed
4/26/20	11532	Primary Electrical Power Manhole	Inspect Primary Electrical Manhole	Pumped out six inches of water from electrical vault.	David Wilson	4/7/20	Completed
4/26/20	11531	Secondary Electrical Control Manhole	Inspect Secondary Electrical Manhole	Pumped out water from electrical vault.	David Wilson	4/7/20	Completed
4/26/20	11533	Waste Oil Storage	Waste Oil Area Inspection	Insp area, ok.	Aram Varjarbedian	4/14/20	Completed
4/27/20	10460	Backflow Preventer - HVAC Room Back Wall	Backflow Preventor Test (HVAC Room) - Semi Annual	Water supply inspector did not schedule. Device appears to be functioning properly.	David Wilson	10/16/19	Completed
4/27/20	10459	Backflow Preventer - Generator Room	Backflow Preventor Testing (Generator Room) - Semi Annual	Water supply inspector did not schedule. Device appears to be functioning properly.	David Wilson	10/16/19	Completed
4/27/20	11442	Backflow Preventer - Generator Room	Backflow Preventor Testing (Generator Room) - Semi Annual	Water supply inspector did not schedule. Device appears to be functioning properly.	David Wilson	4/15/20	Completed
4/27/20	11443	Backflow Preventer - HVAC Room Back Wall	Backflow Preventor Test (HVAC Room) - Semi Annual	Water supply inspector did not schedule. Device appears to be functioning properly.	David Wilson	4/15/20	Completed
4/27/20	11520	Truck 1 - 2010 Dodge Ram 1500	Monthly vehicle inspection on do-Forms	See notes in vehicle inspection form	David Wilson	4/6/20	Completed

Preventative Maintenance

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/1/20	11445	Influent Sluice Isolation Gate	Weekly operate through full range	Done with Ryan H.	Joe Basler	4/1/20	Completed
4/1/20	11288	Influent Sluice Isolation Gate	Weekly operate through full range	Ran the influent gate in hand for its full range of operation while JB observed from SCADA.	Ryan Holman	3/25/20	Completed
4/1/20	11394	Generators "All Pump Station"	Generator Weekly - Test Run no load		Eric Sutton	3/30/20	Completed
4/1/20	11364	PS Trailer Mounted Generator	Generator Weekly - Test Run no load		Eric Sutton	3/30/20	Completed
4/1/20	11480	PS 1 Generator	PS #1 Generator Inspection and Test - Weekly		Eric Sutton	4/1/20	Completed
4/1/20	11485	PS 3 Generator	PS #3 Generator Inspection and Test - Weekly		Eric Sutton	4/1/20	Completed
4/1/20	11492	PS 4 Generator	PS #4 Generator Inspection and Test - Weekly		Eric Sutton	4/1/20	Completed
4/1/20	11497	PS 5 Generator	PS #5 Generator Inspection and Test - Weekly		Eric Sutton	4/1/20	Completed

Preventative Maintenance

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/1/20	11509	PS 6 Generator	PS #6 Generator Inspection and Test - Weekly		Eric Sutton	4/1/20	Completed
4/1/20	11503	PS 9 Generator	PS #9 Generator Inspection and Test - Weekly		Eric Sutton	4/1/20	Completed
4/4/20	11385	High level floats	Weekly High Float Alarm test	Tested all high level floats and alarms.	Ryan Holman	3/29/20	Completed
4/5/20	11554	All Plant Gear box reducers	GEAR BOX MAINT - WEEKLY	Set fluid level in all online clarifier gearboxes. GT1-3gal, PC2-.5qt, SC1- 1qt, SC2-2qt.	David Wilson	4/5/20	Completed
4/5/20	11538	Chlorine probe AT1	Change electrolyte	Chk lab vs actual. Very good, no chugs made	Aram Varjarbedian	4/1/20	Completed
4/5/20	11515	Plant Water Pump 1	Monthly Check Pump Couplings	Direct drive. No hubs or coupling.	David Wilson	4/1/20	Completed
4/5/20	11516	Plant Water Pump 2	Monthly Check Pump Couplings	Direct drive. No hubs or coupling.	David Wilson	4/1/20	Completed
4/5/20	11550	Generators "All Pump Station"	Generator - Monthly Load Test		Eric Sutton	4/5/20	Completed
4/5/20	11524	PS Trailer Mounted Generator	Generator - Monthly Load Test		Eric Sutton	4/5/20	Completed
4/5/20	11519	GODWIN Portable Pump	Test Run Godwin Pump-Monthly	Inspected all fluid levels. Brought up to operating temp. No unusual noises or vibration. Pumped out fuel containment area.	David Wilson	4/1/20	Completed
4/6/20	11465	RAS Pump 3	Monthly Check Pump Couplings	Inspected hubs and coupling. No issues found.	David Wilson	4/1/20	Completed
4/6/20	11466	RST Feed Pump 1	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. No issues found.	David Wilson	4/1/20	Completed
4/6/20	11467	RST Feed Pump 2	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. No issues found.	David Wilson	4/1/20	Completed
4/6/20	11470	Sludge Transfer Pump 1	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. No issues found.	David Wilson	4/1/20	Completed
4/6/20	11471	Sludge Transfer Pump 2	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. No issues found.	David Wilson	4/1/20	Completed
4/6/20	11450	Mechanical Screen & Washpress System	Monthly Maintenance	Cleaned all scrapers. Inspected drive and driven components. No issues found.	David Wilson	4/6/20	Completed
4/6/20	11546	Recirculation pump #1	Monthly Check Pump Couplings	Direct drive.	David Wilson	4/1/20	Completed
4/6/20	11547	Recirculation Pump #2	Monthly Check Pump Couplings	Direct drive.	David Wilson	4/1/20	Completed
4/6/20	11426	Portable Generator - Honda	Portable Generator Inspection - Monthly	Inspected fluid levels. Brought up to operating temp. No unusual noises or vibration.	David Wilson	4/1/20	Completed
4/7/20	11136	Aeration Blower 2	Aeration Blower #2 Oil Change - Semi Annual	Drained oil from blower. Filled oil level to correct height. Topped off reservoirs.	David Wilson	2/25/20	Completed
4/8/20	11462	Wet Scrubber Fan	Scrubber Exhaust Fan PM - Monthly	LOTO of equipment. Inspected and greased all bearings. Checked belt deflection. Good overall.	David Wilson	4/8/20	Completed
4/8/20	11454	Influent Pump 3	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. No issues found.	David Wilson	4/1/20	Completed
4/8/20	11452	Influent Pump 1	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. No issues found.	David Wilson	4/1/20	Completed
4/8/20	11453	Influent Pump 2	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. Recently replaced coupling shows wear. Believe hubs should be replaced.	David Wilson	4/1/20	Completed
4/8/20	11455	Influent Pump 4	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. No issues found	David Wilson	4/1/20	Completed

Preventative Maintenance

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/8/20	11456	Influent Pump 5	Monthly Check Pump Couplings	LOTO of equipment. Inspected hubs and coupling. Slight wear. No new dust.	David Wilson	4/1/20	Completed
4/11/20	11446	Influent Sluice Isolation Gate	Weekly operate through full range	Ran the influent gate in hand while JB watched from SCADA. Observed full motion of gate	Ryan Holman	4/8/20	Completed
4/11/20	11287	Influent Sluice Isolation Gate	Weekly operate through full range		Ryan Holman	3/18/20	Completed
4/12/20	11541	High level floats	Weekly High Float Alarm test	Done with RH.	Joe Basler	4/5/20	Completed
4/12/20	11555	All Plant Gear box reducers	GEAR BOX MAINT - WEEKLY	Inspected and set all fluid levels in all online clarifier gearboxes. GT1- 3gal, PC2- .25qt, SC1- 1.5qt, and SC2-2.5 qt.	David Wilson	4/12/20	Completed
4/13/20	11551	Generators "All Pump Station"	Generator Weekly - Test Run no load	Loss of power 4/13	David Wilson	4/13/20	Completed
4/13/20	11374	Confined Space 4 Gas Meter	monthly calibration	Zeroed and tested calibration. No issues found.	David Wilson	3/26/20	Completed
4/13/20	11366	Meter #2 - 4 Gas	4 Gas Meter #2 Calibration - Monthly	Zeroed and tested calibration. No issues found.	David Wilson	3/26/20	Completed
4/13/20	11367	Meter #3 - 4 Gas	4 Gas Meter #3 Calibration - Monthly	Zeroed and tested calibration. No issues found.	David Wilson	3/26/20	Completed
4/13/20	11368	Meter #4 - 4 Gas	4 Gas Meter #4 Calibration - Monthly	Zeroed and tested calibration. No issues found	David Wilson	3/26/20	Completed
4/13/20	11369	Meter #5 - 4 Gas	4 Gas Meter #5 Calibration - Monthly	Out of service. Requires board replacement by manufacturer.	David Wilson	3/26/20	Completed
4/13/20	11370	Meter #6 - 4 Gas	4 Gas Meter #6 Calibration - Monthly	Zeroed and tested calibration. No issues found.	David Wilson	3/26/20	Completed
4/13/20	11518	Meters - 4 Gas Confined Space #1	4 gas meter calibration - monthly	Zeroed and tested calibration. No issues found.	David Wilson	4/1/20	Completed
4/13/20	11545	Meters - 4 Gas Confined Space #2	4 gas meter calibration - monthly	Zeroed and tested calibration. No issues found.	David Wilson	4/1/20	Completed
4/14/20	11438	Generator #1- Emergency Kohler 750	Generator - Monthly Load Test	Loss of power.	David Wilson	4/5/20	Completed
4/14/20	11439	Generator #1- Emergency Kohler 750	Generator Weekly - Test Run no load		David Wilson	4/13/20	Completed
4/14/20	11435	Generator #2 - Backup Detroit 500	Generator Weekly - Test Run no load		David Wilson	4/13/20	Completed
4/14/20	11521	PS Trailer Mounted Generator	Generator Weekly - Test Run no load		David Wilson	4/13/20	Completed
4/14/20	11468	Primary Sludge Pump 1	Monthly Check Pump Couplings		David Wilson	4/1/20	Completed
4/14/20	11469	Primary Sludge Pump 2	Monthly Check Pump Couplings		David Wilson	4/1/20	Completed
4/16/20	11447	Influent Sluice Isolation Gate	Weekly operate through full range	Ran the influent gate in hand while JB observed from scada.	Ryan Holman	4/15/20	Completed
4/19/20	11556	All Plant Gear box reducers	GEAR BOX MAINT - WEEKLY	Inspected and set fluid level in all clarifier gearboxes. GT1-3gal, PC2-good, SC1-1.5qt, SC2-2.5qt.	David Wilson	4/19/20	Completed
4/19/20	11543	High level floats	Weekly High Float Alarm test		Ryan Holman	4/19/20	Completed

Preventative Maintenance

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/20/20	11427	Pressure Washer	Pressure Washer PM - Annual	Inspected oil, air filter and fuel level. Battery and key start not working. Cleaned carburetor float bowl and main jet. Added fresh fuel and was able pull start motor. Tested pressure washer function. Builds pressure. Wand bent out of shape. Hose holds pressure but quick release fittings leak and corroded. Heater function could not be verified. Overall fair.	David Wilson	4/9/20	Completed
4/20/20	11451	Mechanical Screen & Washpress System	Annual Maintenance	Pressure washed assembly for inspection. Inspected all flights, linkage, pivot pins, snap rings and drive assemblies. No leaks or unusual noises. Good overall. Greased all bearings.	David Wilson	4/6/20	Completed
4/20/20	11552	Generators "All Pump Station"	Generator Weekly - Test Run no load		Eric Sutton	4/20/20	Completed
4/20/20	11522	PS Trailer Mounted Generator	Generator Weekly - Test Run no load		Eric Sutton	4/20/20	Completed
4/20/20	11542	High level floats	Weekly High Float Alarm test		Ryan Holman	4/12/20	Completed
4/21/20	11440	Generator #1- Emergency Kohler 750	Generator Weekly - Test Run no load	Checked all fluid levels. Recorded all run data. No issues found.	David Wilson	4/20/20	Completed
4/21/20	11436	Generator #2 - Backup Detroit 500	Generator Weekly - Test Run no load	Checked all fluid levels. Recorded all run data. No issues found. Cleaned strainer basket.	David Wilson	4/20/20	Completed
4/22/20	11459	Aeration Tank 1 Oxygen Probe	AT #1 DO Probe Clean and Calibrate - Monthly	Cleaned and inspected LDO probe. Completed air and sample calibration.	David Wilson	4/7/20	Completed
4/22/20	11460	Aeration Tank 3 Oxygen Probe	AT #3 DO Probe Clean and Calibrate - Monthly	Cleaned and inspected LDO probe. Completed air and sample calibration.	David Wilson	4/7/20	Completed
4/24/20	11448	Influent Sluice Isolation Gate	Weekly operate through full range	JB ran influent gate from SCADA while RH observed from headworks.	Ryan Holman	4/22/20	Completed
4/26/20	11557	All Plant Gear box reducers	GEAR BOX MAINT - WEEKLY	Inspected and set fluid level in all clarifier gearboxes. SC1- good, SC2- .5qt, PC2- good, GT1-3gal.	David Wilson	4/26/20	Completed
4/26/20	11536	Chlorine probe ATI	Weekly calibration	Cal against lab result, ok. Good slope	Aram Varjarbedian	4/13/20	Completed
4/27/20	11553	Generators "All Pump Station"	Generator Weekly - Test Run no load		Eric Sutton	4/27/20	Completed
4/27/20	11523	PS Trailer Mounted Generator	Generator Weekly - Test Run no load		Eric Sutton	4/27/20	Completed
4/27/20	10458	Backflow Preventer - HVAC Room Boiler Makeup Feed	Backflow Preventor Test (HVAC Room Boiler) - Semi Annual	Water supply inspector did not schedule. Device appears to be functioning properly.	David Wilson	10/16/19	Completed
4/27/20	11444	Backflow Preventer - HVAC Room Boiler Makeup Feed	Backflow Preventor Test (HVAC Room Boiler) - Semi Annual	Water supply inspector did not schedule. Device appears to be functioning properly.	David Wilson	4/15/20	Completed
4/27/20	11549	FIRE ALARM SYSTEM	Fire alarm - semi annual	Hart Security came in and completed the semiannual testing and inspection.	David Wilson	4/6/20	Completed
4/27/20	11458	Aeration Blower 2	Aeration Blower #2 Air Filter Inspection - Monthly	Replaced air filter element with a clean one.	David Wilson	4/23/20	Completed
4/28/20	11441	Generator #1- Emergency Kohler 750	Generator Weekly - Test Run no load	Inspected all fluid levels. Brought up to operating temp. No issues found.	David Wilson	4/27/20	Completed
4/28/20	11437	Generator #2 - Backup Detroit 500	Generator Weekly - Test Run no load	Inspected all fluid levels. Brought up to operating temp. Inspected louvre system. Cleaned strainer basket.	David Wilson	4/27/20	Completed
4/28/20	11457	Aeration Blower 1	Aeration Blower #1 Air Filter Inspection - monthly	Inspected filter assembly. Blower 1 on standby.	David Wilson	4/28/20	Completed

Status Date	WO #	Asset Name	Work Description	Work History Note	Employee	Schedule Date	Status
4/9/20	11432	Eyewash Stations	All Portable Eye wash stations - semi annual	Tested and inspected all emergency eye wash and shower stations.	Ryan Holman	4/1/20	Completed