Monthly Report of the Operations & Maintenance Activities

Claremont Polychemical Operable Unit 5

Groundwater Treatment System

Old Bethpage, New York

August, 2021

NYSDEC Standby Engineering Contract
Work Assignment #D0076025-28

Prepared for
NYS Department of Environmental Conservation
625 Broadway
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NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

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ACRONYMS AND ABBREVIATIONS

AS	Air Stripper
ASF	Air Stripper feed
BP	Bethpage State
BSP	Bethpage State Park (Black Golf Course)
CPC	Claremont Polychemical
CSE	Confined Space Entry
DOSR	Daily Operations Summary Report
EE	Electrical Engineer
EFF	Effluent
EON	EON Products, Inc.
GPD	Gallons Per Day
GPM	Gallons Per Minute
GW	Groundwater
GWTS	Groundwater extraction, treatment, and reinjection system
HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C.
HHLA	High-High Level Alarm
HMI	Human Machine Interface
HVAC	Heating, Ventilation, and Air Conditioning
INF	Influent
LOTO	Lock-out, Tag-Out
MTBA	Tert-Butyl-Methyl ether
MW	Monitoring Well
NCDPW	Nassau County Department of Public Works
NYSDEC	New York State Department of Environmental Conservation
O&M	Operation and Maintenance
OBL	Old Bethpage Landfill
OFP&C	NYS Office of Fire Prevention & Control
OU4	Operable Unit 4
OU5	Operable Unit 5
PD	Plant Discharge
PID	Photoionization Detector
PET	Peter Takach
PFF	Pressure Filter Feed
PLC	Programmable Logic Controller
PM	Preventive Maintenance
PW	Process Water
RW	Recovery Well, Process Well
SOP	Standard Operating Procedure
SMP	Site Management Plan
SSHP	Site Safety and Health Plan
SU	Standard pH Units
TA	TestAmerica Laboratory
TBA	Tert-butyl alcohol
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TOB	Town of Oyster Bay
TOC	Total Organic Carbon
TSS	Total Suspended Solids
VOCs	Volatile Organic Compounds

1 OPERATION AND MAINTENANCE ACTIVITIES

Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) continued the daily operation and maintenance (O&M) of the Claremont Polychemical Superfund Site Groundwater Treatment System (GWTS) Operable Unit 5 (OU5) during the month of August. This report covers the operation and maintenance activities for the system during the period defined as beginning at ~0830 hours, August 1, 2021 through ~0830 hours, September 1, 2021. O&M conducted during this reporting period was guided by the site O&M Manual.

The GWTS – treatment plant, grounds, and well systems - were maintained for the 31 days in this reporting period during which the treatment system operated without downtime.

Readings of the key plant process parameters are normally recorded each workday. These readings and the Human Machine Interface (HMI) flow trend lines are used to monitor the system's performance and condition. Selected readings are recorded in the daily database which is an electronic file maintained in the monthly operating documents folder. If the plant is not occupied, the system is monitored remotely.

The treatment process control and alarm systems are functional. The recovery well pumps, the process pumps, and the air stripper blower are operated in the automatic mode and are remotely controlled and monitored.

1.1 DAILY OPERATIONS SUMMARY REPORTS

The GWTS's daily operations and maintenance activities, project tasks, and observations during this period are briefly described in the Daily Operations Summary Report (DOSR). The DOSR is based in part on the treatment system's daily operating worksheets and logs which include:

Daily Operating Log – flow readings and calculations (Form-01)
Daily Site and Safety Inspection – plant condition checklist (Form-02)
Daily Plant Activity Notes – plant manager's daily summary (Form-03)
HDR Sign-In Sheet – HDR employee on-site hours (Form-15)
Daily Process Data Sheet – point process readings (Form-30)
Logbook CPC 5-8– plant operator's daily logbook
Daily Database – daily process readings (08 August 21 Database.xlsx)
NYSDEC Log-in Sheet – Entry/Exit Log with COVID-19 Acknowledgement

1.2 SUMMARY OF MAINTENANCE ACTIVITIES

The operation and maintenance of the treatment system, facility, and associated equipment is performed in accordance with the site O&M Manual. These tasks and inspections incorporate the equipment manufacturers' recommendations, operations experience, and good engineering and maintenance practices. A detailed accounting of the August activities is further provided in the plant operator's daily logbook.

Maintenance and project activities undertaken during the August period included:

- Routine and general maintenance tasks were conducted at the plant, on the grounds, and in the well fields.
- Flows into Recharge Basin 33 were monitored and adjusted throughout the period.
- The CPC site was inspected, there appears to be some activity on the site.
- The monthly equipment function tests were conducted.
- The monthly electrical testing of the process equipment was conducted.
- Electrical testing was conducted on the mezzanine exhaust fan, (EF-4). It appears to be bad.
- The pressure switch at RW-5 was reset after tripping.
- The monthly recovery well system inspections were conducted. The incoming power readings were recorded.
- The monthly OU4 comprehensive site and safety inspections were conducted.
- The pressure switch at RW-4 was reset.
- The plant inventory continued.
- The OLR for RW-4 was reset several times.
- The power supplied to the recovery wells was adjusted up from 460 vac to 480 vac.
- The monthly truck inspection was conducted.
- The overload relay heater elements for RW-4 were replaced.
- The OU5 comprehensive site and safety inspections were completed.
- The LED light strip in the lobby exit light was repositioned to give better illumination.
- The monthly electrical component survey was completed.

1.3 MAINTENANCE LOGS

The following operating logbooks are currently in use and maintained at OU5:

- CL-18 OU-4 Log (truck)
- CL-43 General Field Support Log (truck)
- CL-47 Misc. Projects Field Notebook (PET)
- CPC 5-4 Project Support Logbook (site)
- CPC 5-8 Site Supervisor's Daily Logbook (PET)

With the exception of log CPC 5-7, the completed logbooks associated with the project have been scanned, all are in storage at OU5, and are available for review.

2 TECHNICAL SUPPORT ACTIVITIES

2.1 HDR Personnel

- HDR maintained the system throughout the period.
- Technical expertise and guidance were provided from the HDR Mahwah, Newark, and NYC offices.
- 8/5, Jennifer Rhee was in to go over the plant's electrical needs. She returned 8/12 to oversee plant operations.

- 8/5, Ian Denholm was in to conduct the monthly electrical testing

2.2 NYSDEC Personnel, sub-contractors, and other visitors

- 8/19, TA-NY was in to pick up the PW samples

2.3 Deliveries

- 8/18, UPS delivered the Radwell order.
- 8/24, UPS delivered the EON order.
- 8/25, UPS delivered the truck's new registration.

3 HEALTH AND SAFETY

Work at the Claremont GWTS OU5 was conducted in accordance with the approved Site Safety and Health Plan (SSHP). Safety related activities during this period included:

- Daily site safety inspections were completed as part of the routine O&M activities.
- Additional monthly safety inspections conducted at both OU4 and OU5 included, the fire alarm system, the plant electrical devices, the plant work and storage areas, and the plant egress.
- The working and common surfaces around the plant are frequently cleaned with 20% bleach solution.
- Access to the plant remains restricted.

4 PLANNED ACTIVITIES AND SCHEDULES

The evaluation of the plant operating system and equipment is ongoing by HDR. A list in the form of corrective actions or maintenance tasks has been generated as is a monthly system status report. These reports are updated as needed and reviewed at least monthly. Both are electronically filed. The corrective action list is included at the end of this report as **Table 1** – Claremont Corrective Action Summary.

Upcoming tasks include:

- The recording of the GW elevations is scheduled for 9/10.
- Further testing of the RW-4 system is scheduled for 9/13 &14.
- The quarterly GW sampling event are scheduled for a 9/16 Eurofins/Test America pick up.
- The next OFP&C inspection is scheduled for 9/22.
- The September PD sampling event are scheduled for a 9/23 Eurofins/Test America pick up.
- The preparations for the O&M transfer continue with the cleanup of the outdoor storage area and a plantwide inventory.

5 MONITORING WELL WATER ELEVATIONS

The monitoring well system's groundwater elevation data table was updated in June after the quarterly GW elevation recording task. This database is available for review. The next synoptic water level round will be scheduled for September 10, after which the table will again be updated.

6 TREATMENT SYSTEM FLOWS

During the August period, the plant continued to operate in the auto control mode. The volume of treated water discharged by the treatment system to the selected recharge basins was calculated from the plant influent and effluent flow meter readings. These readings are taken at the HMI and recorded in the daily database. The treatment system experienced no downtime during this period, although the pump for RW-4 tripped off several times.

Currently, the plant discharge is partially directed into Recharge Basin 33. It should be noted that the flow meter installation configuration and the negative discharge head, characteristic of the downhill piping influent to Basin 33, distort the plant discharge flow meter output. Since flow to Basin 33 commenced on 5/14, the plant discharge has been calculated as ~99.8% of the system flow (based on historic ratios).

The total volume of treated water discharged from ~0830 hours, August 1 to ~0830 hours September 1, was approximately 29,978,703 gallons. The plant discharge is currently directed to Recharge Basin No. 1 and partially to Recharge Basin 33. The data in **Table 2** is a summary of plant discharge flows.

A graphic representation of the system's daily plant discharge output is provided in **Figure 1** and the daily plant totalizer readings for August are provided in **Table 3**, both following the text of this report.

Under current conditions, the Programmable Logic Controller (PLC) and the control system are stable and fully functional. Flows from the individual recovery wells are remotely read, transmitted, and totalized.

The flow summary for the individual components of the system can be found in **Table 4** at the end of this report.

7 CHEMICAL CONSUMPTION

The hydrochloric acid feed system is currently off-line, and the system is empty of acid. There are four drums of virgin acid on site. No acid was consumed in August.

The sodium hydroxide storage system is currently not in use and the system is empty of caustic. There is no bulk sodium hydroxide on site and no caustic was consumed in August.

The sodium hypochlorite storage system is currently not in use and the system is empty of bleach.

No bulk sodium hypochlorite is stored on site. No sodium hypochlorite was consumed in August.

8 WASTE DISPOSALS

The routine collection of waste materials continued. Waste oil left onsite was taken to the TOBAY oil disposal site.

9 MONTHLY DISCHARGE MONITORING REPORT

The GWTS is operated under an equivalency permit from the NYSDEC. **Table 5** presents the Claremont OU5 O&M Sampling and Measurement requirements and their frequency. The analytical results for the August plant discharge samples indicate that all analyzed parameters were compliant with permit limits (**Table 6**).

The plant's water discharge permit is in the process of being renewed by the NYSDEC.

10 PENDING ISSUES AND CONSIDERATIONS

The pump control system for Recovery Well 4 continues to trip the overload relay. Further testing and troubleshooting are required. Electrical engineering tests are scheduled for 9/13.

The incoming electric service powering the recovery well pumps has shown a tendency fluctuate, resulting in pump failures. The incoming voltage will be monitored at least monthly and adjusted as necessary.

The OU4 plant HVAC system was shut down when the blower drive flywheel shaft failed. The system is currently off-line and will be required when the colder weather arrives.

The discrepancies/inaccuracies in the plant flow meter readings may be due to the inappropriate configuration of the local piping. Future calibration or adjustment of pulse reading may be required.

A damaged tree adjacent to the path to the MW-6 well cluster has shifted and continues to obstruct the path. The situation will continue to be monitored.

The well path to the BP-3 cluster following rain events still poses issues for vehicle transport. Work and upkeep will continue as necessary along the path.

The recovery well pump pressure switch assemblies will be replaced for preventative maintenance.

The alarm and monitoring systems for the OU4 fire sprinkler and fire safety systems are to be replaced.

The OU4 plant is offline and its disposition including that of the injection well system, and vapor carbon beds is pending.

The status of key aspects of OU4 are as follows:

- The plant heat is currently off.
- The fire alarm panels are off-line.
- The fire sprinkler system is online. It is frequently checked but not centrally monitored.
- The facility is secure, and its physical monitoring continues.
- The facility and grounds are not maintained except for the facility entrance and plant egress points.
- There appears to be periodic activity at the Claremont Polychemical site.

11 PLANT DOCUMENTS

Procedures and standard forms are written, reviewed, and revised as needed. As-built drawings are generated and updated as necessary. There was no such activity in August.

12 MONITORING RESULTS

The Claremont Polychemical GWTS is monitored through the analysis of off-site laboratory analytical data and on-site field data.

12.1 Off-site Analytical Data Results

Monthly PD samples are taken for organic analysis in compliance with the NYSDEC discharge permit. Quarterly groundwater (GW) samples are taken for organic analysis, and quarterly process water (PW) samples are taken for organic, inorganic, and generic analysis. The August sampling activities included:

- The July PD analytical data was processed and submitted.
- The GW analytical data was processed and resubmitted.
- The PW sample bottles were inventoried, ordered, received, and staged**.** The documents were prepared.
- The PW field samples were collected and processed 8/17. The pH levels were recorded. The PW plant samples were collected and processed 8/17. The PD chrome samples were collected and processed 8/19. All samples were picked up by TA-NY on 8/19.
- The quarterly groundwater elevation task was scheduled for 9/10 The quarterly GW sampling event was scheduled for a pickup on 9/16. The September PD sampling event was scheduled for a pickup on 9/23.

12.2 Field Data

<u>Plant Discharge pH and Temperature</u>

The treatment plant effluent is monitored for pH and temperature on a weekly basis to obtain a monthly average in compliance with the NYSDEC discharge permit requirements. These readings are taken from the plant effluent at a controlled point with a calibrated portable meter. The plant discharge readings for August can be found in **Table 7** following the text of this report.

The NYSDEC discharge permit requires the plant discharge to have an average monthly pH between 6.5 and 8.5 standard units (su). The results for this month meet this requirement. Data showing the plant discharge's monthly average pH trend over several months is provided in **Table 8** following the text of this report.

AS Tower Air Monitoring

Using a calibrated PID meter, weekly VOC air monitoring readings are taken from the effluent air stream of the AS Tower through Port B when the treatment system is online. The August readings from the AS tower are provided in **Table 9**.

There were no emissions from the Air Stripping System observed this month. No emissions have been detected since HDR began operation of the plant in October of 2016.

Other routine data collected in August included:

- The electric and water meter readings at OU5 were recorded weekly.
- The plant vaults and selected areas were monitored for VOCs weekly.
- The plant sound levels were recorded bi-weekly.
- The electric and gas meter readings for OU4 were recorded.
- The recharge basins were inspected, and the water levels noted.
- The differential pressure readings across the AS Tower were recorded bi-weekly.
- The power supply voltage to the recovery wells was recorded.

13 PROCESS ANALYSIS and SYSTEM STATUS

The treatment system is currently operated 24/7 in the automatic mode. It is remotely monitored as necessary.

13.1 Extraction (RW) Processes

- The monthly system inspection was completed.
- The incoming voltage was measured.
- The pump for RW-4 tripped off several times in August. Resetting the motor starter overload relay and changing its heater elements, returned the pump to service.
- The vault heating units remained off during the month of August.
- The recovery well pump system is remotely controlled and monitored, it operates in the Auto mode. All the pumps are fully functional with pumps RW-3, RW-4, and RW-5 online.
- Pump flow readouts are transmitted to the plant and the totalizers for pumps -3, -4,

and -5 are fully functional.

- The A/V valve at station 16+57 remains isolated from the transmission line.
- The A/V valve at station 17+10 remains isolated from the transmission line.
- RW-1 and RW-2 are offline and periodically run for preventative measure purposes. Their flow meters are not transmitting through the PLC.

13.2 Air Stripping (AS) Process

- The three pumps are fully functional. The pumps are operated in the Auto mode controlled by the wet well level switches.
- Motors and seals were lubricated as necessary.
- The AS tower main drain valve's manual actuator is not functional (fail open).
- The tower media appears clean as the pressure differential between the top and bottom ports remains relatively constant. The lower section of media has been visually inspected.
- The discharge valves for ASF P1 and P2 appear to be frozen in the open position.

13.3 Plant Discharge (PD) Process

- The plant discharge flow is predominantly directed to Recharge Basin 1, and is partially diverted to Recharge Basin 33.
- During extended wet periods and high rain events, a high-water level in Basin 33 (as observed on the in-basin level gauge and the high water levels in the storm drains on Round Swamp Road) will necessitate ceasing flow into the basin.
- Pump 1 has been taken out of service due to excessive noise and vibration. A full evaluation is required.
- The motors and seals were lubricated as necessary.
- The discharge valve for PFF P3 has failed open.

13.4 Other

- The plant's first light bank is wired to the e-light recharging system. The circuit is kept on 24/7.
- The potential for leaks in the water supply line running through the plant will continue to be monitored.
- The fire alarm system is fully functional. Central monitoring is functional.
- The truck inspection was completed.

14 GROUNDS

14.1 Plant Perimeter

- General outdoor clean-up tasks are on-going.
- The Town of Oyster Bay (TOB) continues to maintain the grounds along the plant perimeter including landscaping.
- The fencing is clear and secure

14.2 Well Field

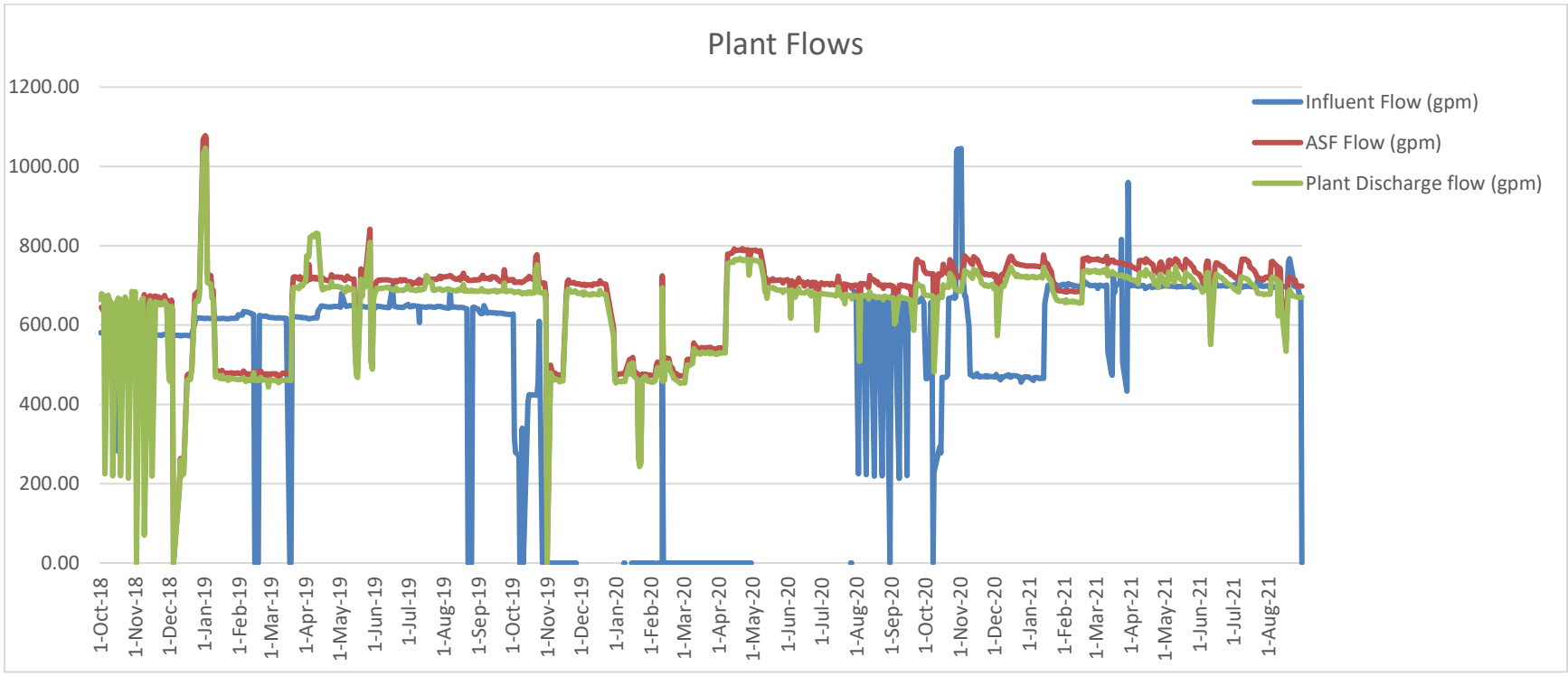
- Well, well field, and recharge basin inspections continue.
- The well access paths are maintained.

14.3 Other

- The Claremont Polychemical GWTF OU4 is secure.
- The property at and around the OU4 site continue to be inspected. While the grounds are not maintained, the treatment plant's entrance and egress points are kept clear and functional.
- The Claremont Polychemical site currently has no tenant.

FIGURES

Figure 1 – Plant Discharge Daily Flow



TABLES

Table 1- Claremont Corrective Actions Summary

Conditions of note and corrective actions planned 8/31/21

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
The RW Discharge Manifold integrity is suspect	The condition of the various devices on the RW discharge manifold are suspect. The Air Vent valve in the vault on the N-side of the 6th fairway is leaking from the influent nipple. **The shut-off valve was closed and the device isolated** The air-vent valve in the vault to the east of the 6th green is leaking. **The shut-off valve was closed and the device isolated.** **The manifold employs isolation, venting, and drain valves as well as other devices. Along the path of the manifold are vaults which house some of these devices. These vaults need to be accessed, pumped out, and the devices tested.**	Plant staff and outside contractors	Possible shutdown	May require a CSE
AS Tower main drain valve is not controlled	The valve does not respond to manipulation of its actuator ***This valve should be replaced*.** ***No further action is planned at this time***	Operator	Plant will need to be shut down to change out the valve	None

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
The RW pump discharge instrumentation and sampling configuration is unwieldy and subject to catastrophic failure	The copper piping assembly (1/2”) carries a fair amount of weight and torque (pressure switch, sample tubing, pressure gauge) and shows signs of corrosion. Various design options have been considered. **The assemblies will be changed when circumstances dictate.**	Plant operator and spotter	Each well system will be shut down during the upgrade	Confined space entries will be required. These will generally not be permit required.
OU4 fire alarm system is not functioning Central monitoring of the fire alarm system or fire suppression system does not exist	The Nassau County Fire Code indicates that the sprinkler system must have central monitoring for flow and valve tampering. The fire alarm system needs to be replaced and centrally monitored. Several contractors have been at the site to propose options for the system ***The fire alarm system is to be replaced*** ***A central station monitoring system is to be installed***	Plant operator, EE and outside vender	None at this time	Fire code violations. High altitude tasks
Several leaks were observed in the plant overhead water supply line.	Adjacent to the north door a clam-shell type clamp was applied. The second leak observed above the AS Blower is not readily accessible. It is not problematic ***Repair work may require evaluation and outside resources. Currently the situation is controlled.***	Outside plumbing contractor?	None	Sanitary water may be shut off during repairs

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
The float controls for the PFF pump system have intermittently shorted out causing the system to not properly control the pumping operation	• The wiring of the pump control system is connected below grade. The junction box in the wet well is thought to be filled with water creating a problem with the float switches to control relay wiring. • The box cannot be opened without damage to it and the conduit. This appears to have been a longstanding problem, as when switches have been replaced in the past, they were spliced outside the box. • The float switches have been replaced and spliced above the sump but there remains a problem with the L2 circuit. • The output from the W-2 relay was moved to the output for the W-1 relay. This has stopped the short cycling. ***The control wiring should be changed and moved above grade.***	Plant operator and HDR resources	Plant shut down is required	Possible Confined Space Entry work
PFF P1 has failed	The pump when activated immediately makes a lot of noise, and the pump drop tube shakes. Smoke/ fumes emanated at the Motor-shaft connection. The motor appears to be good. The pump was removed from service, 2/24/20 ***It is recommended that the motor be disconnected, lifted, and the mechanical connection be checked.***	Outside contractors	None anticipated	To be determined
As the ASF pumps cycle off/on, the check valves have started to slam closed. When reactivating, the motor starter contact is rather violent. Both actions tend to rattle the piping and fixtures	There is no available literature regarding the check valves, so the exact description of their functioning parts is to be determined. A softer start/stop control may fix this issue. ***This will need further investigation***	Plant operator and EE support	If replacement or repairs are necessary, a plant shutdown will be required as the units can-not be isolated	To be determined

Condition to be Corrected	Status and Actions	Resources	Plant Ops Impact	Health & Safety Impacts
The flowmeters for system flow, ASF flow and plant discharge are out of sync with the flow meters on the recovery wells.	While the ASF flow meter is the most out of line, it is plumbed correctly. The influent system flow meter and the plant discharge flow meters are piped incorrectly. The same style of relay is used to count pulses, but the meters have not been calibrated **The system needs further investigation to determine if any changes are warranted**	Electrical engineering	To be determined	none
EF-4 does not seem to be operatable.	Fan is controlled by mezzanine thermostat, but it does not appear to be operating. May need electrical testing. The system was checked, it appears that the fan is not functioning.	EE support	Only in an emergency	Only in an emergency
Wiring nests in main control console	**The wiring in the main control console needs to be cleaned up and labeled, to facilitate problem troubleshooting and process improvements**	**EE support**	**A shut down may be necessary**	**Electrical work**

Other Plant Conditions of Note (no action required at this time)

- The methane detection system is offline. **To function, it will need a technical inspection and technical maintenance**. However, methane does not currently appear to be a hazard
- It has been determined that intrinsically safe components are no longer required in the plant

As previously noted, there are pieces of equipment that are out of service and require repairs. Currently there are no plans for addressing these conditions as the operation of this equipment is not necessary or needed for the operation of the treatment system.

Equipment	**Fault**	**Status**
Plant electric heater UH-1	Needs transformer	Heater is not needed
Plant electric heater UH-2	Needs relay timer and wiring repairs	Heater is not needed
NaOH sump pump	Pump is not operating	No water or chemicals stored in vault. Portable submersible pump in sump should suffice.
RW-5 pump discharge isolation valve	Valve does not fully close	Valve shuts off water sufficiently to perform work
Plant lights are wired to the emergency light charging system	Un-segregated light cannot be shut off, several are intermittent	The bank of lights appear to have failed/burnt out. The second bank of lights are sufficient.
Plant exhaust fans are part of methane system	Fans cannot be manually operated	Once the methane monitoring system is online, the fans can be operated.
Plant discharge drain	Leak in Victaulic fitting	Drain line on plant discharge intermittently leaks. Parts are in-house. Not pressing
ASF pump isolation valve	Valve P1 has failed open	Not needed at this time
PFF pump isolation valve	Valve P3 has vailed open	Not needed at this time
RW-1 flow meter	The meter is not operating	Pump is offline
RW-2 flow meter	The meter is not transmitting	Pump is offline
Air stripper flow meter	Non-functional and removed	
AH-1 condenser	Air conditioner is non-functional	Two window units in place
Plant outdoor lights	9/12 lights not functioning	

Table 2 – Plant Discharge Average Flow & Volume

Period	Average Flow (gpm)	Average Daily volume (gal)	Total Period Flow (gal)	Min off	Min on
Q4 2016	517	745,000	68,540,000	7,309	125,171
Q1 2017	520	748,244	67,342,000	655	128,945
Q2 2017	576	829,130	76,280,000	6,165	126,315
Q3 2017	634	913,576	84,049,000	1,110	131,370
Q4 2017	256	368,762	33,926,110	69,165	63,315
Q1 2018	53	75,989	6,839,000	118,180	11,420
Q2 2018	179	258,284	23,762,103	102,929	29,551
Q3 2018	504	725,280	66,725,717	57,416	75,064
Q4 2018	726	1,045,065	96,145,984	23,734	108,746
Q1 2019	527	758,467	68,262,000	735	128,865
Q2 2019	662	953,877	87,756,724	405	132,075
Q3 2019	685	985,802	90,693,740	108	132,372
Q4 2019	655	943,871	82,116,780	5039	129,326
Q1 2020	480	682,527	62,110,000	1824	129,326
Q2 2020	698	996,998	88,732,846	3838	127,185
Q3 2020	669	955,928	87,945,333	1099	131,401
Q4 2020	695	1,001,365	92,125,539	52	132,497
Q1 2021	708	1,019,733	91,776,000	0	129,603
Q2 2021	709	1,021,317	92,939,850	0	131,040
July 2021	697	1,003,628	31,112,465	0	44,636
Aug 2021	672	967,055	29,978,703	0	44642

Table 3– Plant Daily Totalizer Readings

August 2021 flows	Plant Influent		Plant Discharge		RW Discharge	
Date	Volume	Avg. Flow	Volume	Avg. Flow	Volume	Avg. Flow
1-Aug-21	997000	692	996791	692	1019000	708
2-Aug-21	975000	677	974795	677	995000	691
3-Aug-21	981000	681	980794	681	1003000	697
4-Aug-21	967000	672	966797	671	986330	685
5-Aug-21	1086000	754	1085772	754	1105000	767
6-Aug-21	3115000	2163	3114346	2163	3170000	2201
9-Aug-21	1027000	713	1026784	713	1042000	724
10-Aug-21	906000	629	905810	629	932000	647
11-Aug-21	1031000	716	1030783	716	1053000	731
12-Aug-21	1000000	694	999790	694	1007000	699
13-Aug-21	2780000	1931	2779416	1930	2817000	1956
16-Aug-21	796000	553	795833	553	805000	559
17-Aug-21	772000	536	771838	536	776000	539
18-Aug-21	905000	628	904810	628	919000	638
19-Aug-21	984000	683	983793	683	998946	694
20-Aug-21	2973000	2065	2972376	2064	3021000	2098
23-Aug-21	976000	678	975795	678	993000	690
24-Aug-21	979000	680	978794	680	997000	692
25-Aug-21	950000	660	949801	660	969000	673
26-Aug-21	963000	669	962798	669	981000	681
27-Aug-21	2859000	1985	2858400	1985	2915000	2024
30-Aug-21	1006000	699	1005789	698	1025000	712
31-Aug-21	957000	665	956799	664	977000	678
August Total Plant **Influent** (Gal)				29,985,000		
August Total Plant **Effluent** (Gal)				29,978,703		
August Total **RW Discharge** (Gal)				30,506,276		

Table 4– Pump System Flow Readings

August	On-Time Minutes (actual)	Avg. Flow (gpm)	Avg. Flow (gpd)	Total Flow (gal)
RW-1	5	221	-	1,105
RW-2	68	253	-	17,175
RW-3	44632	227	315,645	9,785,000
RW-4	41340	278	370,903	11,498,000
RW-5	43962	209	296,935	9,205,000
RW Totals	44642	683	984,073	30,506,276
Plant Influent	44642	672	967,258	29,985,000
Plant Effluent	44642	672	967,055	29,978,703

The treatment process was online 31 days in August with no downtime. Flows are taken from the HMI meter readings.

Table 5– Claremont OU5 O&M Sampling/Measurement Program and Frequency

Measurement / Analyte	Sampling Location			
	System Influent	Plant Discharge	Recovery Wells	Monitoring Wells
Flow	Daily	Daily	Daily	NA
pH	Quarterly	Weekly	Quarterly	Quarterly
VOCs (+Tert-Butyl-Methyl ether (MTBA) & Tert-butyl alcohol (TBA))	Quarterly	Monthly	Quarterly	Quarterly
SVOC Base Neutral & Acid Extractables (BNA)	Quarterly	Monthly	NS	NS
Total Kjeldahl Nitrogen (TKN)	NS	Quarterly	NS	NS
Total Suspended Solids (TSS)	Quarterly	NS	Quarterly	NS
Total Organic Carbon (TOC)	Quarterly	NS	NS	NS
Total Dissolved Solids (TDS)	NS	Quarterly	NS	NS
Cyanide	NS	Quarterly	NS	NS
Hexavalent Chromium	NS	Quarterly	NS	NS
Mercury	NS	Quarterly	NS	NS
Metals (AES/MS)	Quarterly	Quarterly	Quarterly	NS
Anions	NS	Quarterly	NS	NS

Notes: NA – Not applicable; NS – Not sampled.

Table 6– Recent Plant Discharge Analytical Results

The plant discharge was last sampled 8/18. The results for the August samples are below:

Parameters	Discharge Limitations (SPDES)	Units	Results
pH (range)	*6.5 – 8.5*	*SU*	*7.42*
1,1,1-Trichloroethane	5	ug/l	U
1,1-Dichloroethane	5	ug/l	U
1,1-Dichloroethylene	5	ug/l	U
1,2- Dichloroethane	0.6	ug/l	U
Benzene	0.7	ug/l	U
Chlorobenzene	5	ug/l	U
Chloroform	7	ug/l	U
CIS 1,2-Dichloroethylene	5	ug/l	U
Ethylbenzene	5	ug/l	U
Methylene Chloride	5	ug/l	U
Tert-butyl alcohol (TBA)	Not indicated	ug/l	U
Tert-Butyl-Methyl ether (MTBA)	5	ug/l	U
Tetrachloroethylene (PCE)	5	ug/l	U
Toluene	5	ug/l	U
Trans 1,2-Dichloroethylene	5	ug/l	U
Trichloroethylene (TCE)	5	ug/l	U
Bis(2-ethylhexyl) phthalate	5	ug/l	U
Di-n-butyl phthalate	50	ug/l	U
Nitro Benzene	0.4	ug/l	U
Antimony, Total recoverable	3	ug/l	U
Arsenic, Total recoverable	50	ug/l	U
Barium, Total recoverable	2000	ug/l	84
Chromium, Hexavalent	100	ug/l	U
Lead, Total recoverable	50	ug/l	U
Iron, Total recoverable	600	ug/l	U
Manganese, Total recoverable	600	ug/l	140
Mercury	Not indicated	ug/l	U
Zinc	Not indicated	mg/l	U
Nitrogen, Total (as N)	10	mg/l	4.7
Selenium, Total recoverable	40	ug/l	U
Solids, Total Dissolved	1000	mg/l	334
Chloride Ion	NL	mg/l	114
Cyanide	Not indicated	ug/l	U
Fluoride Ion	NL	mg/l	0.03
Sulfate Ion	NL	mg/l	17
1, 4-Dioxane	NL	ug/l	U

J – Estimated value **U** – Analyzed but not detected NL – Monitor only **NM**– Not sampled
Discharge limitations updates as per the water discharge permit.
Note: Parameters shaded in gray are sampled quarterly with results being provided March, June, October, and December

Table 7– Effluent pH and Temperature Readings

Date	pH (su)	Temp ˚F
8/2	7.86	62
8/9	7.49	63
8/16	7.46	64
8/23	7.70	62
8/31	6.87	65
August Average	**7.42 su**	**63^{O}F**

Table 8 – Plant Discharge Monthly Average pH

Month	pH(su)
June ‘19	6.5
July ‘19	6.6
Aug ‘19	6.56
Sept ‘19	7.45
Oct ‘19	6.86
Nov ‘19	6.88
Dec ‘19	6.84
Jan ‘20	6.63
Feb ‘20	6.75
Mar’20	6.74
Apr ‘20	6.65
May ‘20	6.8
June ‘20	6.8
July ‘20	6.9
Aug ‘20	6.8
Sept. ‘20	6.8
Oct. ‘20	6.95
Nov. ‘20	6.8
Dec ‘20	6.64
Jan ‘21	6.8
Feb ‘21	6.75
Mar ‘21	6.76
Apr ‘21	7.28
May ‘21	7.53
June ‘21	7.44
July ‘21	7.41
Aug ‘21	7.42

Table 9 – Monthly Average pH (Plant Discharge)

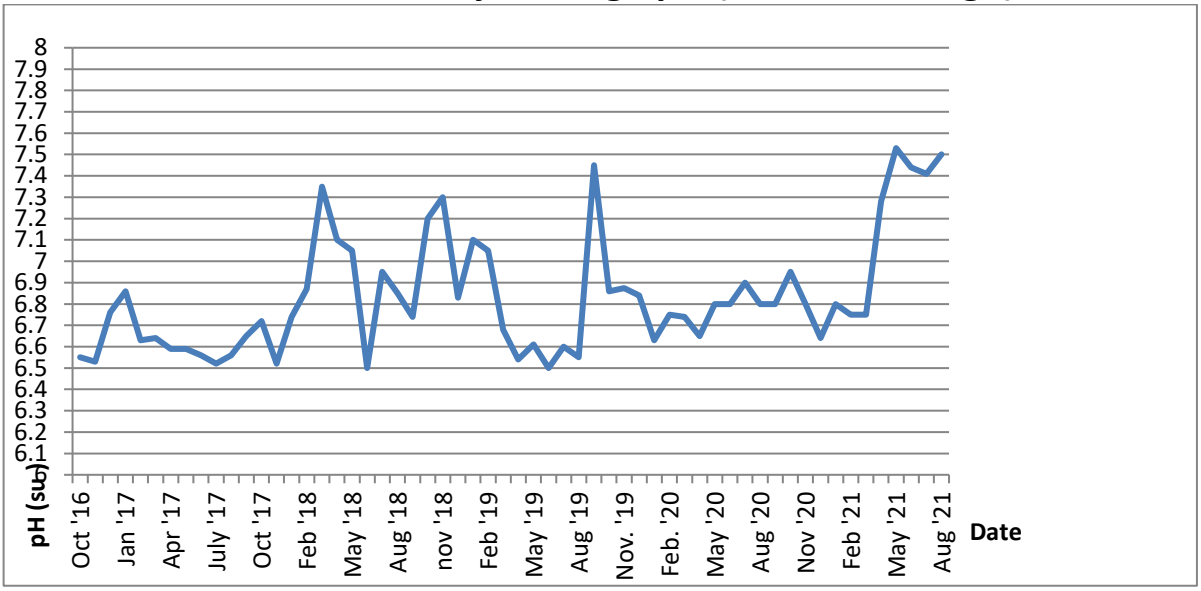


Table 10– AS Tower Air Monitoring Readings

Recorded Date	Port B
8/3	0
8/10	0
8/16	0
8/24	0
8/31	0