NEWSLETTER | WINTER 2020-2021

INSIDE:

A NACWA Peak Performance Agency

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New Features for Organic Waste Facility

CMSA accepts Fats, Oils, and Grease (FOG) and commercial food waste from private haulers at our Organic Waste Receiving Facility (OWRF). These materials are processed and pumped to the digesters to produce additional biogas. CMSA is largely energy self-sufficient, and at times, exports renewable electricity to the grid for sale to MCE. Recently, a couple of upgrade projects have been initiated to increase FOG storage and acceptance capabilities.

Making Room for More

The Agency's OWRF includes an existing below-grade storage tank. Because most organic material is delivered on weekday mornings, the tank fills up quickly and FOG haulers that arrive later may at times be turned away. As a result, there can be a shortage of feed material during nighttime and weekend hours. To maximize tipping fee revenues and to provide a more continuous supply of digester feedstock, and to maximize biogas production and increase export of renewable power, CMSA plans to add an additional above-grade liquid organic waste storage tank. The Agency recently retained consultant GHD and the design is underway with completion anticipated in the Fall 2021.

Completion of geotechnical boring for new tank location.

Additional storage tank project area being surveyed by GHD technicians.

Now Accepting Additional Liquids at the OWRF

Staff recently installed a receiving port at the OWRF to accept wastewater sludge from local agencies. The process begins with the delivery truck using the receiving port to offload the material, similarly to how FOG deliveries are currently accepted. These solids are then metered directly into the Agency's anaerobic digesters to produce additional biogas for onsite energy production.

New receiving port at the OWRF.

UPCOMING PROJECTS AND CONSTRUCTION

RAS Pumps Replacement

The Return Activated Sludge (RAS) pumps were installed during the original facility construction in 1985, and now show heavy corrosion and wear. Six RAS pumps, valves, and necessary associated piping are to be replaced. The project is in the design phase, and construction is scheduled for this Summer.

Secondary Clarifier No. 3 Rehabilitation

The secondary clarifiers were last rehabilitated about 15 years ago. In recent years, staff noticed corrosion on the steel components, including the rake arm, RAS pipe, and the steel supports for the overflow weir plate.

GSE Construction was awarded the project in February, and construction is scheduled to begin this spring. The project includes coating steel surfaces, resurfacing concrete, weir leveling, installation of spray nozzles, and replacing the walkway, the center column, and associated equipment.

Facility to be Powered on 100% Biogas Energy by 2022

In November 2020, the Agency awarded the Cogeneration System Installation Project to GSE Construction for $3.6 million. On-site construction will begin in spring 2021, and it is scheduled to be completed by January 2022. The new cogeneration system will be more efficient than the old equipment and can generate up to 995 kW of electricity plus additional heat. It is also expected to provide 100 percent of the energy needed to operate the CMSA facility using biogas, plus additional amounts of renewable energy that will be exported to the grid and sold to MCE under a new Power Purchase Agreement.

Switchgear Found to be in Good Order

Consultants Lee & Ro and APS were hired to perform a condition assessment of the existing electrical switchgear last summer. This equipment, mostly comprised of original equipment from 1985, was found to be in good shape, functional, and well-maintained. There were only a few issues, which do not pose any notable concerns. Another assessment is planned in about two years to determine the rate of deterioration. If the results indicate that the deterioration is faster than anticipated, rehabilitation and replacement options will be considered at that time.

Five Years or More for Digester Covers

The digester membrane covers were installed in 2011 and typically last up to 15 years. Because the membrane cover cannot be seen in close-up from the ground level, an in-depth inspection of the outer membrane was performed in September 2020 using a specialized crane. A representative from the membrane manufacturer checked for leaks and evidence of deterioration on the seams, the cables and anchors. While several very minor air leaks were observed, the covers and appurtenances are functioning properly and are in overall good condition. The manufacturer recommended visual re-inspection of the cover and appurtenances from the ground level annually, and to plan on replacing the membranes in the next five years.

Prison Pump Station to Get New Equipment

Under our wastewater services agreement with the Department of Corrections and Rehabilitation, CMSA has been providing asset management services for the San Quentin wastewater pump station. Current construction work being managed by CMSA involves replacing the pump station's aging emergency generator and its supply and exhaust fans. This work is scheduled for completion this spring.

OPERATIONS AND MAINTENANCE DEPARTMENT ACTIVITIES

Valves from the 90s Replaced

CMSA has five 6,000-gallon hypochlorite storage tanks with discharge piping equipped with motor operated diaphragm valves. These were installed in the mid-90s, and are no longer supported by the manufacturer or other suppliers, and aren't compatible with current process control protocols. Agency technicians installed and programmed the new Rotork units.

Fabricated System to Control H2S Gas Automatically

Controlling hydrogen sulfide (H2S) generation inside our anerobic digesters is important to minimize potential damage to the cogeneration engine and to comply with its emissions requirements. In the spring 2020 newsletter, we highlighted the installation of a new system that measures the concentration of H2S in biogas. Recently, staff built a ferric chloride injection system for each digester that uses a dedicated metering pump, dual containment piping, and a magnetic flowmeter. With both of these systems, the H2S concentration in the biogas can now be automatically controlled. Our process control system uses the biogas H2S concentrations from the analyzer to feed ferric chloride into each digester to control the H2S generation. The system is operational and working well.

Biotower Pump Receives Special Attention

CMSA has two biotowers which are used in the first phase of the biological treatment process. All four of these pumps are 35-years-old and replacement parts, with the exception of bearings, have to be specially made. Recently, one of the four main pumps was refurbished, which involved tearing the pump down to individual components, inspecting the wear on the impeller, volute, and main shaft, and replacing the bearings. The main shaft, which supports the impeller, was sent out to a specialized shop for machining and coating work. As these pumps are extremely tough and resilient, the Agency intends to rehabilitate the remaining three pumps, one per year.

Hardworking Equipment Thoroughly Rehabilitated

Grit Classifiers are integral to primary solids separation, ensuring inorganic materials such as sand and grit are removed prior to primary wastewater treatment. Due to the nature of their function these units receive a lot of wear, and monthly maintenance is necessary to ensure their upkeep. Because of the continuous exposure to water and erosive grit, despite the regular maintenance, it was time to remove each unit, one at a time, for more involved rehabilitation work. Corroded piping was either replaced or repaired, the main separation compartments were coated and received new augers and bearings, and the inlet boxes, already repaired more than once, were replaced.

New Scope Makes a World of Difference

A wastewater treatment plant is a microbiological zoo that houses bacteria, protozoa, metazoa and other microlife. The microorganisms do the actual work of breaking down and removing the organic material. Operations recently procured a new microscope with a digital camera. Its 50% higher magnification significantly improves microorganism identification, a key driver in process control adjustments.

COVID Monitoring Partnership with UC Berkeley

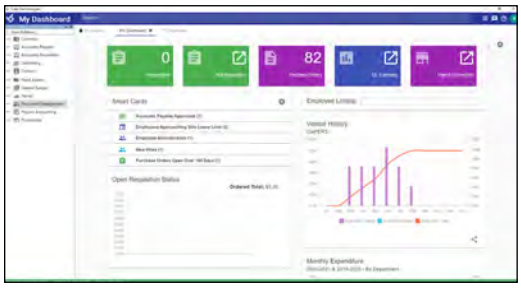
Last year we partnered with the University of California, Berkeley to launch a new wastewater COVID surveillance program that detects the presence of coronavirus RNA or genetic material in wastewater. The program is intended to provide early warning signs for COVID-19 outbreaks throughout our service area. Samples are shipped to the Berkeley Water Center for analysis. The results are then provided to public health officials.

Berkeley Water Center

THE LATEST FROM FINANCE AND ADMINISTRATION

Live on Tyler!

The Finance team, along with Tyler consultants, completed the implementation of the new Tyler Incode finance software last September. The system is 100% live, and staff is learning and refining the system to fit our needs. Incode has many more capabilities than our legacy system, and the goal is to utilize it to the fullest extent possible.



Agency Revenue and Spending on Track

The Agency is on track with its FY21 budget. As of the end of 2020, revenue collection is at or above 50% for the significant revenue sources, and operating expenditures are at approximately 52%. The Agency also embarked on developing a new two-year budget for FY22 and FY23, with the draft planned for presentation to the Board at their May meeting.

Planning Five Years into the Future

CMSA recently hired a consultant, Michele Pla, to facilitate the updating of our 5-year Strategic Plan for the years FY22 to FY26. The Agency Strategic Plan Committee recently met with Michele, and she has interviewed Board members for their ideas. The objective is to have a new five-year plan adopted by the Board in June, and a FY22 Business Plan presented to the Board in July.

New System Robustly Tracks Fixed Assets

The new financial system has substantially expanded functionality for the management of fixed assets. The system tracks and accounts for fixed assets that are purchased, acquired through construction, refurbished, donated, or contributed. Constructed fixed assets can be accounted for by components, and reports can be generated using these components. The Agency will use this method going forward, and will restate certain prior large capital projects for transparency and ease of partial disposal when situations arise.

Hello to New Arrivals and Farewell to Retirees!

Ashley Woods joined CMSA in December 2020. She is a Grade III Wastewater Operator and graduate of Sonoma State University with a BS in Biology with an emphasis in Marine Biology. She began her career in the wastewater field two years ago, and has worked for the Sonoma Water Agency, the Town of Windsor, and most recently, the Fairfield Suisun Sewer District. In her free time, she loves to hike and paint landscapes.

Blake Petersen began work at CMSA in September 2020. He graduated from Butte College with a certification in welding from their nationally-recognized welding program. Blake previously worked at a sulfuric acid regeneration plant, Sonoma Train Town, and most recently, at the City of Napa's freshwater division. Blake lives in Sonoma and spends his free time barbequing in the backyard and walking his Black Lab around town.

Jenny Bender retired in December 2020 after 29 years at CMSA. Jenny joined CMSA as a Lab Technician, and due to her skills and dedication, was promoted to Environmental Laboratory Administrator in 2011. Jenny's work included wastewater sampling and analysis, and training laboratory staff. She was often seen on her tricycle, heading out to the plant to capture samples. She is now enjoying more time with her family, and her beloved Corgis.

Sandi Batis, a 16-year veteran Operator, retired in December 2020 and now lives in Nevada with her husband. Sandi was hired as an OIT and worked her way up to a Grade III Operator. She was always an energetic, can-do person, and was never afraid to take on a new task. The *California Water Environment Association* recently announced that Sandi was the Redwood Empire Section's Operator of the Year recipient!