Victor Valley Wastewater Reclamation Authority

Purple Pipe

Volume XXIV Fall 2021

# Renewable Natural Gas Project Nears Completion

*Installation of a 50,000 gallon tank for storage.*

*A gas scrubbing facility which cleans and pressurizes biogas to bring it to RNG standards.*

A renewable natural gas facility, that will provide a new source of green energy, is nearing completion at VVWRA's main plant in Victorville. The RNG project will collect methane or biogas emitted by waste in our digesters and convert it into pipeline quality natural gas. The project is a public/private partnership between VVWRA, Anaergia and Southwest Gas that is designed to help address the requirements of SB 1383. SB 1383 was signed into law in 2016 by then Governor Jerry Brown. The law requires the diversion of 75% of organic waste, like food scraps, paper and yard trimmings, from the states landfills to reduce the emission of methane into our environment. "The new facility will accept up to 65,000 gallons of slurried food waste per day", said VVWRA Plant Superintendent Brad Adams. The project is expected to generate 1000 SCFM (standard cubic feet per minute) of renewable natural gas. That is on top of the 200 SFM produced by municipal sludge.

The project will beneficially reduce more than 6,000 metric tons of methane (1.5 million CO2 tons equivalent) per year, which otherwise would have been flared or released into the atmosphere. "The VVWRA facility is a great model for use in California: leveraging the existing wastewater treatment plant to meet organic waste recycling requirements, increasing yields of renewable energy, and improving publicly owned infrastructure," said Andrew Benedek, Anaergia's Chairman and CEO.

VVWRA is repurposing its three original 330,000 gallon digesters to process the food waste. A large 50,000 gallon storage tank and two 12,000 gallon tanks have been installed to help operators regulate the feed of material into the digesters. The methane produced in the digesters will be piped to a scrubbing facility that will remove impurities and pressure the gas before it is injected into an adjoining Southwest Gas pipeline.

*New food waste receiving station.*

"VVWRA is committed to protecting public health and the environment in the Victor Valley, and this partnership reflects our three core values: collaboration, dedication, and integrity," said VVWRA General Manager Darron Poulsen. "This project increases capacity needed for future growth while benefiting the agency economically."

*More on the RNG project on page 4*

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## VVWRA's GM Enters the Presidents Circle

VVWRA GM Darron Poulsen, left, and VVC President Daniel Walden

VVWRA General Manager Darron Poulsen was welcomed in to the VVC President's Circle by Victor Valley College President Daniel Walden during a luncheon at the Spring Valley Lake Country Club. The President's Circle was created to bring the community and college leadership together in a united effort to ensure that VVC anticipates community needs and enhances higher education in the Victor Valley.

## Purple Pipe

### VVWRA Board of Commissioners

Bill Holland / Hesperia
Debra Jones/ Victorville
Scott Nassif / Apple Valley
Paul Cook/ SB CSA 64 & 42

*The Purple Pipe is a newsletter published by the Victor Valley Wastewater Reclamation Authority.*

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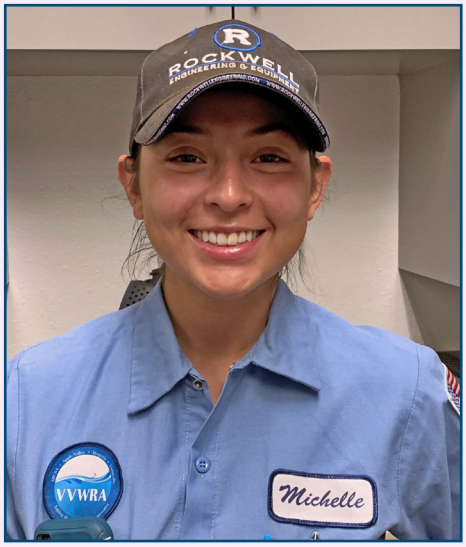
## Safety Award

Congratulations to Senior Operator Miguel Mendoza for winning the Quarterly Safety Award.

# Around the plant

## Congratulations!


Daniel Kessel has been promoted to Operator.




Michelle Quintana has been promoted to Operator in Training.

## Welcome to VVWRA!

Mike Medina
MIS Technician

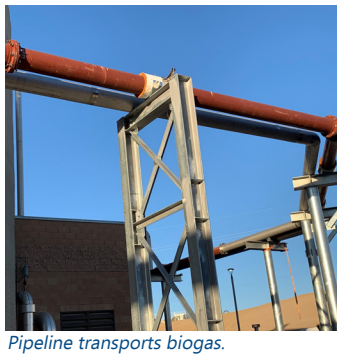

David Sharp
Maintenance Mechanic I


Andrei Davis
ADM/Septage Attendant


James Hunsaker
Maintenance Mechanic-in-Training

# A closer look at the Waste to RNG Program

*Digesters break down food waste.*



*Pipeline transports biogas.*

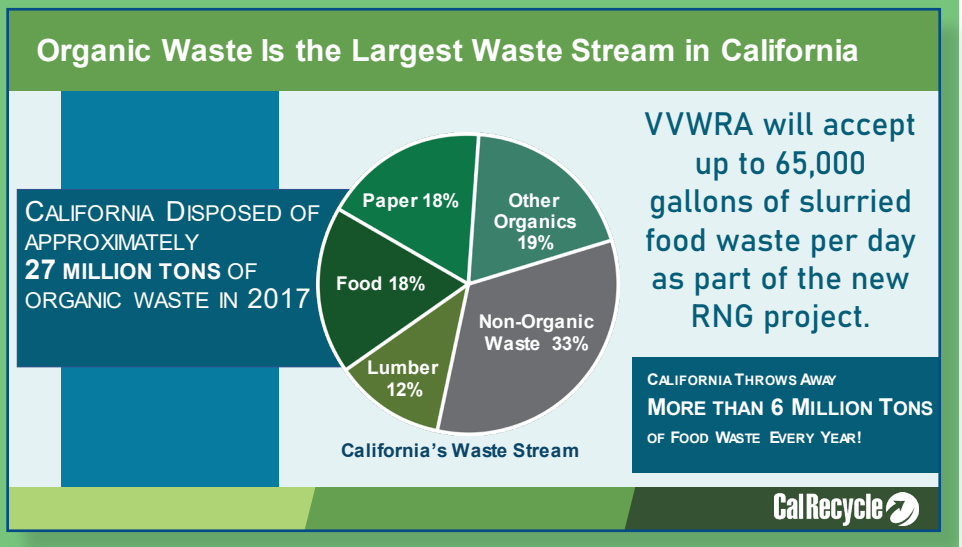
*Gas is scrubbed and pressurized to become RNG.*

*RNG is injected into a Southwest Gas pipeline.*

Treating food waste has different challenges compared to regular wastewater. Typical municipal sewage contains 1-3% total solids (solids suspended in the water) while food waste can be up to 15-20% total solids. Also, municipal waste is around 80-85% volatile solids (easily digestible organic material), while food waste is 97-99% volatile solids. The amount of volatile solids in wastewater is frequently used to describe the strength of the waste. The more volatile solids present in wastewater, the stronger that wastewater is. In turn, food waste digests much quicker and produces much more biogas. VVWRA will be utilizing our original three digesters which are 330,000 gallons each to solely digest food waste. Our two larger 1.2 million gallon digesters will be used only for digesting municipal sludge, waste biology from the BNR process (biological nutrient removal), and FOG (fats, oil and grease). This separation of feed stock is to maximize the credits that will be received for the gas. Food waste gas is much more valuable than municipal waste gas. Combined, VVWRA's digestion system is expected to produce 1200SCFM (standard cubic feet per minute) of biogas. Digesters 1-3 will produce 1000 SCFM of the more valuable food waste biogas, while digesters 4 and 5 will produce around 200SCFM of standard biogas. The collected biogas will be scrubbed, compressed, and injected into the Southwest Gas pipeline as renewable natural gas (RNG). VVWRA's new food waste to RNG program will help California meet the requirements of SB-1383 which calls for the diversion of 75% of organic materials from our landfills by 2025.

# SB 1383-Diverting Organic Waste

In 2016, state lawmakers approved Senate Bill 1383 which sets targets for reducing methane emissions. It required 50% reduction in organic waste being sent to landfills by 2020. And will require a 75% reduction by January 1, 2025 (based on 2014 levels). The VVWRA RNG Facility will assist in diverting food waste. Enforcement of SB 1383 begins on January 1, 2022. It is estimated that organic waste, like food scraps, paper and yard trimmings, emit 20% of the methane found in our atmosphere.



# Meet Our Staff


*Getting all of our staff in one place at one time can be a challenge. VVWRA employs 42 staff members in areas that include plant operations, maintenance, electrical, environmental compliance, accounting and administration.*

# Tire fished out of the headworks

Plant operators recently got a surprise when they found a car tire in the headworks. The tire potentially could have damaged plant equipment and caused a sewer overflow. It's not clear how the tire got into the pipeline,  but, needless to say, tires and other large items should never be disposed of in the sewer system.

# Clean Burning Generators Installed

*One of two MWM 800 kwh generators recently installed at VVWRA.*

VVWRA recently installed two massive 800 kWh generators to help power our main plant. The 16-valve natural gas-powered generators are made by the German company MWM, which was founded by inventor Carl Benz of Mercedes-Benz fame. Each generator is capable of producing enough power for 1000 homes, but will instead provide most of the electricity for VVWRA to run the main plant. On average, VVWRA uses about 1.2 megawatts of electricity for such power intensive operations as ultra violet disinfection and aeration. In the future, VVWRA hopes to export any extra power we produce to the electrical grid. The generators are part of what is called a CHP system which stands for combined heat and power. In addition to providing electricity, the heat created by the generators is used to warm our anaerobic digesters. The sludge in the digesters must be kept at about 100 degrees for effective biological treatment. The heat from is recovered from the engine jacket water that is cooling the engine. The how water is used to heat the digesters. VVWRA had previously used generators powered by biogas or methane created by the waste treated at our facility. With the construction of our new RNG Facility, all the biogas created at VVWRA will now be converted into renewable natural gas and injected into a Southwest Gas pipeline for commercial and residential use.

# Pelican Brief

VVWRA recently had a surprise visit from a "pod" or "squadrom" of white pelicans who took up residency in one of our percolation ponds. In all, more than 50 of the large birds took a brief rest at VVWRA before continuing on their annual migration.

# New Blowers to Help with Aeration

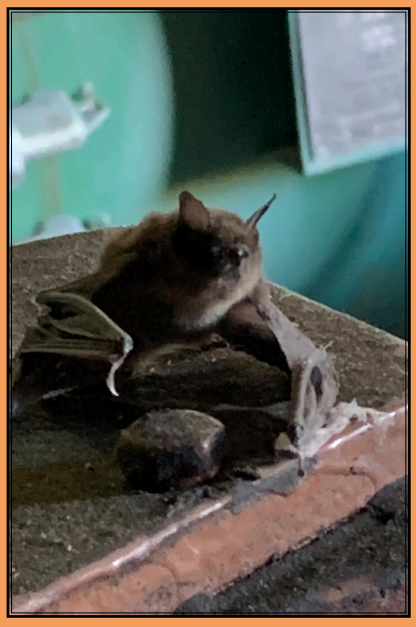
Air is crucial in treating wastewater. More than 90% of the treatment of wastewater at VVWRA takes place in our aeration basins where tiny air bubbles are blown into the wastewater to keep microbes happy and active. VVWRA is installing two new high speed blowers to provide a reliable air source to the aeration basins. The Swedish made 250 hp Sulzer turbo blowers produce air flow of 5000 SCFM (standard cubic feet per minute). The Sulzer blowers are more efficient and have a smaller environmental footprint then our previous blowers. They are designed to work in harsh environments.


*Above, Operator Kalin Westover walks by new Sulzer turbo blower; right, air bubbles surface in the aeration basins.*

# What happens in VEGAS...


Environmental Compliance Inspector Robert Townsend (l) shares an article from the Purple Pipe with Operator Kalin Westover during a break at the Tri-state Seminar in Las Vegas.

## BATS IN THE BELFRY



*Just in time for Halloween, one of our operators came across this small bat while doing their daily rounds.*

**SECRET MESSAGE:** *The newly redesigned VVWRA website will debut in mid-November.*

# The Back Side...

## DAMS Training & Vendor Fair

*Attendees talk to a vendor.*

*Julio Espinoza directs truck during competition.*

After a year off due to Covid 19, the CWEA/DAMS Training and Vendor Fair returned to the San Moritz Lodge in Crestline. More than 100 public works and wastewater professionals from Big Bear to Barstow were in attendance. This years event included a trailer hitching, hose connecting competition. VVWRA Sr. Operator Johnny Bustos and Operator Julio Espinoza took second place.

## Why Whitney He Read It?


After hiking 11 miles and climbing more than 6000 feet in elevation to reach the top of Mt. Whitney, Safety and Communications Officer David Wylie takes a moment to read the Purple Pipe. At 14,505', Mt. Whitney is tallest mountain in the lower 48 states.

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