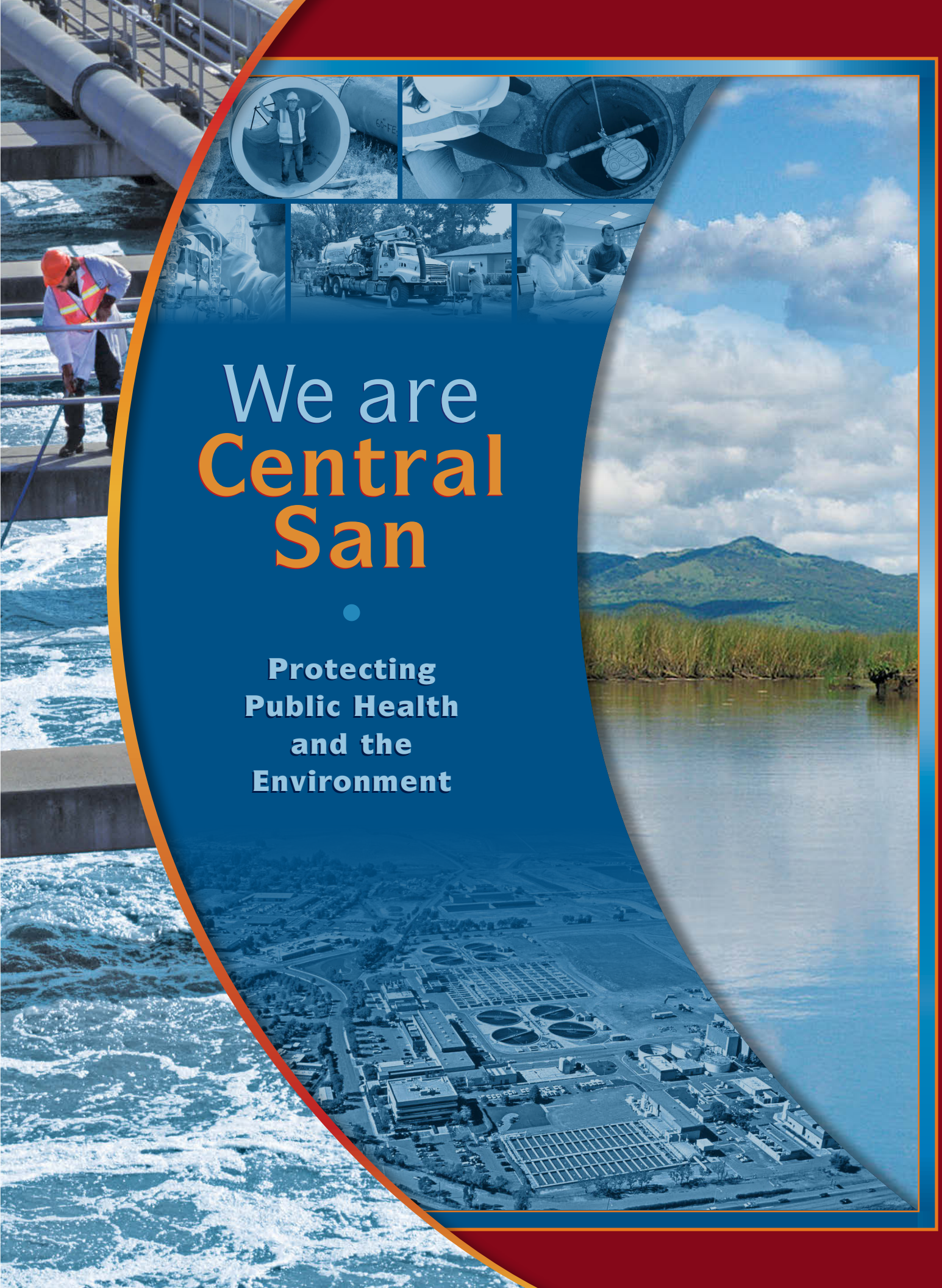


We are Central San

Protecting Public Health and the Environment

Welcome to

OUR MISSION

To protect public health and the environment by:

- **Collecting and treating wastewater**
- **Embracing a policy of sustainability for the responsible use of existing resources**
- **Promoting environmental stewardship**

OUR VISION

To be a high-performance organization that provides exceptional customer service and full regulatory compliance at responsible rates.

OUR VALUES

We achieve our goals by valuing:

- **Each other**
- **Ethics and integrity**
- **A healthy and safe environment**
- **Community relationships**
- **The meeting of commitments**
- **Transparency in all we do**

Central San

TABLE OF CONTENTS

INTRODUCTION

The Central Contra Costa Sanitary District (Central San) has been protecting public health and the environment since 1946.

We do this by safely and effectively collecting and treating wastewater, producing recycled water (primarily for treatment plant processes and landscape irrigation), and vigorously promoting pollution prevention.

The details of how we fulfill these important responsibilities are contained within this booklet. We hope you enjoy learning about Central San and what we do for the communities we serve.

ABOUT US

OUR HISTORY

In the early 1940s, central Contra Costa County was a rural area of farms, orchards and small towns. After World War II ended, a building boom began. As the nearby cities of San Francisco, Oakland and Berkeley grew, so did the population of Contra Costa County.

The population surge resulted in a sanitation crisis due to the inability of septic systems in the area's heavy adobe clay soil to handle increased volumes. Wells and creeks were becoming fouled and waterborne diseases such as typhoid became a potential health issue.

Citizens and civic leaders began efforts to create a new agency to collect and treat wastewater. After a public vote, the Central Contra Costa Sanitary District was officially created on July 15, 1946.

Within 26 months, Central San's newly constructed sewer main and treatment plant were operational.

Many changes have occurred since then: the size, population, and characteristics of our service area; the processes and technologies we use to collect and treat wastewater; the environmental awareness and associated tightening of water quality regulations; the customers who use our services; and the people who provide them.

What hasn't changed is our unwavering commitment to our mission of protecting public health and the environment.

WHO WE ARE

Central San is a special district governed by a five-member Board of Directors, each elected to a four-year term:

Paul H. Causey
Michael R. McGill,
James A. Nejedly
Tad J. Pilecki
David R. Williams

Our General Manager is **Roger S. Bailey**.
Our Deputy General Manager is **Ann Sasaki**.

Our workforce is comprised of about 260 highly skilled men and women: treatment plant operators, maintenance personnel, engineers, chemists, inspectors, electricians, computer specialists, administrators, accountants, utility workers and more. Their dedication and commitment enable us to provide efficient, cost-effective service for our customers while meeting or surpassing all regulatory requirements.

Our main headquarters, Board room, and treatment plant are located at 5019 Imhoff Place in Martinez. Our collection system operations are headquartered at 1250 Springbrook Road in Walnut Creek.

THE COMMUNITIES WE SERVE

Central San serves more than 471,000 residents and thousands of businesses within a 144-square-mile area of central Contra Costa County that includes 13 cities, towns, and unincorporated areas: Alamo, Concord, Clayton, Clyde, Danville, Lafayette, Martinez, Moraga, Orinda, Pacheco, Pleasant Hill, San Ramon, and Walnut Creek.

Wastewater collection and treatment, and Household Hazardous Waste (HHW) disposal for 335,000 people

Wastewater treatment and HHW disposal for 136,000 people in Concord and Clayton by contract

HHW disposal only

CCCSD's Headquarters, treatment plant, and HHW Collection Facility are located in Martinez

What is a Special District?

Special districts are local public agencies formed by residents of a community to provide a specific service not provided by the county or city. In the case of Central San, that service is wastewater collection and treatment. We are one of 43 special districts in Contra Costa County.

Special districts are governed by a legislative body (usually a Board of Directors) and hold regularly scheduled public meetings where citizens are encouraged to ask questions, voice concerns, and provide feedback on the district's service.

****

Watch our "Central San at a Glance" video here: www.centralsan.org/publications

FINANCIAL INFORMATION

Central San operates under a fiscal year budget cycle beginning July 1 and ending June 30. Like many public agencies, we have two primary budgets: one for Operations and Maintenance, and another for Capital Improvements. Our current combined budget is over $110 million.

Our revenue sources include:

- Residential Sewer Service Charges
- Commercial Sewer Service Charges
- Sewer connection fees
- City of Concord (contract to treat wastewater)
- Ad valorem property taxes

You can find additional financial information on our website: **http://www.centralsan.org**

BY THE NUMBERS

144
Square miles in our service area

260
Employees

1,500
Miles of sewer pipes in our collection system

15,000
Laboratory tests we perform each year

2 million
Pounds of household hazardous waste we collect each year

54 million
Gallons of wastewater we're capable of treating each day

$1.6 billion
Value of our infrastructure

471,000 Residential customers we serve

OUR AWARDS

Central San works tirelessly to improve our performance and provide the best possible service to our customers. These efforts have earned several awards throughout our history. Here are the most recent:

- **Platinum-16 Peak Performance Award**, given by the National Association of Clean Water Agencies for treating more than 180 billion gallons of wastewater over the past 16 consecutive years without a single violation of Federal, State, or regional water quality requirements. It's a distinction earned by only a handful of wastewater agencies nationwide.
- **Treatment Plant of the Year** (2012) award from the California Water Environment Association. The award is earned through remarkable accomplishments in compliance, safety, training, innovative practices, cost effectiveness and superior operations.
- **Collection System of the Year** (2013) award from the California Water Environment Association, San Francisco Bay Section. The award is earned through remarkable accomplishments in compliance, safety, training, innovative practices, cost effectiveness and superior operations.
- **Certificate of Achievement for Excellence in Financial Reporting**, given by the Government Finance Officers Association of the U.S. and Canada for Central San's Comprehensive Annual Financial Report. This is the highest form of recognition in the area of governmental accounting and finance recording; Central San has achieved this honor every year since 2000.
- **Achievement of Excellence in Procurement Award**, given by the National Purchasing Institute for excellence in procurement. Central San is one of only 29 special districts in the U.S. to receive this award; we've received it six times.
- **Large Plant Safety Award**, given by the California Water Environment Association in recognition of our comprehensive safety training program and overall safety record.
- **George W. Burke, Jr. Award**, given by the Water Environment Federation for establishing and maintaining an active and effective safety program.

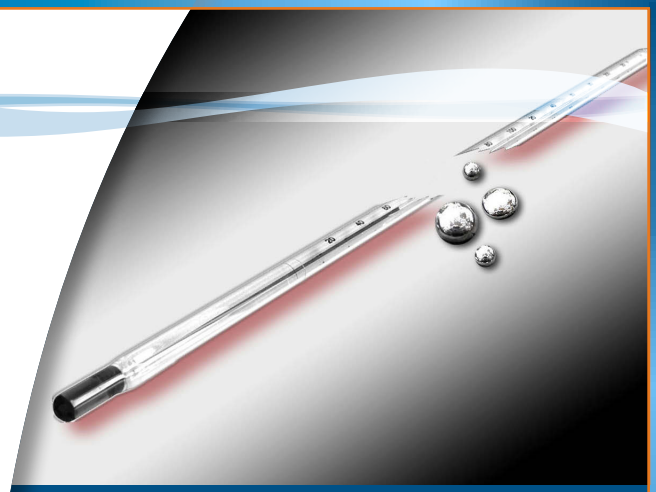
POLLUTION PREVENTION

When you think about water pollution, images of factories discharging toxic chemicals into the bay may come to mind. In reality, the problem is closer to home. Much of the water pollution in the Bay Area is caused by residents who allow commonly used household products – such as paint, motor oil, cleansers, pesticides, personal care products, pharmaceuticals, and other items containing ingredients that can be harmful to aquatic life – to enter the sewer system.

Our treatment plant is designed to remove human biological wastes. It cannot remove all traces of chemicals, solvents, metals, pharmaceuticals, and other toxic contaminants from wastewater. When these contaminants get into the sewer, they can end up in Suisun Bay, harming fish and wildlife.

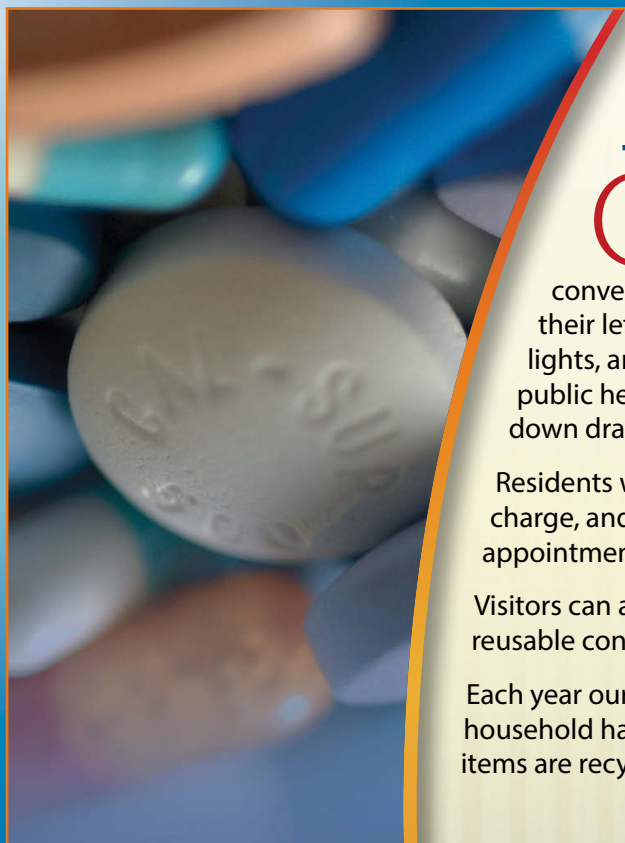
It is more effective and less costly to prevent pollutants from entering the wastewater stream than to try to remove them during the treatment process.

That's why Central San developed an extensive Pollution Prevention Program to raise awareness and encourage activities that protect the environment. The major components of that program are our Household Hazardous Waste Collection Facility, our Environmental Compliance Program, our Public Outreach/Education Program, and our partnerships with other organizations that enable us to convey consistent pollution prevention messages across the Bay Area and beyond.



Reducing Mercury Pollution

Mercury is highly toxic and one of the most troubling pollutants in Suisun Bay. Among our many activities to reduce mercury pollution is a thermometer exchange program. A mercury fever thermometer contains enough mercury to contaminate five million gallons of water. These thermometers are particularly vulnerable to breakage in a sink. Our treatment plant cannot remove all traces of mercury from wastewater; if it goes down the drain, it contaminates the Bay. Although the sale of mercury fever thermometers has been banned in California for several years, people still own them. To encourage our customers to bring their mercury thermometers to our Household Hazardous Waste Collection Facility for safe disposal, we offer them free digital fever thermometers in exchange. Since the program began in 1999, more than 18,000 mercury fever thermometers have been turned in, which equates to nearly 40 pounds of mercury!



HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITY

One of our most successful pollution prevention efforts is our award-winning Household Hazardous Waste Collection Facility in Martinez. It provides a safe and convenient method for residents and small businesses to dispose of their leftover paint, pesticides, used motor oil, batteries, fluorescent lights, and other hazardous materials. Items such as these can threaten public health and the environment if put in the trash, flushed or poured down drains.

Residents within our service area can drop off their items without charge, and no appointment is necessary. Small businesses require an appointment and are charged a nominal fee.

Visitors can also pick up free items, such as paint or other products in reusable condition, that were brought in by others.

Each year our conscientious customers bring about 2 million pounds of household hazardous waste to the facility. Approximately 90% of collected items are recycled or reused; the rest are disposed of safely.

Pharmaceutical Disposal

Pharmaceuticals often contain chemicals that may harm aquatic life; they should never be flushed. Because of Federal Drug Enforcement Administration restrictions, our Household Hazardous Waste Collection Facility cannot accept pharmaceuticals. So we established a Pharmaceutical Disposal Program to encourage residents to drop off unwanted and expired medications at one of several locations throughout our service area, free of charge. The program safely disposes of thousands of pounds of over-the-counter and prescription medications each year. For a list of locations, see: www.centralsan.org/hhw

ENVIRONMENTAL COMPLIANCE PROGRAM

Our Environmental Compliance Program focuses on preventing pollution from non-residential customers. It establishes standards to control pollutants from businesses and industries such as dry cleaners, dentists, auto repair shops, car washes, restaurants, hospitals, and waste haulers. We regulate, inspect and monitor their wastewater to make sure it doesn't contain pollutants that could disrupt the treatment process or harm the environment. Our partnership with local dental practices, for instance, is preventing mercury waste from amalgam fillings from entering the sewer system and the bay. Mercury is a highly toxic substances and it does not break down. Once it enters the environment, it remains there and continues to damage the ecosystem.

We also conduct stormwater inspections in partnership with the Contra Costa Clean Water Program. This helps to ensure that commercial and industrial customers take the necessary precautions to prevent pollutants from entering storm drains, which flow directly to creeks and the bay.

PUBLIC OUTREACH/EDUCATION

We actively promote pollution prevention at environmental events and other public venues. We periodically produce and mail a newsletter (*The Pipeline*) to our residential and business customers that provides information on household hazardous waste disposal, overflow prevention, pollution prevention, green tips, and much more.

We also offer a variety of educational programs that help students learn about water quality, wastewater treatment, and how to protect their environment.

- **The Central San Water Wizards:** An interactive program covering the wonders of water and the importance of pollution prevention (grades 3-5).
- **Sewer Science:** A hands-on laboratory program that teaches students the basic concepts of how wastewater is treated prior to being returned to the environment (grades 9-12).
- **Delta Discovery Program:** An interactive learning experience about water quality that takes place aboard a 90-foot research vessel that cruises in the Suisun Bay/Delta (grade 5).
- **Treatment Plant Tours:** We conduct free treatment plant tours for groups of students (grade 6 and up) and adults who are interested in learning about the effects of water pollution, the mechanical and biological processes Central San uses to treat and disinfect wastewater, and what we can all do to help keep our water environment clean.

This Collection Systems Operations Division headquarters building was constructed in 2012 (to replace a facility that was built in 1956). It was designed and built using recycled materials and the latest "green" techniques to conserve resources and reduce environmental impacts.

COLLECTION SYSTEM

We operate a modern wastewater treatment plant and its effectiveness is crucial to our mission of protecting public health and the environment. But the success of our mission also depends on activities that occur before the wastewater even reaches the plant.

Wastewater flows from a house or building through a private side sewer (lateral) that connects to the public sewer main. Maintaining the private side sewer is the property owner's responsibility. The public sewer main, part of our collection system, is our responsibility.

Central San collects wastewater from more than 471,000 people in residences, restaurants, hospitals, schools, businesses, and industries within our 144-square-mile service area. Whatever they flush, wash, or pour down an inside drain enters the sewer system and flows to our treatment plant in Martinez; on average, that's about 45 million gallons of wastewater every day.

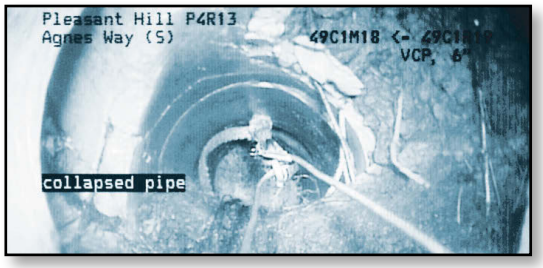
The wastewater flows through our collection system of 1,500 miles of underground sewer pipes ranging in size from 4 inches to 8.5 feet in diameter.

Most of the wastewater flows to our treatment plant by force of gravity, but the terrain in some areas requires it to be pumped over hills. We operate and maintain 19 pumping stations throughout our service area.

Using a variety of specialized equipment and methods, we regularly clean and maintain our entire collection system, and build or renovate sewers as necessary, to minimize clogs and overflows and to ensure a constant, efficient flow of wastewater to the treatment plant.

OVERFLOW PREVENTION

- **Television inspection of sewers:** We send a small video camera on wheels through sewer pipelines to locate problems.



- **Hydroflushing:** We use a high-pressure water system to clean out pipelines that are clogged with grease or other debris.

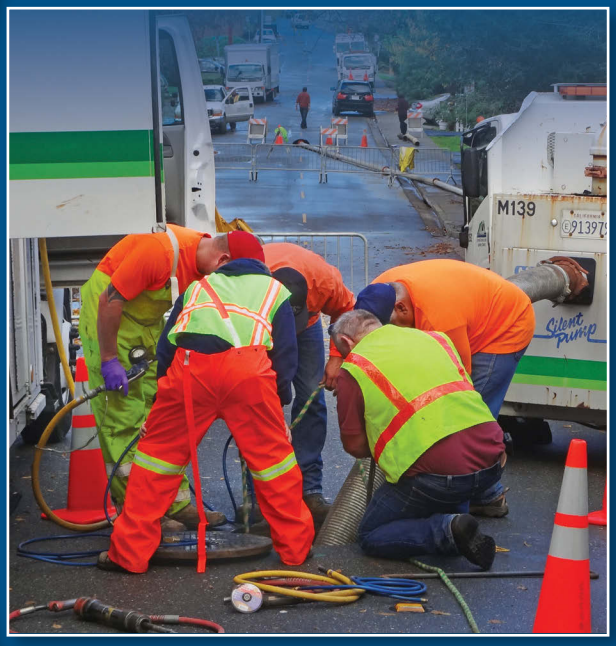
- **Rodding:** We use a high-powered auger to remove roots from pipelines.

- **Construction:** When pipelines need to be repaired or replaced, we use everything from hand tools to heavy equipment.

Because of all this effort, overflows are rare in our collection system; as a matter of fact, we have one of the best overflow records in northern California.

Emergency Response

Our crews respond within 30 minutes to emergencies like the one pictured below. Heavy rains produced a situation where a road (and our sewer line within it) was about to collapse. Swift actions to install a sewer bypass (inset photo) just before the road gave way prevented a major sewage spill and potential harm to the environment.



Watch our "Fats, Oils and Grease" video:
www.centralsan.org/publications

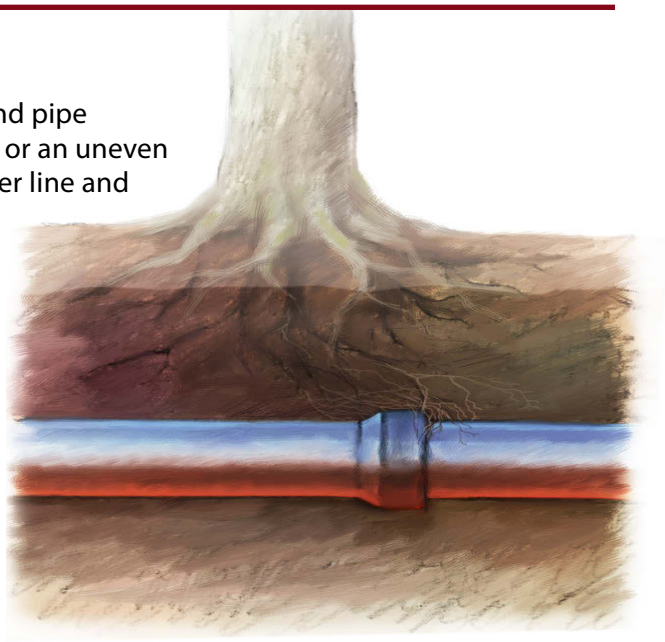
FATS, OILS AND GREASE

Grease is a major cause of sewer clogs and overflows. Even when people know better than to pour used cooking oil and grease down their drain, some of the fatty foods they put down garbage disposals can cause problems. All year long, cooking byproducts from thousands of homes and restaurants go down kitchen drains. The fats, oil and grease can build up in sewer pipes over time and create blockages, backups and overflows. We regularly encourage our customers to keep all fats, oils and grease out of the sewer.

ROOTS

Roots are the leading cause of sewer blockages and pipe damage. It takes no more than a miniscule crack or an uneven joint between pipes for roots to penetrate a sewer line and then grow rapidly due to the nutrient-rich wastewater. Left undisturbed, it's only a matter of time before a blockage occurs. As roots grow, they can even break apart the pipe.

Our crews work diligently to inspect sewer lines and remove roots before blockages occur or pipes are damaged. In addition, we provide information to residents on how they can prevent root problems on their property. But with the vast number of trees in our service area, our efforts to keep roots out of sewers will be a never-ending struggle.



WIPES CLOG PIPES

Nearly 30% of the sewage overflows in our service area are caused by wipes. So-called "flushable" or "disposable" wipes do not disintegrate in water as quickly as toilet paper and can get caught on roots or debris in pipes, causing blockages and overflows. They not only clog sewer pipes, they damage our pumps and treatment equipment.

Overflow Protection Device

Sewer overflows are rare, but can be damaging and create a health risk. That's why all homes and businesses in the Central San service area are required by ordinance to have an Overflow Protection Device. An Overflow Protection Device can prevent sewage from backing up into a home or business from a clogged pipe. With this device installed, sewage backing up in the pipe from the direction of the street will be released into the yard, rather than inside the building. We urge all of our customers to ensure this device is installed on their property.

Remember: The toilet is not a trash can; only human waste and toilet paper should be flushed.

WASTEWATER TREATMENT

As you can imagine, water quality is highly regulated. Central San (and all other wastewater treatment agencies) must comply with stringent pollution control standards specified by a National Pollutant Discharge Elimination System permit. It is issued by the Regional Water Quality Control Board, the local regulatory agency charged with enforcing state, regional, and federal water quality standards. The purpose of the permit is to set limits for pollutants; when we meet those limits, we know our water environment is protected.

When the wastewater flowing through the collection system reaches our treatment plant in Martinez, several processes must be performed before it is clean enough to meet the requirements of our permit and be safely discharged into Suisun Bay.

PRETREATMENT

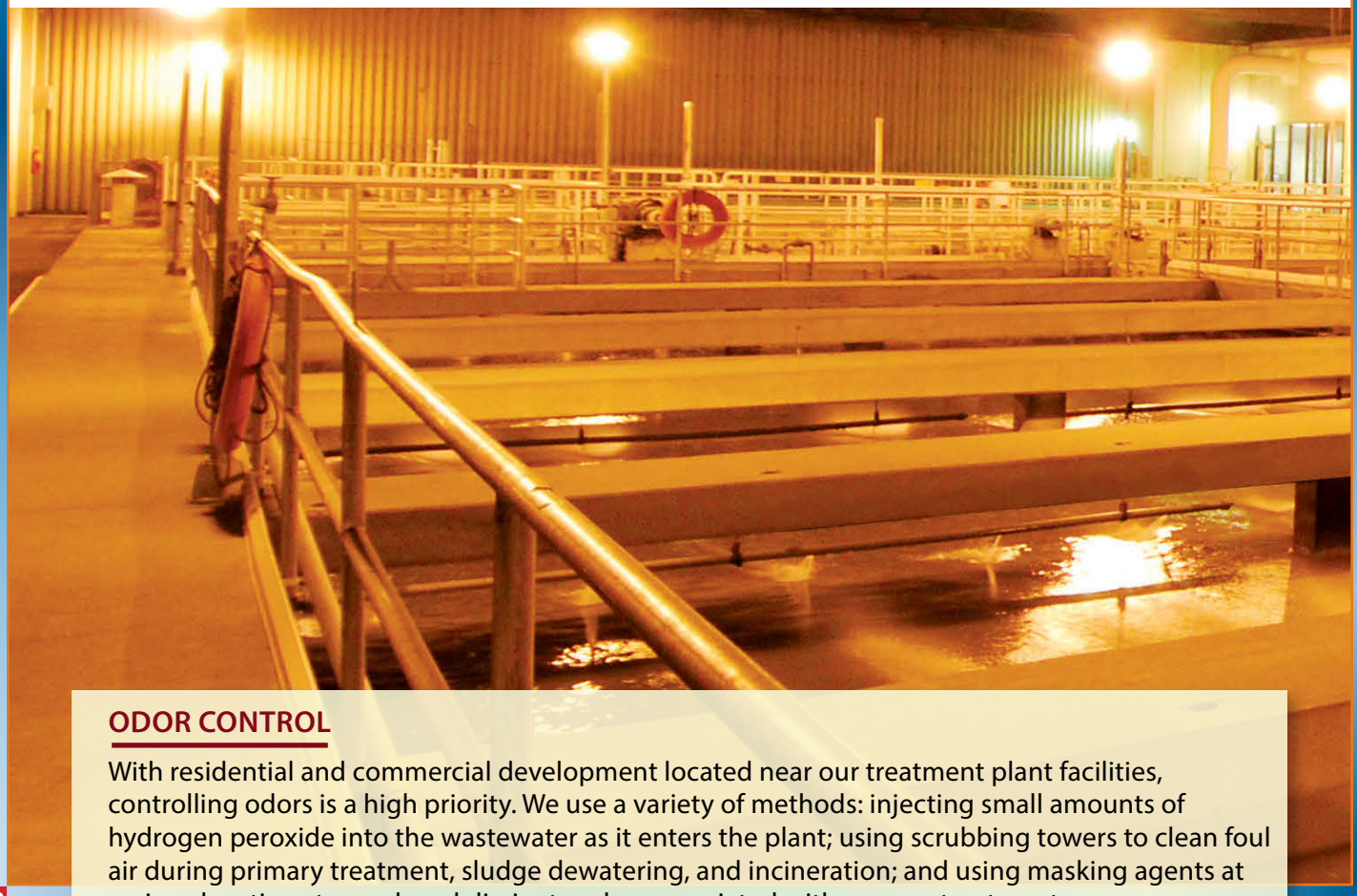
The first step in cleaning wastewater is to remove large objects such as rags, pieces of wood, and other debris. This is done by a mechanical bar screen and raking device. The debris is ground up by mechanical grinders and returned to the wastewater.

PRIMARY TREATMENT

Next, the wastewater undergoes primary treatment. It is pumped to pre-aeration tanks where heavy solids such as sand and silt (grit) settle to the bottom and are pumped to a dewatering process. The dewatered grit is hauled to a local landfill for disposal.

The wastewater then enters primary sedimentation tanks where materials that float (scum) are removed by skimming devices, and materials that sink (sludge) are pumped out. The scum and sludge are later incinerated.

Approximately 50% of the solids and 35% of the organics are removed during this primary treatment process.



ODOR CONTROL

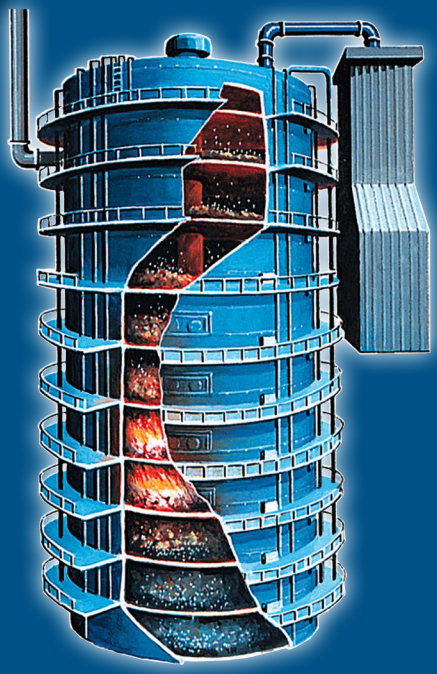
With residential and commercial development located near our treatment plant facilities, controlling odors is a high priority. We use a variety of methods: injecting small amounts of hydrogen peroxide into the wastewater as it enters the plant; using scrubbing towers to clean foul air during primary treatment, sludge dewatering, and incineration; and using masking agents at various locations to mask and dissipate odors associated with sewage treatment.

SECONDARY TREATMENT

While primary treatment consists largely of mechanical processes, secondary treatment uses a naturally occurring biological process.

The wastewater is pumped to aeration tanks where air bubbles provide an oxygen-rich environment for bacteria to consume organic waste remaining in the water. After they consume the waste particles, the water is pumped to secondary clarifier tanks where the bacteria (known as activated sludge) settle to the bottom. A small portion of the settled bacteria is removed and later incinerated, but most is returned to the aeration tanks to consume more organic waste particles. The water pumped from the clarifier tank has more than 95% of the impurities removed.

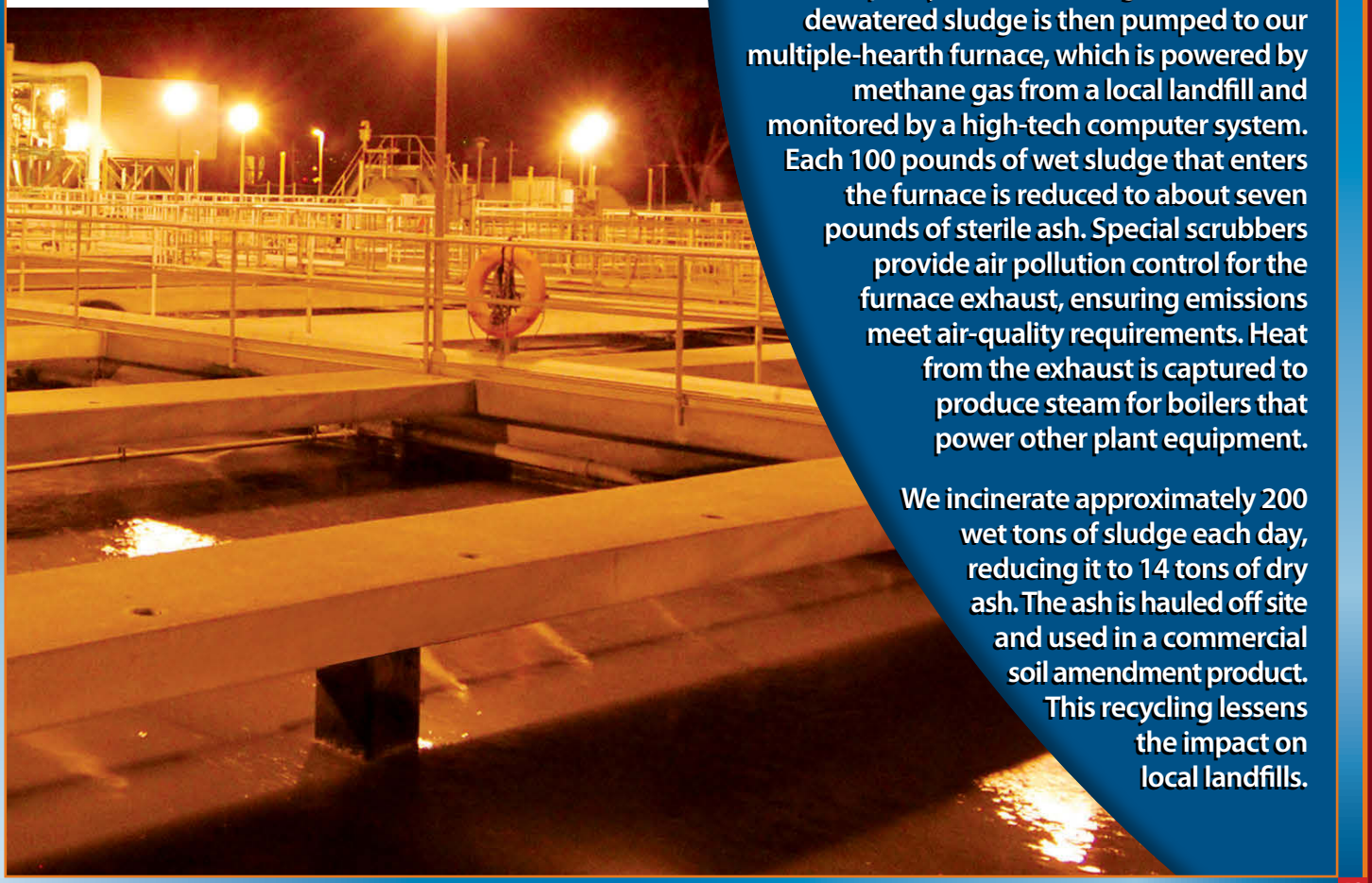
See our video, "From Waste to Worth," here:
www.centralsan.org/publications



Incineration

The solid byproducts of the treatment process, commonly known as sludge or biosolids, are dewatered in a centrifuge which works similarly to the spin cycle of a washing machine. The dewatered sludge is then pumped to our multiple-hearth furnace, which is powered by methane gas from a local landfill and monitored by a high-tech computer system. Each 100 pounds of wet sludge that enters the furnace is reduced to about seven pounds of sterile ash. Special scrubbers provide air pollution control for the furnace exhaust, ensuring emissions meet air-quality requirements. Heat from the exhaust is captured to produce steam for boilers that power other plant equipment.

We incinerate approximately 200 wet tons of sludge each day, reducing it to 14 tons of dry ash. The ash is hauled off site and used in a commercial soil amendment product. This recycling lessens the impact on local landfills.



ULTRAVIOLET (UV) DISINFECTION

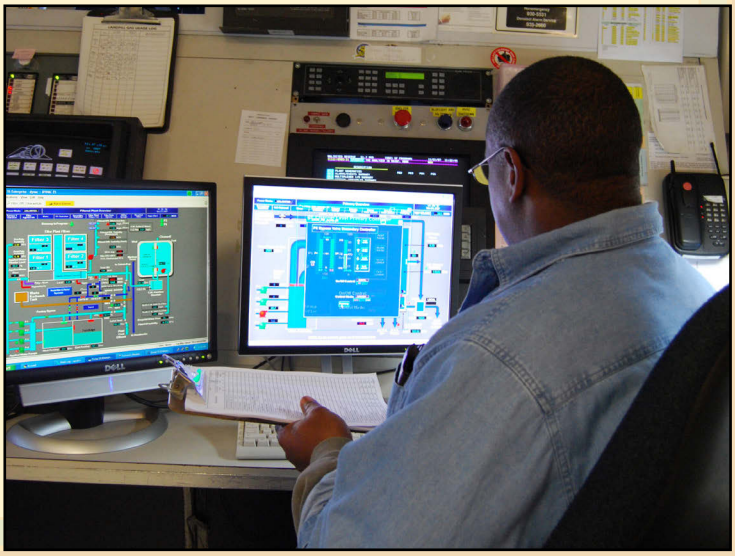
Treated wastewater from the secondary clarifiers then enters our UV disinfection facility, where 10,000 special lamps that produce a particular type of UV radiation are immersed in the wastewater stream. When the wastewater flows past the lamps, that UV radiation attacks the DNA of bacteria, viruses and other microorganisms. The UV light does not necessarily kill the bugs outright, but weakens them and renders them unable to reproduce, infect, or survive for long. Even parasites such as Cryptosporidia or Giardia, which are typically resistant to chemical disinfectants, are significantly reduced by UV light.

Most of the treated and disinfected wastewater is then discharged into Suisun Bay, while a portion is diverted to our water recycling facility for additional treatment.

All of the activities mentioned (and far too many support activities to list) ensure the water we release into Suisun Bay meets all water quality requirements and is environmentally safe.

PLANT CONTROL SYSTEM

Treating millions of gallons of wastewater every day – while meeting stringent regulations that protect public health and the environment – is a very complex process. It involves hundreds of functions and thousands of pieces of equipment, all connected by dozens of remote processors and miles of fiber optic cable to a central computerized control system. This system controls and monitors pump operations, water levels, chemical doses, temperatures, pressures, and a myriad of other functions. Operators monitor the system 24 hours a day from three different control rooms located throughout the plant to ensure everything is functioning properly.



WATER RECYCLING

By providing filtration and a second round of disinfection with sodium hypochlorite (chlorine bleach) to treated wastewater, Central San produces recycled water that is ideal for nondrinking purposes such landscape irrigation and industrial processes.

Recycled water is monitored by the Regional Water Quality Control Board and the California Department of Public Health to ensure quality standards are consistently met.

Each year, we use about 400 million gallons of recycled water at our treatment plant. In addition, about 200 million gallons of our recycled water is used to irrigate golf courses, parks, and school ball fields in Martinez, Concord and Pleasant Hill. We also now offer free recycled water to our residential customers for hand-watering lawns, gardens and landscaping, all of which helps to save drinking water supplies during droughts. Visit **centralsan.org/recycledwater** for more information.

Central San continues to seek opportunities and funding to expand recycled water use, which will ultimately reduce both treated wastewater discharges to Suisun Bay and water withdrawals from the Sacramento-San Joaquin Delta.

Cogeneration Facility

Our cogeneration facility is a gas turbine which uses natural gas to produce electricity and steam for the treatment plant. It provides more than 90% of the plant's daily power demand (the remaining power is supplied by PG&E). The turbine's exhaust heat is used by the cogeneration boiler to produce steam. The steam powers the aeration blower, which produces bubbles in the aeration tanks to aid the biological process.

WATER QUALITY TESTING

Central San's Environmental Laboratory is a state-of-the-art facility that serves the demands of today's highly sensitive and complex testing requirements.

The U.S. Environmental Protection Agency Clean Water Act requires that we carefully monitor more than 125 pollutants. These include metals such as mercury, lead, copper and zinc and organics such as pesticides, dioxins and solvents.

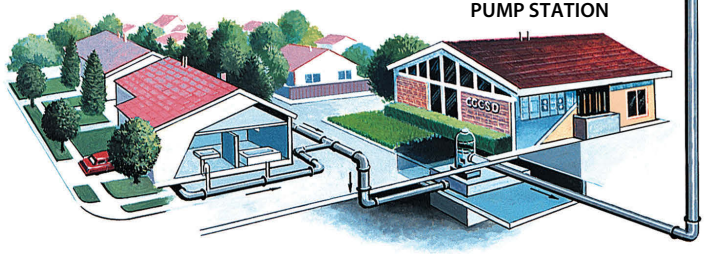
Each day, our chemists perform hundreds of tests to identify various constituents in the wastewater. They ensure the treated wastewater is environmentally safe and complies with all state and federal requirements for water quality.

Our chemists also conduct toxicity testing to ensure the wastewater causes no harm to sensitive marine species even when it meets all water quality requirements. These tests are difficult to perform, but our laboratory staff are among the best in the industry and this process provides an added measure of protection for the Bay.

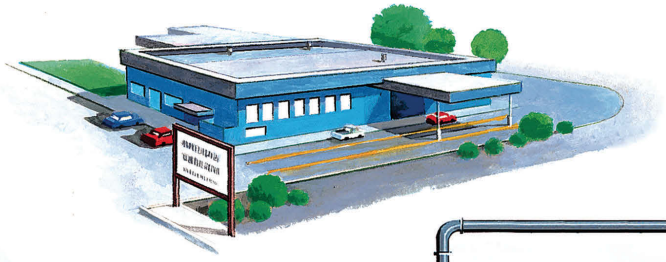
FOLLOW THE FLOW

Central San provides wastewater collection and treatment services for more than 471,000 residential and business customers throughout central Contra Costa County. Whatever they flush or pour down an inside drain comes to our treatment plant.

Each day, about 45 million gallons of wastewater flow by gravity to the treatment plant through more than 1,500 miles of underground pipe in our sewer collection system. In hilly areas where gravity flow isn't possible, 19 pumping stations throughout our service area lift sewage to the main sewer trunk lines that flow to the plant in Martinez.



PUMP STATION



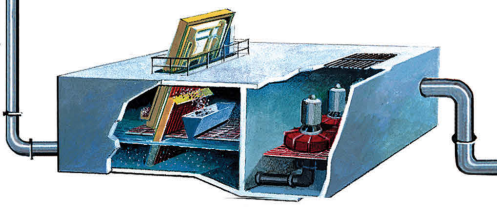
HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITY

The Household Hazardous Waste (HHW) Collection Facility, located at Central San's plant site, provides the community with an alternative to dumping toxics down household drains. The permanent facility allows residents to dispose of or recycle common HHW, such as pesticides, motor oil, and paint.

HYDROGEN PEROXIDE

Hydrogen peroxide is added to the wastewater for odor control just before it enters the plant.

The wastewater flows through bar screens where debris is removed by mechanical rakes, ground up, and returned to the treatment process.



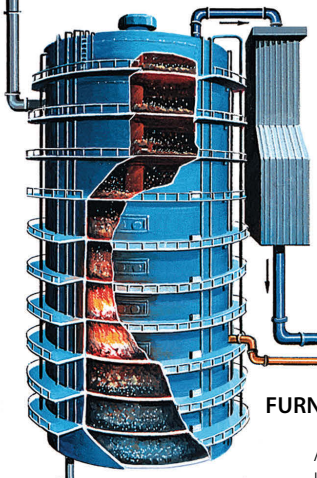
BARSCREEN/HEADWORKS

CENTRIFUGE

A centrifuge removes water from the sludge, which is pumped to the furnace for incineration.

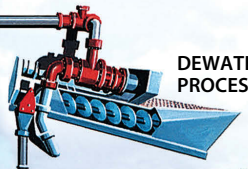
AIR POLLUTION CONTROL

A multiple-hearth furnace incinerates the sludge. Scrubbers provide air pollution control for the exhaust. The sterile ash is hauled off-site and used in a commercial soil amendment.



FURNACE

The dewatered grit is now hauled to the local landfill.



DEWATERING PROCESS

At a landfill site, bacteria feed off decomposing garbage and produce methane gas. This gas is utilized by the plant to fuel the furnace and auxiliary boiler.

GRIT

ASH

LANDFILL

LANDFILL GAS

SUISUN BAY

PUMP

PUMP

WATER RECYCLING FACILITY

INDUSTRY

GOLF COURSE

FILTER PLANT

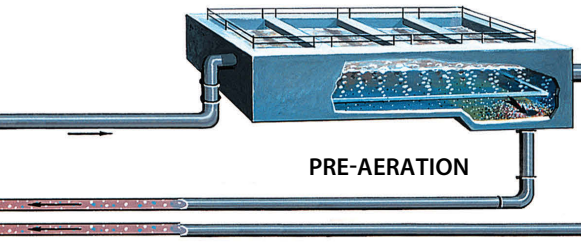
A portion of the treated wastewater is recycled (filtered and further disinfected) and used for landscape irrigation and other purposes.

RECYCLED WATER

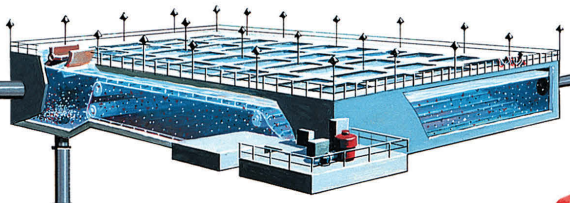
30-MILLION GALLON STORAGE BASIN

The screened wastewater is pumped to the pre-aeration tanks where sand and silt (grit) settle to the bottom of the tank and are pumped to the dewatering process.

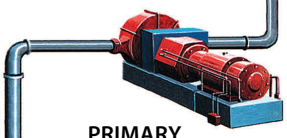
The wastewater then enters primary sedimentation tanks. Material that floats (scum) is skimmed, thickened and later burned in the furnace. Material that settles to the bottom (sludge) is pumped to a centrifuge for further dewatering.



PRE-AERATION



PRIMARY SEDIMENTATION



PRIMARY EFFLUENT PUMP

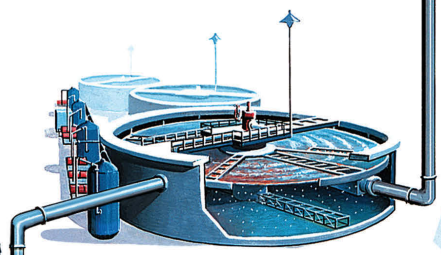
The sludge is separated from the water in the DAF process, then sent to centrifuges.

The waste-heat boiler uses heat recovered from the furnace exhaust to produce steam. The steam is piped to a turbine which drives the blower to produce air for the aeration tanks.

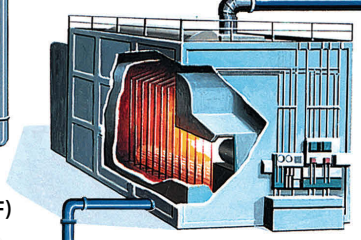
WASTE-HEAT BOILER

The cogeneration facility uses natural gas and methane gas from the landfill to produce electricity and steam, providing 90% of the plant's daily power needs.

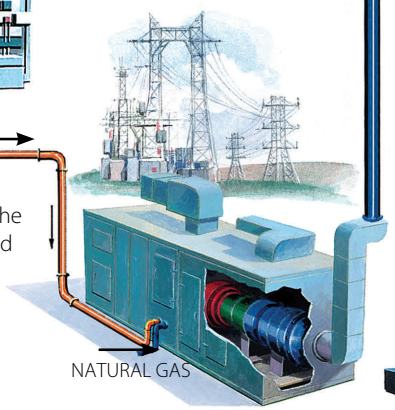
Steam from the process generates air (via a turbine and blower) that is bubbled through the wastewater in the secondary aeration tanks. An abundance of oxygen is needed to keep bacteria alive during secondary treatment.



DISSOLVED AIR FLOTATION (DAF)



LANDFILL GAS



NATURAL GAS

COGENERATION

TURBINE

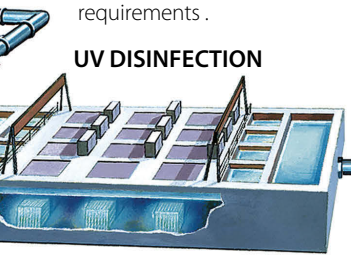
BLOWER

The wastewater is then disinfected by UV light. Most of the disinfected wastewater is then discharged into Suisun Bay. A portion is diverted to the water recycling facility.

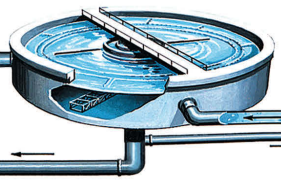
Samples of the treated wastewater are analyzed to ensure it is environmentally safe and complies with state and federal water quality requirements .

In the secondary clarifiers, the bacteria (known as activated sludge) sink to the bottom of the tank. A portion of the bacteria is pumped to the dissolved air floatation thickeners and later to the furnace for incineration. The remaining portion is returned to the aeration tanks where bacteria again break down the organics. The water that comes off the top of the clarifier has more than 95% of the impurities removed.

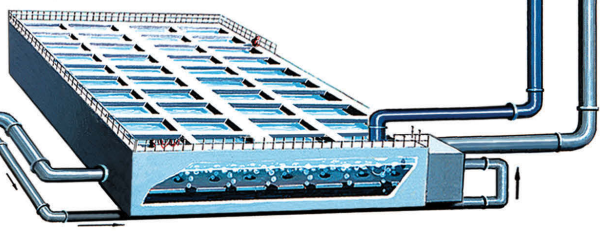
Primary treated wastewater containing dissolved and suspended organic material is pumped to the aeration tanks. Here, secondary treatment occurs as bacteria biologically break down the organics into carbon dioxide and water.



UV DISINFECTION

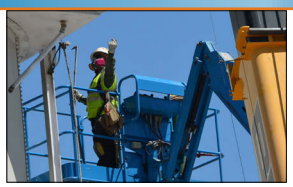


SECONDARY CLARIFIER

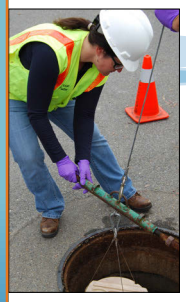


SECONDARY AERATION



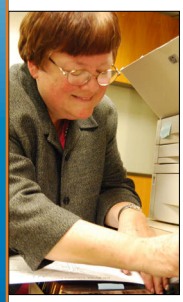



Central Contra Costa Sanitary District
5019 Imhoff Place
Martinez, CA 94553-4392




CONTACT US

General Information	(925) 228-9500
Report Sewer Overflows	(925) 933-0955 or 933-0990
Report Odors	(925) 335-7703
Household Hazardous Waste Info Line	(800) 646-1431
Sewer Connection Permits	(925) 229-7371
Report Illegal Discharges into Sewer	(925) 229-7288 or 229-7214
Job Hotline	(925) 229-7109
Student Education Programs	(925) 229-7310
Public Info Line	(925) 335-7702




Or visit our website at **www.centralsan.org**