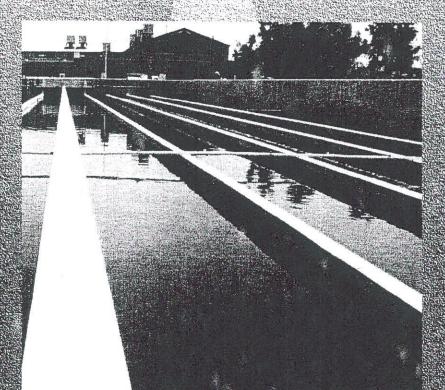
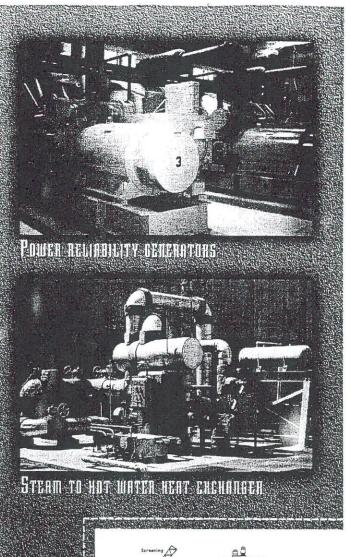
APPENDIX G



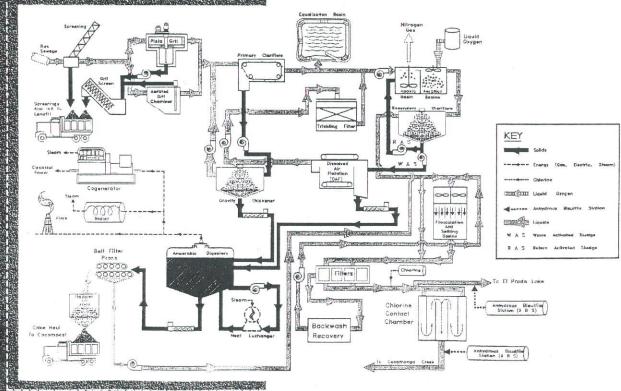
REGIONAL

PLANT

N 0 . 1



THE INLAND EMPIRE UTILITIES AGENCY DISTRIBUTES WATER, PROVIDES MUNICIPAL/INDUSTRIAL COLLECTION AND TREATMENT SERVICES, AND OTHER RELATED UTILITY SERVICES FOR A 242-SQUARE-MILE AREA THAT INCLUDES MORE THAN 700,000 PEOPLE. THE AGENCY PROVIDES SERVICE TO THE CITIES OF CHINO, CHINO HILLS, FONTANA, MONTCLAIR, ONTARIO AND UPLAND, AS WELL AS THE CUCAMONGA COUNTY WATER DISTRICT, THE MONTE VISTA WATER DISTRICT, AND THE WATER FACILITY AUTHORITY. THE AGENCY CURRENTLY OPERATES FOUR REGIONAL SEWAGE TREATMENT PLANTS; REGIONAL PLANT NO. 5 IS ON THE NEAR HORIZON.



THE REGIONAL PLANT NO. 1 (RP1) HAS BEEN IN OPERATION SINCE
1948. THROUGHOUT THE YEARS,
SEVERAL MAJOR EXPANSIONS HAVE
BEEN MADE, BRINGING THE FACILITY TO ITS CURRENT CAPACITY OF
44 MILLION GALLONS PER DAY. THE
FACILITY SERVES THE CITIES OF
ONTARIO, RANCHO CUCAMONGA,
UPLAND, MONTCLAIR, FONTANA AND
AN UNINCORPORATED AREA OF SAN
BERNARDINO COUNTY.

HOW THE PLANT WORKS

RAW SEWAGE IS PASSED THROUGH SCREENING AND GRIT REMOVAL UNITS, PRIMARY CLARI-FIERS, AERATION BASINS, SEC-ONDARY CLARIFIERS, CHEMICAL ADDITION, TERTIARY FILTERS, CHLORINATION AND DECHLORINA-TION FACILITIES PRIOR TO DIS-CHARGE. PLANT EFFLUENT IS USED FOR IRRIGATION OF THE WHISPERING LAKES GOLF COURSE, EL PRADO GOLF COURSE, AND WESTWIND PARK, IT ALSO SUP-PLIES WATER TO THE PRADO REGIONAL PARK LAKE IN SOUTH-SAN WESTERN BERNARDINO COUNTY, IN ADDITION TO BEING DIS-CHARGED TO THE CUCAMONGA CREEK FLOOD CONTROL CHANNEL AND ONTO THE SANTA ANA RIVER.

SOLIDS REMOVED FROM THE LIQUID TREATMENT PROCESSES ARE THICKENED AND STABILIZED IN ANAEROBIC DIGESTERS BEFORE BEING DEWATERED AND TRANSPORTED TO THE AGENCY'S CO-COMPOSTING FACILITY IN CHINO. THE METHANE GAS PRODUCED DURING THE DIGESTION PROCESS IS USED TO POWER COGENERATORS, WHICH WILL ULTIMATELY PROVIDE 100% OF THE POWER NEEDED TO OPERATE RP-1.

PLANT EXPANSION

RECENT EXPANSIONS OF RP-1 INCLUDE THE CONSTRUCTION OF A NEW LABORATORY BUILDING, AN EXPANSION OF THE COGENERATION FACILITIES. A STANDBY POWER SYSTEM, IMPROVEMENTS TO THE DIGESTER HEATING EQUIPMENT AND ELECTRIC POWER DISTRIBUTION SYSTEM, AND ODOR CONTROL FACILITIES AT THE PLANT HEADWORKS AND PRIMARY CLARIFIERS.

WATER RECLAMATION

THE PLANT PROCESSES WERE DESIGNED SO THAT EFFLUENT WATER QUALITY WOULD MEET TITLE 22 REQUIREMENTS FOR NONRESTRICTED RECREATIONAL USE. THE EFFLUENT MEETS THE STRINGENT PUBLIC HEALTH TURBIDITY STANDARD OF 2 NTU. THIS RECLAIMED WATER PROVIDES INLAND EMPIRE UTILITIES AGENCY WITH A SUPPLEMENTAL WATER SOURCE THAT MAY BE USED FOR IRRIGATION OF PUBLIC AND PRIVATE LAND, INDUSTRIAL WATER SUPPLY, GROUNDWATER-RECHARGE, OR ANY UNRESTRICTED RECREATIONAL USE, SUCH AS BOATING, FISHING AND SWIMMING.

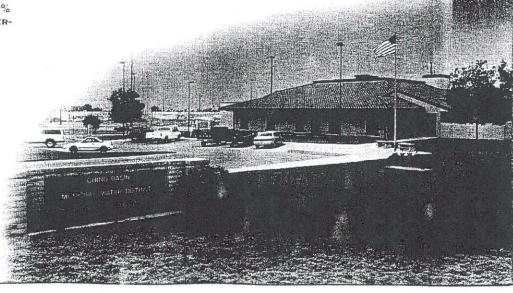
SANTA ANA RIVER BASIN STANDARDS

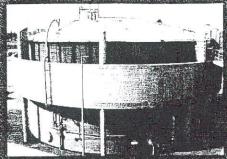
THE DISCHARGE FROM RP-1
REACHES THE SANTA ANA RIVER
UPSTREAM FROM SPREADING PONDS
OPERATED BY THE ORANGE COUNTY
WATER DISTRICT, WHICH CAPTURE
WATER FOR GROUNDWATER
RECHARGE. SINCE THE EFFLUENT
EVENTUALLY BECOMES PART OF
THE ORANGE COUNTY DRINKING

WATER SUPPLY, IT MUST MEET THE ENVIRONMENTAL CONTROLS AND WATER QUALITY STANDARDS ESTABLISHED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD. BY PROVIDING THE PLANT WITH DENITRIFICATION CAPABILITY. THE AMOUNT OF NITROGEN DISCHARGED TO THE RIVER IS REDUCED SO THAT IT IS SUITABLE TO BE USED TO RECHARGE THE DOWNSTREAM GROUNDWATER BASINS.

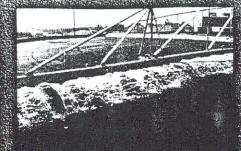
COMPUTER AIDED OPERATIONS

A FOXBORO INTELLIGENT AUTOMATION (VA) SYSTEM MONITORS AND ASSISTS STAFF IN PLANT OPERATIONS. THE STATE-OF-THE-ART COMPUTER SYS-TEM RECORDS MOST OF THE DATA REQUIRED BY REGULATORY AGEN-CIES, AND PROVIDES CONTROL OF A VARIETY OF PLANT EQUIPMENT AND TREATMENT PROCESSES, SUCH AS CHEMICAL FEED RATES, PUMP CONTROLS, AND OPENING AND CLOSING VALVES. THE FOXBORO I/A ALSO PROVIDES OPERATORS WITH THE STATUS OF PLANT FOUIPMENT IN TWO CENTRAL LOCATIONS. THE I/A SYSTEM ALSO CONNECTS THE RP-1 FACILITY TO THE AGENCY'S OTHER TREATMENT FACILITIES-REGIONAL PLANT No. 2, CARBON CANYON WATER RECLAMATION FACILITY, AND REGIONAL PLANT

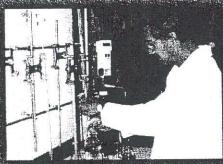




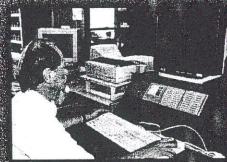
Digester with Planting cover



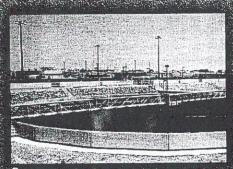
Trickling Pilter



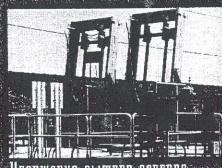
LARDRATDAY



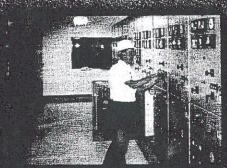
FORBORD CONTROL STATION



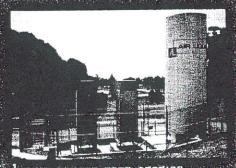
Secondary clampics



LENDWORKS CLIMBER SCREEDS



Power neliability building

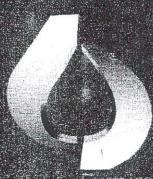


<u>Liquid</u> onycen reed station

REGIONAL PLANT NO.

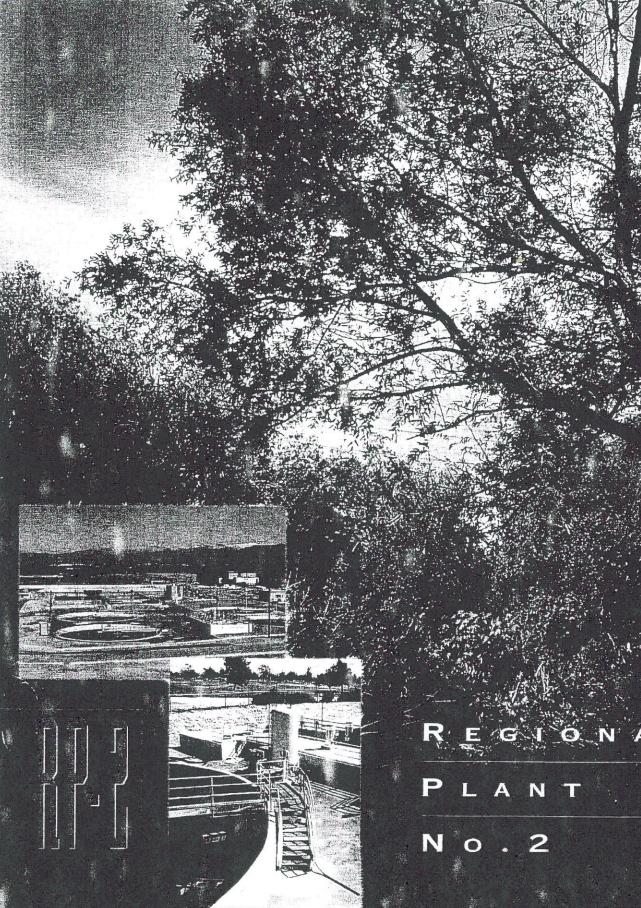
2450 E, PHILADELPHIA AVE. ONTARIO, CA 91761

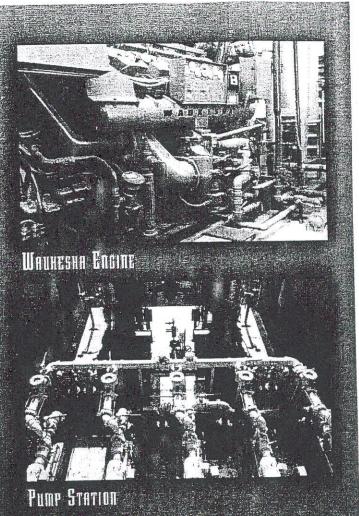
> 909:947.4131 Fax: 909.947.2598



TILITIES AGENCY

*A Municipal Water District





THE INLAND EMPIRE UTILITIES AGENCY DISTRIBUTES WATER.

PROVIDES MUNICIPAL AND INDUSTRIAL WASTEWATER

COLLECTION AND TREATMENT SERVICES, AND OTHER

RELATED UTILITY SERVICE TO MORE THAN 700,000 PEOPLE

WITHIN A 242-SQUARE-MILE AREA. THE AGENCY PROVIDES

SERVICE TO THE CITIES OF CHINO, CHINO HILLS.

FONTANA, MONTCLAIR, ONTARIO AND UPLAND, AS WELL

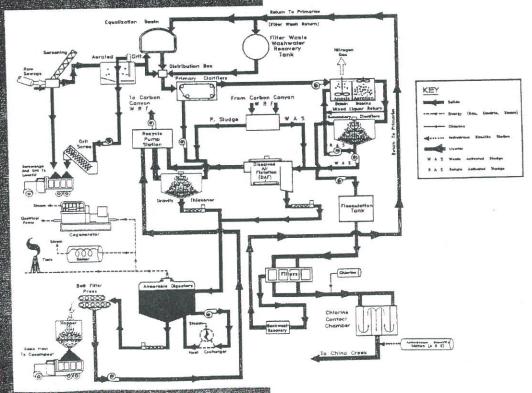
AS THE CUCAMONGA COUNTY WATER DISTRICT, THE

MONTE VISTA WATER DISTRICT, AND THE WATER

FACILITIES AUTHORITY. THE AGENCY CURRENTLY

OPERATES FOUR REGIONAL SEWAGE TREATMENT PLANTS;

REGIONAL PLANT NO. 5 IS ON THE NEAR HORIZON.



REGIONAL PLANT No. 2 (RP-2) HAS BEEN IN OPERATION SINCE 1960, AND HAS SEEN A NUMBER OF EXPANSIONS OVER THE YEARS TO MEET THE DEMANDS OF INCREASINGLY STRINGENT REQUIRE-MENTS FOR WATER QUALITY. THE AGENCY IS COMMITTED TO INSURING THAT DISCHARGES FROM THE PLANT MEET ALL STATE AND FEDERAL REGULATORY PER-MITS. AS MONITORED BY THE REGIONAL WATER QUALITY CONTROL BOARD. THE FACILITY CURRENTLY TREATS FIVE MIL-LION GALLONS PER DAY OF WASTEWATER AND DISPOSES APPROXIMATELY 50 TONS OF BIOSOLIDS DAILY. RP-2 AND CARBON CANYON WATER RECLAMATION FACILITY SERVE THE CITIES OF CHINO AND CHINO HILLS.

HOW THE PLANT WORKS

WASTEWATER IS FIRST RECEIVED AT THE PRELIMINARY TREATMENT LEVEL, WHERE MATERIALS THAT ARE LARGE OR COARSE ENOUGH TO DAMAGE DOWNSTREAM EQUIPMENT ARE REMOVED. THE WASTE-WATER THEN FLOWS THROUGH PRIMARY CLARIFIERS THAT ARE DESIGNED TO REMOVE SUSPENDED AND FLOATING MATERIALS. THE WASTEWATER THAT DISCHARGES FROM THE PRIMARY CLARIFIERS GOES TO THE NEXT PROCESS LEVEL, WHICH IS SECONDARY TREATMENT. HERE, A BIOLOGICAL ENVIRONMENT IS DEVELOPED WHERE MICROORGANISMS IN THE PRESENCE OF OXYGEN REDUCE NITROGEN CONCENTRATIONS THROUGH THE PROCESS OF NITRIFICATION AND DENITRIFICATION. THE WASTEWATER THEN FLOWS INTO THE SECONDARY CLAR-IFIERS FOR FURTHER SEPARATION OF THE REMAINING SUSPENDED MATERIALS, AND THEN CONTINUES ON TO THE FINAL PROCESS, WHICH IS THE TERTIARY TREATMENT PROCESS. THE WASTEWATER IS FILTERED AND DISINFECTED BEFORE FINAL DISCHARGE INTO THE CHINO CREEK, WHICH IS TRIBUTARY TO THE SANTA ANA RIVER.

SOLIDS REMOVED DURING THE TREATMENT PROCESS AT BOTH RP-2 AND THE AGENCY'S CARBON CANYON WATER RECLAMATION FACILITY (CCWRF) ARE PUMPED TO THE STABILIZATION AND DEWATERING PROCESSES LOCATED AT RP-2. THESE PROCESSES INCLUDE GRAVITY AND DISSOLVED AIR FLOATATION THICKENERS, ANAEROBIC DIGESTERS, AND BELT FILTER PRESSES. THE SOLIDS ARE THEN TRANSPORTED TO THE AGENCY'S CO-COMPOSTING FACILITY LOCATED NEARBY IN SOUTH CHINO. THE METHANE GAS PRODUCED DURING

THE ANAEROBIC DIGESTION PROCESS IS USED TO POWER A COGENERATOR. THIS ALTERNATIVE SOURCE OF POWER PROVIDES AN AVERAGE OUTPUT OF 300,000 KILOWATT HOURS OF ELECTRICITY PER MONTH. THIS SIGNIFICANTLY REDUCES THE COST OF PURCHASING ELECTRICAL POWER FROM SOUTHERN CALIFORNIA EDISON.

PLANT EXPANSION

THE PLANT EXPANSIONS AT RP-2, OVER THE YEARS, ARE A RESULT OF THE AGENCY'S RESPONSE TO MEET REGULATORY ISSUES AND THE GROWTH OF THE COMMUNITY. THEY INCLUDE THE INSTALLATION OF EMERGENCY STANDBY POWER IN THE EVENT OF AN EDISON POWER OUTAGE, COGENERATION TO REDUCE POWER COSTS, SLUDGE THICKENING AND DEWATERING FACILITIES, ADDITIONAL DENITRIFICATION PROCESSES, AND ADVANCED INTELLIGENT/AUTOMATED COMPUTER CONTROLS.

WATER RECLAMATION

THE PROCESSES AT RP-2 WERE DESIGNED TO ENSURE THE WATER DISCHARGED FROM THE FACILITY MEETS TITLE 22 REQUIREMENTS FOR NON-RESTRICTED RECREATIONAL USE. THIS WATER, TERMED FINAL EFFLUENT, MEETS THE STRINGENT PUBLIC HEALTH TURBIDITY STANDARD OF 2 NTU.

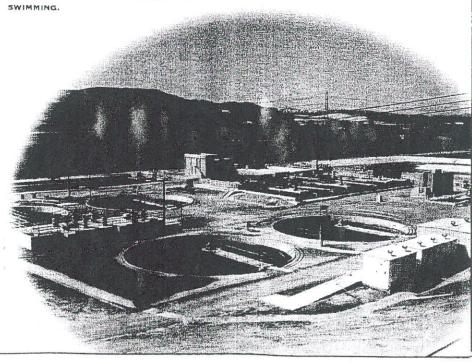
THE RECLAIMED WATER PROVIDES THE AGENCY WITH A SUPPLEMENTAL WATER SOURCE THAT MAY BE USED FOR IRRIGATION OF PUBLIC LAND, INDUSTRIAL WATER SUPPLY, GROUNDWATER RECHARGE, OR ANY NON-RESTRICTED RECREATIONAL USE SUCH AS BOATING, FISHING OR

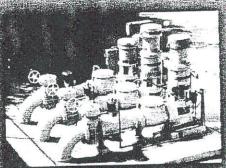
COMPUTER AIDED OPERATIONS

A FOXBORO INTELLIGENT AUTOMATION (I/A) SYSTEM MONITORS AND ASSISTS STAFF IN PLANT OPERATIONS. THIS STATE-OF-THE-ART COMPUTER SYSTEM RECORDS DATA REQUIRED BY REGULATORY AGENCIES, AND PROVIDES CONTROL OF A VARIETY OF PLANT EQUIPMENT AND TREATMENT PROCESSES. THIS INCLUDES CHEMICAL FEED RATES, PUMP CONTROLS, AND OPENING AND CLOSING VALVES. THE STAFF HAS THE CAPABILITY OF MONITORING EQUIPMENT AND DATA FROM BOTH RP-2 AND THE CCWRF, APPROXIMATELY THREE MILES AWAY. THIS ADVANCEMENT HAS REDUCED THE STAFFING REQUIREMENTS AT BOTH FACILITIES.

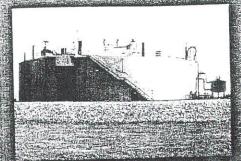
SANTA ANA RIVER BASIN STANDARDS

THE WATER THAT IS DISCHARGED FROM THE RP-2 FACILITY REACHES THE SANTA ANA RIVER UPSTREAM OF THE HOLDING BASINS OPERATED BY THE ORANGE COUNTY WATER DISTRICT. THESE BASINS CAPTURE WATER FROM THE RIVER FOR NITROGEN REMOVAL, AND, AS SUCH, MUST MEET THE WATER QUALITY STANDARDS ESTABLISHED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD. BY MODIFYING THE EXISTING NITRIFICATION PROCESS AT RP-2 TO DENITRIFY, THE AMOUNT OF NITROGEN DISCHARGED TO THE RIVER IS REDUCED SIGNIFICANTLY AND CAN BE USED TO RECHARGE THE DOWNSTREAM GROUND-WATER BASINS.

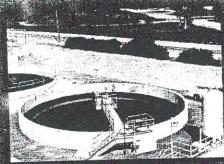




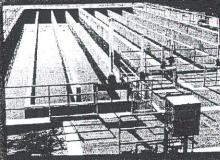
TERTIFIERY PLANT INTAKE PURPS



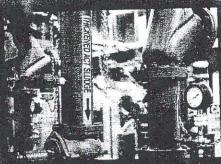
Higesten Da 3



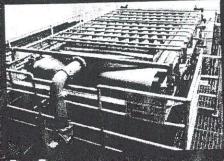
GRAVITY THICKENER



CHLORINE CONTACT CHAMBER



SLUDGE TRANSFER PUMPS



BELT PRESS



EFFLUENT VS. INFLUENT



Sampling H2S gas from digester

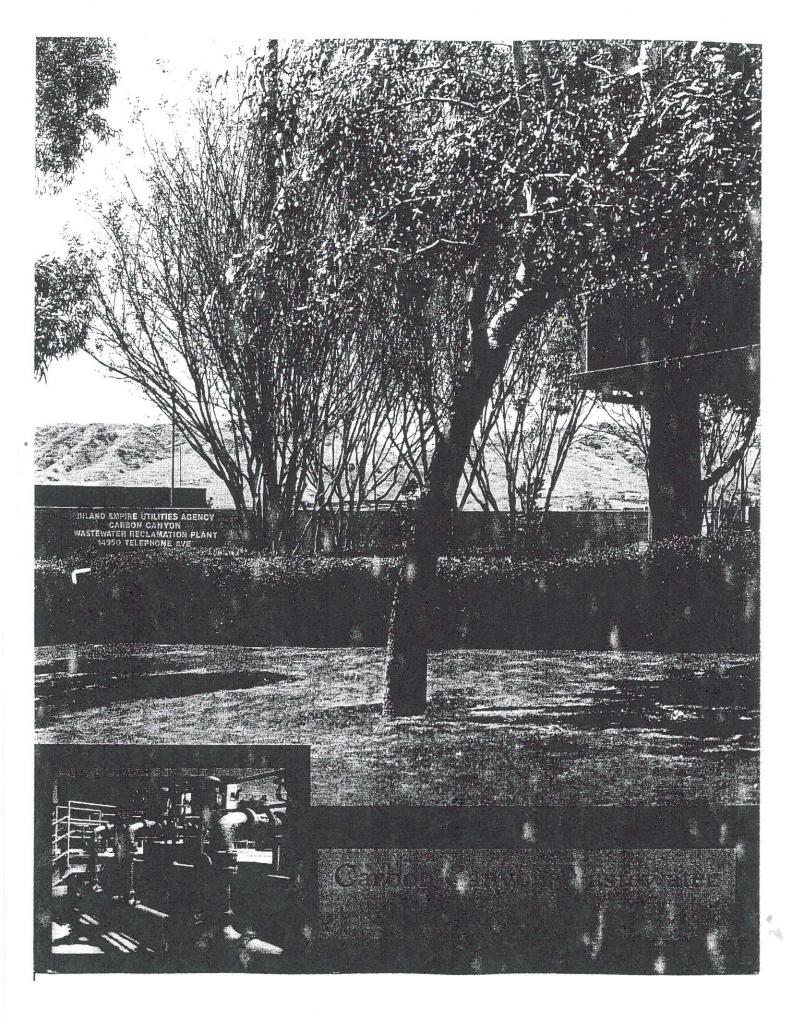
REGIONAL PLANT No. 2

16400 EL PRADO ROAD CHINO, CA 91710

909.597.6768 FAX: 909.393.8129

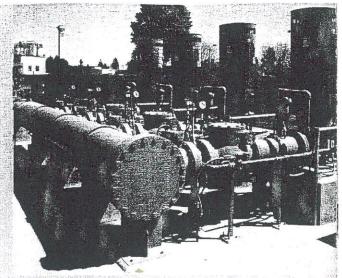


Inland Empire



Carbon Canyon Wastewater Reclamation Facility

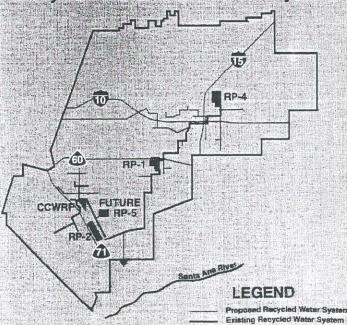
The filling Empire Utilities Agency (IEUA) distributes imported water and provides municipal and industrial wastewater collection and treatment services, and other related titility services to more than 700,000 people within a 242 square mile area. The Agency provides service to the cities of Chino, Chino Hills, Fontana, Montelair, Ontario and Upland, as well as the Cucamonga County Water District and the Monte Vista Water District. The Agency currently operates four regional wastewater treatment plants, with a fifth treatment plant (Regional Plant No. 5) under construction.



Additionally, the Agency owns and operates a co-composting facility, provides water resources management within the Chino groundwater basin, distributes recycled water, operates a non-reclaimable wastewater collection system and the Santa Ana Watershed Project Authorities Chino Basin Desalter.

The Carbon Canyon Wastewater Reclamation Facility (CCWRF), located in the City of Chino, has been in operation since May 1992. The \$46-million facility works in tandem with Regional Plant No. 2 (RP-2) and serves the areas of Chino, Chino Hills, Montclair and Upland. Liquids are treated at CCWRF, while the solids removed from the waste flow are treated at RP-2. CCWRF treats an annual average flow of 8.0-mgd.

Recycled Water Distribution System



The plant treatment processes were designed so that effluent water quality would meet Title 22 requirements for nonrestricted recreational use. The effluent meets the stringent public health turbidity standard of 2 NTU. This reclaimed water provides it 23A with a supplemental water source that may be used for utrigation of public land, industrial water supply; groundwater recharge, or any unrestricted recreational use such as boating fishing and swimming.

Santa Ana River Basin Standards

The discharge from CCWRF reaches the Santa Ana River upstream from spreading ponds operated by the Orange County Water District, which capture water for groundwater recharge. Since the effluent eventually becomes part of the Orange County drinking water supply, it must meet the environmental controls and water quality standards established by the California Regional Water Quality Control Board. By providing CCWRF with denitrification capacity, the amount of nitrogen discharged to the river is reduced so that it is suitable to be used to recharge the downstream groundwater basins.

RF where it buts, primary ned for

Flow the Plane World

Wastewater (raw sewage) is received at CCWRF where it passes through screening and grit-removal units, primary clarifiers, agration, basins designed for nitrification, dentarification, secondary clarifiers, polymer and coagulant chemical addition, effluent piliers for tertiary treatment, and finally a chloring contact chamber for distinfection before a is discharged into the Chino Creek upstream from the Sama Ana River. The facility is designed to meet a total inorganic autrogen limit of 10 mg/li

Solids removed during the treatment process are transported by underground pipeline to RF 2 for thickening stabilization in anaerobic digesters, and belt press dewatering before removal by a contradict for composing. Treating solids at RP-2 allows the Agency to centralize its solids beatment. So dang at allow tacility. Eliminating solids handling at CCWRF enhances the facility's ability to operate virtuals the other problems normally associated with solids processing.

Computer-Aided Operations

A distributive control system monitors and assists staff in plant operations. This state-of-the-art computer system records much of the data required by regulatory agencies; provides control of various plant equipment and operations, such as turning on and off pumps and opening and closing valves; and furnishes a status of plant operations and equipment. The interconnected system provides a computational plant operation. Regional Plant No. 1, Regional Plant No. 2 and Regional Plant No. 4:

Good Neighbor Design

CCWRF's construction and operation adheres to an important Agency philosophy; it is important to be a good neighbor to the surrounding population and environment. The 19-age sit is screened with walls, trees and shrubbery in addition, the facility is equipped will an agraphology system to eliminate odors at the heartworks equipment and primary claribes.

UTILINGES AGENC

Carbon Cacca

Ca

*A Municipal Water District

REGIONAL PLANT NO. 4

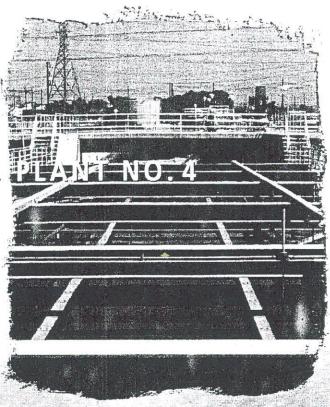
operation since September 1997, Regional Plant No. 4 is the District's newest wastewater reclaination facility. Located in Rancho Cucamonga, the \$32.9 million facility serves Rancho Cucamonga and unincorporated areas in San Bernardino County. The District is committed to assuring that all discharges from this facility meet, or exceed, state and federal regulatory permits, as required by the Regional Water Quality Control Board.

REGIONAL

The Chino Basin Municipal Water District distributes imported water, provides municipal and industrial wastewater collection, and offers treatment services to more than 650,000 people within a 242-square mile area. The District operates four regional sewage treatment plants and is working towards a fifth facility.

Additionally, the District owns and operates a co-composting facility, provides water resources management within the Chino groundwater basin, distributes reclaimed water, and operates a non-reclaimable wastewater collection system.

The District's jurisdictional boundaries include most of San Bernardino County west of the city of Rialto. Included in the District are the Cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Rancho Cucamonga, and Upland, as well as the Cucamonga County, and Monte Vista Water Districts and the Water Facility Authority.



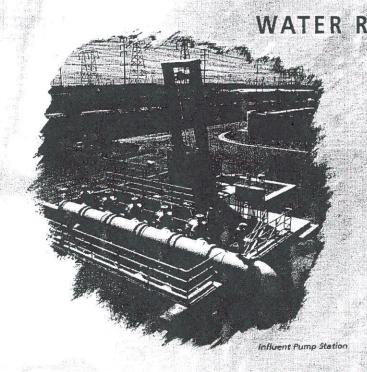
Intra-Channel Clarifier

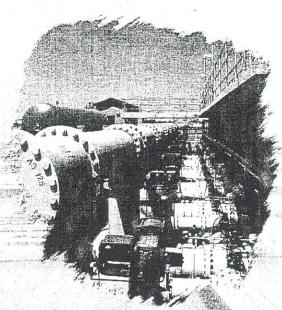
he treatment plant processes were designed such that effluent water quality would meet, or exceed, the requirements of Title 22 for nonrestricted recreational use. The effluent meets the

stringent public health

WATER RECLAMATION, turbidity standard of 2 NTU, and total coliform

median of <2.2/1,000ml. This reclaimed water provides Chino Basin Municipal Water District with a supplemental water source that may be used for public and private land irrigation, industrial water supply, groundwater recharge, or any unrestricted recreational use such as boating, fishing and swimming. The system is designed to work in conjunction with Regional Plant No. 1 to provide reclaimed water to users within the service areas of Regional Plants No. 1 and 4.





Actuated Valves in Filters One through Eight

ischarge from Regional Plant No. 4-is ultimately introduced into the Orange County-groundwater basin after an extensive natural filtration process. The reclaimed water enters Cucamonga Creek at Regional Plant No. 1, flows through the Prado Basin into the Santa Ana River, where it's percolated into the basin through ponos operated by the Orange County Water District. The ponds capture water for ground-

water recharge. Since the effluent eventually becomes part of the

Orange County drinking water supply, it must meet, or exceed, the environmental and water quality standards established by the California Regional Water Quality Control Board. By providing the facility with denitrification capabilities, the amount of

nitrogen discharged to the river is reduced, making

it suitable for use in recharging the downstream groundwater basins.

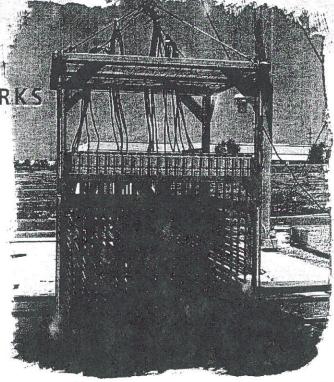
SANTA ANA RIVER BASIN STANDARDS

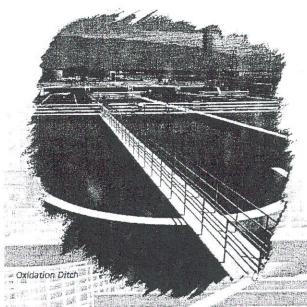
aw sewage from waste streams received at Regional Plant No. 4 first pass through screening and grit removal units, which if left in the waste stream could cause damage to downstream equipment. The elements removed are transported to a local landfill for disposal. The waste stream then flows through a biological environment for nitrification and denitrification. In this process, the waste stream flows through a series of tanks that contain moderate and low levels of dissolved oxygen where biological microorganisms reduce nitrogen concentrations.

HOW THE PLANT WORKS

The waste stream then flows through the intra-channel clarifier to further separate biological suspended solids from the flow stream. The waste stream travels on to the tertiary treatment process where it flows through sand filters and is disinfected by an ultraviolet light process before entering an eight mile, 30-inch pipeline which transports the final effluent to the Cucamonga Flood Control Channel at Regional Plant No. 1. The flood control channel is a tributary to the Santa Ana River.

Solids removed during the treatment process are concentrated and then directed into an aerobic digester where they become stabilized. Once stabilized, they are dewatered, and then trucked to the District's co-composting site by a contractor. In addition, Regional Plant No. 4 has the option of treating the solids off-site by returning the removed solids directly back into the sewer for eventual treatment at Regional Plant No. 1.





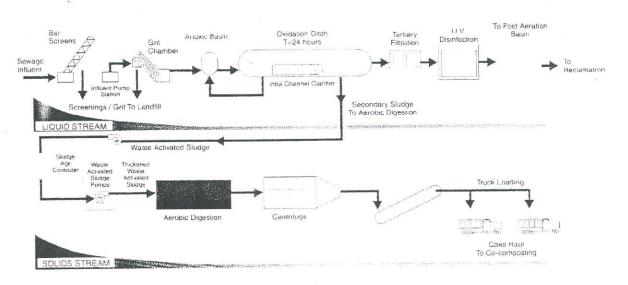
COMPUTER AIDED OPERATIONS

ntelligent automation monitors assist in facility operations by recording much of the data required by regulatory agencies. The state-of-the-art computer system provides control of various plant equipment and operations, such as the oxygen reduction potential system. It also provides communication links, with the District's main operations headquarters at Regional Plant No. 1.

Regional Plant No. 4 was designed to adhere to the following important District philosophy.

GOOD NEIGHBOR DESIGN neighbor to the surrounding population and environment.

Greened with walls, trees and shrubbery, the site's grounds are beautifully landscaped and feature grassy areas and a variety of native plant life. The facility has also been designed to circulate water flows that help control odors at the headworks equipment and initial diversion structures.



PROCESS FLOW DIAGRAM Regional Plant No. 4



Corporate Office 9400 Cherry Avenue • Bldg. A Fontana CA 92335 Phone 909.357.0241 Fax 909.357.3870 Regional Plant No. 4 12811 Sixth Street Rancho Cucamonga, CA 91729 Phone 909.899.6604 Fax 909.899.4245