



2021 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT



Photo by Elizabeth Falejczyk

Prepared by:

**Veolia Water West Operating Services, Inc.
500 Davidson Street
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February 7, 2022

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Overview

The continued priorities for 2021 were to maintain a safe working environment and zero lost time, Occupational Safety Health Act recordable incidents, and no treatment plant effluent violations. 2021 Veolia's ninth consecutive year of zero effluent violations and tenth year of zero recordable incidents. We continue to celebrate this success with the Novato Sanitary District on its vision and commitment to the protection of water quality and the environment.

Key areas of focus throughout the year included:

- Safety Training
- COVID-19 Workplace Compliance
- No Safety Incidents (recordable, lost time, or medical)
- Participation in Veolia *Near Miss and Leading Indicator* Reporting Program
- Regulatory Compliance
- Odor Monitoring
- Reporting (internal and external)
- Records Keeping and Data Base Management
- Facility Energy Management Program
- Employee Education and Certification / Professional Advancement
- Community Outreach and Participation – Limited due to the Pandemic
- Effective Asset Management by using Oracle Work Asset Management System (OWAM) for Maintenance Tracking, Scheduling, Inventory, and Purchasing
- Operation, Management, and Maintenance
- Oversight of Laboratory and Pretreatment Program

Treatment Plant Design Criteria

Wastewater is collected throughout the Novato Sanitary District service area and conveyed by gravity as well as mechanical means (pump stations) to the Novato Treatment Plant (NTP). Listed below are the descriptions of each of the processes. Table 1.0 below provides the influent flow design criteria.

Table 1.0

DESIGN CRITERIA		
Condition	Value	Unit
Average Dry Weather Flow	7.0	MGD
Peak Wet Weather Flow (Max Day)	30.7	MGD
Max Peak Wet Weather (1-3 Hour)	47.0	MGD
Average BOD Loading	14,600	Lbs/D
Average TSS Loading	17,600	Lbs/D

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Preliminary Treatment - Influent Pump Station and Headworks

When the wastewater arrives at the NTP, it is pumped from the influent pump station to the headworks. The headworks provides screening of coarse materials and removal of grit which consists of heavy matter such as sand, silt, and gravel.

Flow and Loading Measurement

Flow at the NTP is measured using a Parshall flume and hydro ranger™ ultra-sonic flow meter in combination. Composite samples for biochemical oxygen demand (BOD) and total suspended solids (TSS) are collected downstream of screening and grit removal. Composite samples are proportioned throughout the sampling period (normally 24 hours).

Primary Treatment – Primary Clarifiers

An efficient primary clarifier typically removes approximately 60 – 70% of the solids from raw wastewater. Clarifiers are large tanks that slow the flow of water and allow the force of gravity to remove solids. Heavier solids referred to as “sludge” settles to the bottom. Lighter material such as fat, oil, grease and plastic, referred to as “scum” rises to the surface. Both sludge and scum are removed from the waste stream and pumped to a digester for additional treatment. The NTP primary clarifiers are covered to contain air/odor associated with raw sewage. Air/odor is removed and discharged to odor scrubbing biofilters.

Secondary Treatment – Aeration Basins & Secondary Clarifiers

After screening, grit removal, and primary solids removal, all wastewater receives full secondary treatment. Large rectangular tanks with baffle walls, mechanical mixers, air diffusers, and recirculation pumps make up the aeration basins. Four aeration basins, each with a capacity of more than 850,000 gallons, provides complete secondary treatment under all flow conditions. Each aeration basin has three anoxic (no dissolved oxygen) zones accounting for almost 25% of the tank volume. The anoxic zones convert nitrate and nitrite to nitrogen gas to reduce the level of total nitrogen in the effluent. Secondary clarifiers allow for the separation of the biomass where the clarified wastewater flows to the disinfection process and the settled biomass is returned to the influent of the aeration basins.

Ultra Violet (UV) Disinfection

Prior to discharge wastewater must be disinfected. Ultra violet light disrupts the DNA of pathogens and other life forms leaving them incapable of reproduction.

Effluent Disposal – Bay Discharge / Reclamation / Storage

The District's NPDES Permit effective September 1st, 2020 allows for year-round discharge to San Pablo Bay with stringent effluent limits from May 1st through October 31st. Throughout the historical non-discharge season, effluent is stored for future use, specifically for pasture irrigation. In addition, California State Coastal Conservancy also received treated effluent for the Bel Marin Keys Unit V Wetland Restoration Project.

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Effluent Reuse – Recycled Water

Recycled water was produced in 2021 for irrigation of parks, landscaping, and golf courses. Additionally, a portion of the recycled water is provided to a car wash facility. Recycled water receives added treatment in order to comply with stringent Title 22 regulations.

Treatment Plant Performance Tables

The tables that follow provide the summary for the plant performance, maintenance program, consumables, and energy results for the period January 1, 2021 through December 31, 2021. The total number of samples taken in 2021 changed due to the National Pollution Discharge Elimination System (NPDES) permit issuance. The Annual Waste Characteristics & Loading Summaries are provided below in Tables 2.0 – 9.0 and in the attachment section of this report.

Table 2.0

2021 Influent Flows and Loading Summary			
Condition	Value	Unit	Notes
Average Dry Weather Flow	3.13	MGD	Jul/Aug /Sep
Peak Wet Weather Flow (Max Day)	26.66	MGD	Oct 24 th
Max Peak Wet Weather (1-3 Hour)	20.0	MGD	Oct 24 th
Average Biochemical Oxygen Demand (BOD)	310	mg/L	
Average BOD Loading	9,808	Lbs/Day	
Average Total Suspended Solids (TSS)	323	mg/L	
Average TSS Loading	10,848	Lbs/Day	

Table 3.0

2021 Plant Performance		
Total Volume of Wastewater	1,469	Million Gallons
Total Volume of Reclaimed Water (Reclamation and California State Coastal Conservancy)	260.11	Million Gallons
Recycled – Title 22 (Novato Sanitary District, North Marin Water District Deer Island)	207.72	Million Gallons
Flow Discharged to San Pablo Bay	928.22	Million Gallons
Average BOD Effluent	<5	mg/L
Total Pounds of BOD Treated	3,551,030	Lbs
Average TSS Effluent	4	mg/L
Total Pounds of TSS Treated	3,900,221	Lbs
Total Pounds of Bio-solids Treated	2,577,738	Lbs
Total Cubic Feet of Biogas Produced	25,512,414	Cu Ft

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Table 4.0

2021 Violations / Excursions	
Total Number	0
NPDES (Bay Discharge)	0
Waste Discharge Reporting (WDR) (Reclamation)	0

Table 5.0

2021 Plant Effluent		
	Value	Unit
BOD Removal	98	%
TSS Removal	99	%

Table 6.0

2021 Consumables and Energy Summary	
Total Million Gallons	1,469
*Electricity – kWh / Year	3,240,554
Electricity – kWh / MG	2,325
Natural Gas Cubic Feet/Year	172,359
*Natural Gas – Therms / Year	1,724
Diesel Fuel – Gallons / Year	5,123

*Excludes Administration Building and Recycled Water Plant

Table 7.0

2021 Waste Discharge Limits / Reclamation			
Parameter	Limit	Units	Violations
BOD Monthly Average	40	mg/L	0
Total Coliform – 5 Sample Median	240	mpn/100 ml	0
Total Coliform - Maximum	10,000	mpn/100 ml	0
pH – High	9.0	s.u.	0
pH – Low	6.0	s.u.	0

Table 8.0

2021 NPDES Wet Season Limits - November – April			
Parameter	Limit	Units	Violations
BOD Weekly	40	mg/L	0
BOD Monthly	25	mg/L	0
TSS Weekly	40	mg/L	0
TSS Monthly	25	mg/L	0

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BOD Removal (minimum)	85	%	0
TSS Removal (minimum)	85	%	0
Enterococcus – 6 Week Rolling Geometric Mean	30	Col/100 ml	0
Enterococcus – No More than 10 Percent All Samples	110	CFU/100mL	0
Fecal Coliform - Median	140	mpn/100 ml	0
Fecal Coliform - 90 th Percentile	430	mpn/100 ml	0
Ammonia – Daily Maximum	21	mg/L	0
Ammonia - Monthly Average	5.9	mg/L	0
pH – High	8.5	s.u.	0
pH – Low	6.5	s.u.	0
Oil & Grease - Daily Maximum	20	mg/L	0
Oil & Grease - Monthly Average	10	mg/L	0

Table 9.0

2021 NPDES Dry Season Limits - May, September, & October			
Parameter	Limit	Units	Violations
BOD Weekly	30	mg/L	0
BOD Monthly	15	mg/L	0
TSS Weekly	20	mg/L	0
TSS Monthly	10	mg/L	0
BOD Removal (minimum)	85	%	0
TSS Removal (minimum)	85	%	0
Enterococcus – 6 Week Rolling Geometric Mean	30	Col/100 ml	0
Enterococcus – No More than 10 Percent All Samples	110	CFU/100mL	0
Fecal Coliform - Median	140	mpn/100 ml	0
Fecal Coliform - 90 th Percentile	430	mpn/100 ml	0
Ammonia – Daily Maximum	21	mg/L	0
Ammonia - Monthly Average	5.9	mg/L	0
pH – High	8.5	s.u.	0
pH – Low	6.5	s.u.	0
Oil & Grease - Daily Maximum	15	mg/L	0
Oil & Grease - Monthly Average	5	mg/L	0

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Operational Program

Throughout 2021, the majority of the treatment plant equipment operated full time with the exception of the equipment listed below:

Novato Treatment Plant - Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- Aeration Basin #1 & #3 (standby)
- Primary Clarifier #2 (standby)
- Secondary Clarifier #2 (standby)

Environmental Services Program and Public Education Activities

Retrospective Screening for SARS-CoV-2 in the Bay Area – January-December

Sampling of influent composite samples began in July 2020 and continued through December 2021 at the request of the Berkeley Water Center (BWC) at the University of California, Berkeley. Information about the program and the data can be found at <https://covid-web.org/>

Environmental Laboratory Accreditation Program (ELAP) – Training - March

ELAP certification for the onsite laboratory was renewed and received in January. Liz Falejczyk, Veolia Water Environmental Services Supervisor attended a Zoom® meeting in March for the Roadmap to ELAP accreditation transition to review the requirements specific to the NSD's laboratory.

July 27th the laboratory staff participated in an audit of the laboratory and the quality assurance/quality control program by an independent contractor as part of preparing for the implementation of the TNI: 2016 laboratory standards and completing the on-site audit requirements for ongoing certification.

Enterococcus – January - December

When effluent is discharged to the Bay, the bacteriological requirement is for Enterococcus. Testing continued throughout the summer as part of the agreement between the District and the California State Coastal Conservancy, which allowed the Conservancy to use the treated effluent at their construction site. Sample results were submitted to the California State Coastal Conservancy for this additional sampling.

Public Education

Liz Falejczyk and Julie Hoover, Novato Sanitary District Administrative Secretary attended Zoom® Marin County Wastewater Agency Public Education Committee Meetings throughout the year. Julie Hoover, Novato Sanitary District Administrative Secretary and Lynda Farmery, Novato Sanitary District Administrative Assistant assisted with preparing new outreach materials to dentists specifically about not flushing dental floss. The materials were distributed through Central Marin

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Sanitation Agency, which conducts the annual inspections of the Dentists in the District's service area.

Julie Hoover and Lynda Farmery also prepared reminder outreach letters for distribution to tenants of the Vintage Oaks Shopping Center. The letters re-enforce the "Toilets are not Trashcans" campaign, and were distributed by Liz Falejczyk to the tenants.

Training - January

Liz attended a two-day (virtual) workshop sponsored by the California Environmental Laboratory Accreditation Program on the TNI: 2016 Quality System Documentation. The Novato laboratory will have to be fully compliant with the newly adopted standards by 2024.

Liz Falejczyk, and Kurt Hawkyard, Veolia Water Laboratory Technician attended a Laboratory Ethics and Data Integrity Zoom® training session presented by Monterey Bay Section of the California Water Environment Association. Annual Ethics training is a requirement of the newly adopted standards.

Bay Area Clean Water Agencies (BACWA) - 2021

Liz Falejczyk, Veolia Water Environmental Services Supervisor attended the following virtual meetings

- BACWA Laboratory TNI Training Series
- BACWA Laboratory Committee Meetings
- BACWA Permits Committee Meetings
- BACWA Pretreatment Committee Meeting

Whole Effluent Toxicity Testing - 2021

Quarterly Acute and Chronic Toxicity is required during Bay Discharge. The Acute test had 100% survival. The Chronic Toxicity, test results for survival and growth were very good at <1.0 Toxicity Unit-chronic) TUc each. See 2021 Chronic Toxicity results below.

Test Date	02/21	4/21	9/21	10/21
EC ₂₅ (%)	>100	>100	>100	>100
NOEC (%)	100	100	100	100
TUc(100/EC ₂₅)	<1.0	<1.0	<1.0	<1.0

Pollution Prevention

The 2021 Annual Pollution Prevention and Minimization Report was submitted as required through the California Integrated Water Quality System (CIWQS) on February 28, 2021.

Pasture Evaluation

Stephanie Larson, Ph.D., of the University of California, Agriculture & Natural Resources

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Cooperative Extension visited the reclamation pastures in August and completed an evaluation. Pasture soil samples were collected and analyzed in July. The soil and pasture evaluations were submitted to the Water Board as part of the 2021 Triennial Irrigated Pasture Report.

Monitoring Wells

Sampling and data collection of the Dedicated Land Disposal (DLD) groundwater monitoring wells was conducted on May 12th by Liz Falejczyk and Martin Yungul, Veolia Water Operator. Sampling of the NSD groundwater monitoring wells was conducted on November 17th by Kurt Hawkyard. This data supports the required Biosolids EPA 503 Report which is due annually in February.

Recycled Water Reporting - April

The Annual Recycled Water Report was submitted as required by the new Water Quality Order 2016-0068-DDW. The volumetric reporting of Influent volumes through the final destination (San Pablo Bay, Reclamation, Recycled Water, BMK Coastal Conservancy) of the treated wastewater including the level of treatment were uploaded into the GeoTracker software program in April as required.

Discharge Monitoring Report-Quality Assurance (DMR-QA) Study 41 - December

The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. The results including those of NSD and the contract laboratories were submitted in December to the State of California coordinator as required. Examples of the certificates are provided below.

CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for

WP-317

Novato Sanitary District Laboratory

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 333 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Demand
pH
Total Residual Chlorine
WasteWat[®] Coliform
MicroB[®]
WasteWat[®] Coliform
MicroB[®] - SM 9221



Matthew Seebeck
Quality Officer

CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for

WP-319

Novato Sanitary District Laboratory

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 345 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Hardness
Minerals
Simple Nutrients
Turbidity



Matthew Seebeck
Quality Officer

Asset Management Program

Computerized Maintenance Management System (CMMS)

Key components of an Oracle Work Asset Management (OWAM or WAM) software program include:

- OWAM is a robust multi-layered asset management system which provides modules for purchasing, inventory control, asset life cycle cost, as well as the typical scheduling and maintenance tracking tools.

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- Preventive maintenance (PM) is a scheduled maintenance activity generally tied to equipment runtime or time periods (weekly / quarterly).
- Equipment inventory is crucial to all phases of Asset Management. Equipment at the NTP has been entered into the OWAM data base.
- Criticality Assessment is typically performed every 5 years. The last assessment was conducted in 2019.

2021 MAINTENANCE ACTIVITIES – OVER \$10,000.00 – DISTRICT FUNDED

2021	Equipment	Activity
	Digester Transfer Pump #1	Mechanical seal assembly replacement.
	Ignacio Pump Station Channel Grinder	Replaced the grinder assembly unit

2021 MAINTENANCE ACTIVITIES – VEOLIA FUNDED

January	Equipment	Activity
	Local Internet Connection	District provided access to an AT&T digital subscriber line.
	Digester #2 Mixing Pump Electrical Motor	Replaced the bearings.
	Wet Weather Diesel Engines	Replaced the batteries.
	Anaerobic Sludge Digester #2	Initiated the startup in mid-January 2021.
	Sludge Lagoons (and Reclamation Area)	
	Assisted District's Contractor Linscott Engineering	Replacement of underground anaerobically digested sludge feed and sludge lagoon decant lines and cleanouts.
February	Equipment	Activity
	Ultraviolet Channel #2	Corrected selector switch factory-wiring problem.
	Thickened Waste Activated Sludge Pump #2	Bearings and seals replaced.
	Secondary Clarifier #1	Removed the weeds from the weir covers.
	Screenings Compactor/ Auger	Corrected electrical issue.
	Sludge Lagoons (and Reclamation Area)	
	Line Maintenance	Contractor performed jetting and rodding service on the lagoon sludge feed and decant lines.
March	Equipment	Activity
	#3 Water Pump #1	Refurbishing completed and readied for installation.

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	Digester #1	Preparing for shutdown and cleaning.
	Digester #2	Recirculation line from the mixing pump to the heating loop completed and activated.
	Houston Services Industries Aeration Blower #3	Software verified and reconfigured by Calcon Systems.
	Standby Generators #2 and #3	Bay Power LLC started the process of evaluating the current performance. This process is to continue into April 2021.
April	Equipment	Activity
	Changed to Reclamation discharge.	Changed valving
	#3 Water Pump #1	Reinstalled and returned to service.
	Diesel Storage Tanks	The contents of all fuel tanks filtered, cleaned, and returned to the tanks.
	Standby Generators #2 and #3	Bay Power LLC started the process of evaluating the current performance in March 2021. Process completed.
	Digester #1	Continued to prepare for the shutdown and cleaning.
May	Equipment	Activity
	Ferric Pump #2	Replaced the pump assembly.
	Fence Line Mister Feed Water	Installation of reverse osmosis system.
June	Equipment	Activity
	Digester Sludge Pump #1	Completed the refurbishing process.
	Digester Transfer Pump #2	Replaced the shaft backstop unit.
July	Equipment	Activity
	Mixed Liquor Return Pump #3	Electrical contractor conducted troubleshooting for an Electrical issue. Unit returned to service.
	Digester Boiler	Annual service performed.
	Digester #1 Cleaning	Contractor Mobilization.
	Sludge Lagoons (and Reclamation Area)	
	Sludge transfer and decant lines	Rodded and cleaned twice in July 2021 by a contracted service.
August	Equipment	Activity
	Digester #1 Cleaning	Completed and equipment demobilized.
	Headwork's Recoating Project	Provided assistance to the contractor.
	High Voltage Electrical Maintenance	Provided operational assistance.
	Regional Water Board Dedicated Land Disposal (DLD)	Inspection
	Certified Unified Program Agencies (CUPA)	3 Year Inspection
	Sludge Lagoons (and Reclamation Area)	

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	Sludge transfer and decant lines	Rodded and cleaned twice in August 2021 by a contracted service.
September	Equipment	Activity
	Gravity Belt Thickener	Replaced the #1 belt wash water pump pressure ring.
	#3 Water Filtration System	Replaced the programmable logic controller.
	Sludge Lagoons (and Reclamation Area)	
	Sludge Line	Rodding and flushing of line on sludge lagoon roadway.
October	Equipment	Activity
	Gravity Belt Thickener # 1	Replaced the variable frequency drive.
	High Pressure Wash Water Pump #1	Replaced Onyx® annular pressure diaphragm.
	Sodium Hypochlorite Storage Tank #2	Reconfigured the suction line.
	Ferric Chloride Pump # 2	Troubleshooting performed and ordered new pump.
November	Equipment	Activity
	#3 Water Pumps	#2 reinstalled and #3 removed for refurbishing.
	Headworks Channel Recoat Project	Continued to assist the contractor until completion.
December	Equipment	Activity
	Influent Pumping Station and Aeration Basins Odor Bed	#2 Fan bearings replaced.
	Ultraviolet Disinfection Systems	Replaced the bearings in inlet gate #2 motorized gate operator.

Safety and Training 2021



The Environmental, Health, Safety & Transportation (EHS&T) department's team of professionals is dedicated to creating a safe, secure and compliant workplace through ongoing education, awareness and risk-control programs. We provide support to Veolia operations, as well as due diligence activities for future business opportunities, with our Corporate, Industrial, and Municipal & Commercial presence. We also seek to influence employee safety and well-being beyond the workplace through reinforcement of positive lifestyle choices and behaviors.

We focus our continual improvement efforts in alignment with Veolia's five (5) pillars:

- Management Involvement
- Employee Involvement and Development
- Communication and Dialogue
- H&S Risk Management
- H&S Performance Monitoring & Control

Veolia Water recognizes the importance of an effective health and safety program to the well-being of each employee, the general public, clients/facility owners, and to the overall success of our



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company. Veolia Water is committed to providing its employees a healthful and safe place of employment. To that end, Veolia Water provides the proper training, materials, and equipment so that work can be performed safely and in compliance with the Occupational Safety and Health Administration (OSHA) Regulations and other applicable standards. Veolia Water has had no incidents from June 1, 2010 to present at the NTP. 2021 was an incident free year. In recognition of this achievement - each employee received a cash incentive reward from Veolia Water for 10 years no loss time.

Safety Training Calendar

2021 Veolia MW EHS Training Calendar



Month	Safety Topic	Notes
1st Quarter		
January Online – JJK/VNAU	1) HazCom: What You Need to Know OSHA Annual 2) Housekeeping & Maintenance	HazCom/GHS for <u>all</u> employees. As part of training, brief employees on site SDS locations and types of HazMat labeling systems used onsite. <u>Laboratory Chemical Hygiene Plan</u> , where applicable - annual review, certification, and training.
February Online – JJK/VNAU	Lockout/Tagout: Put a Lock on Hazardous Energy OSHA Annual	For all plant/field employees. Review Site Program Changes - e.g., new equipment or changes to Energy Control Procedures Recommend reviewing Veolia's Global High Risk Management "Control of Hazardous Energy" Standard with employees.
March Online – JJK/VNAU	1) Fire Prevention & Response 2) Fire Extinguisher Use Both OSHA Annual	<u>All</u> employees must take 'Fire Prevention and Response.' Employees designated to use Fire Extinguishers (e.g., Hot Work Fire Watch) must also take 'Fire Extinguisher Use.' Optional to have training provided by an outside vendor for hands-on training in lieu of JJK Fire Extinguisher Use.
2nd Quarter		
April Online – JJK/VNAU	Confined Spaces & Permit Spaces OSHA Annual	For all plant/field employees. Also, review site PRCS program changes, affected spaces etc. Further, recommend reviewing Veolia's Global High Risk Management "Confined Spaces" Standard with employees.
May Online – JJK/VNAU	1) Safety Showers and Eyewashes 2) Hazardous Substances: Incidental Spill Response	For all plant/field employees.
June Online – JJK/VNAU	1) Heat Stress 2) Hand and Power Tool Safety	Heat Stress for <u>all</u> employees. Hand and Power Tool Safety for plant/field employees.
3rd Quarter		
July Online – JJK/VNAU	1) Compressed Gas Cylinders 2) Hot Work: Safety Operations Training	Hot work training for employees who conduct welding, cutting, grinding or other Hot Work operations <u>and/or</u> for employees who act as Fire Watch. Recommend reviewing Veolia's Global High Risk Management "Hot Work" Standard with employees.
August Online – JJK/VNAU	Personal Protective Equipment: Employee Essentials Includes OSHA Annual Hearing Protection PPE for Hearing Conservation Program sites	Applicable to all plant/field staff, and also admin staff who enter plant work areas. NOTE: Sites under a Hearing Conservation Program must also conduct annual audiometric testing for affected employees only.
Sept. Online – JJK/VNAU	1) Respiratory Protection OSHA Annual 2) Asbestos Awareness	Respiratory Protection training only for affected workers who must don respirators as part of their work requirements. Asbestos Awareness only for sites that have Asbestos Containing Materials (ACM) or Presumed ACM.
4th Quarter		
October Online – JJK/VNAU	1) Material Handling Safety 2) Cranes Safety for General Industry	In addition to the course, recommend reviewing Veolia's Global High Risk Management "Lifting Operations" Standard with plant employees.
November Online – JJK/VNAU	1) Cold Stress 2) Winter Safety	For <u>all</u> employees.
December Online – JJK/VNAU	1) Bloodborne Pathogens: Safety in the Workplace OSHA Annual 2) Office Safety	Bloodborne training for <u>all</u> employees. Not required if employees receive BBP training as part of first aid training. Office Safety only applicable to office workers.

Notes: Some training topics must be complemented with site-specific content, refer to the Notes column. The Notes column also provides guidance on which employees must take a particular training and alternative options. "OSHA Annual" denotes annual OSHA required training.



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Veolia International Safety Week Activities

September 20th was the start of International Health & Safety Week (IHSW) at Veolia. This is an annual event that helps us to reinforce our strong commitment to worker safety. It also, helps to further direct our attention to the essential practices and protocols that we must follow every day. The focus this year was on slip, trip and fall hazards.

Here are this year's activities:

- **Safety Week Poster Mounting.** The poster was posted in the Operations Room.
- **Leadership Message.** On Monday September 20th, a letter from Keith Oldewurtel, Veolia North America Chief Operating Officer was distributed to the facilities regarding the focus of Safety Week.
- **Injury Review.** A review of injuries in the Municipal Water group thus far in 2021 was conducted with the employees.
- **Always Safe Rules Poster Signing.** The Veolia's Always Safe Rules poster was discussed and signed by the employees as a commitment to safety.
- **New Safety Training on High Risk Management Standards (HRMS).** Two on-line training programs were completed by the employees.
- **Safety Contest.** This contest involved the submission of Before/After photos or videos of slip/trip/fall hazards identified at facility and how you corrected them.
- **Photos/Records.** Photos were requested of the signing of the Always Safe Rules poster.

Environmental & Compliance

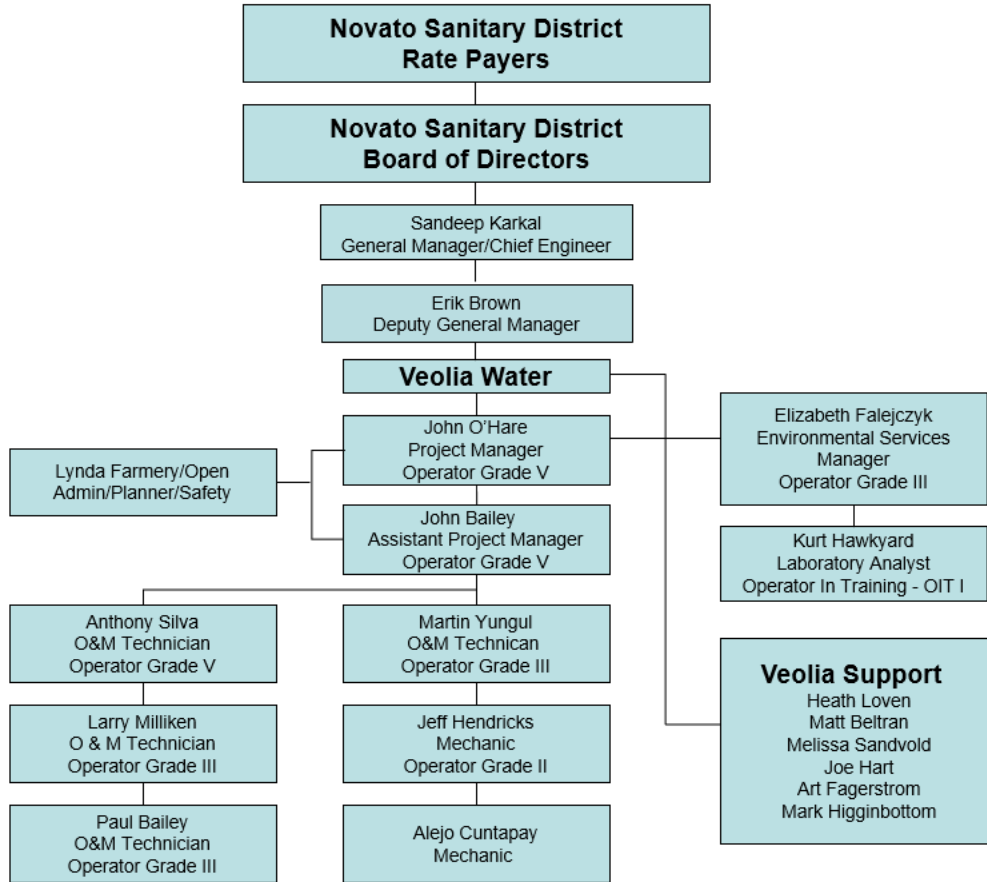
The Environmental & Compliance Team provides technical support and guidance on environmental matters and compliance issues for improving regulatory performance at the project and site level. The team's objectives are; reduce/mitigate risks, improve environmental performance, and enhance employee awareness of environmental issues. These include:

- Establishing policies and procedures
- Monitoring and tracking environmental issues
- Measuring and controlling environmental impacts
- Conducting assessments and reviewing performance
- Identifying environmental interactions and risks
- Knowing the legal requirements
- Addressing compliance issues and system non-conformances
- Setting targets for environmental performance improvement

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Staffing and Organization

Organization Chart – Novato Sanitary District/Veolia Water



Certification Status (Details)

John P. O'Hare – Project Manger

Grade V California Wastewater Treatment Plant Operator #10669, June 30, 2024

Grade IV, Wastewater Treatment Plant Operator, Association of Boards of Certification # S40011R, November 21, 2023

Grade VII, Wastewater Treatment Plant Operator, Massachusetts #977, December 31, 2023

Grade IV, Collection Systems, Massachusetts #882-C (1986)

Grade I, Environmental Compliance Inspection, CWEA #04074112, July 31, 2022

Grade I, Laboratory Analyst, California, CWEA #05013114, March 31, 2022

Grade I, Plant Maintenance Technologist, CWEA #050751016, July 31, 2022

Grade I, Water Distribution Operator, California Department of Public Health #34234 April 1, 2023

John Bailey – Assistant Project Manager

Grade V California Wastewater Treatment Plant Operator #4123, December 31, 2024

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Anthony M. Silva – Operator III

Grade V California Wastewater Treatment Plant Operator #10973, December 31, 2023

Grade II Collection System Maintenance Technician, CWEA #354, January 31, 2022

Larry Milliken – Operator III

Grade IV California Wastewater Treatment Plant Operator #41483, August 12, 2023

Paul Bailey – Operator II

Grade III California Wastewater Treatment Plant Operator #28322, December 24, 2022

Martin Yungul – Operator I

Grade III California Wastewater Treatment Plant Operator #43219, July 17, 2023

Jeffrey D. Hendricks – Operator II

Grade II California Wastewater Treatment Plant Operator #28377, December 31, 2023

Grade I Plant Maintenance Technologist #070750011, July 31, 2022

Grade I Collection System Maintenance #801210049, January 31, 2022

Elizabeth G. Falejczyk – Environmental Services Supervisor

Operator III California Wastewater Treatment Plant Operator #6334, August 17, 2024

Kurt Hawkyard – Laboratory Technician/Pretreatment Programs Inspector

Operator In Training OIT-I Novato WWTP, August 15, 2022

Laboratory Analyst Grade I #130931002, June 30, 2022

Industrial Waste Grade II #1308211129, June 30, 2022

Environmental Compliance Inspector, Grade II #130821437, March 31, 2022

Summary of Shifts - 2021

The facility continued to be manned 10 hours per day 7 days per week with two alternating shifts until July 6th when the staff returned to the previous shift Monday-Friday with an on call operator on the weekend. This schedule was first developed in March 2020 due to the concern regarding the pandemic and continued operations of the facility.

Additional Veolia Support

- Melissa Sandvold – Vice President of Operations
- Matt Belltran – Director of Health and Safety, Veolia Municipal and Commercial Manager
- Heath Loven– Technical Director / Technical Support, West Region
- Art Fagerström, PE, BCEE, Technical Manager, Corporate Technical Support
- Joe Hart – Regional Asset Manager
- Dave Coffman – Asset Manager, West Region
- Matt Nausin – Maintenance Supervisor, Veolia Richmond Project

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Contract Adjustments

The Amended and Restated Novato Operations and Maintenance Service Agreement was renegotiated and adopted May 10, 2021 based on a fixed fee price contract. Included in the base contract fee are management, operation, and maintenance. Exceptions to the fixed price include:

Schedule 13 – Pass through Costs

Section 5.6 – Performance Bond

Schedule 8 – Cost Adjustment and Escalation Indices

Schedule 8 – Flow and Loading Adjustments

Schedule 5 – Operation of Recycled Water Facility

Equipment Repair in excess of \$10,000

Fiscal Year 2020/21 service fee adjustment was 3.2%.

Title 22 – Recycled Water Production Report for 2021

All water produced by the Novato Sanitary District (NSD) Recycled Water Facility was distributed by the North Marin Water District (NMWD).

In 2021, compliance testing for coliform was performed at the NMWD laboratory, NMWD is a State of California Environmental Laboratory Accreditation Program certified facility.

Recycled Water Table 6.0 below provides a summary of the quantity and quality of recycled water produced by NSD.

Table 6.0 Recycled Water Plant

2021 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Novato Sanitary District 2021 Recycled Water Production Data							
Month	Water Delivered (Million Gal)	Effluent Turbidity (NTU)		Effluent CT Value (mg min/L)		Effluent Coliform (mpn/100 ml)	
Criteria	1.7 mgd	<2		>450		<2.2	
		Max	Ave	Min	Ave	Max	7 Med
January	N/A	N/A	N/A	N/A	N/A	N/A	N/A
February	N/A	N/A	N/A	N/A	N/A	N/A	N/A
March	10.591	1.3	0.8	>450	>450	<1	<1
April	15.559	1.7	0.7	>450	>450	<1	<1
May	22.222	1.4	0.8	>450	>450	<1	<1
June	36.155	1.5	1.0	>450	>450	<1	<1
July	37.191	1.7	0.9	>450	>450	<1	<1
August	33.196	1.1	0.6	>450	>450	<1	<1
September	32.151	1.3	0.7	>450	>450	<1	<1
October	14.647	0.8	0.4	>450	>450	4	<1
November	N/A	N/A	N/A	N/A	N/A	N/A	N/A
December	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL	201.712	+ Deer Island 6.009 MG = 207.721					

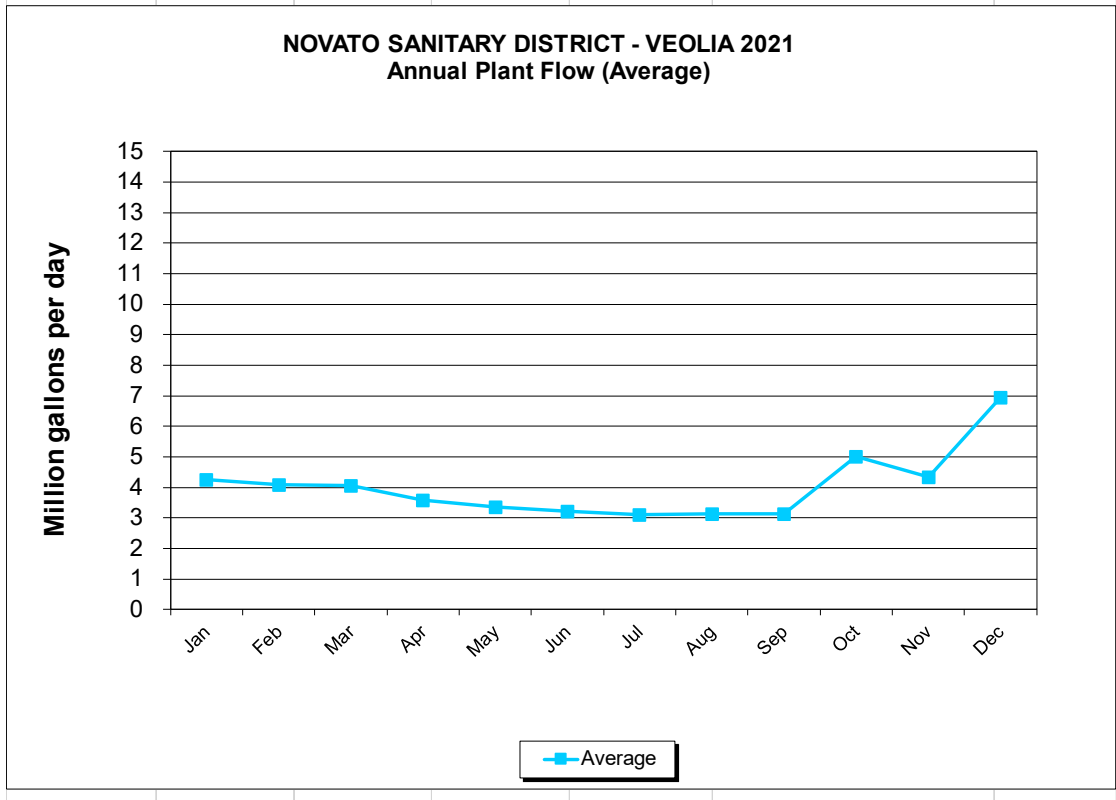
2021 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Attachments

Annual Waste Characteristics & Loading Summary

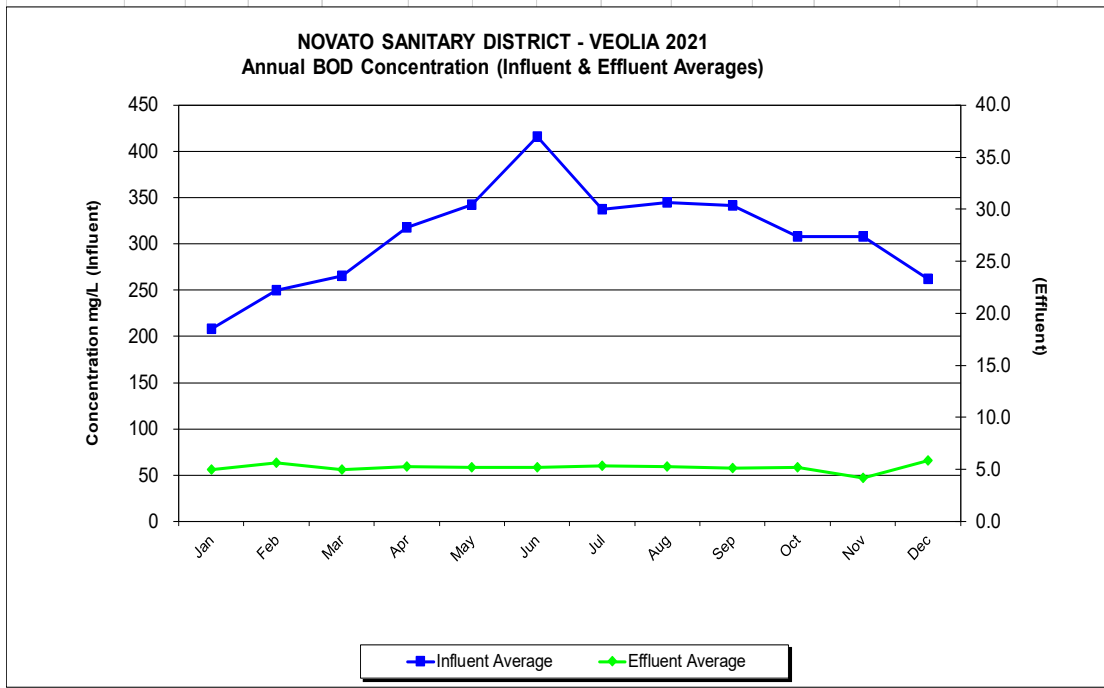
2021 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA PLANT FLOW							
Annual Waste Characteristics & Loading Summary							
(IN GALLONS TIMES 1,000,000)							
YEAR: 2021						PRINT DATE:	31-Jan-2022
	Total Flow	High	Low	Average			
January	132.30	8.46	3.46	4.27	Peak Wet Weather Flow (MAX Day)	26.66	
February	114.48	4.85	3.70	4.09	Max Peak Wet Weather (1-3 Hour)	20.00	
March	125.53	4.91	3.67	4.05	24-Oct-21		
April	107.43	4.13	3.28	3.58			
May	103.80	3.59	3.10	3.35			
June	96.80	3.42	2.95	3.23			
July	96.61	3.45	2.88	3.12	Three month dry weather averages:	3.12	
August	97.03	3.44	2.78	3.13		3.13	
September	94.19	3.42	2.91	3.14		3.14	
October	155.77	26.66	3.06	5.02			
November	129.99	6.85	3.53	4.33			
December	215.23	14.99	3.42	6.94			
ANNUAL TOTAL	1469.16						
ANNUAL MAX.	215.23	26.66			Max.	26.66	
ANNUAL MIN.	94.19		2.78		Min.	3.12	
ANNUAL AVG.	122.43			4.02	Avg. Dry Weather Flow	3.13	



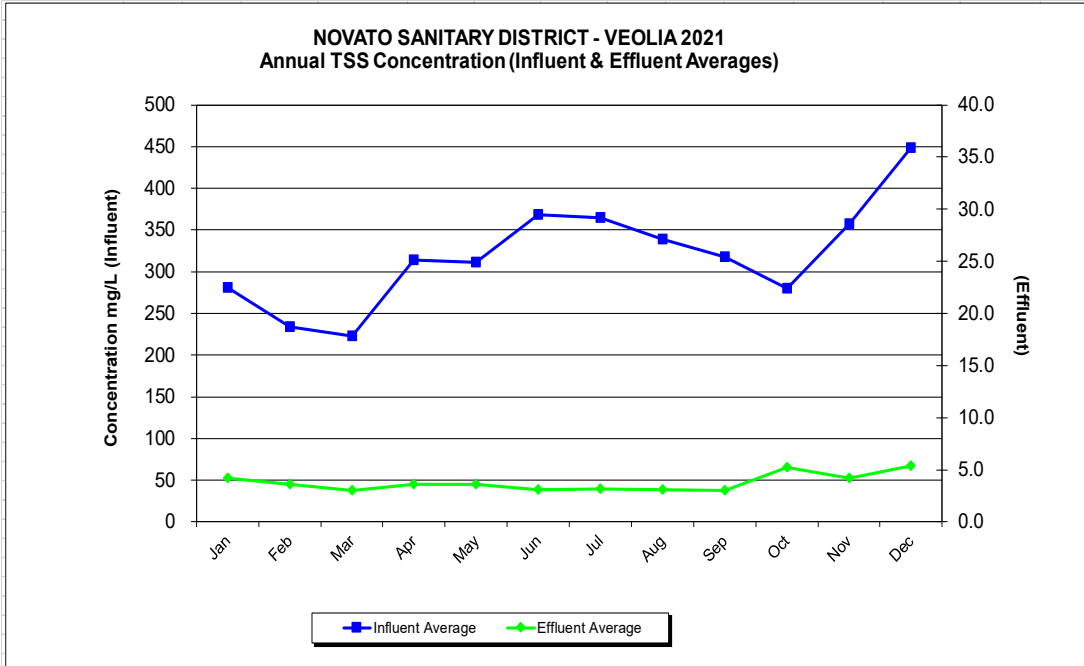
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NOVATO SANITARY DISTRICT - VEOLIA															
BOD (Influent & Effluent)															
Annual Waste Characteristics & Loading Summary															
YEAR: 2021												PRINT DATE: 28-Jan-2022			
	INFLUENT							EFFLUENT							
	Concentration (mg/L)			No. of Samples	Loading (lb/day)			Concentration (mg/L)			No. of Samples	Loading (lb/day)			
	High	Low	Average		High	Low	Average	High	Low	Average		High	Low	Average	
January	271	149	208	4	8798	6593	7504	5.0	5.0	5.0	5	295	147	187	
February	288	218	250	4	8935	7097	8191	8.0	5.0	5.6	5	534	209	274	
March	290	240	265	4	8997	8066	8572	5.0	5.0	5.0	5	174	153	165	
April	350	318	318	5	10625	8586	9334	6.0	5.3	5.3	12	182	141	153	
May	370	307	342	4	10955	8782	9749	6.0	5.0	5.2	12	165	141	149	
June	600	300	416	5	17114	7931	11268	8.0	5.0	5.2	15	220	125	140	
July	380	300	338	4	9920	8327	9069	9.0	5.0	5.3	12	234	128	141	
August	400	320	345	4	10342	7659	9056	8.0	5.0	5.2	13	222	120	138	
September	380	300	342	5	10839	8196	9144	6.0	5.0	5.1	10	160	123	134	
October	380	222	308	4	10424	8088	9465	6.0	5.0	5.2	5	282	133	166	
November	390	260	308	4	15425	9259	11761	5.0	3.0	4.2	5	286	108	165	
December	400	180	262	5	16798	8807	13565	8.0	5.0	5.8	6	747	146	346	
ANNUAL HIGH	600	320	416	5	17114	9259	13565	9.0	5.3	5.8	15	747	209	346	
ANNUAL LOW	271	149	208	4	8798	6593	7504	5.0	3.0	4.2	5	160	108	134	
ANNUAL AVG.	375	260	308	4	11598	8116	9723	6.7	4.9	5.2	9	292	140	180	



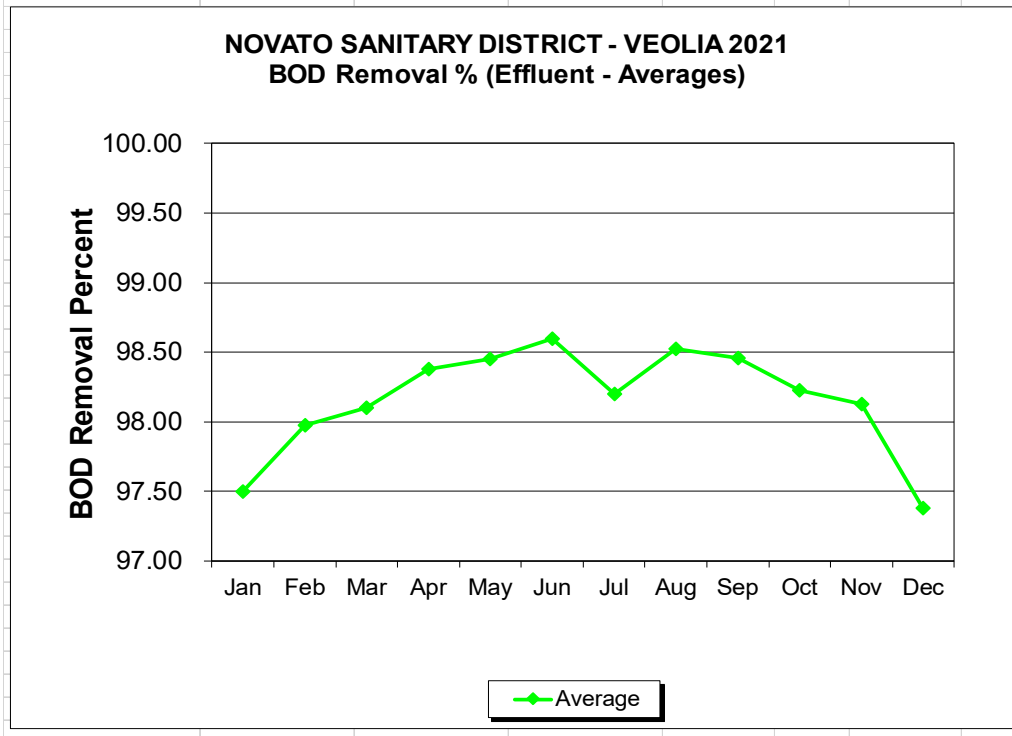
2021 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA SUSPENDED SOLIDS (Influent & Effluent)														
Annual Waste Characteristics & Loading Summary														
YEAR: 2021										PRINT DATE: 3-Feb-2022				
	INFLUENT							EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (lb/day)			Concentration (mg/L)			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average	High	Low	Average		High	Low	Average
January	306	250	281	4	15766	8465	10609	7.0	3.0	4.2	4	413	88	173
February	260	187	234	4	8893	5770	7714	4.0	3.0	3.6	4	146	93	121
March	255	178	223	4	7911	5983	7188	4.0	3.0	3.0	4	111	86	99
April	431	248	314	5	13084	7343	9228	3.0	3.0	3.6	5	182	84	106
May	338	284	311	4	10007	7793	8874	6.0	2.0	3.6	4	165	53	99
June	530	296	368	5	15117	7826	9971	5.0	1.0	3.1	5	143	27	83
July	400	340	365	4	10442	8847	9819	5.0	2.0	3.2	4	134	51	84
August	365	310	339	4	9749	7899	8891	5.0	2.0	3.1	4	138	48	82
September	340	280	318	5	9127	7683	8489	5.0	1.0	3.0	5	133	26	79
October	360	180	280	4	9728	7544	8493	6.0	5.0	5.2	4	282	133	166
November	430	290	358	4	19424	10327	13818	5.0	3.0	4.2	4	286	108	165
December	868	276	448	5	41996	8161	24804	11.0	3.0	5.3	5	1027	88	354
ANNUAL HIGH	868	340	448	5	41996	10327	24804	11.0	5.0	5.3	5	1027	133	354
ANNUAL LOW	255	178	223	4	7911	5770	7188	3.0	1.0	3.0	4	111	26	79
ANNUAL AVG.	407	260	320	4	14270	7803	10658	5.5	2.6	3.8	4	263	74	134



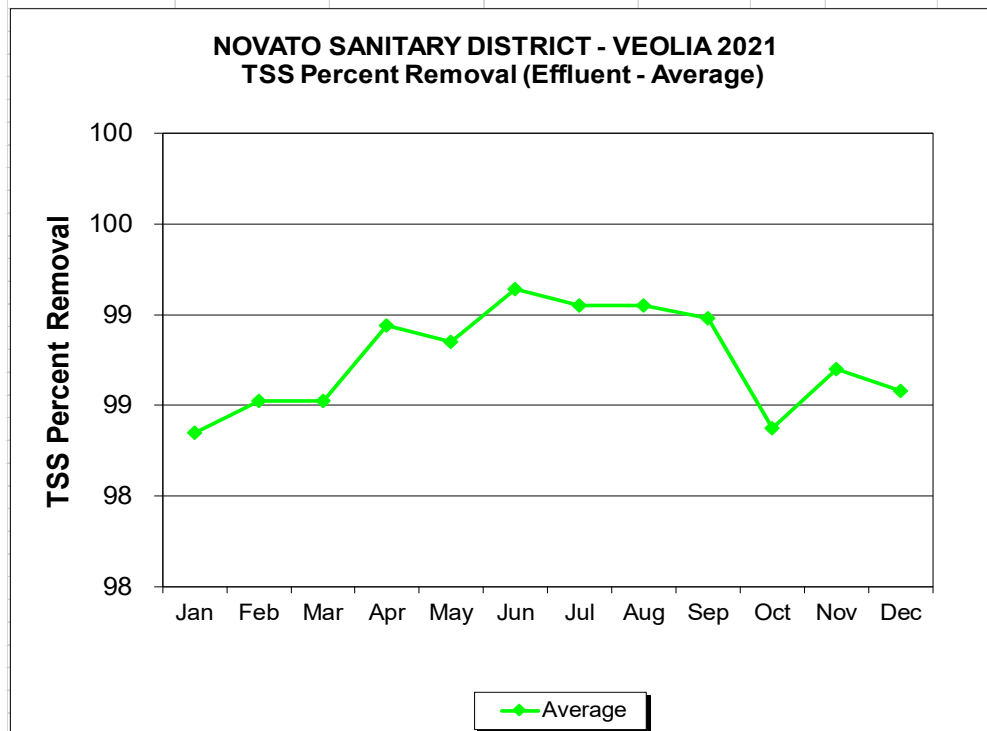
2021 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA							
BOD Removal Percent							
Annual Waste Characteristics & Loading Summary							
YEAR: 2021				PRINT DATE: 28-Jan-2022			
	High	Low	Average	Number of Samples			
January	98.2	96.6	97.5	4			
February	98.3	97.7	98.0	4			
March	98.3	97.9	98.1	4			
April	98.5	98.3	98.4	5			
May	98.6	98.2	98.5	4			
June	99.2	98.3	98.6	5			
July	98.7	97.2	98.2	4			
August	98.8	98.4	98.5	4			
September	98.7	98.2	98.5	5			
October	98.7	97.3	98.2	4			
November	98.7	97.0	98.1	4			
December	98.8	95.6	97.4	5			
				Number of Samples Total =		52	
ANNUAL MAX.	99.20	98.40	98.60	1st Qtr.	12	2nd Qtr.	14
ANNUAL MIN.	98.20	95.60	97.38	3rd Qtr.	13	4th Qtr.	13
ANNUAL AVG.	98.63	97.56	98.16				



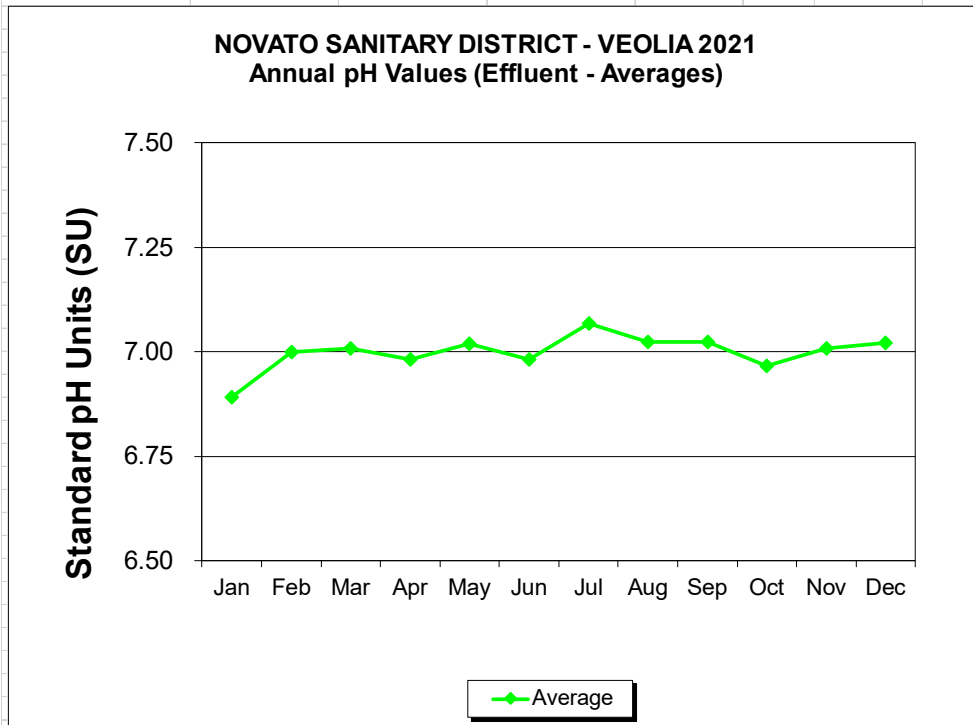
2021 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA						
TSS Percent Removal						
Annual Waste Characteristics & Loading Summary						
YEAR: 2021			PRINT DATE: 28-Jan-2022			
	High	Low	Average	Number of Samples		
January	99.0	97.4	98.4	4.0		
February	98.8	98.4	98.5	4.0		
March	98.8	98.3	98.5	4.0		
April	99.3	98.5	98.9	5.0		
May	99.4	97.9	98.9	4.0		
June	99.4	99.0	99.1	5.0		
July	99.3	98.7	99.1	4.0		
August	99.4	98.9	99.1	4.0		
September	99.4	98.5	99.0	5.0		
October	99.4	95.6	98.4	4.0		
November	99.1	98.3	98.7	4.0		
December	99.4	97.6	98.6	5.0		
				Number of Samples Total =		52
ANNUAL MAX.	99.4	99.0	99.1	1st Qtr.	12	2nd Qtr. 14
ANNUAL MIN.	98.8	95.6	98.4	3rd Qtr.	13	4th Qtr. 13
ANNUAL AVG.	99.2	98.1	98.8			



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NOVATO SANITARY DISTRICT - VEOLIA							
pH (Effluent)							
Annual Waste Characteristics & Loading Summary							
YEAR: 2021			PRINT DATE: 3-Feb-2022				
	High	Low	Average	Number of Samples			
January	7.0	6.7	6.9	21			
February	7.1	6.9	7.0	20			
March	7.1	7.0	7.0	23			
April	7.0	6.9	7.0	22			
May	7.1	6.9	7.0	20			
June	7.1	6.9	7.0	23			
July	7.2	6.9	7.1	22			
August	7.1	6.9	7.0	22			
September	7.1	6.9	7.0	22			
October	7.1	6.9	7.0	21			
November	7.2	6.9	7.0	22			
December	7.3	6.9	7.0	23			
				Number of Samples Total = 261			
ANNUAL MAX.	7.30	7.00	7.07	1st Qtr.	64	2nd Qtr.	65
ANNUAL MIN.	7.00	6.70	6.89	3rd Qtr.	66	4th Qtr.	66
ANNUAL AVG.	7.12	6.89	7.00				



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NOVATO SANITARY DISTRICT - VEOLIA							
TEMPERATURE (Effluent)							
Annual Waste Characteristics & Loading Summary							
YEAR: 2021				PRINT DATE: 3-Feb-2022			
	High	Low	Average	Number of Samples			
January	20.3	16.7	18.8	21.0			
February	19.7	17.9	18.7	20.0			
March	20.1	17.3	18.9	23.0			
April	21.3	18.9	20.0	22.0			
May	23.1	20.9	21.8	20.0			
June	24.9	21.8	23.3	23.0			
July	25.3	23.0	24.2	22.0			
August	25.1	23.8	24.5	22.0			
September	25.2	23.5	24.4	22.0			
October	24.8	19.8	22.7	21.0			
November	22.6	20.1	21.5	22.0			
December	21.3	16.3	18.4	23.0			
				Number of Samples Total = 261			
ANNUAL MAX.	25.3	23.8	24.5				
ANNUAL MIN.	19.7	16.3	18.4	1st Qtr.	64	2nd Qtr.	65
ANNUAL AVG.	22.8	20.0	21.4	3rd Qtr.	66	4th Qtr.	66

**NOVATO SANITARY DISTRICT - VEOLIA 2021
Annual Temperature (Effluent - Average)**

Month	Average Temperature (Degrees C)
Jan	18.8
Feb	18.7
Mar	18.9
Apr	20.0
May	21.8
Jun	23.3
Jul	24.2
Aug	24.5
Sep	24.4
Oct	22.7
Nov	21.5
Dec	18.4

◆ Average

2021 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA OIL & GREASE (Effluent)							
Annual Waste Characteristics & Loading Summary							
YEAR: 2021				PRINT DATE:	3-Feb-2022		
* = Reclamation							
EFFLUENT							
	Concentration (mg/L)			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average
January	1.5	1.5	1.5	1	1.5	1.5	1.5
February	1.5	1.5	1.5	1	1.5	1.5	1.5
March	1.4	1.4	1.4	1	1.4	1.4	1.4
April	1.4	1.4	1.4	1	1.4	1.4	1.4
May							
June							
July							
August							
September							
October							
November	1.4	1.4	1.4	1	1.4	1.4	1.4
December	1.4	1.4	1.4	1	1.4	1.4	1.4
ANNUAL HIGH	1.5	1.5	1.5		1.5	1.5	1.5
ANNUAL LOW	1.4	1.4	1.4		1.4	1.4	1.4
ANNUAL AVG.	1.4	1.4	1.4		1.4	1.4	1.4

