2016 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Prepared by:

Veolia Water Operating Services
March 2017

2016 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO WASTEWATER TREATMENT FACILITY
NOVATO SANITARY DISTRICT

Veolia Water West Operating Services, Inc.
500 Davidson Street
Novato, CA 94947

TABLE OF CONTENTS

VEOLIA WATER

OVERVIEW

The top priorities for 2016 were to meet the goals of zero lost time incidents or OSHA recordable incidents and no treatment plant effluent violations. This is a year in and year out objective plainly stated and firmly established throughout Veolia Water. A term we apply to this end is "Zero Harm". We are very happy and proud to report that both goals were met. 2016 represents our fifth consecutive year of zero effluent violations and sixth year of zero recordable incidents. We celebrate that success with and offer congratulations to the Novato Sanitary District on its vision and commitment to water quality.

Key areas of focus throughout the year include:

- Safety Training
- Regulatory Compliance
- Third Party Facility Reviews – Safety, Operations, and Maintenance Audits
- Reporting (internal and external)
- Records Keeping and Data Base Management
- No Safety Incidents (recordable, lost time, or medical)
- Participation in Company *Near Miss* Reporting Program (focused on prevention)
- Employee Education and Certification / Professional Advancement
- Community Outreach and Participation
- Effective Asset Management by utilizing tools such as the Oracle Work Asset Management System (OWAM) for Maintenance Tracking, Scheduling, Scheduling, Inventory, and Purchasing.
- Operation, Management, & Oversight of Laboratory and Pretreatment Program.
- Assist in the successful negotiation of the new Discharge (NPDES) Permit.

PROCESS DESCRIPTION & LOADING SUMMARY

Wastewater is collected throughout the Novato Sanitary District service area and conveyed by gravity as well as mechanical means (pump stations) to the Davidson Street Treatment Plant.

Preliminary Treatment - Influent Pump Station and Headworks

When the wastewater arrives at the Treatment Plant 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.

Top Left – Influent Pump Station
Top Right – Parkson Aqua Guard Screen ™
Bottom Left – Grit Conveyance and Pumping
Bottom Right – Screenings Washer / Compactor, Compacted Screenings Being Discharged to Dumpster

Flow and Loading Measurement

Flow at the Novato Wastewater Treatment Plant is measured using a Parshall Flume and Hydro Ranger ™ ultra sonic level meter in combination. This pairing is considered very reliable and provides a high degree of accuracy.

Composite samples for biochemical oxygen demand (BOD) and total suspended solids (TSS) are collected downstream of screening and grit removal. Composite samples are flow proportioned throughout the sampling period (normally 24 hours). Flow proportioning provides the most representative sample.

Above Left – Hydro Ranger level meter, hourglass shaped plating over Parshall Flume
Above Right – Hach Model 3540 SDR Composite Sampler

Rated Capacities

DESIGN CRITERIA			
Condition	Value	Unit	Notes
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	

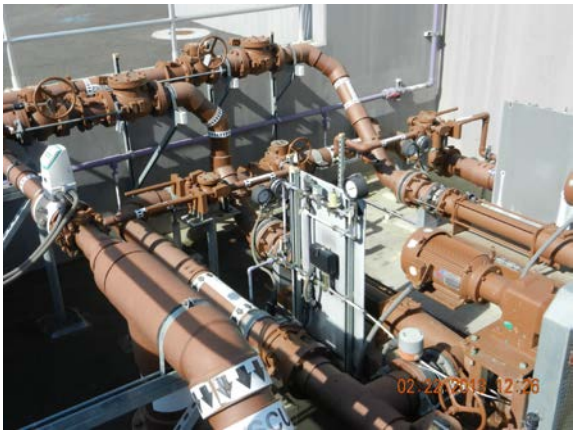
Actual 2016

2016 FLOWS AND LOADS SUMMARY			
Condition	Value	Unit	Notes
Average Dry Weather Flow	3.46	MGD	Jul / Aug / Sep
Peak Wet Weather Flow (Max Day)	16.51	MGD	12/15/16
Max Peak Wet Weather (1-3 Hour)	~24.00	MGD	12/15/16 1630–1730 hours
Average BOD Loading	10,474	Lbs/D	
Average TSS Loading	11,353	Lbs/D	

Significant Peak Wet Weather Events occurred in December.

Primary Treatment – Primary Clarifiers

Primary clarifiers typically remove 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.



Above Left – Primary Clarifier #2, Superstructure supports the cover.
Above Right – Sludge and Scum Pumping

PRIMARY CLARIFIERS			
	Value	Unit	Notes
Number	2		
Diameter	100	Ft	Each
Sidewall Depth	12	Ft	Each
Capacity (Volume)	880,770	Gallons	Each
BOD Removal	26	%	2016 Results
TSS Removal	73	%	2016 Results

Novato's primary clarifiers are covered to contain foul air associated with raw sewage. The foul air is removed and discharged to odor scrubbing biofilters by large fans. Like much of the wastewater process the biofilters are living processes. Various life forms including fungi, worms, and microbial populations convert odorous compounds to other gases, primarily carbon dioxide.

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. The Novato facility was designed with both

flexibility and reliability in mind. 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.

Left – Aeration Basin
Right – Secondary Clarifier

Solids, primarily biological cell mass, are produced during the process of removing dissolved pollutants (BOD) in the aeration basins. A combination of wastewater and bio-mass, known as mixed liquor, typically contains between 1,500 mg/L and 2,500 mg/L (0.15% to 0.25%) of solids. The aeration basins are well mixed and as a result, a continuous stream of solids leaves the aeration basins. Solids are captured in the secondary clarifiers and the majority is returned to the head end of the aeration basins to maintain the proper biomass concentration for treatment. Excess solids are sent to the gravity belt thickener (GBT) where they are concentrated to 4% - 6% solids content and then pumped to a digester for additional treatment. Effluent from the secondary clarifiers is then ready for disinfection.

SECONDARY CLARIFIERS			
	Value	Unit	Notes
Number	2		
Diameter	125	Ft	Each
Sidewall Depth	16	Ft	Each
Capacity (Volume)	1.468	MG	Each

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. UV light (unlike other methods of disinfection) uses no chemicals, produces no harmful byproducts (trihalomethanes for example), and leaves no toxic residual.

Left – UV Rack Removed for Cleaning
Below – Preparing UV Rack for Removal

Effluent Disposal – Bay Discharge / Reclamation / Storage

Discharge to San Pablo Bay (Bay Discharge), is prohibited beginning June 1st through August 31st. Bay Discharge is permitted (with stringent effluent limits) in the months of May, September and October. Throughout the non-discharge season effluent is either stored for future use, specifically pasture irrigation, or Recycled for a higher use such as irrigation of parks, landscaping, and golf courses. Recycled water receives added treatment in order to comply with stringent Title 22 regulations.

The Performance Summary provides a breakdown of discharge quantities.

PERFORMANCE AND COMPLIANCE SUMMARY

Treatment Plant Performance Summary

The following summary provides an overview of plant performance and activities for the period January 1, 2016 through December 31, 2016.

Total Volume of Water Processed	1,726	Million Gallons
Total Volume of Water Reclaimed	482	Million Gallons
Total Volume of Water Discharged	1,268	Million Gallons
Recycled – Title 22 (included in Water Reclaimed)	89.582	Million Gallons
Average Daily Dry Weather Flow	3.46	MGD
Maximum Daily Flow	16.51	MGD
Pounds of BOD Treated	3,833,484	Lbs
Pounds of BOD Removed	3,750,542	Lbs
Percent BOD Removal Efficiency	98	%
Pounds of TSS Treated	4,155,198	Lbs
Pounds of TSS Removed	4,094,276	Lbs
Percent of TSS Removal Efficiency	98	%
Pounds of Bio-solids Treated	3,354,514	Lbs
Cubic Feet of Biogas Produced	25,906,382	Cu Ft
Total Number of Violations / Excursions	0	
NPDES (Bay Discharge)	0	
WDR (Reclamation)	0	

Maintenance

Total Number of Work Orders Issued	2,969
Total Number of Work Orders Closed	2,418
Percentage Preventive Maintenance	87%
Average Completion	2.0 Days

Consumables / Energy

*Electricity – kWh / Year	3,476,978
Electricity – kWh / MG	2,014
*Natural Gas – Therms / Year	45,970
Natural Gas – Therms / MG	27
Diesel Fuel – Gallons / Year	2,369
Diesel Fuel – Gallons / MGD	1.37

*Excludes Administration Building, Recycled Water Plant, and Flare Pilot.

Treatment Plant Compliance Summary

No treatment plant violations were experienced in 2016. The compliance summary table (below) is broken down by constituent and discharge season.

Waste Discharge Limits / Reclamation				
Parameter	Limit	Units	# Analysis	Violations
BOD Monthly Average	40	mg/L	5	0
Total Coliform – 5 Sample Median	240	mpn/100 ml	66	0
Total Coliform - Maximum	10,000	mpn/100 ml	66	0
pH – High	9.0	s.u.	108	0
pH – Low	6.0	s.u.	108	0

NPDES Wet Season Limits - November – April				
Parameter	Limit	Units	# Analysis	Violations
BOD Weekly	45	mg/L	27	0
BOD Monthly	30	mg/L	6	0
TSS Weekly	45	mg/L	27	0
TSS Monthly	30	mg/L	6	0
BOD Removal (minimum)	85	%	6	0
TSS Removal (minimum)	85	%	6	0
Enterococcus - 30 Day Geo Mean	35	Col/100 ml	6	0
Fecal Coliform - Median	140	mpn/100 ml	3	0
Fecal Coliform - 90th Percentile	430	mpn/100 ml	3	0
Ammonia – Daily Maximum	21	mg/L	14	0
Ammonia - Monthly Average	6	mg/L	6	0
pH – High	8.5	s.u.	130	0
pH – Low	6.5	s.u.	130	0
Oil & Grease - Daily Maximum	15	mg/L	6	0
Oil & Grease - Monthly Average	5	mg/L	6	0

Compliance Summary (Continued)

NPDES Dry Season Limits - May, September, & October				
Parameter	Limit	Units	# Analysis	Violations
BOD Weekly	30	mg/L	4	0
BOD Monthly	15	mg/L	2	0
TSS Weekly	20	mg/L	4	0
TSS Monthly	10	mg/L	2	0
BOD Removal (minimum)	85	%	2	0
TSS Removal (minimum)	85	%	2	0
Enterococcus - 30 Day Geo Mean	35	Col/100 ml	2	0
Fecal Coliform - Median	140	mpn/100 ml	0	0
Fecal Coliform - 90th Percentile	430	mpn/100 ml	0	0
Ammonia – Daily Maximum	21	mg/L	2	0
Ammonia - Monthly Average	6	mg/L	2	0
pH – High	8.5	s.u.	22	0
pH – Low	6.5	s.u.	22	0
Oil & Grease - Daily Maximum	15	mg/L	2	0
Oil & Grease - Monthly Average	5	mg/L	2	0

Sample Locations

ENVIRONMENTAL SERVICES REPORT

O & M Report 2016

Wildlife Pond and Reclamation Activities

Samples and weekly/monthly observations at the Wildlife pond were taken according to the WDR (Order No. 92-065) throughout the year. Monthly irrigation wet well samples were monitored during the irrigation season.

Laboratory

Annual Performance testing for all certified methods occurred with 100% success. We successfully renewed the ELAP certification for the NSD Laboratory, adding 2 methods under Field of Testing (FoT) 107 Microbiology of Wastewater and 3 methods under FoT 126 Microbiology of Recreational Water.

Public Education

- Staff assisted in Wetlands Days for the Marin County public education group staffing two stations, “Bird Bingo” and “The Toilet is not a Trashcan”.
- Hosting Algebra Academy in the laboratory we worked with operations to give a visual sense of math and dilutions using bright colored dye in graduating volumetric flasks and then used different dilutions to demonstrate optimization of chemicals and relating it to annual cost savings for chemicals using algebra.
- Staffed North Bay Science Discovery Day with other Veolia Staff showing what “dispersibles” are (toilet paper vs. tissues and paper towels). Cleaned and disinfected clogs from pumps, looking like mopheads, were on display to demonstrate the problem. Clearly visible in the clogs are dental floss, wipes and strings. This is a hands on educational event and very popular.

Training

Kurt Hawkyard earned 15.6 contact hours for various meetings and trainings.
Liz Falejczyk earned 16.0 contact hours for various meetings and trainings.

BACWA

Liz attended many of the BACWA Bay Area Pollution Prevention Group, Permits and Laboratory Committee meetings throughout the year.

Pretreatment

Bob Adamson continued supporting the NSD pretreatment program through January and the Pretreatment Compliance Inspection (PCI) 1/12/2016. The inspection report was expected at the end of February 2017 but no report has been received.

Permits Renewed

- Dye Guy
- Marin Biologic Laboratories
- BioSearch Technologies

- BioMarin (95 Digital Drive)
- ExxonMobil (long-term Temporary Discharge Permit)
- 3 Septic Haulers

New Permits

- 4 temporary groundwater discharge permit

Inspections

- All 5 Significant Industrial Users
- 29 Food Service Establishments(FSE) for Fats Oil and Grease (FOG)
    - Inspections and/or compliance checks
- 1 Car Wash Installation
- 4 non-permitted industries

Sampling

- BioMarin BMK (2 events)
- BioMarin Galli (2)
- Buck Center (1)
- Optical Metals (1)
- NMWD (1)

Coordination of Environmental Services with NSD Staff

Besides working closely with Erik Brown and Sandeep Karkal regarding the significant industrial users, in 2016 there was increased communication and coordination between Environmental Services and NSD staff to better organize, track and target commercial users in the following ways

- Engineering-coordination on inspections and file review
- Finance-invoicing and tracking payments
- Public Education-support for staffing and emphasizing specific pollutants
- Collections-targeting problem areas for FOG

ASSET MANAGEMENT

Key components of an Asset Management Program include:

- Computerized Maintenance Management System (CMMS)
- Preventive, Predictive, and Corrective Maintenance
- Equipment Inventory
- Reliability / Criticality Assessment (Hierarchy of Equipment Priority)

Computerized Maintenance Management System (CMMS)

Oracle Work Asset Management (OWAM or WAM). 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.
OWAM is an off-the-shelf, non-proprietary software program available from Oracle, Redwood Shores, California.

Preventive, Predictive, and Corrective Maintenance

Preventive maintenance (PM) is a scheduled maintenance activity generally tied to equipment run time (x hours) or period schedule (weekly / quarterly). Routines such as lubrication, oil change, filter change fall into the category of PM. Predictive maintenance (PdM) is performed to determine when maintenance might be required and or to assess condition. Tasks such as vibration, temperature, and oil analysis are types of PdM. Corrective maintenance is initiated when a deficiency is found.

Equipment Inventory

An accurate equipment inventory is crucial to all phases of Asset Management. Equipment at the Novato facility has been entered into the OWAM data base. The equipment inventory is a dynamic process with additions and deletions over time. An accurate equipment inventory is an essential component when planning for equipment replacement.

Reliability / Criticality Assessment (Hierarchy of Equipment Priority)

A Criticality Assessment was performed at the Novato facility in August 2010 and updated in June 2014. The assessment evaluates processes and equipment and rates the relative importance. The evaluation process looks at consequences and likelihood of failure. The product helps the user prioritize replacement and maintenance. The next full system Criticality Update is scheduled for 2017.

Maintenance Activities Under $10,000.00*

January	Equipment	Activity
	Headworks Compactor	Replaced solenoid valves
	Sludge/Scum Pump #1	Replaced stator and softstart (motor starter)
	Secondary Clarifier #1	Replaced drive motor
	Secondary Clarifier #2	Replace drive motor

February	Equipment	Activity
	SCADA Servers	Replaced 4 servers
	UPS – Operations Area	Performed annual maintenance

March	Equipment	Activity
	UV PLC	Replaced Ethernet switch in network
	Headworks Channel #1	Replaced level sensor

April	Equipment	Activity
	Radio Communication Equipment	Replaced radios at Novato & Ignacio
	Headworks Channel #1	Replaced flow meter
	Jerome Meter	Annual re-calibration

May	Equipment	Activity
	Rooftop Fan – Ignacio	Replaced contactor and motor
	Microcool Fogger	Replaced pump
	Overhead Cranes	Annual crane inspection/certification
	Flow Meters	Annual flow meter calibration
	Grit Classifier #2	Replaced lower bearing
	Blower #1	Replaced Modicon - PLC
	Sludge Transfer Pump #1	Replaced stator and rotor
	Emergency Generators	Annual service & coolant flush on radiators
	Odor Bed Fan #1 – Ignacio	Rehabilitated
	Gem Electric Cart	Replaced batteries
	GBT #1	Replaced bearing
	Fire Extinguishers	Annual recharge of all fire extinguishers at Novato WWTP & Ignacio PS

June	Equipment	Activity
	Primary Clarifier #2	Replaced drive motor
	RAS Pump #1	Replaced sensor proms
	Boiler	Replaced recirculation pump and time delay relay
	Forklift	Replaced water pump, master cylinder, brakes and annual service
	Boiler	Combustion tune up

July	Equipment	Activity
	Digester Mixing Pump #1	Replaced soft start and power supply
	Hypochlorite Pump #1	Replaced tachometer
	TWAS Pump #1	Repaired on/off/remote switch
	Annual Thermography	Performed at Novato and Ignacio
	Headworks Channel #2	Replaced Hydroranger and level sensors
	Emergency Generators	Performed annual service and coolant flush
	Wet Weather Pumps	Performed annual service
	Odor Beds – Novato & Ignacio	Topped off all beds with new mulch

August	Equipment	Activity
	Blower #3	Replaced capacitors
	GBT Odor Fan #2	Replaced motor bearings
	Sludge/Scum Pump #1 & Pump #2	Installed upgraded power supply

September	Equipment	Activity
	EQ Pump @ Ignacio	Replaced VFD Board
	Novato Plant	Annual crane certification
	Boiler	Replaced actuator
	Backflow Prevention Valve – (By Digester #1)	Replaced valve
	Fuel Tank	Replaced gauge

October	Equipment	Activity
	GBT #1	Replaced bearings & boot
	Flare	Replaced timers and relay

November	Equipment	Activity
	Novato Plant	Assisted with Arc Flash Study
	Flygt Pumps & Mixers – Novato and Ignacio	Performed annual inspection
	Decant	Flushed line

December	Equipment	Activity
	Trucks	Annual oil change on 4 trucks
	Dry Weather Pump #4	Performed vibration analysis
	Aeration Basin #2	Waterline repairs
	Aeration Basin Mixer #3B	Performed overhaul in house
	Aeration Basin Mixer #3C	Performed overhaul in house

Maintenance Activities Over $10,000.00*

* Limit Set by Section 3.0 of the Service Agreement between Veolia and NSD.

PREDICTIVE MAINTENANCE - THERMOGRAPHIC SCAN

Thermographic scans (or imagery) can be used to detect hot spots in motor control centers (MCC). This is often an indication of loose connections or failing components. This scan is being performed by Ben Bayaban, Veolia's industrial electrician at the Rio Vista project.

PREVENTIVE MAINTENANCE
ANNUAL SERVICE OF INFLUENT PUMPS

Jeff Hendricks, Alejo Cuntapay, and Matt Nausin perform annual manufacturer recommended inspection and maintenance on influent pumps.

CORRECTIVE MAINTENANCE

Replacement of Lamps and Ballasts on Ultra Violet Disinfection System

SAFETY AND TRAINING

It's a Culture, Not a Campaign

Veolia Water North America (VWNA) 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 company. VWNA is committed to providing its employees a healthful and safe place of employment. To that end, VWNA will provide 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. In turn, each employee is responsible to participate in a cooperative effort to maintain an effective health and safety program. Adherence to company policies and work practice guidelines is an essential part of this responsibility. By maintaining an effective program, we reduce the risk of personal injury, operational interruptions, regulatory fines, and maintain the company's reputation as a world leader in environmental management.

Our highest duty - to ensure health, safety and security for all. It is our highest duty, essential business priority, and the individual responsibility of each of us to ensure that at all time and in all of our operations, the health, safety and security of the general public, our customers, subcontractors and our fellow employees are protected. We allow for no compromise in this matter, and we strive to proactively identify potential risks and take diligent corrective and preventative actions to reduce and eliminate them. In the same spirit, we support, advise and encourage our fellow employees to maintain good personal health, as well as to develop positive practices and behaviors in that respect.

VWNA Novato has had no incidents from 6/1/10 to present. This reporting period from 1/1/16 - 12/31/16 resulting in 365 days - accident/incident free. In recognition of this achievement - each employee received a cash incentive reward from the Company for 6 years no loss time incidents as a group and also as individual achievements.

VWNA Novato provides daily safety topics - 5 minutes in length at each of our daily morning meeting. Subjects range from personal to job related safety topics.

In addition to daily safety discussion, formal monthly training of worksite relevant safety topics is conducted by the Safety Coordinator. The formal training includes testing. Test questions are answered round table style and discussed.

2016 Safety Training	
Date	Topic
January	Hazardous Communication & GHS – OSHA Laboratory Safety/Chemical Hygiene Plan
February	Lockout/Tagout – Control of Hazardous Energy
March	Fire Safety Training
April	Confined Space - Dangerous Spaces
May	Forklift Operator Safety
June	Hearing Protection Respirator Protection
July	Heat Stress
August	NFPA 70E Refresher Training Ergonomics
September	Fall Protection
October	Earthquake Drill and Review Distracted Driving Great Shakeout Earthquake Drill
November	1st Aid/CPR Certification Cold Stress and Winter Safety
December	Spill Prevention Control & Countermeasures (SPCC) Plans - Novato and Ignacio Bloodborne Pathogens

GREAT SHAKEOUT – ANNUAL EARTHQUAKE DRILL
OCTOBER 28, 2016

Top Left – Brian Exberger Simulates Shutoff of Natural Gas
Top Middle - Inventory Emergency Supplies
Top Right – Brian Exberger, Duck Cover Hold
Bottom Left – Preston Ingram, Duck Cover Hold

STAFFING AND ORGANIZATION

STAFFING & CERTIFICATION STATUS (Current)

John Bailey – Project Manager
Grade V California Wastewater Treatment Plant Operator #4123, December 31, 2018

Brian N. Exberger – Assistant Project Manager / Operations Manager
Grade V California Wastewater Treatment Plant Operator #10424, June 30, 2017

Lynda Farmery – Administrative Assistant/Planner/Scheduler/Safety Coordinator

Anthony M. Silva – Operator III
Grade V California Wastewater Treatment Plant Operator #10973, December 31, 2017
Grade II Collection System Maintenance Technician, 354, January 31, 2018

Manual Arias – Operator III
Grade III California Wastewater Treatment Plant Operator #III-29081, December 31, 2018

Larry Milliken – Operator III
Grade IV California Wastewater Treatment Plant Operator #41483, August 12, 2017

Preston Ingram – Operator III
Grade IV California Wastewater Treatment Plant Operator #10277, June 30, 2017

Jeffrey D. Hendricks – Operator II
Grade II California Wastewater Treatment Plant Operator #II-28377, December 31, 2017
Grade I Plant Maintenance Technologist, 070750011, January 31, 2018

Alejo Cuntapay – Maintenance Technician II

Elizabeth G. Falejczyk – Environmental Services Manager
Operator III California Wastewater Treatment Plant Operator #6334, August 17, 2018

Kurt Hawkyard – Laboratory Technician/Pretreatment Programs Inspector
Laboratory Analyst Grade I, #130931002, September 30, 2017

Additional Support

Sachin Chawla – Vice President of Operations

Matt Nausin – Maintenance Supervisor, Richmond Project

Dennis Flosi – Instrumentation and Controls Specialist, Richmond Project

Ben Baybayan – Industrial Electrician, Rio Vista Project

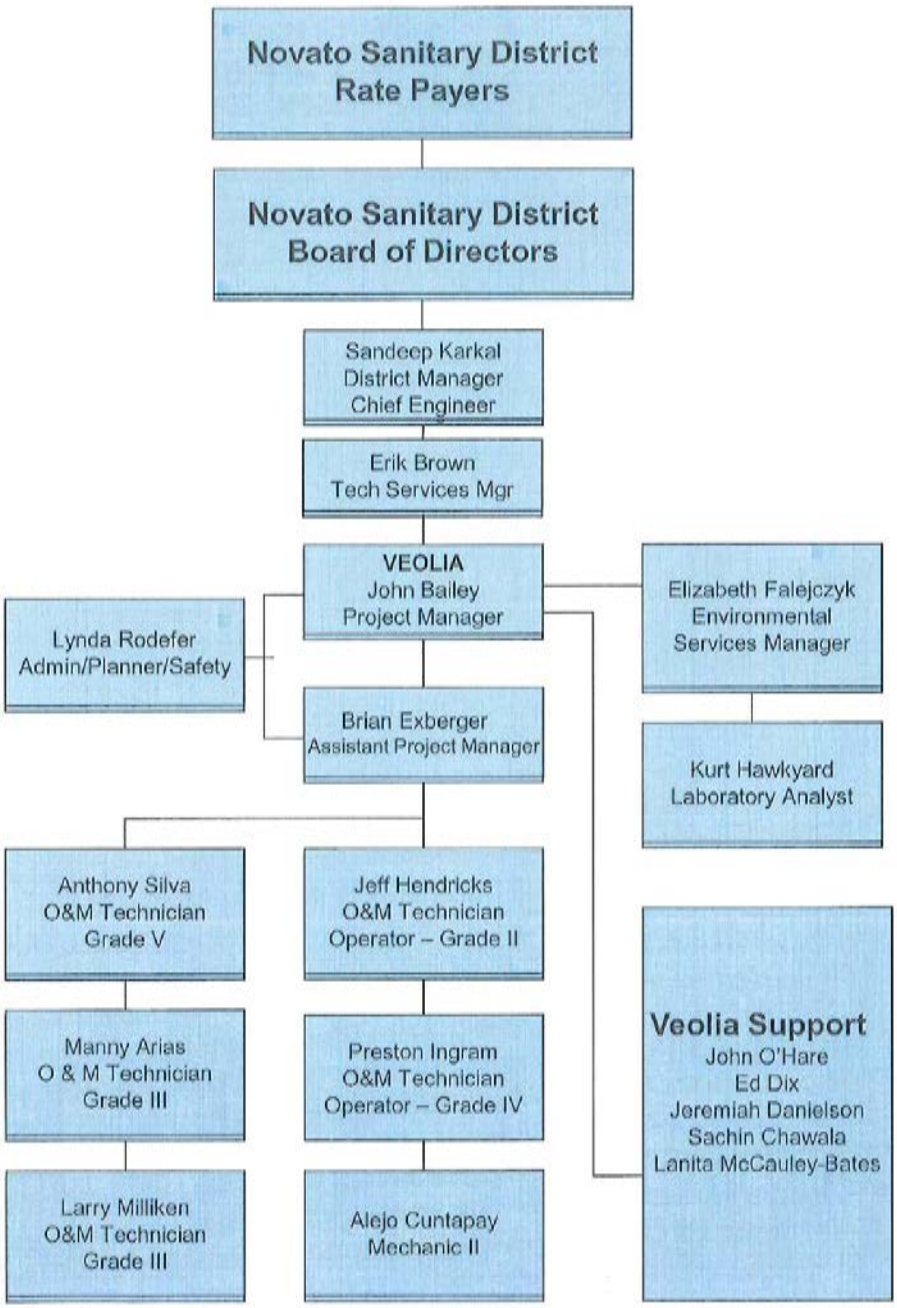
Dave Coffman – Asset Manager, West Region

Ed Dix – Technical Director / Technical Support, West Region

Jeremiah Danielson – Director of Health and Safety, Veolia Municipal and Commercial

John O'Hare – Pretreatment Programs Manager, Municipal & Commercial Business
Grade V, Wastewater Treatment Plant Operator, California, # 10669 (2005)
Grade IV, Wastewater Treatment Plant Operator, Association of Boards of Certification, # S40011R (2004)
Grade I, Environmental Compliance Inspection, California, CWEA # 04074112 (2004)
Grade I, Laboratory Analyst, California, CWEA # 05013114 (2005)
Grade I, Plant Maintenance Technologist, California, CWEA # 05075101 (2005)
Grade I, Collection System Maintenance, California, CWEA # 070121088 (2007)
Grade I, Water Distribution Operator, California Department of Public Health, #34234 (2008)

Organization Chart
Veolia Water / Novato Sanitary District



BUDGET

ADJUSTMENTS OCCUR ON A "CONTRACT YEAR CYCLE", JULY - JUNE

The Amended and Restated Novato Operations and Maintenance Service Agreement adopted February 18, 2014 is a fixed price contract. Included in the base contract fee are operation, maintenance, and management. 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 11 – Usage Caps

- Electrical
- Natural Gas
- Diesel Fuel

Schedule 5 – Operation of Recycled Water Facility

Equipment Repair in excess of $10,000

Fiscal Year 2016/17 service fee adjustment was 1.94%.

Community Outreach Activities 2016

Veolia is proud to be a member of the Novato community and we are committed to supporting local activities. The following are events and organizations supported by Veolia in 2016.

School Fuel – Tour of Novato – donation of bottled water for participants

Member Rotary Club Novato Sunrise (RCNS)

2016 American Crown Circus/Circus Osorio (RCNS)

Member – Novato Chamber of Commerce

Margaret Todd Senior Center Monthly Birthday Celebrations

Senior Pharmaceutical Collection

Senior Health Fair

Chamber of Commerce Annual Golf Tournament – provided bags for participants

North Bay Leadership Council - Algebra Academy

North Bay Science Fair

Paint The Town Red – “Novato Birthday Bash”

2016 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NORTH BAY DISCOVERY DAY (Science Fair)
October 29, 2016

NOVATO SANITARY DISTRICT - VEOLIA

PLANT FLOW

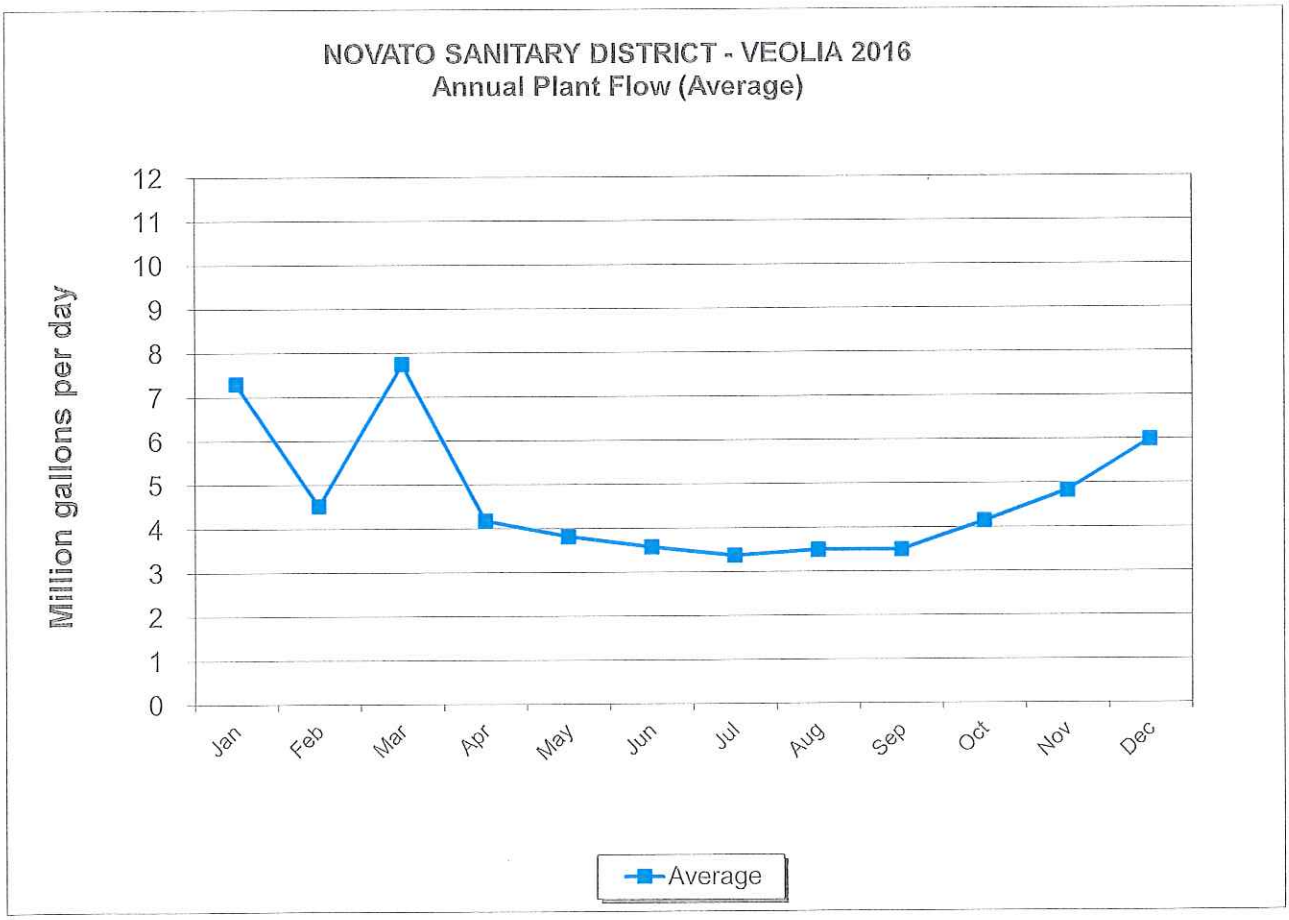
Annual Waste Characteristics & Loading Summary

(IN GALLONS TIMES 1,000,000)

YEAR: 2016

PRINT DATE: 17-Mar-2017

	Total Flow	High	Low	Average		
January	226.39	14.60	3.78	7.30		
February	131.03	5.71	4.04	4.52		
March	240.12	14.67	3.97	7.75		
April	125.33	5.32	3.66	4.18		
May	118.34	4.64	3.23	3.82		
June	107.23	4.05	3.16	3.57		
July	104.65	3.84	3.03	3.38	Three month dry weather averages:	3.38
August	108.49	3.87	2.97	3.50		3.50
September	105.14	3.79	3.26	3.50		3.50
October	128.55	6.40	3.33	4.15		
November	145.06	10.83	3.58	4.84		
December	185.77	16.51	3.98	5.99		
ANNUAL TOTAL	1726.10					
ANNUAL MAX.	240.12	16.51			Max.	3.50
ANNUAL MIN.	104.65		2.97		Min.	3.38
ANNUAL AVG.	143.84			4.71	Avg. Dry Weather Flow	3.46



NOVATO SANITARY DISTRICT - VEOLIA

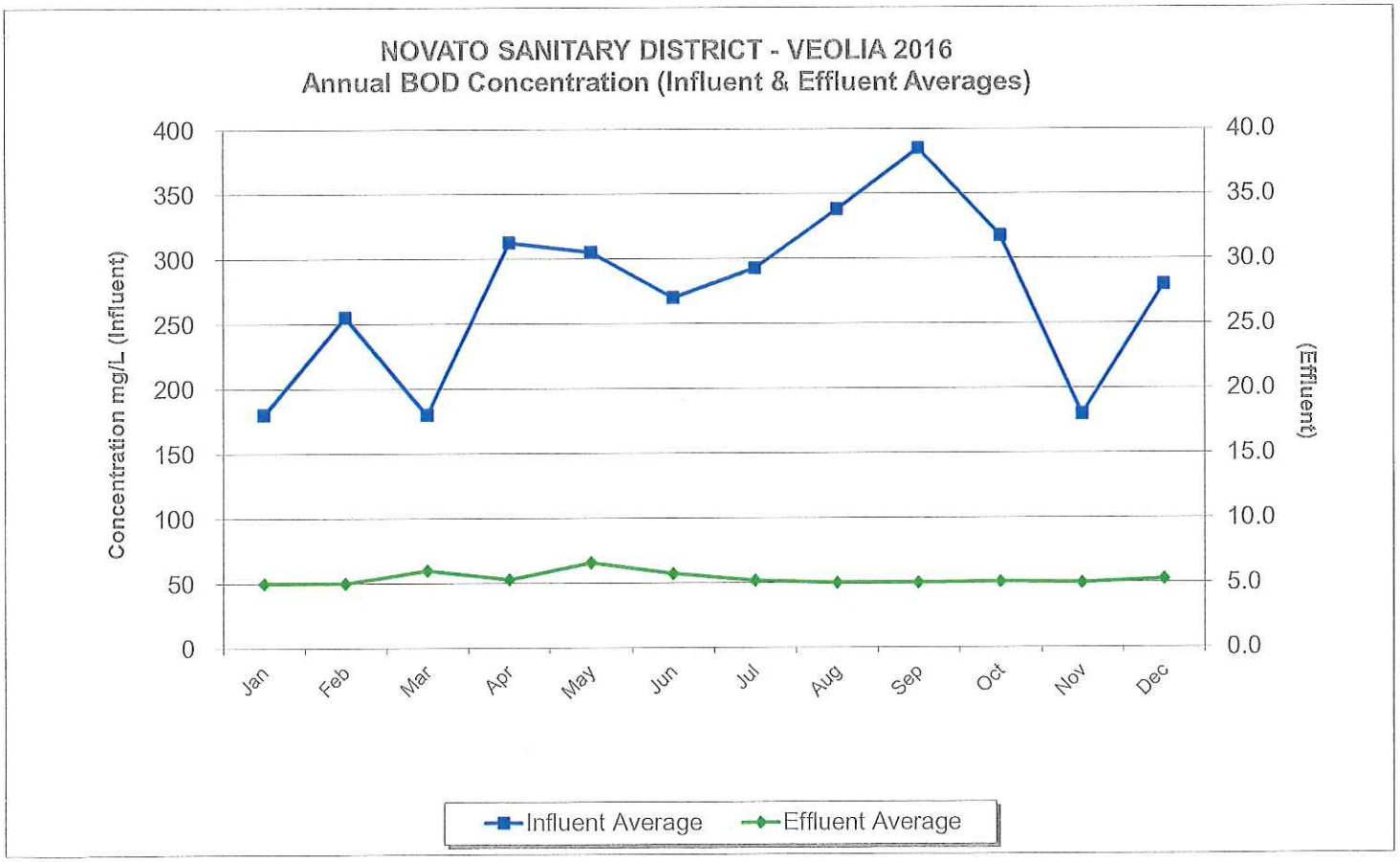
BOD (Influent & Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2016

PRINT DATE: 17-Mar-2017

	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	260	130	180	4	17174	6538	12693	5.0	5.0	5.0	5	559	251	357
February	310	200	255	4	11801	7556	10017	5.0	5.0	5.0	6	236	176	197
March	250	100	180	5	16755	7299	10309	9.0	5.0	6.0	11	598	308	426
April	400	240	313	4	13511	8507	10470	7.0	5.0	5.3	7	236	158	185
May	340	290	305	4	10458	9723	10118	13.0	5.0	6.6	5	453	152	236
June	320	220	270	5	10115	6165	8097	12.0	5.0	5.7	15	158	140	149
July	350	270	293	4	9049	6823	8208	8.0	5.0	5.2	15	160	126	141
August	410	280	338	5	12105	8454	9946	5.0	5.0	5.0	16	153	136	147
September	450	340	385	4	13023	10548	11289	5.0	5.0	5.0	15	155	140	147
October	360	290	318	4	11875	8513	10306	6.0	5.0	5.1	14	205	147	163
November	260	130	180	4	10458	4218	7655	5.0	5.0	5.0	5	349	161	220
December	330	220	280	4	30293	9458	16580	7.0	5.0	5.3	11	688	203	349
ANNUAL HIGH	450	340	385	5	30293	10548	16580	13.0	5.0	6.6	16	688	308	426
ANNUAL LOW	250	100	180	4	9049	4218	7655	5.0	5.0	5.0	5	153	126	141
ANNUAL AVG.	337	226	275	4	13885	7817	10474	7.3	5.0	5.3	10	329	175	226



NOVATO SANITARY DISTRICT - VEOLIA

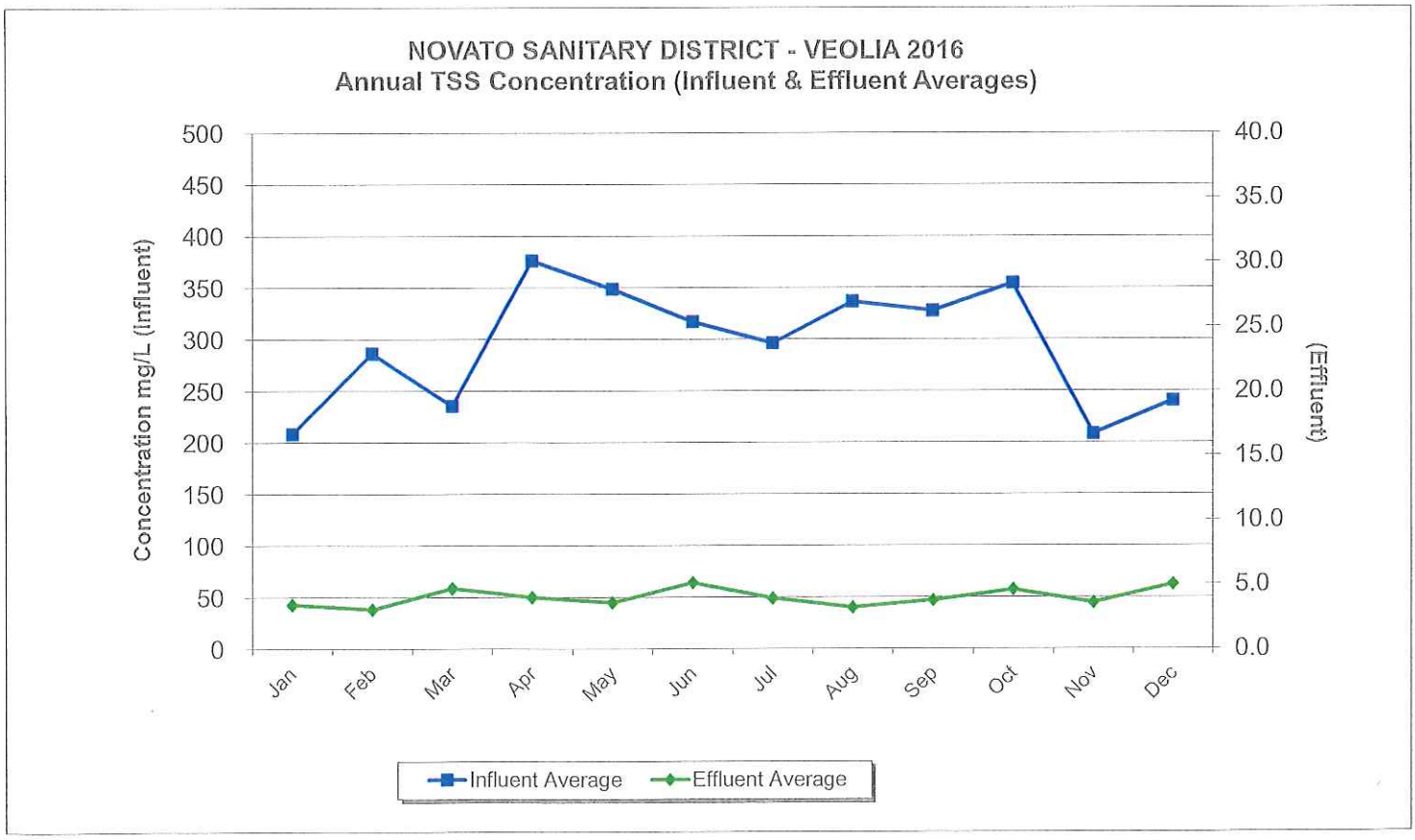
SUSPENDED SOLIDS (Influent & Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2016

PRINT DATE: 17-Mar-2017

	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	279	166	209	4	18551	9756	14473	5.0	2.0	3.4	4	559	141	244
February	327	251	286	4	14161	9375	11309	4.0	3.0	3.1	4	143	105	120
March	328	126	236	5	22260	10903	13523	14.0	3.0	4.7	5	819	104	285
April	567	296	376	4	19152	9381	12664	6.0	3.0	4.0	4	213	93	134
May	398	265	349	4	13642	9238	11542	8.0	3.0	3.6	4	279	84	119
June	359	271	317	5	10859	7865	9474	8.0	3.0	5.1	5	248	89	153
July	320	266	296	4	9960	7446	8342	5.0	3.0	3.9	4	148	77	111
August	369	279	336	5	11294	8051	9887	4.0	3.0	3.2	5	115	83	94
September	358	310	328	4	10114	8971	9617	7.0	3.0	3.8	4	202	82	110
October	456	284	354	4	14250	8551	11566	8.0	3.0	4.6	4	427	83	157
November	279	166	209	4	11574	6294	8763	5.0	3.0	3.6	4	349	97	161
December	296	192	240	4	30293	6485	15082	6.0	4.0	5.0	4	688	183	304
ANNUAL HIGH	567	310	376	5	30293	10903	15082	14.0	4.0	5.1	5	819	183	304
ANNUAL LOW	279	126	209	4	9960	6294	8342	4.0	2.0	3.1	4	115	77	94
ANNUAL AVG.	361	239	295	4	15509	8526	11353	6.7	3.0	4.0	4	349	102	166



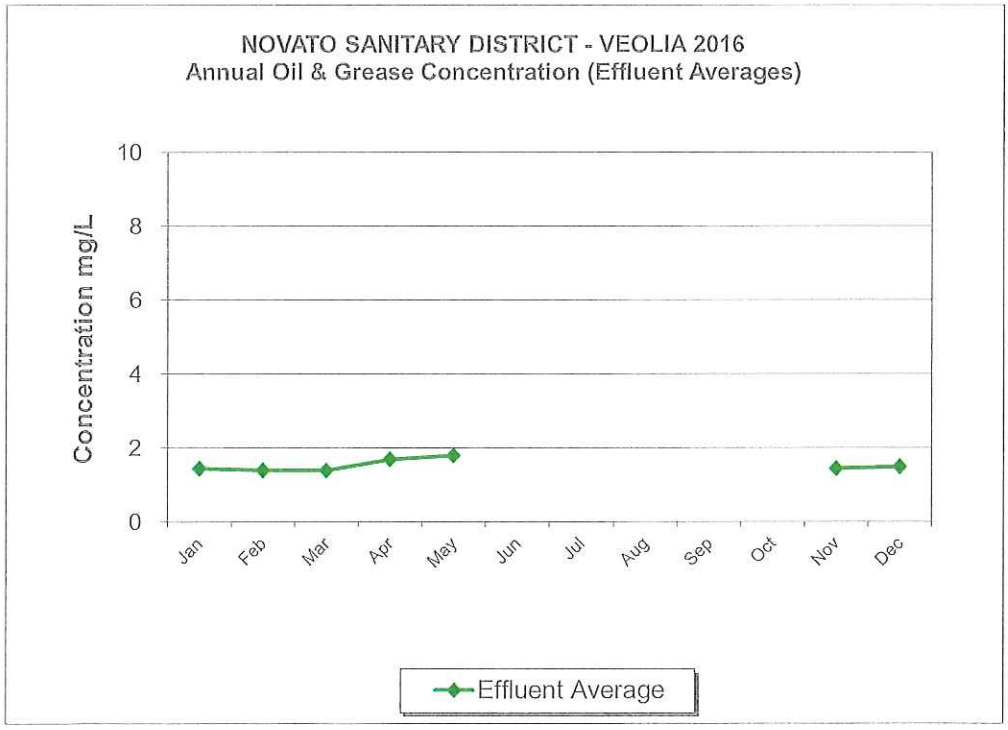
NOVATO SANITARY DISTRICT - VEOLIA

OIL & GREASE (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2016 PRINT DATE: 17-Mar-2017

	EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average
January	1.5	1.4	1.5	2	87	82	85
February	1.4	1.4	1.4	2	50	49	50
March	1.4	1.4	1.4	1	49	49	49
April	1.7	1.7	1.7	1	57	57	57
May	2.1	1.5	1.8	2	77	51	64
June				0			
July				0			
August				0			
September				0			
October				1			
November	1.5	1.4	1.5	2	45	45	45
December	1.5	1.5	1.5	2	69	51	60
ANNUAL HIGH	2.1	1.7	1.8	2	87	82	85
ANNUAL LOW	1.4	1.4	1.4	0	45	45	45
ANNUAL AVG.	1.6	1.5	1.5	1	62	55	58

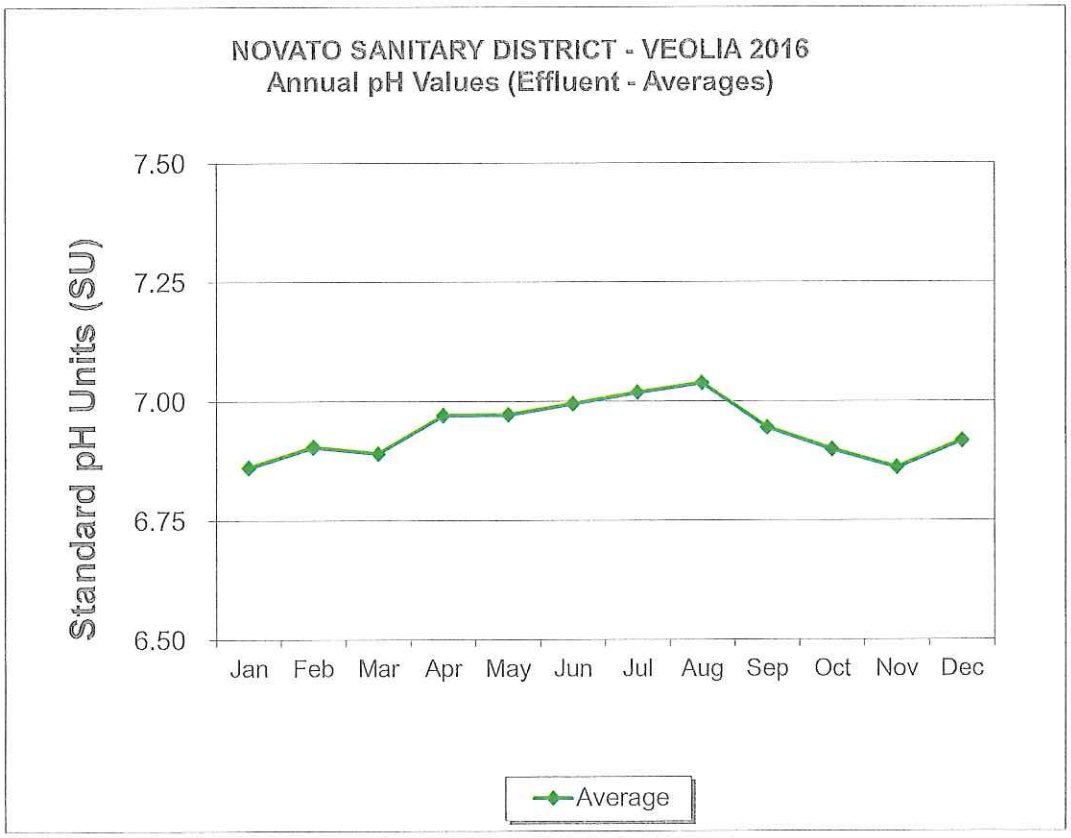


NOVATO SANITARY DISTRICT - VEOLIA
pH (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2016 PRINT DATE: 22-Mar-2017

	High	Low	Average	Number of Samples
January	7.0	6.6	6.9	21
February	7.0	6.8	6.9	21
March	7.0	6.8	6.9	23
April	7.1	6.9	7.0	21
May	7.1	6.9	7.0	22
June	7.1	6.7	7.0	22
July	7.1	6.9	7.0	21
August	7.1	6.9	7.0	23
September	7.1	6.9	6.9	22
October	7.0	6.8	6.9	21
November	7.0	6.6	6.9	21
December	7.0	6.8	6.9	22
				Number of Samples Total = 260
ANNUAL MAX.	7.10	6.90	7.04	
ANNUAL MIN.	7.00	6.60	6.86	1st Qtr. 65 2nd Qtr. 65
ANNUAL AVG.	7.05	6.80	6.94	3rd Qtr. 66 4th Qtr. 64



NOVATO SANITARY DISTRICT - VEOLIA

TEMPERATURE (Effluent)

Annual Waste Characteristics & Loading Summary

YEAR: 2016 PRINT DATE: 17-Mar-2017

	High	Low	Average	Number of Samples
January	18.7	16.6	17.6	21.0
February	20.0	17.7	18.8	21.0
March	20.1	17.1	18.7	23.0
April	21.4	19.3	20.5	21.0
May	24.0	21.2	22.1	22.0
June	24.4	22.3	23.4	22.0
July	24.7	23.4	24.1	21.0
August	25.2	23.0	24.3	23.0
September	24.9	23.6	24.2	22.0
October	23.6	21.8	22.9	21.0
November	18.7	16.6	17.6	21.0
December	20.1	16.8	18.6	22.0
				Number of Samples Total = 260
ANNUAL MAX.	25.2	23.6	24.3	
ANNUAL MIN.	18.7	16.6	17.6	1st Qtr. 65 2nd Qtr. 65
ANNUAL AVG.	22.2	20.0	21.1	3rd Qtr. 66 4th Qtr. 64