

NOVATO SANITARY DISTRICT

Meeting Date: February 10, 2020

The Board of Directors of Novato Sanitary District will hold a regular meeting at 5:30 p.m., Monday, February 10, 2020, at the District Offices, 500 Davidson Street, Novato.

Materials related to items on this agenda that are public records, are available for public inspection in the District Office, 500 Davidson Street, Novato, during normal business hours. This agenda packet is also available on the District's website: www.novatosan.com. Note: All times and/or order of consideration for agenda items are for reference only. The Board of Directors may consider item(s) in a different order than set forth herein.

AGENDA

1. PLEDGE OF ALLEGIANCE:

2. AGENDA APPROVAL:

3. PUBLIC COMMENT (PLEASE OBSERVE A THREE-MINUTE TIME LIMIT):

This item is to allow anyone present to comment on any subject not on the agenda, or to request consideration to place an item on a future agenda. Individuals will be limited to a three-minute presentation. No action will be taken by the Board at this time as a result of any public comments made.

4. REVIEW OF MINUTES:

- a. Approve minutes of the January 13, 2020 regular meeting.

5. CONSENT CALENDAR:

The General Manager-Chief Engineer has reviewed the following items. To his knowledge, there is no opposition to the action. The items can be acted on in one consolidated motion as recommended, or may be removed from the Consent Calendar and separately considered at the request of any person.

- a. Approve regular disbursements, January 14, 2020 – February 10, 2020.
- b. Ratify payroll and payroll related disbursements, January 2020.
- c. Receive deposit summary, January 2020.
- d. Receive Accounts Receivable (A/R) Summary Report as of January 31, 2020.
- e. Receive 2nd Quarter Investment Report, Fiscal Year (FY) 2019-20.
- f. Receive 2nd Quarter Financial Report, FY 2019-20 (unaudited).
- g. Receive report, District Finance Officer's attendance at annual California Society of Municipal Finance Officers (CSFMO) conference – information only.
- h. Approve the District's Collections System Lead Worker to attend the California Water Environment Association (CWEA) Annual Conference 2020 in Reno, Nevada.

6. WASTEWATER OPERATIONS:

- a. Receive and accept Wastewater Treatment Facilities Calendar Year (CY) 2019 Annual Operations and Maintenance Report, subject to minor edits.
- b. Receive Wastewater Operations Reports, January 2020:
 - Collection System
 - Treatment Facilities
 - Reclamation Facilities

7. CAPITAL PROJECTS:

- a. *Collection System Improvements, Account No. 72706 – Bel Marin Keys Sewer Rehabilitation Project:* Grant Final Acceptance of the Project, and authorize staff to file the Notice of Completion (NoC).
- b. *Collection System Improvements, Account No. 72706 – Golden Gate/Rush Creek Sewer Phase II Project:* Approve Balancing Change Order in the amount of \$111,265, grant Final Acceptance of the Project, and authorize staff to file the Notice of Completion (NoC).
- c. Receive Capital Projects Update, January 2020.

8. BOARD MEMBER REPORTS AND REQUESTS:

- a. North Bay Watershed Association (NBWA) meeting, February 7, 2020.

9. INFORMATIONAL ITEMS:

These items are for information only - no action will be taken on these items as a result of any discussion or any comments made.

- a. Receive article from The Economist Magazine provided by Director Long, titled "State of Denial".

10. GENERAL MANAGER'S REPORT AND ANNOUNCEMENTS:

11. ADJOURNMENT:

Next Resolution No. 3142.

Next regular meeting date: Monday, March 9, 2020, 5:30 PM, at the Novato Sanitary District office, 500 Davidson Street, Novato, CA.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the District at (415) 892-1694 at least 24 hours prior to the meeting. Notification prior to the meeting will enable the District to make reasonable accommodation to help ensure accessibility to this meeting.

NOVATO SANITARY DISTRICT

Board Meeting Minutes

Meeting Date: January 13, 2020

A regular meeting of the Board of Directors of the Novato Sanitary District was held at 5:30 p.m., Monday, January 13, 2020, at the District Office, 500 Davidson Street, Novato.

BOARD MEMBERS PRESENT: President Carole Dillon-Knutson, Directors William Long, Tim Fvette, Jean Mariani, and Jerry Peters.

STAFF PRESENT: General Manager-Secretary Sandeep Karkal and Administrative Secretary Julie Hoover.

ALSO PRESENT: Erik Brown, Deputy General Manager, Novato Sanitary District
John O'Hare, Project Manager, Veolia
Dale Thrasher, Administrative Services Officer, Novato Sanitary District
Jeff Boheim, Field Services Manager, Novato Sanitary District
Jeff Andress, Collection System Superintendent, Novato Sanitary District
Russell Farmery, Electrical/Instrumentation Tech, Novato Sanitary District
Melissa Sandvold, West Vice President of Operations, Veolia
Melissa Demsky, Sr. Director of Asset Management, CWE, Veolia

PLEDGE OF ALLEGIANCE:

AGENDA APPROVAL: The agenda was approved as presented.

PUBLIC COMMENT: None.

REVIEW OF MINUTES:

- Consider approval of minutes of the December 9, 2019 regular meeting.

On motion of Director Peters, seconded by Director Long, and carried unanimously, the December 9, 2019 Board meeting minutes were approved.

CONSENT CALENDAR:

The General Manager stated that the Board was being presented with a revised Capital Projects Check Register for January 13, 2020. He stated that a payment invoice for the 2019 Revenue Refunding Bonds was received earlier in the day, and that it was necessary to issue a check at this time to ensure that payment would be received prior to the due date. Upon this explanation, Director Mariani requested that item (a) be pulled from the Consent Calendar, and that all disbursements included in the revised Capital Projects Check Register for January 13, 2020, be approved separately.

President Dillon-Knutson called for a motion on the Consent Calendar items as follows:

- a. *(To be approved separately).*
- b. Approval of December 2019 payroll and payroll-related disbursements in the amount of \$292,230.62.
- c. Receive Deposit Summary, December 2019.

- d. Receive report – submittal of Financial Transactions Report (FTR) to the State Controller's Office (SCO).
- e. Authorize the General Manager-Chief Engineer to approve an application from Chevron Environmental Management Company (EMC) and issue a one-time, temporary, Class I, non-domestic discharge permit for discharge of groundwater from a groundwater remediation and soil extraction project, at 7455 Redwood Boulevard, Novato.
- f. Authorize the General Manager-Chief Engineer to approve an application from Novato Unified School District and issue a one-time, temporary, Class I non-domestic discharge permit for discharge of groundwater from on-site construction at Novato High School, 625 Arthur Street, Novato.
- g. Approve the District's Electrical Instrumentation Technician and one Collections System Worker to attend the California Water Environment Association Annual Conference 2020 training conference in Reno, Nevada.

On motion of Director Peters, seconded by Director Long, and carried unanimously, the Board approved the above listed Consent Calendar items b. through g.

President Dillon-Knutson stated that the withdrawn Consent Calendar item would now be considered for approval:

- a. Approve regular disbursements, December 9, 2019 – January 13, 2020, with the revision of the Capital Projects Check Register for January 13, 2020.

On motion of Director Mariani, seconded by Director Peters, and carried unanimously, the Board approved the following: Board member disbursements in the amount of \$1,539.73, operating check disbursements in the amount of \$476,124.45, and the revised capital project disbursements in the amount of \$5,779,331.04. Ratification of December 23, 2019 disbursements as follows: operating check disbursements in the amount of \$333,982.01, and capital project disbursements in the amount of \$737,830.62

WASTEWATER OPERATIONS:

- Receive presentation from Veolia Water NA: Update on wastewater treatment plant condition assessment and criticality analysis. The General Manager stated that periodically, Veolia Water provides condition assessment and criticality analysis reports as part of their ongoing analysis of the treatment facility. He introduced two Veolia representatives present at the meeting: Melissa Sandvold, West Vice President of Operations, and Melissa Demsky, Sr. Director of Asset Management, and stated that Ms. Demsky would be providing the report.

Melissa Demsky began the Asset Management and Criticality Analysis Update presentation and outlined the role of the Central-West Regional Asset Management Support Team (Team), which consists of eight individuals. She discussed Veolia's asset management/criticality analysis vision, and the evaluation tools used to determine the facilities equipment condition assessment score profile. She stated that through this evaluation process, it was determined that nearly all of the treatment facilities assets (99%) are in average or better condition. She stated that 93% of assets have remaining expected useful life, and that 73% of the assets having a remaining life of 10 years or more. She concluded her presentation by providing an overview of the Team's development of a 10 year Capital Plan for the District's treatment plant capital assets.

The Board thanked Ms. Demsky for the report, stating that it was well prepared and clearly presented the status of the District's assets.

- Receive Wastewater Operations Reports, December 2019.

Collection System Report: Collection System Superintendent Jeff Andress provided the Collection System Report for December. He stated that 95,280 lineal feet of sewer pipelines were cleaned, and that staff completed 459 maintenance work orders, leaving 44 work orders outstanding. Further, he noted that staff conducted 179 lift station inspections and completed maintenance inspections on four (4) air relief/vacuum valves. The Collection System Superintendent then outlined the training provided in December, stating that Collection Department staff attended four (4) safety tailgate meetings, and participated in two specialized training events: Harassment Prevention Training and a Culture Perception Survey results presentation. He stated that there were no lost time accidents in the month.

He concluded the December report, noting that there was one Category 2 sanitary sewer overflow (SSO) on December 13th, which was caused by roots protruding out from a private lateral into the mainline causing a partial blockage. He stated that the SSO resulted in an estimated total of 10,102 gallons spilled, with about 9,602 gallons recovered. He stated that approximately 500 gallons had absorbed into the ground. He stated that Collection System staff arrived at the event only six minutes after the call was received, and commended the crew for the quick response.

Treatment Facilities Report: Veolia Project Manager John O'Hare provided the December 2019 Treatment Facilities Monthly Operations Reports (MOR), and stated that the average flow was 7.96 MGD (million gallons per day). He stated that there were no discharge violations in the month, and that the Recycled Water Facility (RWF) produced 0.734 million gallons of recycled water. The Project Manager stated that Veolia staff participated in two online safety training modules: Bloodborne Pathogens, and Safety in the workplace - OSHA annual. He reviewed the monthly routine inspections, maintenance activities, and key events for the Novato treatment facility, the Ignacio transfer pump station, and the recycled water facility. The Project Manager discussed pretreatment and pollution prevention activities, and concluded the December report, stating that no odor contacts were received in the month.

Reclamation Facilities Report: Field Services Manager Jeff Boheim summarized the Reclamation Facilities report for December. He stated that drainage pump stations No. 3 and 7 pumped approximately 82 million gallons (MG) and 62 MG, respectively. He stated that volunteers from the Audubon Society counted birds at Site 2 on December 19, 2019. He concluded his report, stating that all cattle were removed from the pastures earlier in the month, and that no biosolids activities occurred in December.

CAPITAL PROJECTS:

- Pump Station Rehabilitation, Account No. 72403 - Marin Village Pump Station Rehabilitation Project: Approve a contract with Nute Engineering, Inc. in the not-to-exceed amount of \$200,000 for professional engineering services related to the Marin Village Pump Station Rehabilitation Project, and authorize the General Manager-Chief Engineer to execute it. The Deputy General Manager stated that the amended FY 19-20 Capital Improvement Program (CIP) Budget included provisions to rehabilitate the Marin Village Pump Station on South Novato Blvd. He provided an overview of the work required, and stated that staff had requested a proposal from Nute Engineering to provide professional engineering services for the design of the pump station improvements. He stated that Nute Engineering had submitted a proposal in the amount of about \$200,000 to complete the flow studies and design engineering work, and stated that staff believes the proposal to be reasonable and accurate.

On motion of Director Peters, seconded by Director Long, and carried unanimously, the Board approved a contract with Nute Engineering, Inc. in the not-to-exceed amount of \$200,000 for professional engineering services related to the Marin Village Pump Station Rehabilitation Project, and authorized the General Manager-Chief Engineer to execute it.

- Collection System Improvements, Account No. 72706 – Air Relief Valve (ARV) Improvements Project: Review bids received, and authorize the General Manager-Chief Engineer to award the construction contract to Glosage Engineering, Inc., and to execute it in the bid amount of \$410,212.50. The Deputy General Manager stated that at its November 18th meeting, the District Board authorized the General Manager-Chief Engineer to accept plans and specifications, and advertise for bids for the Air Relief Valve (ARV) Improvements project. He stated that on January 7th, six bids were received, with the apparent low bid being submitted by Glosage Engineering, Inc. (Glosage) in a bid amount of \$410,462.50. He stated that upon review of Glosage's bid documents, a minor error was found, lowering the actual bid to \$410,212.50. The Deputy General Manager stated that Glosage was contacted and that they accepted the adjusted bid amount. Therefore, the Deputy General Manager recommended that the Board authorize the General Manager-Chief Engineer to award the construction contract to Glosage, and to execute it in the bid amount of \$410,212.50.

On motion of Director Long, seconded by Director Peters, and carried unanimously, the Board authorized the General Manager-Chief Engineer to award the construction contract for the Collection System ARV Improvements Project to Glosage Engineering, Inc., and to execute it in the bid amount of \$410,212.50.

- Receive Capital Projects Update, December 2019. The Deputy General Manager provided an update of the Capital Improvement Program capital projects.

BOARD MEMBER REPORTS AND REQUESTS:

- North Bay Watershed Association (NBWA) meeting, January 3, 2020. Director Mariani discussed her attendance at the NBWA meeting held on January 3rd at Marin Municipal Water District in Corte Madera. She provided details of three presentations: "The State of the Estuary", by Caitlin Sweeney, Director of the San Francisco Estuary Partnership; "The Latest US EPA News", by Luisa Valiela of US EPA Region 9; and "The New Game of Floods", by Chris Choo of Marin County.

Director Mariani stated that NBWA will be holding their annual conference on April 3rd at the Petaluma Sheraton: "2020 Vision: One Region, One Water, One Future".

Director Long commented on an editorial article discussing sewer overflows and fines. He suggested that CASA consider making a template letter/response that Districts could use to respond to published comments of this nature.

INFORMATIONAL ITEMS:

- City of Novato – Notice of Reorganization of the Novato City Council. The General Manager stated that this item was for informational purposes only.

GENERAL MANAGER'S REPORTS AND ANNOUNCEMENTS:

- Reports:

- The California Association of Sanitation Agencies (CASA) Winter Conference is being held in Indian Wells, CA, from January 21st to 23rd. All travel/hotel arrangements have been made. If there are any changes, contact the District's Administrative Secretary.

- Announcements:

- The District office will be closed on Monday, January 20th, in honor of Martin Luther King Day.
- The next Board meeting will be held on Monday, February 10th, at 5:30 p.m.

ADJOURNMENT: There being no further business to come before the Board, President Dillon-Knutson adjourned the meeting at 6:56 p.m.

Respectfully submitted,

Sandeep Karkal
Secretary

Julie Hoover, Recording

Novato Sanitary District Board Fees for January 2020

Date	Num	Name	Credit
Feb 7, 20			
02/07/2020	6495	Dillon-Knutson-, Carole	407.78
02/07/2020	6496	Fuette, Timothy G	207.78
02/07/2020	6497	Long, William C	313.78
02/07/2020	6498	Mariani, Jean M	502.58
02/07/2020	6499	Peters, Arthur Gerald	107.78
Feb 7, 20			<u>1,539.70</u>

Novato Sanitary District Operating Check Register

January 27, 2020

Date	Num	Name	Credit
Jan 27, 20			
01/27/2020	63744	Pacific, Gas & Electric	69,155.14
01/27/2020	63749	Stericycle	19,981.06
01/27/2020	63746	RedZone Robotics Inc	17,600.00
01/27/2020	63756	Woodard & Curran formerly RMC	9,150.98
01/27/2020	63743	Pac Machine Company Inc	5,995.60
01/27/2020	63754	United Rentals	3,265.20
01/27/2020	63722	CASA	2,975.00
01/27/2020	63726	Dearborn National	2,761.52
01/27/2020	63723	CDW Government, Inc.	2,468.38
01/27/2020	63730	Grainger	2,383.50
01/27/2020	63736	Monterey Mechanical, Inc.	2,173.00
01/27/2020	63755	WECO	1,972.92
01/27/2020	63747	SMART	1,647.58
01/27/2020	63731	IEDA, INC	1,268.00
01/27/2020	63740	North Marin Water District Payroll	1,165.13
01/27/2020	63733	Labworks Equipment, Inc.	947.19
01/27/2020	63720	BoundTree Medical, LLC	831.57
01/27/2020	63741	Novato Chamber of Commerce	775.00
01/27/2020	63734	Leete Generators	702.00
01/27/2020	63750	Thomas & Associates, Inc.	687.33
01/27/2020	63751	U.S. Bank Equipment Finance	680.00
01/27/2020	63758	North Marin Water District Jobsite	570.00
01/27/2020	63727	DKF Solutions Group, LLC	550.00
01/27/2020	63729	Frontier California Inc EQ	538.14
01/27/2020	63735	McMaster-Carr Supply Co.	525.79
01/27/2020	63732	Irvine Consulting Services Inc.	522.50
01/27/2020	63721	Cagwin & Dorward Inc.	475.00
01/27/2020	63745	Recology Sonoma Marin	327.61
01/27/2020	63728	Evoqua Water Technologies - L...	294.09
01/27/2020	63724	Claremont EAP, Inc.	250.00
01/27/2020	63742	Novato, City	240.00
01/27/2020	63752	UniFirst Corporation	233.02
01/27/2020	63725	CWEAmembers	188.00
01/27/2020	63757	North Marin Water District	132.52
01/27/2020	63737	NAPA Auto Parts	70.51
01/27/2020	63738	National Notary Association	69.00
01/27/2020	63718	American Messaging	67.86
01/27/2020	63748	Staples Advantage	40.65
01/27/2020	63719	Better Rooter-	40.00
01/27/2020	63753	United Parcel Service	19.27
01/27/2020	63739	North Marin Water District VOIDED	0.00
Jan 27, 20			<u>153,740.06</u>

Novato Sanitary District Operating Check Register

February 10, 2020

Date	Num	Name	Credit
Feb 10, 20			
02/10/2020	63799	Veolia Water North America, Inc.	185,238.01
02/10/2020	63800	Veolia Water North America, Lab	30,762.26
02/10/2020	63793	RedZone Robotics Inc	17,600.00
02/10/2020	63790	PARS-PSRP-Post Employment...	15,056.63
02/10/2020	63769	Citi Visa (Costco)	11,850.68
02/10/2020	63804	Woodard & Curran formerly RMC	9,281.25
02/10/2020	63789	PARS-OPEB-Post Employment...	8,370.51
02/10/2020	63786	Novato, City	8,202.38
02/10/2020	63778	Johnson, Dee	7,830.00
02/10/2020	63798	United Rentals	6,784.01
02/10/2020	63801	Veolia Water Recycled Water ...	5,016.39
02/10/2020	63779	Leete Generators	4,850.00
02/10/2020	63765	Caltest Analytical Lab Inc.	3,445.95
02/10/2020	63780	Liebert, Cassidy, Whitmore	3,285.00
02/10/2020	63767	Central Marin Sanitation District	3,127.76
02/10/2020	63766	CDW Government, Inc.	2,907.00
02/10/2020	63774	Graybar Electric Co. Inc.	2,850.21
02/10/2020	63761	Aqua Science	2,150.00
02/10/2020	63781	McMaster-Carr Supply Co.	886.35
02/10/2020	63759	Alpha Analytical Lab, Inc.	624.00
02/10/2020	63805	Yorke Engineering Inc.	595.00
02/10/2020	63802	Vision Service Plan	548.83
02/10/2020	63784	North Marin Water District	544.43
02/10/2020	63773	Grainger	517.02
02/10/2020	63794	School Fuel	500.00
02/10/2020	63803	Win-911 Software	495.00
02/10/2020	63764	BoundTree Medical, LLC	453.09
02/10/2020	63777	Janiline Supply Co	421.96
02/10/2020	63791	Pini Hardware	410.94
02/10/2020	63772	Evoqua Water Technologies - ...	350.07
02/10/2020	63782	Monterey Mechanical, Inc.	341.40
02/10/2020	63768	Cereske Electric Cable Co.	334.86
02/10/2020	63797	UniFirst Corporation	250.40
02/10/2020	63796	U.S. Bank Equipment Finance	219.06
02/10/2020	63787	O'Reilly Auto Parts	178.40
02/10/2020	63776	Irvine Consulting Services Inc.	176.75
02/10/2020	63788	Orkin Pest Control, Inc.	153.36
02/10/2020	63763	Barnett Medical LLC	135.00
02/10/2020	DD	Karkal, Sandeep	128.70
02/10/2020	63795	Staples Advantage	120.35
02/10/2020	DD	Long, William C.	112.80
02/10/2020	63792	R & B Company	103.37
02/10/2020	63770	Creamer, Laura(reimb)	102.81
02/10/2020	63785	Novato Farmers Market	95.00
02/10/2020	63771	CWEAmembers	94.00
02/10/2020	63762	AT&T Mobility	73.65
02/10/2020	63783	NAPA Auto Parts	71.64
02/10/2020	63775	Hardiman Construction-	40.00
02/10/2020	63760	American Messaging	13.49
Feb 10, 20			<u>337,699.77</u>

Novato Sanitary District Capital Projects Check Register

January 27, 2020

Date	Num	Name	Credit
Jan 27, 20			
01/27/2020	3570	Cantarutti Electric, Inc	55,089.00
01/27/2020	3576	Michels Corporation	15,606.22
01/27/2020	3571	EEC	13,222.54
01/27/2020	3574	Linscott Engineering Contr...	13,176.01
01/27/2020	3572	GHD Inc.	8,511.42
01/27/2020	3575	Marin Lock and Safe Servi...	163.50
01/27/2020	3573	Grainger	81.87
01/27/2020	3577	NorthBay Reprographics	23.16
Jan 27, 20			<u>105,873.72</u>

Novato Sanitary District Capital Projects Check Register

February 10, 2020

Date	Num	Name	Credit
Feb 10, 20			
02/10/2020	3582	JMB Construction, Inc	127,296.20
02/10/2020	3581	GHD Inc.	28,731.75
02/10/2020	3588	Novato, City	19,320.00
02/10/2020	3589	Nute Engineering Inc.	15,573.73
02/10/2020	3583	JMB Construction, Inc - Es...	6,699.80
02/10/2020	3592	Woodard & Curran formerl...	2,593.50
02/10/2020	3578	CA Dept. of Fish and Wildlife	2,290.50
02/10/2020	3584	Lateral-Faber	2,000.00
02/10/2020	3585	Lateral-Fryer	2,000.00
02/10/2020	3586	Lateral-Mayock	2,000.00
02/10/2020	3587	Lateral-Semple	2,000.00
02/10/2020	3591	State Water Resources Co...	1,949.00
02/10/2020	3580	Crump & Co. Inc.	1,302.67
02/10/2020	3579	Citi Visa (Costco)	1,035.82
02/10/2020	3590	Pini Hardware	147.96
Feb 10, 20			<u>214,940.93</u>

**Novato Sanitary District
Payroll and Payroll Related Disbursements
January - 2020**

Item 5.b.

Date	Description	Amount
01/31/2020	Payroll for January	127,336.55
01/24/2020	Retirees Health Reimbursement	13,553.54
01/31/2020	Eft-Federal P/R Taxes	25,457.86
01/31/2020	Eft-State P/R Taxes	8,164.93
01/24/2020	California State Disbursement Unit	571.00
01/24/2020	CalPERS 457 Plan	10,225.00
01/24/2020	CALPERS Retirement	12,632.87
01/24/2020	CalPers Health	30,223.40
01/24/2020	CALPERS Retirement	15,813.78
01/24/2020	Lincoln Financial Group	8,538.22
01/24/2020	Lincoln Financial Group-401a Plan	5,116.20
01/24/2020	Lincoln Financial Group 457 Roth	100.00
01/24/2020	Local Union 315	480.00
01/24/2020	Delta Dental	2,922.44
01/24/2020	ICMA-RC-Vantagepoint	1,635.15
01/24/2020	Lincoln Financial Group-401a Plan	4,030.55
01/24/2020	PARS-OPEB-Post Employment Benefits Trust	8,370.51
01/24/2020	PARS-PSRP-Post Employment Benefits Trust	15,056.63
Total for January 2020		290,228.63

Novato Sanitary District
Deposit Detail
 January 2020

Item 5.c.

Type	Date	Name	Account	Amount
Deposit	01/03/2020		11113 - Westamerica - Operations	
		County of Marin	51015-1 - Property Tax - RDA Funds	49,277.18
TOTAL				49,277.18
Deposit	01/07/2020	County of Marin	51015 - Property Taxes	3,449.73
		County of Marin	51015 - Property Taxes	70.79
		Wright Contracting	41090 - Non-domestic Permit Fees	(1) 175.00
		North Marin Water District-	11200 - Accounts Receivable	(2) 28,634.87
		Golden Gate Veterinary Compounding Pharm	11200 - Accounts Receivable	(1) 660.00
TOTAL				32,990.39
Deposit	01/10/2020	Diaz, Alex	41040 - Permit & Inspection Fee	40.00
		Hardiman Construction	41040 - Permit & Inspection Fee	40.00
		Hardiman Construction	41040 - Permit & Inspection Fee	40.00
		Roto Rooter	41040 - Permit & Inspection Fee	40.00
		County of Marin	51015 - Property Taxes	44.73
		County of Marin	51015 - Property Taxes	11,289.51
TOTAL				11,494.24
Deposit	01/23/2020	Gagne Brothers	41040 - Permit & Inspection Fee	40.00
		County of Marin	51015 - Property Taxes	2,872.97
		Verizon California	66193 - Telephone	124.54
		Wright Contracting	11200 - Accounts Receivable	(1) 1,250.00
		Novato Elks Lodge	41040 - Permit & Inspection Fee	60.00
		Government Finance Officers Assoc.	66121 - Accounting & Auditing	100.00
		Roy's Sewer Service, Inc.-	11200 - Accounts Receivable	(3) 176.26
TOTAL				4,623.77
Deposit	01/27/2020	Sewer Connection	41040 - Permit & Inspection Fee	40.00
		Sazada, John	41040 - Permit & Inspection Fee	40.00
		Auburn Ravine Ranch	11200 - Accounts Receivable	(4) 3,483.37
TOTAL				3,563.37
Deposit	01/28/2020	County of Marin	51015 - Property Taxes	1,966.23
		County of Marin	51015 - Property Taxes	5,447.54
		County of Marin	51015 - Property Taxes	8,522.47
		Roto Rooter	11200 - Accounts Receivable	(3) 1,272.32
TOTAL				17,208.56
Total Deposits for January 2020				119,157.51
(1)	Collection of non-domestic permit and discharge fees from Wright Contracting & Golden Gate Vet Pharmacy.			
(2)	Collection of Recycled Water Facility billing for October 2019 from North Marin Water District.			
(3)	Collection of septic hauler charges for Roy's Sewer Service & Roto Rooter.			
(4)	Collection of first quarterly billing for new rancher, Auburn Ravine Ranch.			

NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

TITLE: Consent Calendar: Accounts Receivable Aging Summary for the Period Ended January 31, 2020.	MEETING DATE: February 10, 2020 AGENDA ITEM NO.: 5.d.
RECOMMENDED ACTION: Receive Accounts Receivable Report as of January 31, 2020.	
SUMMARY AND DISCUSSION: The attached Accounts Receivable Summary shows the following receivables as of January 31, 2020: <u>1-45 days - \$170,909:</u> Current. <u>46-120 days - \$13:</u> Considered collectible. <u>120+ days - \$51,143:</u> Considered collectible - consists of receivables for the ranch lease for the first and second quarter of FY 18-19 and the water usage billing for FY 18-19.	
ATTACHMENTS: 1. Accounts Receivable (A/R) Aging Summary.	
STRATEGIC PLAN INFORMATION: This item addresses Goal 4 (Well Planned Finances with a Long Range Outlook) of the latest Strategic Plan Update.	
DEPT. MGR.: lmc, ssk	GENERAL MANAGER: SSK

**Novato Sanitary District
A/R Aging Summary
As of January 31, 2020**

	Current	46 - 120	> 120	TOTAL
Arcadis, U.S.	1,240.00	0.00	0.00	1,240.00 (1)
Auburn Ravine Ranch	13,020.67	0.00	0.00	13,020.67 (2)
Biomarin	5,621.22	0.00	0.00	5,621.22 (1)
Buck Institute	833.69	0.00	0.00	833.69 (1)
Hayden, Ron	0.00	0.00	51,142.59	51,142.59 (3)
North Marin Water District	20,841.02	0.00	0.00	20,841.02 (4)
Pacific Gas & Electric Co. (PG&E)	0.00	12.72	0.00	12.72 (5)
Recology	109,425.00	0.00	0.00	109,425.00 (6)
SMART	179.46	0.00	0.00	179.46 (7)
USCG	16,219.85	0.00	0.00	16,219.85 (7)
USCG-Finance Center	211.35	0.00	0.00	211.35 (7)
Veolia Water	3,317.24	0.00	0.00	3,317.24 (8)
TOTAL	170,909.50	12.72	51,142.59	222,064.81

(1) Lab monitoring, analysis and non domestic permit fees for Arcadis, U.S., Biomarin, and The Buck Institute.
 (2) Billing to Auburn Ravine Ranch for reimbursement of water usage for first half of fiscal year (FY)
 (3) Rancher's lease fees for the first and second quarter of FY 18-19 and the billing for water usage for FY 18-19.
 (4) Billing for reimbursement from North Marin Water District for November 2019 for Recycled Water Facility operations.
 (5) Billing of non-tax roll sewer service charges for PG&E for first half of FY 19-20.
 (6) Billing for the third quarter of Hazardous Household Waste - AB939 Fees from Recology.
 (7) Billing for monthly/quarterly sewer service charges for SMART and the U.S. Coast Guard.
 (8) Billing for reimbursement of quarterly expenses from Veolia Water for second quarter FY 19-20.

Novato Sanitary District

23-Jan-20

QUARTERLY INVESTMENT REPORT -- For Quarter Ended December 31, 2019

INVESTMENT	ACTIVITY	October	November	December	QTR TOTAL
STATE TREASURER'S INVESTMENT FUND	Total deposits/transfers in	115,000	285,000	11,360,000	11,760,000
	Total transfers out	724,000	1,754,000	1,607,000	4,085,000
Current Yield 2.043%	Minimum daily balance	23,591,891	22,122,891	22,122,891	22,122,891
	Maximum daily balance	24,041,517	23,591,891	32,017,234	32,017,234
	Interest earned	0	0	141,343	141,343
The LAIF Pooled Money Investment Account Report is attached as specified in California Government Code Section 53646 (e)					
TRUST ACCOUNTS					
For 2017 Refunding Wastewater Bond Funds (3)	Total deposits/transfers in	0	0	0	0
	Total transfers out	0	0	0	0
	Month End balance	0	0	0	
For 2019 Refunding Wastewater Bond Funds (4)	Total deposits/transfers in	0	0	0	0
	Total transfers out	0	0	0	0
	Month End balance	23,204	23,204	23,204	
CHECKING ACCOUNTS					
Interest Rate 0.02%	Operations Account				
	Total deposits & transfers in	946,340	2,094,785	13,538,168	16,579,293
	Total checks & transfers out	700,599	2,364,215	13,289,662	16,354,476
	Minimum daily balance	14,396	11,749	52,009	11,749
	Maximum daily balance	723,115	928,509	11,503,598	11,503,598
	Interest earned	2	5	7	14
	Payroll Account				
	Total transfers in	129,900	152,000	139,000	420,900
	Total checks & transfers out	138,537	151,129	139,453	429,119
	Minimum daily balance	298	72	456	72
	Maximum daily balance	117,298	122,425	125,176	125,176
	Project Account				
	Total transfers in	99,100	673,800	1,077,000	1,849,900
	Total checks & transfers out	73,270	300,714	1,074,562	1,448,546
	Minimum daily balance	2,547	2,700	2,656	2,547
	Maximum daily balance	63,047	433,575	740,657	740,657
	Interest earned	0	2	5	7

- NOTES:** (1) The above investments are consistent with the annual Statement of Investment Policy approved by the District Board, most recently May 2019.
The District has the ability to meet six months cash needs.
- (2) LAIF interest rate is currently 2.043 which is a slight decrease from 2.280 in September 2019, 2.428% in June 2019, 2.436% in March 2019 and 2.291% in December 2018.
- (3) The 2017 Bond fund accounts consist of debt service payments, no balance required in these accounts until debt service payments are funded which are due in February and August.
- (4) The 2019 New bond fund accounts consist of the balance remaining in the cost of issuance account. In the next few months, this account will only consist of the funding of the debt service payments in February and August.

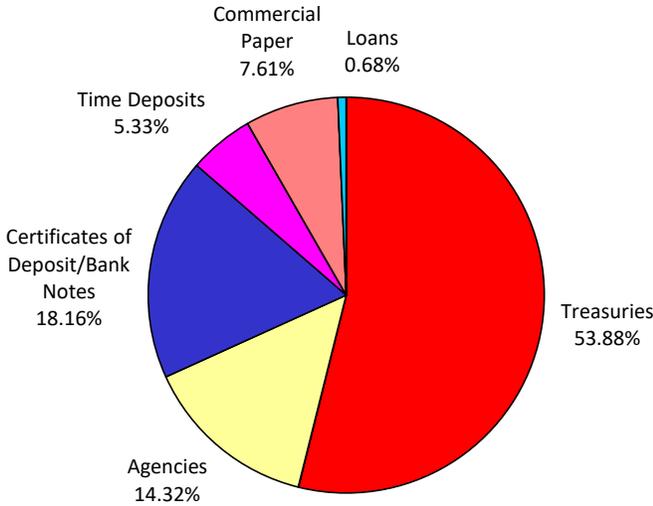


PMIA/LAIF Performance Report as of 01/22/2020



Pooled Money Investment Account Portfolio Composition ⁽¹⁾

12/31/19
\$88.9 billion



Percentages may not total 100% due to rounding

PMIA Average Monthly Effective Yields⁽¹⁾

Dec 2019	2.043
Nov 2019	2.103
Oct 2019	2.190

LAIF Quarterly Performance Quarter Ended 12/31/19

Apportionment Rate ⁽²⁾ :	2.29
Earnings Ratio ⁽²⁾ :	0.0000625008577897
Fair Value Factor ⁽¹⁾ :	1.001770298
Daily ⁽¹⁾ :	2.02%
Quarter to Date ⁽¹⁾ :	2.11%
Average Life ⁽¹⁾ :	226

PMIA Daily Rates⁽¹⁾

Date	Daily Yield*	Quarter to Date Yield	Average Maturity (in days)
12/23/19	2.03	2.12	222
12/24/19	2.03	2.12	225
12/25/19	2.03	2.12	225
12/26/19	2.03	2.12	224
12/27/19	2.03	2.12	227
12/28/19	2.03	2.12	227
12/29/19	2.03	2.12	227
12/30/19	2.03	2.11	224
12/31/19	2.02	2.11	226
01/01/20	2.03	2.03	224
01/02/20	2.00	2.02	231
01/03/20	2.00	2.01	229
01/04/20	2.00	2.01	229
01/05/20	2.00	2.01	229
01/06/20	2.00	2.00	226
01/07/20	1.99	2.00	224
01/08/20	1.99	2.00	224
01/09/20	1.99	2.00	224
01/10/20	1.98	2.00	223
01/11/20	1.98	2.00	223
01/12/20	1.98	2.00	223
01/13/20	1.98	1.99	220
01/14/20	1.97	1.99	221
01/15/20	1.96	1.99	228
01/16/20	1.95	1.99	226
01/17/20	1.95	1.99	224
01/18/20	1.95	1.98	224
01/19/20	1.95	1.98	224
01/20/20	1.95	1.98	224
01/21/20	1.95	1.98	219
01/22/20	1.95	1.98	218

*Daily yield does not reflect capital gains or losses

[View Prior Month Daily Rates](#)

Notes: The apportionment rate includes interest earned on the CalPERS Supplemental Pension Payment pursuant to Government Code 20825 (c)(1) and interest earned on the Wildfire Fund pursuant to Public Utility Code 3288 (a).

Source:

(1) State of California, Office of the Treasurer

(2) State of California, Office of the Controller



State of California Pooled Money Investment Account Market Valuation 12/31/2019

Description	Carrying Cost Plus		Fair Value	Accrued Interest
	Accrued Interest	Purch. Amortized Cost		
1* United States Treasury:				
Bills	\$ 17,174,339,397.43	\$ 17,350,129,672.69	\$ 17,365,398,000.00	NA
Notes	\$ 30,739,969,843.54	\$ 30,731,614,309.82	\$ 30,856,016,000.00	\$ 123,724,495.00
1* Federal Agency:				
SBA	\$ 563,068,144.49	\$ 563,068,144.49	\$ 559,814,189.13	\$ 1,060,847.49
MBS-REMICs	\$ 19,117,016.90	\$ 19,117,016.90	\$ 19,707,931.37	\$ 89,294.47
Debentures	\$ 2,345,173,135.80	\$ 2,345,053,344.14	\$ 2,358,141,250.00	\$ 12,401,929.25
Debentures FR	\$ -	\$ -	\$ -	\$ -
Debentures CL	\$ 775,000,000.00	\$ 775,000,000.00	\$ 774,976,000.00	\$ 1,472,708.50
Discount Notes	\$ 8,184,116,847.13	\$ 8,212,363,645.77	\$ 8,213,758,500.00	NA
1* Supranational Debentures	\$ 664,499,557.94	\$ 664,015,463.49	\$ 668,156,900.00	\$ 3,146,068.25
1* Supranational Debentures FR	\$ 200,189,619.96	\$ 200,189,619.96	\$ 200,208,546.60	\$ 690,069.72
2* CDs and YCDs FR	\$ 400,000,000.00	\$ 400,000,000.00	\$ 400,000,000.00	\$ 521,646.05
2* Bank Notes	\$ 700,000,000.00	\$ 700,000,000.00	\$ 700,074,261.44	\$ 5,441,333.35
2* CDs and YCDs	\$ 15,050,000,000.00	\$ 15,050,000,000.00	\$ 15,051,899,567.98	\$ 80,940,374.96
2* Commercial Paper	\$ 6,769,921,930.60	\$ 6,795,891,652.80	\$ 6,796,111,305.57	NA
1* Corporate:				
Bonds FR	\$ -	\$ -	\$ -	\$ -
Bonds	\$ -	\$ -	\$ -	\$ -
1* Repurchase Agreements	\$ -	\$ -	\$ -	\$ -
1* Reverse Repurchase	\$ -	\$ -	\$ -	\$ -
Time Deposits	\$ 4,736,240,000.00	\$ 4,736,240,000.00	\$ 4,736,240,000.00	NA
AB 55 & GF Loans	\$ 605,929,000.00	\$ 605,929,000.00	\$ 605,929,000.00	NA
TOTAL	\$ 88,927,564,493.79	\$ 89,148,611,870.06	\$ 89,306,431,452.09	\$ 229,488,767.04

Fair Value Including Accrued Interest

\$ 89,535,920,219.13

* Governmental Accounting Standards Board (GASB) Statement #72

Repurchase Agreements, Time Deposits, AB 55 & General Fund loans, and Reverse Repurchase agreements are carried at portfolio book value (carrying cost).

The value of each participating dollar equals the fair value divided by the amortized cost (1.001770298). As an example: if an agency has an account balance of \$20,000,000.00, then the agency would report its participation in the LAIF valued at \$20,035,405.95 or \$20,000,000.00 x 1.001770298.



Pooled Money Investment Account

Portfolio as of 12-31-19

PAR VALUES MATURING BY DATE AND TYPE

Maturities in Millions of Dollars

ITEM	1 day to 30 days	31 days to 60 days	61 days to 90 days	91 days to 120 days	121 days to 150 days	151 days to 180 days	181 days to 210 days	211 days to 270 days	271 days to 1 year	1 year to 2 years	2 years to 3 years	3 years to 4 years	4 years to 5 year/out
TREASURY	\$ 4,300	\$ 5,650	\$ 2,250	\$ 400	\$ 2,600	\$ 1,750	\$ 4,000	\$ 5,250	\$ 6,100	\$ 14,000	\$ 1,900		
REPO													
TDs	\$ 1,534	\$ 806	\$ 923	\$ 468	\$ 547	\$ 460							
AGENCY	\$ 763	\$ 2,150	\$ 1,640	\$ 1,325	\$ 2,050	\$ 875	\$ 1,240	\$ 527	\$ 1,443	\$ 1,168	\$ 450	\$ 150	\$ 125
CP	\$ 750	\$ 2,100	\$ 1,275	\$ 850	\$ 1,550	\$ 100	\$ 200						
CDs + BNs	\$ 1,750	\$ 5,500	\$ 2,300	\$ 2,500	\$ 1,400	\$ 750	\$ 1,450	\$ 100	\$ 400				
CORP BND													
TOTAL													
\$ 89,818	\$ 9,097	\$ 16,206	\$ 8,388	\$ 5,543	\$ 8,147	\$ 3,935	\$ 6,890	\$ 5,877	\$ 7,943	\$ 15,168	\$ 2,350	\$ 150	\$ 125
PERCENT	10.1%	18.0%	9.3%	6.2%	9.1%	4.4%	7.7%	6.5%	8.8%	16.9%	2.6%	0.2%	0.1%

Notes:

1. SBA Floating Rate Securities are represented at coupon change date.
2. Mortgages are represented at current book value.
3. Figures are rounded to the nearest million.
4. Does not include AB55 and General Fund loans.

NOVATO SANITARY DISTRICT

MEMORANDUM

BOARD

MEETING DATE: February 10, 2020

TO: District Board of Directors

FROM: Sandeep Karkal, General Manager-Chief Engineer
Laura M. Creamer, Finance Officer

SUBJECT: Fiscal Year (FY) 19-20 Second Quarter Financial Report (Unaudited)

INTRODUCTION

This memorandum presents a summary unaudited year-to-date financial report for the District as of the FY19-20 Second Quarter ended December 31, 2019. The following items are presented as three sections herein:

1. Revenue and Expenditure Report (for the quarter ended December 31, 2019).
2. Debt Service Schedule as of December 31, 2019.
3. Operating and Capital Cash Flow for July 1, 2019 – December 31, 2019.

1.0 REVENUE AND EXPENDITURES REPORT

This section presents an overview of revenues and expenditures for the operating and capital funds through the second quarter of Fiscal Year 2019-20. A more detailed summary is presented in the attached tables titled “DRAFT – Revenues and Expenditures – Budget vs. Actual”. A brief discussion and analysis of items displaying variance from the final budget is also provided below, as appropriate.

OPERATING FUND

Table 1: OPERATING REVENUE

	YTD Balance Received	Annual Budget	Budget Overage	Pct. Received
Total Operating Revenues	\$6,374,239	\$11,534,649	\$5,160,410	55.3%

Discussion

Overall, operating revenues are approximately 55.3% of the total budget amount with 50% of the year complete. The operating revenue accounts are within the normal range for this time of year, since the District receives its primary revenues in December and April.

Table 2: OPERATING EXPENDITURES

	YTD Balance	Annual Budget	Budget Unused	Pct. Used
Total Operating Expenditures	\$ 5,289,056	\$11,423,358	\$6,134,302	46.3%

Discussion

Overall, operating expenditures are at approximately 46.3% of budget, with 50% of the year complete. Variances in individual expenditure accounts are discussed below:

Collection System (44.0%)

General: Overall, no significant negative variance noted for this cost center for the second quarter. The cost center is expected to stay within budget over remainder of the fiscal year. Significant variances in individual expenditure accounts are discussed below:

Employee Benefits: 54.4%. Per review of account, no significant items noted. The account is expected to stay within budget over remainder of the fiscal year.

Gas, Oil & Fuel: 65.8%. Per review of account, significant variance due to purchase of additional fuel due to the Public Safety Power Shutoff (PSPS) event in October. Fuel in the amount of approximately \$11k was purchased during this time period; which is an increase from last year of \$5k or 79%. Staff will continue to carefully monitor this budget line item, and adjust budget line items within the overall cost center consistent with District Policy No. 3512: Annual Budget – Non-Personnel Related Changes to Budget Amounts.

Operating Supplies: 52.5%. Per review of account, no significant items noted. The account is expected to stay within budget over remainder of the fiscal year.

Repairs & Maintenance: 55.4%. Per review of account, no significant items noted. The account is expected to stay within budget over remainder of the fiscal year.

Other (Garbage Collection): 66.5%. Per review of account, no significant items noted. The account is expected to stay within budget over remainder of the fiscal year.

Treatment Facilities - Contract Operations: (44.6%)

General: Overall, no significant negative variance noted for this cost center for the second quarter. The cost center is expected to stay within budget over the remainder of the fiscal year. Significant variances in individual expenditure accounts are discussed below.

Water/Permits/Telephone: 54.5%. Per review of account, no significant items other than a small variance due to the PSPS event in October, which increased fuel cost in this account by approximately \$5k for this same time period last fiscal year. Staff will continue to carefully monitor this budget line item.

Reclamation/Disposal Facilities: (67.1%)

General: Overall, significant negative variance noted for this cost center for the second quarter, however, the cost center is expected to stay within budget over remainder of the fiscal year. Significant variances in individual expenditure accounts are discussed below.

Gasoline & Oil: 52.5%. Per review of account, no significant items noted. The account is expected to stay within budget over remainder of the fiscal year.

Sludge Disposal: 94.0%. Sludge Disposal operations have been completed for the fiscal year. Account expected to stay within budget over remainder of the fiscal year.

Water: 268.6%. Water is a reimbursable expenditure billed and paid by the rancher at the end of the fiscal year. The account is expected to stay within budget over remainder of fiscal year, after accounting for cost reimbursement from rancher.

Permits & Fees: 72.8%. Significant variance due to the annual permit for Bay Area Air Quality Management District being paid in the first quarter of the fiscal year. The account is expected to stay within budget over the remainder of the fiscal year.

Laboratory/Monitoring: (44.7%)

General: Overall, no significant negative variance noted for this cost center for the second quarter. The cost center is expected to stay within budget over remainder of the fiscal year. Variances in individual expenditure accounts are discussed below.

Repairs & Maintenance: 53.5%. No significant items, but a small variance due to an unexpected repair to the spectrophotometer in the amount of \$4K in the second quarter. The account is expected to stay within budget over the remainder of the fiscal year.

Permits & Fees: 105.9%. Significant variance albeit on a small overall annual budget of \$6,000 for this account, due to the annual permit fee paid for the California Environmental Laboratory Accreditation Program (ELAP) in the second quarter. The account will be reviewed in the upcoming budget cycle to allow for increased fees by State Water Resources Control Board.

Pump Stations: (49.0%)

General: Overall, no significant variance noted for this cost center for the second quarter. The cost center is expected to stay within budget over remainder of the fiscal year. Variances in individual expenditure accounts are discussed below.

Employee Benefits: 54.4%. Per review of account, no significant items noted. The account is expected to stay within budget over the remainder of the fiscal year.

Gas, Oil & Fuel: 92.46%. Per review of account, significant variance due to purchase of additional fuel due to the Public Safety Power Shutoff (PSPS) event in October, to operate standby generators at the pump stations. Staff will continue to carefully monitor this budget line item, and adjust budget line items within the overall cost center consistent with District Policy No. 3512: Annual Budget – Non-Personnel Related Changes to Budget Amounts.

Safety Expenses: 70.5%. Due to the small budget for this account, significant variance still due to purchase of new AED units in the first quarter. The account is expected to stay within budget over the remainder of the fiscal year.

Software Maintenance: 54.8%. Per review of account, no significant items noted. The account is expected to stay within budget over the remainder of the fiscal year.

Repairs & Maintenance: 67.7%. Per review of account, significant variance due to various expenses mostly equipment rental associated with two generator failures at Olive and Marin Village Pump Station. In addition, unexpected expenses incurred due to the flooding of Rowland Plaza's underground control structure in this quarter.

Administration and Engineering: (44.0%)

General: Overall, no significant negative variance noted for this cost center for the second quarter. The cost center is expected to stay within budget over remainder of the fiscal year. Variances in individual expenditure accounts are discussed below.

Employee Benefits: 53.9%. Per review of account, no significant items noted. The account is expected to stay within budget over the remainder of the fiscal year.

Gasoline & Oil: 56.1%. Per review of account, no significant items noted. The account is expected to stay within budget over the remainder of the fiscal year.

Accounting & Auditing: 75.8%. Significant variance due to completion of annual audit for FY 18-19; account expected to stay within budget for the current fiscal year.

County Fees - Property Taxes/Sewer Service Charges (SSC): 67.8%. Significant variance but expenditures are within expected parameters for this time of year, due to payment of Property tax/SSC collection services rendered to the District by the County. The District receives its revenue in December and April, receiving approximately 55% in December and 45% in April. The account is expected to stay within budget for the current fiscal year.

AB 939 Solid Waste Programs: (31.2%)

General: Overall, no significant negative variance noted for this cost center for the second quarter. Consistent with prior years, expenses are lower (at about 31% of budget) with 50% of the year complete, primarily due to lower than anticipated consulting oversight and management services required from the Solid Waste Coordinator; and also given that significant expenses for outreach and public education events related to E-waste, School Fuel, Business Showcase, etc. typically occur in the second half.

Recycled Water: (54.6%)

General: Overall, significant variance noted for this cost center for the second quarter, however, the cost center is expected to stay within budget over remainder of the fiscal year. Variances in individual expenditure accounts are discussed below.

O&M Services: 73.7%. Significant variance from on-going adjustments with additional recycled water customers continuing to come on-line with the expansion of the recycled water distribution system. Note that these costs are reimbursable pass-through costs billed to and paid by the North Marin Water District (NMWD).

Research & Monitoring: 98.2%. Please refer to explanation above for O&M Services.

Non-Departmental: (52.0%)

General: Overall, significant variances noted for this cost center for the second quarter. The cost center is expected to stay within budget over remainder of the fiscal year. Variances in individual expenditure accounts are discussed below.

Insurance: 120.7%. The insurance expense is within expected parameters for this time of year, as it is typically paid when billed in the first and second quarters of the fiscal year. The account is expected to stay within budget over the current fiscal year, once the District receives the annual Pooled Liability Program (PLP) dividend from CSRMA in March, which will offset the account balance.

Agency Dues: 83.2%. Variance due to significant portion of agency dues having being paid for the current fiscal year. The account is expected to stay within budget over the remainder of the fiscal year.

Memberships/Certifications: 59.2%. Per review of account, no significant items noted. The account is expected to stay within budget over the remainder of the fiscal year.

County Fees- Property Taxes/Sewer Service Charges: 67.8%. Expenditures are within expected parameters for this time of year. The District receives its revenue in December and April, receiving approximately 55% in December and 45% in April. The account is expected to stay within budget for the current fiscal year.

CAPITAL FUND

Table 3: CAPITAL REVENUE

Capital Revenue	YTD Balance Received	Annual Budget	Over/(Under) Budget	Pct. Received
Sewer Service Charges	\$4,705,758	\$ 8,422,128	(\$3,716,370)	55.9%
Property Taxes	1,373,080	2,382,632	(1,009,552)	57.6%
Connection Charges	98,815	475,200	(376,385)	20.8%
Collector Sewer/Special Equalization Charges	180	1,000	(820)	18.0%
Interest	127,679	120,000	7,679	106.4%
Other Revenue	0	20,000	(20,000)	0.0%
Total Revenue	\$6,305,512	\$11,420,960	(\$5,115,448)	55.2%

Discussion

Overall capital revenues are 55.2% of budget at the close of the second quarter, consistent with the District receiving the bulk of its revenue in December and April.

Table 4: CAPITAL EXPENDITURES

	YTD Balance	Annual Budget	Budget Unused	Pct. Used
Capital Expenditures	\$2,834,720	\$12,729,956	(\$9,895,236)	22.3%

Discussion

The list of capital project accounts is shown in the attached tables. Overall expenses are 22.3% of budget.

Attachments:

1. Draft Revenue and Expenditure Reports:
 - a. Operating, July 2019-December 2019
 - b. Capital, July 2019-December 2019.
2. Debt Service Schedule as of December 31, 2019
3. Operating and Capital Cash Flow, July 2019-December 2019.

Novato Sanitary District
DRAFT - Revenues & Expenditures Budget vs. Actual
July through December 2019

	Jul - Dec 19	Budget	\$ Over Budget	% of Budget
41000 · OPERATING INCOME				
41010 · Sewer Service Charges	5,755,723.65	10,306,800.00	(4,551,076.35)	55.84%
41030 · Plan Check & Inspection Fee	3,646.00	500.00	3,146.00	729.2%
41040 · Permit & Inspection Fee	3,610.00	6,000.00	(2,390.00)	60.17%
41060 · Interest Income	173,390.64	180,000.00	(6,609.36)	96.33%
41080 · Engineering & Admin Charges	0.00	165,000.00	(165,000.00)	0.0%
41090 · Non-domestic Permit Fees	1,596.44	30,000.00	(28,403.56)	5.32%
41100 · Garbage Franchise Fees	31,008.00	58,210.00	(27,202.00)	53.27%
41105 · AB 939 Collector Fees	217,130.00	434,260.00	(217,130.00)	50.0%
41107 · Oil/Bev/Tire Grants	36,906.00	52,009.00	(15,103.00)	70.96%
41130 · Ranch Income	3,571.49	40,000.00	(36,428.51)	8.93%
41135 · Recycle Water Facility Revenue	137,231.56	231,870.00	(94,638.44)	59.19%
41140 · Other Revenue	10,424.98	20,000.00	(9,575.02)	52.13%
41142 · Gain/Loss on disposal of assets	0.00	10,000.00	(10,000.00)	0.0%
Total 41000 · OPERATING INCOME	6,374,238.76	11,534,649.00	(5,160,410.24)	55.26%
Expense				
60000 · COLLECTION SYSTEM				
60010 · Salaries & Wages	326,557.43	679,353.00	(352,795.57)	48.07%
60020 · Employee Benefits	178,898.81	328,738.00	(149,839.19)	54.42%
60060 · Gas, Oil & Fuel	11,848.62	18,000.00	(6,151.38)	65.83%
60085 · Safety	2,058.19	5,500.00	(3,441.81)	37.42%
60091 · Software Maint	13,467.11	35,000.00	(21,532.89)	38.48%
60100 · Operating Supplies	13,129.84	25,000.00	(11,870.16)	52.52%
60150 · Repairs & Maintenance	41,511.91	75,000.00	(33,488.09)	55.35%
60152 · Small Tools	141.96	2,000.00	(1,858.04)	7.1%
60153 · Outside Services	9,764.00	145,000.00	(135,236.00)	6.73%
60192 · Water	5,691.99	12,000.00	(6,308.01)	47.43%
60193 · Telephone	1,434.08	3,500.00	(2,065.92)	40.97%
60200 · Other(Garbage Coll)	465.73	700.00	(234.27)	66.53%
60201 · Permits & Fees	16,843.00	85,000.00	(68,157.00)	19.82%
Total 60000 · COLLECTION SYSTEM	621,812.67	1,414,791.00	(792,978.33)	43.95%
61000 · TREATMENT FACILITIES				
61000-1 · Fixed Fee	1,100,392.98	2,275,786.00	(1,175,393.02)	48.35%
61000-2 · Insurance & Bonds	4,839.04	14,000.00	(9,160.96)	34.57%
61000-3 · Major Repair/Replacement	54,160.62	150,000.00	(95,839.38)	36.11%
61000-4 · Water/Permits/Telephone	49,022.04	90,000.00	(40,977.96)	54.47%
61000-5 · Gas & Electricity	285,127.14	816,033.00	(530,905.86)	34.94%
Total 61000 · TREATMENT FACILITIES	1,493,541.82	3,345,819.00	(1,852,277.18)	44.64%

Novato Sanitary District
DRAFT - Revenues & Expenditures Budget vs. Actual
July through December 2019

	Jul - Dec 19	Budget	\$ Over Budget	% of Budget
63000 · RECLAMATION/DISPOSAL				
63010 · Salaries & Wages	44,049.02	86,909.00	(42,859.98)	50.68%
63020 · Employee Benefits	10,360.37	24,565.00	(14,204.63)	42.18%
63060 · Gasoline & Oil	524.49	1,000.00	(475.51)	52.45%
63085 · Safety	0.00	1,500.00	(1,500.00)	0.0%
63091 · Software Maintenance	1,000.00	2,000.00	(1,000.00)	50.0%
63100 · Operating Supplies	605.52	2,000.00	(1,394.48)	30.28%
63115 · Sludge Disposal	211,450.00	225,000.00	(13,550.00)	93.98%
63150 · Repairs & Maintenance	24,828.18	70,000.00	(45,171.82)	35.47%
63152 · Small Tools	108.31	500.00	(391.69)	21.66%
63157 · Ditch/Dike Maintenance	0.00	11,000.00	(11,000.00)	0.0%
63191 · Gas & Electricity	35,296.22	80,000.00	(44,703.78)	44.12%
63192 · Water - Reclamation	13,427.75	5,000.00	8,427.75	268.56%
63201 · Permits & Fees	3,275.00	4,500.00	(1,225.00)	72.78%
Total 63000 · RECLAMATION/DISPOSAL	344,924.86	513,974.00	(169,049.14)	67.11%
64000 · LABORATORY/MONITORING				
64010 · Contract Lab Services	184,425.34	379,848.00	(195,422.66)	48.55%
64060 · Gasoline & Oil	78.87	500.00	(421.13)	15.77%
64085 · Safety	0.00	1,000.00	(1,000.00)	0.0%
64091 · Software Maintenance	0.00	1,000.00	(1,000.00)	0.0%
64100 · Operating Supplies	8,177.84	20,500.00	(12,322.16)	39.89%
64150 · Repairs & Maintenance	6,526.31	12,200.00	(5,673.69)	53.49%
64160 · Research & Monitoring	48,130.78	130,000.00	(81,869.22)	37.02%
64170 · Pollution Prevention/Public Ed	10,527.04	40,000.00	(29,472.96)	26.32%
64201 · Permits & Fees	6,352.00	6,000.00	352.00	105.87%
Total 64000 · LABORATORY/MONITORING	264,218.18	591,048.00	(326,829.82)	44.7%
65000 · PUMP STATIONS				
65010 · Salaries & Wages	163,624.27	337,492.00	(173,867.73)	48.48%
65020 · Employee Benefits	74,443.79	136,951.00	(62,507.21)	54.36%
65060 · Gasoline & Oil	5,917.18	6,400.00	(482.82)	92.46%
65085 · Safety Expenses	2,818.54	4,000.00	(1,181.46)	70.46%
65091 · Software Maintenance	4,655.00	8,500.00	(3,845.00)	54.77%
65100 · Operating Supplies	2,665.38	10,000.00	(7,334.62)	26.65%
65150 · Repairs & Maintenance	81,218.19	120,000.00	(38,781.81)	67.68%
65152 · Small Tools	299.85	2,000.00	(1,700.15)	14.99%
65153 · Outside Services, Electrical	8,949.84	55,000.00	(46,050.16)	16.27%
65191 · Gas & Electricity	49,518.41	115,000.00	(65,481.59)	43.06%
65192 · Water	2,690.81	7,000.00	(4,309.19)	38.44%
65193 · Telephone	17,772.05	42,000.00	(24,227.95)	42.31%
65201 · Permits & Fees	2,500.00	7,000.00	(4,500.00)	35.71%
Total 65000 · PUMP STATIONS	417,073.31	851,343.00	(434,269.69)	48.99%

Novato Sanitary District
DRAFT - Revenues & Expenditures Budget vs. Actual
July through December 2019

	Jul - Dec 19	Budget	\$ Over Budget	% of Budget
66000 · ADMIN/ENGINEERING				
66010 · Salaries & Wages	624,469.37	1,383,416.00	(758,946.63)	45.14%
66020 · Employee Benefits	338,728.88	628,135.00	(289,406.12)	53.93%
66030 · Director's Fees	10,125.00	32,400.00	(22,275.00)	31.25%
66060 · Gasoline & Oil	1,459.25	2,600.00	(1,140.75)	56.13%
66085 · Safety	1,600.99	4,200.00	(2,599.01)	38.12%
66090 · Office Expense	9,516.62	28,000.00	(18,483.38)	33.99%
66100 · Engineering Supplies	726.36	5,000.00	(4,273.64)	14.53%
66121 · Accounting & Auditing	22,724.00	30,000.00	(7,276.00)	75.75%
66123 · O/S Contractual	79,655.27	283,000.00	(203,344.73)	28.15%
66124 · IT/Misc Electrical	9,360.47	57,000.00	(47,639.53)	16.42%
66150 · Repairs & Maintenance	21,776.51	95,000.00	(73,223.49)	22.92%
66193 · Telephone	6,691.87	13,000.00	(6,308.13)	51.48%
Total 66000 · ADMIN/ENGINEERING	1,126,834.59	2,561,751.00	(1,434,916.41)	43.99%
67000 · AB 939 SOLID WASTE PROGRAMS				
67400 · Consulting Services	40,860.00	147,500.00	(106,640.00)	27.7%
67500 · Household Hazardous Waste	105,741.74	292,000.00	(186,258.26)	36.21%
67530 · Used Oil/Beverage Cont Grant	2,880.00	11,269.00	(8,389.00)	25.56%
67540 · Outreach/Publicity/Education	300.42	20,500.00	(20,199.58)	1.47%
67600 · Other	1,951.45	5,000.00	(3,048.55)	39.03%
67610 · City AB 939 Admin Services	0.00	10,000.00	(10,000.00)	0.0%
Total 67000 · AB 939 SOLID WASTE PROGRAMS	151,733.61	486,269.00	(334,535.39)	31.2%
68000 · Recycled Water				
68010 · O & M Services	48,635.78	66,000.00	(17,364.22)	73.69%
68100 · Operating Supplies	1,094.90	4,400.00	(3,305.10)	24.88%
68101 · Operating Chemicals	35,438.49	72,120.00	(36,681.51)	49.14%
68150 · Repairs & Maintenance	17,127.33	33,550.00	(16,422.67)	51.05%
68160 · Research & Monitoring	13,744.93	14,000.00	(255.07)	98.18%
68191 · Gas & Electricity	10,555.14	41,800.00	(31,244.86)	25.25%
Total 68000 · Recycled Water	126,596.57	231,870.00	(105,273.43)	54.6%
69000 · Non-Departmental				
69021-1 · Retiree Health Benefits - Trust	101,214.96	201,661.00	(100,446.04)	50.19%
69021 · Retiree Health Benefits	102,164.94	226,673.00	(124,508.06)	45.07%
69022 · Pension Expense-Trust	180,679.56	361,359.00	(180,679.44)	50.0%
69040 · Election Expenses	9,778.31	95,000.00	(85,221.69)	10.29%
69070 · Insurance Expense	201,636.98	167,000.00	34,636.98	120.74%
69071 · Insurance Claim Expense	0.00	45,000.00	(45,000.00)	0.0%
69075 · Agency Dues	62,250.04	74,800.00	(12,549.96)	83.22%
69080 · Memberships/Certifications	5,916.26	10,000.00	(4,083.74)	59.16%
69122 · Attorney Fees	3,046.15	50,000.00	(46,953.85)	6.09%
69125 · Safety & Wellness Incentive	28.95	10,000.00	(9,971.05)	0.29%
69130 · Printing & Publications	611.92	24,000.00	(23,388.08)	2.55%
69170 · Board Travel & Training	8,476.28	26,000.00	(17,523.72)	32.6%
69171 · Staff Travel & Training	28,473.25	65,000.00	(36,526.75)	43.81%
69202 · County Fees-Property Taxes	16,349.50	33,000.00	(16,650.50)	49.54%
69203 · County Fees-Sewer Serv Chg	21,693.00	32,000.00	(10,307.00)	67.79%
69250 · Service Charge Syst Exp	0.00	5,000.00	(5,000.00)	0.0%
Total 69000 · Non-Departmental	742,320.10	1,426,493.00	(684,172.90)	52.04%
Total Expense	5,289,055.71	11,423,358.00	(6,134,302.29)	46.3%
Net Income (Loss)	1,085,183.05	111,291.00	973,892.05	

Novato Sanitary District
DRAFT Revenues & Expenditures - Capital
 July through December 2019

	Jul - Dec 19	Budget	\$ Over Budget	% of Budget
Income				
51000 · CAPITAL IMPROVEMENT INCOME				
51010 · Sewer Service Charges	4,705,758.04	8,422,128.00	(3,716,369.96)	55.87%
51015 · Property Taxes	1,373,079.50	2,382,632.00	(1,009,552.50)	57.63%
51020 · Connection Charges	98,815.50	475,200.00	(376,384.50)	20.8%
51040 · Special Equalization Charge	180.00	1,000.00	(820.00)	18.0%
51060 · Interest	127,678.84	120,000.00	7,678.84	106.4%
51070 · Other Revenue	0.00	20,000.00	(20,000.00)	0.0%
Total 51000 · CAPITAL IMPROVEMENT INCOME	6,305,511.88	11,420,960.00	(5,115,448.12)	55.21%
Expense				
72000 · CAPITAL IMPROVEMENT PROJECTS				
72403 · Pump Station Rehabilitation	2,338.75	515,000.00	(512,661.25)	0.45%
72508 · N. Bay Water Recycling Auth	0.00	25,000.00	(25,000.00)	0.0%
72706 · Collection System Improv	1,798,719.77	2,790,000.00	(991,280.23)	64.47%
72706-1 · Lateral Replacement Program	8,000.00	60,000.00	(52,000.00)	13.33%
72707 · Hamilton Wetlands/Outfall Integ	0.00	10,000.00	(10,000.00)	0.0%
72708 · Cogeneration/Alt Energy	0.00	1,010,000.00	(1,010,000.00)	0.0%
72802 · Annual Sewer Adj. for City Proj	0.00	25,000.00	(25,000.00)	0.0%
72803 · Annual Collection Sys Repairs	13,114.68	100,000.00	(86,885.32)	13.12%
72804 · Annual Reclamation Fac Imp	57,029.52	200,000.00	(142,970.48)	28.52%
72805 · Annual Treatment Plnt Improv	0.00	350,000.00	(350,000.00)	0.0%
72806 · Annual Pump Station Improv	6,886.38	175,000.00	(168,113.62)	3.94%
72807 · Annual Ignacio Facility Improv	28,767.43	50,000.00	(21,232.57)	57.54%
72808 · Strategic Plan Update	0.00	20,000.00	(20,000.00)	0.0%
72809 · Novato Creek Watershed	0.00	5,000.00	(5,000.00)	0.0%
73003 · Admin Bldg/Maint.Bldg Upgrades	31,696.82	150,000.00	(118,303.18)	21.13%
73004 · Odor Control & NTP Landscaping	26,682.00	50,000.00	(23,318.00)	53.36%
73005 · RWF Expansion	(296,127.99)	(295,000.00)	(1,127.99)	100.38%
73006 · NTP Corrosion Control	34,739.34	55,000.00	(20,260.66)	63.16%
73090 · Vehicle Replacement	604.12	605,000.00	(604,395.88)	0.1%
Total 72000 · CAPITAL IMPROVEMENT PROJECTS	1,712,450.82	5,900,000.00	(4,187,549.18)	29.03%
78400 · Principal and Interest				
78500 · Interest - Capital Projects	1,122,269.14	1,963,279.00	(841,009.86)	57.16%
78501 · Principal - Capital Projects	0.00	4,866,677.00	(4,866,677.00)	0.0%
Total 78400 · Principal and Interest	1,122,269.14	6,829,956.00	(5,707,686.86)	16.43%
Total Expense	2,834,719.96	12,729,956.00	(9,895,236.04)	22.27%
Net Income(Loss)	3,470,791.92	(1,308,996.00)	4,779,787.92	

Novato Sanitary District
State Revolving Fund Loan Payable and 2019 Wastewater Revenue Refinancing Bonds
and 2017 Wastewater Revenue Refunding Bonds Payable Balances

2.0 Debt Service Schedule as of December 31, 2019

	<u>State Revolving Fund (SRF) Loan</u>		
		Principal	Interest
	SRF Loan Payable 7/1/2019.....	55,511,638	
	Principal Payment 2019-20	(55,511,638)	
	Interest payments 2019-20		(806,769)
	SRF Loan Balance/Interest Paid 8/31/2019.....	-	(806,769)
	<u>2019 Wastewater Revenue Refinancing Bonds</u>		
		Principal	Interest
	Revenue Bond Payable Balance 7/1/2019.....	-	
	New Bond payable	46,145,000	
	Principal Payment 2019-20	-	
	Interest payments 2019-20		-
	Revenue Bond Payable Balance/Interest Paid 12/31/2019	46,145,000	-
	<u>2017 Wastewater Revenue Refunding Bonds</u>		
	Revenue Bond Payable Balance 7/1/2019.....	12,620,000	
	Principal Payment 2019-20	-	
	Interest payments 2019-20		(315,500)
	Revenue Bond Payable Balance/Interest Paid 12/31/2019	12,620,000	(315,500)
	Note 1: In August 2019, the District refinanced the SRF Loan with the issuance of its 2019 Wastewater Revenue Refinancing Bonds.		
	Note 2: Principal and Interest payments for the 2017 and 2019 Wastewater Revenue Bonds are paid in August and February of each fiscal year.		

3.0 OPERATING AND CAPITAL CASH FLOW

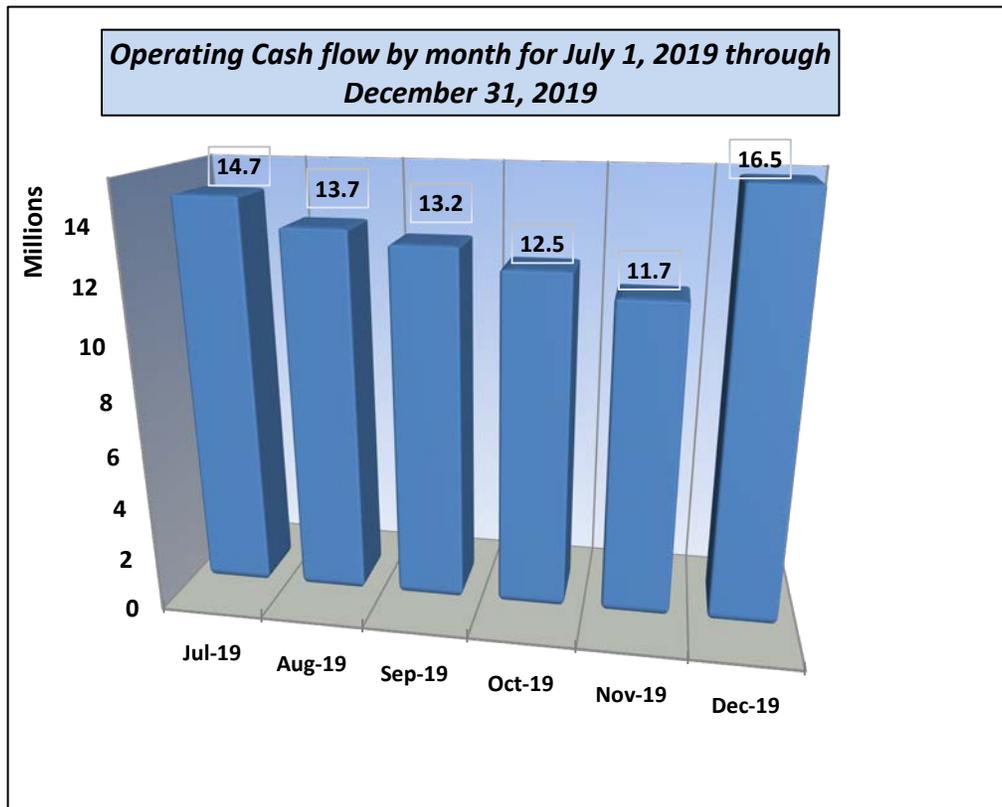
Operating:

Cash Flow For Novato Sanitary District

July 1, 2019 - December 31, 2019

Dated: February 10, 2020

Month Earned	Operating Revenue	Monthly Operating Expenditures	Cash Balance
			* \$ 15,627,565
Jul-19	\$ 101,674	\$ 1,036,111	14,693,128
Aug-19	33,708	1,031,794	13,695,042
Sep-19	243,015	712,624	13,225,433
Oct-19	82,360	781,580	12,526,213
Nov-19	295,525	1,116,979	11,704,759
Dec-19	5,709,552	884,945	16,529,366



Note: Cash balances at year end split 55/45 - Operating/Capital based on split sewer service charges.

* Beginning balance adjusted for accrual vs cash basis differences.

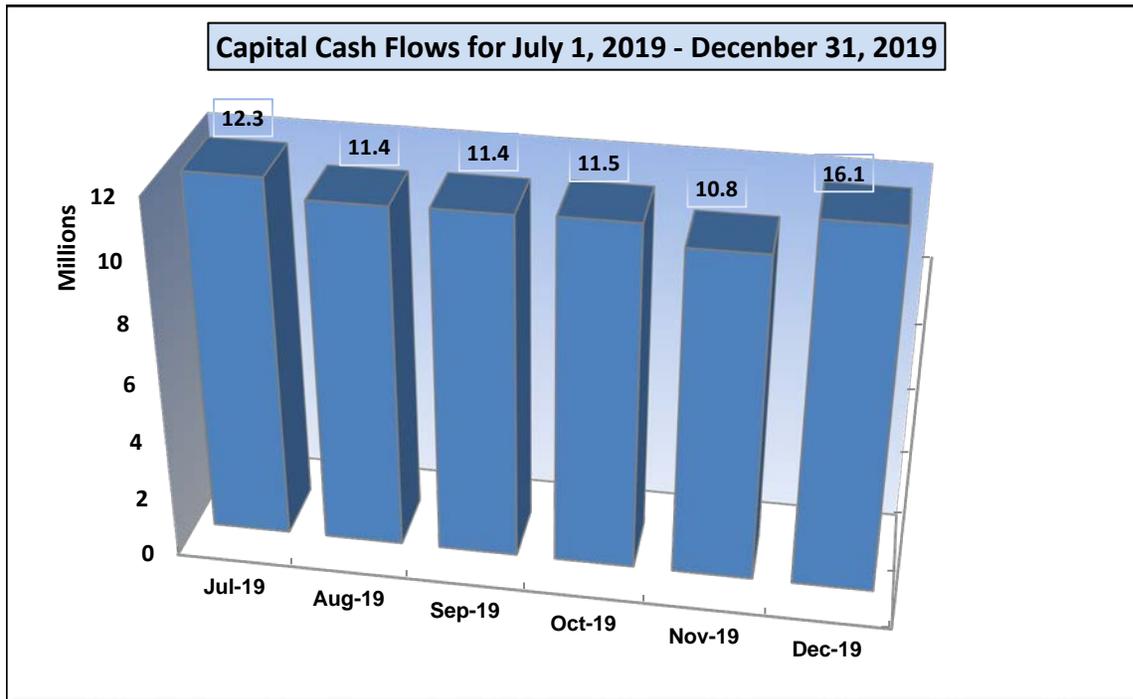
Capital:

Cash Flow For Novato Sanitary District

July 1, 2019 - December 31, 2019

Dated: February 10, 2020

Month Earned	Monthly Operating Expenditures	Debt Service	Capital Revenue	Cash Balance
Jul-19	\$ 147,999	\$ 315,500	\$ 108,629	\$ 12,608,691
Aug-19	84,528	806,769	29,026	12,253,821
Sep-19	50,477		89,460	11,391,550
Oct-19	86,651		132,993	11,430,533
Nov-19	662,717		16,124	11,476,875
Dec-19	769,558		6,009,998	10,830,282
				16,070,722



NOVATO SANITARY DISTRICT BOARD AGENDA AGENDA ITEM SUMMARY

TITLE: District Finance Officer Attendance at California Society of Municipal Finance Officers (CSMFO) Annual Conference.	MEETING DATE: February 10, 2020 AGENDA ITEM NO.: 5.g.
RECOMMENDED ACTION: Receive report, District Finance Officer’s attendance at annual California Society of Municipal Finance Officers (CSFMO) conference – information only.	
SUMMARY AND DISCUSSION: <p>The District’s Finance Officer, Laura Creamer attended the annual CSMFO Conference from January 28th – 31st, 2020 in Anaheim.</p> <p>The conference courses covered current topics such as: CalPERS Update, Government Auditing Standards Board (GASB) Updates, Protecting Your Entity from Fraud, and Government Finance Officers Association (GFOA) Best Practices, just to name a few.</p> <p>In addition, the conference provided keynote speakers at lunches and for the closing session. The speakers were engaging and inspiring. One of the keynote speakers was Fiona Ma, California State Treasurer. One of the many things the audience learned about her: not only is she the first woman in this important role, but she received the most votes of any preceding State Treasurer. She is California’s 34th State Treasurer. Her stated key objectives in moving California forward include: To attract people of higher education to the job market, to have affordable housing, to promote Environmental programs, and to seek Financial Wellness.</p> <p>The courses taken also earn credit toward the Continuing Professional Education (CPE) required to maintain the District Finance Officer’s Certified Public Accountant (CPA) license. During this conference, Ms. Creamer completed 16 of the 80 CPE units required for her 2020 CPA license renewal.</p>	
STRATEGIC PLAN INFORMATION: This item addresses Goal 5 (Effective Governance and Administration) of the latest Strategic Plan Update.	
DEPT. MGR.: LC	GENERAL MANAGER: SSK

NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

TITLE: Consent Calendar: Attendance at the California Water Environment Association Annual Conference - 2020.	MEETING DATE: February 10, 2020 AGENDA ITEM NO.: 5.h.
RECOMMENDED ACTION: Approve the District's Collections System Lead Worker to attend the California Water Environment Association (CWEA) Annual Conference 2020 in Reno, Nevada.	
SUMMARY AND DISCUSSION: <p>At its last regular meeting on January 13, 2020, the Board approved attendance of the California Water Environment Association (CWEA) Annual Conference 2020 (AC 2020) by the District's Electrical Instrumentation Technician and one Collection System Worker. Subsequently, several District staff members attended the CWEA Redwood Empire Section's Awards Ceremony on January 17, 2020. At the event, the District's Collection System Lead Worker, Javier Vega, won a door prize for free registration for AC 2020 (a \$695 value).</p> <p>AC 2020 will be held in Reno, NV from March 31 to April 3, 2020. This 4-day event features courses on current developments, trends and best practices in the wastewater industry. Out-of-state travel requires pre-approval by the District Board of Directors.</p> <p>The topics covered at the CWEA AC 2020 align well with the District's Strategic Plan goal of achieving operational and organizational excellence and will serve the Collections System Lead Worker well.</p> <p>District staff believe that by taking advantage of the free registration, the costs associated with travel and lodging are a good use of District funds in order to realize the benefits of having another staff member attend this worthwhile conference.</p> <p>To ensure that District staff continue to grow professionally and increase their knowledge base by keeping abreast of current trends in the industry, the General Manager-Chief Engineer recommends that the Board authorize the Collections System Lead Worker to attend the California Water Environment Association Annual Conference 2020 training conference in Reno, Nevada.</p>	
BUDGET INFORMATION: Total costs for attendance including travel and lodging are estimated to be approximately \$1,000.00 and would be funded from Account No. 69171, which has a FY19-20 budget of \$65,000 with a current balance of approximately \$35,300.	
STRATEGIC PLAN INFORMATION: This item addresses Goal 1 (Operational Excellence) and Goal 5 (Effective Governance and Administration) of the latest Strategic Plan Update.	
DEPT. MGR.: ja, eb	GENERAL MANAGER: SSK



2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT



Prepared by:

**Veolia Water West Operating Services, Inc.
500 Davidson Street
Novato, CA 94945**

February 5, 2020

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

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2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Overview

The continued priorities for 2019 were to meet the goals of zero lost time incidents, or Occupational Safety Health Act recordable incidents, and no treatment plant effluent violations. This is a year-in and year-out objective plainly stated and firmly established throughout Veolia North America (*Veolia*). A term we apply to this end is “Zero Harm”. We are very happy and proud to report that both goals were met. 2019 represents our seventh consecutive year of zero effluent violations and ninth year of zero recordable incidents. We 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
- Regulatory Compliance
- Odor Monitoring
- Third Party Facility Reviews – Safety, Management 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 using Oracle Work Asset Management System (OWAM) for Maintenance Tracking, Scheduling, Inventory, and Purchasing
- Operation, Management and Oversight of Laboratory and Pretreatment Program
- Facility Energy Management 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

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

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.

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

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 stored for future use, specifically for pasture irrigation.

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Effluent Reuse – Recycled Water

Recycled water was produced in 2019 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, 2019 through December 31, 2019. The Annual Waste Characteristics & Loading Summaries are provided below in Tables 2.0 – 8.0 and in the attachment section of this report.

Table 2.0

2019 Influent Flows and Loading Summary			
Condition	Value	Unit	Notes
Average Dry Weather Flow	3.50	MGD	Aug /Sep/Oct
Peak Wet Weather Flow (Max Day)	12.82	MGD	
Max Peak Wet Weather (1-3 Hour)	30.30	MGD	2/13/19
Average Biochemical Oxygen Demand (BOD)	293	mg/L	
Average BOD Loading	14,170	Lbs/Day	
Average Total Suspended Solids (TSS)	305	mg/L	
Average TSS Loading	15,168	Lbs/Day	

Table 3.0

2019 Plant Performance		
Total Volume of Wastewater	2087.09	Million Gallons
Total Volume of Reclaimed Water (Reclamation, Recycled, California State Coastal Conservancy)	294.74	Million Gallons
Recycled – Title 22 (Novato Sanitary District, North Marin Water District Deer Island))	145.37	Million Gallons
Recycled – Title 22 (included in Water Reclamation)	171.83	Million Gallons
Flow Discharged to San Pablo Bay	1798.77	Million Gallons
Average BOD	6	mg/L
Average BOD Discharged	313	Lbs/Day
Total Pounds of BOD Treated	5,172,050	Lbs
Average TSS	4	mg/L
Average TSS Discharged	239	Lbs/Day
Total Pounds of TSS Treated	5,536,411	Lbs
Total Pounds of Bio-solids Treated	2,947,578	Lbs
Total Cubic Feet of Biogas Produced	25,452,036	Cu Ft

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Table 4.0

2019 Violations / Excursions	
Total Number	0
NPDES (Bay Discharge)	0
WDR (Reclamation)	0

Table 5.0

2019 Plant Effluent		
	Value	Unit
BOD Removal	98	%
TSS Removal	99	%

Table 6.0

2019 Consumables and Energy Summary	
Total Million Gallons	2087.09
*Electricity – kWh / Year	3,461,805
Electricity – kWh / MG	1,659
*Natural Gas – Therms / Year	47,499
Natural Gas – Therms / MG	23
Diesel Fuel – Gallons / Year	7267.96
Diesel Fuel – Gallons / MGD	3.48

*Excludes Administration Building and Recycled Water Plant

Table 7.0

2019 Waste Discharge Limits / Reclamation – 1,288				
Parameter	Limit	Units	# Analysis	Violations
BOD Monthly Average	40	mg/L	2	0
Total Coliform – 5 Sample Median	240	mpn/100 ml	20	0
Total Coliform - Maximum	10,000	mpn/100 ml	24	0
pH – High	9.0	s.u.	34	0
pH – Low	6.0	s.u.	34	0

Table 8.0

2019 NPDES Wet Season Limits - November – April				
Parameter	Limit	Units	# Analysis	Violations
BOD Weekly	45	mg/L	25	0
BOD Monthly	30	mg/L	6	0
TSS Weekly	45	mg/L	25	0
TSS Monthly	30	mg/L	6	0
BOD Removal (minimum)	85	%	6	0
TSS Removal (minimum)	85	%	6	0



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Enterococcus - 30 Day Geo Mean	35	Col/100 ml	6	0
Fecal Coliform - Median	140	mpn/100 ml	1	0
Fecal Coliform - 90 th Percentile	430	mpn/100 ml	1	0
Ammonia – Daily Maximum	21	mg/L	8	0
Ammonia - Monthly Average	6	mg/L	6	0
pH – High	8.5	s.u.	129	0
pH – Low	6.5	s.u.	129	0
Oil & Grease - Daily Maximum	15	mg/L	6	0
Oil & Grease - Monthly Average	5	mg/L	6	0

Table 9.0

2019 NPDES Dry Season Limits - May, September, & October				
Parameter	Limit	Units	# Analysis	Violations
BOD Weekly	30	mg/L	16	0
BOD Monthly	15	mg/L	5	0
TSS Weekly	20	mg/L	16	0
TSS Monthly	10	mg/L	5	0
BOD Removal (minimum)	85	%	5	0
TSS Removal (minimum)	85	%	5	0
Enterococcus - 30 Day Geo Mean	35	Col/100 ml	5	0
Fecal Coliform - Median	140	mpn/100 ml	2	0
Fecal Coliform - 90 th Percentile	430	mpn/100 ml	2	0
Ammonia – Daily Maximum	21	mg/L	7	0
Ammonia - Monthly Average	5.9	mg/L	5	0
pH – High	8.5	s.u.	98	0
pH – Low	6.5	s.u.	98	0
Oil & Grease - Daily Maximum	15	mg/L	5	0
Oil & Grease - Monthly Average	5	mg/L	5	0

Operational Program

Throughout 2019, 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)

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Environmental Services Program

Regulatory Inspections

On January 28-29, 2019, PG Environmental inspectors (contracted by the U.S. EPA and California Regional Water Quality Control Board) conducted two regulatory inspections. The first inspection focused on the industrial pretreatment program and included two industrial user facility site visits. The second was for the management, operation and maintenance of the wastewater treatment plant.

Bay Area Clean Water Agencies (BACWA)

Liz Falejczk, Veolia Water Environmental Services Supervisor, and Erik Brown, Novato Sanitary District Deputy General Manager attended the annual BACWA meeting. Liz also attended the Nutrient Watershed Permit workshop to provide comments and suggested edits to the administrative draft regulations. She also attended most of the regularly scheduled meetings of the Permits, Laboratory and Pretreatment committees.

Pretreatment Program Billing

Liz Falejczk worked with Laura Creamer, Novato Sanitary District Finance Officer throughout 2019 to complete invoicing/billing for: quarterly and annual surcharge for one significant industrial user, and permit issuance, renewal, and sampling.

Monitoring Wells

Sampling of the groundwater monitoring wells was conducted in May and November 2019. This biannual monitoring is to assure the protection of groundwater around the Designated Land Disposal (DLD) site and the old sludge disposal site at the Ignacio Treatment Plant as part of the EPA Part 503 Biosolids requirements. Sampling and data collection was performed by Kurt Hawkyard, Veolia Water Laboratory Technician.

National Pollution Discharge Elimination System (NPDES) Permit Renewal

Liz attended the kick off meeting with the Novato Sanitary District and Woodward and Curran engineers to discuss the upcoming NPDES permit renewal and provided support information.

Environmental Laboratory Accreditation Program (ELAP)

The biannual renewal application was forwarded to ELAP as required. The electronic confirmation of the successful renewal of the certification of the laboratory was received on January 22, 2020. The certification now expires January 31, 2021.

Public Education

Throughout 2019, Liz Falejczyk, Environmental Services Supervisor, Kurt Hawkyard, Veolia Water Laboratory Technician, Julie Hoover, Novato Sanitary District Administrative Secretary, and Lynda Farmery, Veolia Administrative Assistant participated in one or all of the activities listed below.

- Novato Senior Health Day at the Margaret Todd Center on February 20, 2019.



2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

- On March 19, 2019, provided a tour for the San Marin High School Applied Chemistry and Biotechnology classes of approximately 40 students.
- Distributed public outreach materials on the safe disposal of fats, oils and greases, flushable wipes and unwanted medications to 220 residents of the Los Robles Mobile Home Park.
- Marin County Wastewater Treatment Agencies of Marin County Public Education Program meetings and activities.
- Vintage Oaks Shopping Center businesses and Novato High School; purchase of awareness signage for posting in public restrooms to educate the public to reduce trash being flushed down the toilets.

Training

Liz Falejczyk, Veolia Water Environmental Services Supervisor, attended several training events.

- Redwood Empire Section Laboratory Committee training on Chronic Toxicity Reporting and Ethics and Integrity held at the City of Vacaville Easterly Wastewater Treatment Plant.
- State Water Resources Control Board workshop regarding the proposed changes to the First Revised Toxicity Provisions and Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California.
- "The First Steps to Implementing the TNI 2016 Standards, Rev 2.1" last of 6 trainings.
- California State Water Resources Control Board workshop regarding the proposed changes to the Laboratory accreditation regulations.

Kurt Hawkyard, Veolia Water Laboratory Technician attended the 4th, 5th and 6th trainings sessions "The First Steps to Implementing the TNI 2016 Standards, Rev 2.1".

Both Kurt and Liz attended the California Water Environment Association Redwood Empire Section meeting at Caltest Analytical Laboratories. The meeting focused on the latest findings from NV5 Environmental Laboratory Services inspections of drinking water laboratories.

Whole Effluent Toxicity Testing

Quarterly Acute (96 hours) and Chronic (7 days) Toxicity testing is required during Bay Discharge season. Testing was performed in February, June, and October in 2019. All tests were performed by Aqua Science (Davis, CA), and results reported in compliance with the NPDES permit. The Acute Toxicity testing results yielded 100% survival. The Chronic Toxicity test results for survival and growth were reported as <1.0 TUC. Table 5.0 below provides the 2017-2019 results.

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Table 4.0 Historical Toxicity Testing 2017-2019

Test Date	1/17	4/17	6/17	10/17	1/18	4/18	9/18	12/18	2/19	6/19	10/19
EC ₂₅ (%)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
NOEC (%)	100	100	100	65	100	100	100	100	100	100	100
TUc(100/EC ₂₅)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

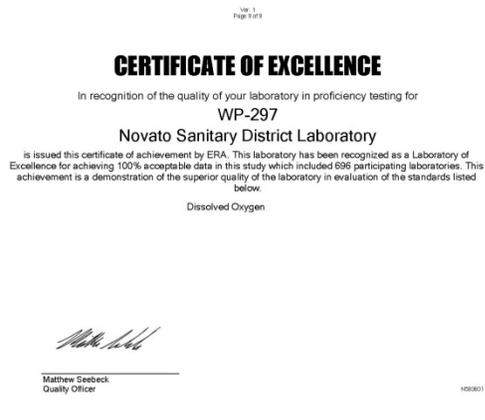
Abbreviations	
EC ₂₅ (%)	Effect Concentration 25 Percent
NOEC (%)	No Observed Effect Concentration
TUc (100/EC ₂₅)	Toxic Unit-Chronic (100/Effect Concentration 25 Percent)

Proficiency Testing

U.S. EPA DMR-QA 39 Proficiency Testing Studies were conducted in 2019 and 100% acceptable results were achieved. This was a collaborative effort between Veolia employees Kurt Hawkyard and Liz Falejczyk, and Jessica Bena-Nommsen, North Marin Water District Chemist I for the NSD Laboratory. The Certificates of Excellence are provided below. In addition the DMR-QA studies performed by all contract laboratories that routinely perform or support self-monitoring analyses required by National Pollution Discharge Elimination System permit were evaluated for proficiency and submitted to the State Water Board Quality Assurance Officer/State DMR-QA Coordinator.



2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT



Community Outreach Activities 2019

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 2019.

- School Fuel – Tour of Novato – donated bottled water for participants & booth member
- Rotary Club Novato Sunrise (RCNS)
- Member – Novato Chamber of Commerce
- Margaret Todd Senior Center Monthly Birthday Celebrations
- Senior Health Fair Booth

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.
- 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 Criticality Assessment was performed on September 16, 2019. The assessment evaluated the processes equipment and developed a rating (1-5) for the relative importance. The results of the assessment are used in developing the priorities for equipment replacement and preventive maintenance. The items with a 4 and 5 rated were evaluated by Veolia mechanics.

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

2019 MAINTENANCE ACTIVITIES OVER \$10,000.00 – DISTRICT FUNDED

March 2019	Equipment	Activity
	Ultraviolet (UV) control system	Prosoft® card replacement

June 2019	Equipment	Activity
	Ignacio conveyance pump #1	Rebuild

July 2019	Equipment	Activity
	Primary clarifier #1	Conduit replacement and rewire

December 2019	Equipment	Activity
	Ignacio conveyance pump #2	Rebuild

2019 MAINTENANCE ACTIVITIES OVER \$10,000.00 – VEOLIA FUNDED

January 2019	Equipment	Activity
	Blowers #1, #2 & #3	Performed class II service on blowers #1 & #2, inspection on blower #3

August 2019	Equipment	Activity
	UV standby generator	Replaced engine control unit

2019 MAINTENANCE ACTIVITIES UNDER \$10,000.00

January 2019	Equipment	Activity
	Sludge scum pump #4	Replaced mechanical seal
	Aeration basin mixer 3B	Rebuilt pump
	Odor bed #1 – fan #1	Replaced motor
	Odor bed #3 – fan #2	Replaced motor
	Dry weather pump #5	Replaced therma sentry controller
	Ignacio emergency generator	Flushed radiator and installed crankcase ventilation
	Sludge scum pump #4	Replaced mechanical seal

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

February 2019	Equipment	Activity
	Hypochlorite pump #1	Replaced motor

March 2019	Equipment	Activity
	Odor bed #1 – fan #2	Replaced motor
	Digester #2 – sludge recirculation Pump #3	Rebuilt cutter assembly and all internal cutting parts
	Digester #2 – sludge recirculation pump #2	Replaced all internal cutting parts
	Blower #2	Replaced current transformer
	Ferric pump #2	Replaced leak detector
	Waste activated sludge pump #1	Replaced with spare and rebuilt
	Gravity belt thickener (GBT) filtrate pump #1	Replaced
	Ignacio – conveyance pump #1	Replaced check valve dampener
	Ignacio – conveyance pump #1 – variable frequency drive	Replaced contactor

April 2019	Equipment	Activity
	Main electrical building Heating Ventilation and Air Conditioning (HVAC)	Repaired condensate leak
	Digester #1 sediment trap	Replaced sight glass tube
	Blower room HVAC	Replaced relays in air conditioning unit
	Return activated sludge #1 flow meter	Replaced sensor prom
	Ignacio – motor control center (MCC)	Replaced ICECUBE unit in MCC panel

May 2019	Equipment	Activity
	Ferric pump #2	Replaced pump head
	Influent wet well #1	Replaced Hydro Ranger® flow meter
	UV transmittance meter	Replaced flow cell
	Fire extinguishers – Novato & Ignacio	Annual service and inspection

June 2019	Equipment	Activity
	Primary clarifier #1	Replaced flow tube
	UV system	Initial testing/evaluation of entire system
	Boiler	Replaced firing rate controller, gas pressure switch and thermal wells
	Flow meters – Novato & Ignacio	Annual calibration

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	Jerome meter	Annual service & repair
	Boiler	Annual inspection and combustion testing
	HVAC/rooftop fans – Novato & Ignacio	Semi-annual service
	Forklift	Annual service

July 2019	Equipment	Activity
	Aeration basin #3	Repaired waterline leak
	Primary clarifier #1 sludge scum pump #2	Replaced soft start
	Forklift	Replaced starter
	GBT #2 – WAS valve actuator	Replaced main PCB board
	Effluent sampler	Replaced pump
	Cranes/hoists	Annual certification
	Flare	Replaced thermocoupler
	Flygt® pumps – Novato	Annual pump inspection
	Blower room – HVAC	Repaired condensate leak on MCC side of building

August 2019	Equipment	Activity
	Ferric pump #1	Replaced leak detector
	GBT #1	Replaced drive end bearing
	Primary clarifier #2	Replaced #3 water piping to scum trough
	Blower #3	Replaced Uninterruptible Power Supply for Programmable Logic Controller
	Secondary clarifier #1	Replaced air compressor for bubbler system
	Ignacio – MCC building exhaust fan	Replaced motor, shieve and contactor
	UV standby generator	Replaced batteries
	Standby generators – Novato	Annual inspection/service
	Wet weather pumps	Annual inspection/service
	Ignacio – standby generator	Annual inspection/service

September 2019	Equipment	Activity
	#3 Water – UV area	Fabricated and installed new piping section to repair leak
	Secondary clarifier #2	Replaced bubbler pump #2
	Novato & Ignacio	Annual electrical inspection of all equipment
	Novato & Ignacio	Annual thermography testing
	Administration standby generator	Replaced batteries

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

October 2019	Equipment	Activity
	Primary clarifier #1 & #2 samplers	Hardwired samplers
	Ignacio standby generator	Replaced voltage regulator

November 2019	Equipment	Activity
	Novato HVAC/rooftop fans	Semi-annual service
	UV standby generator	Replace direct current amp gauge on battery charger
	Ignacio – Flygt pumps	Annual service/inspection
	Ignacio – conveyance pump #3 variable frequency drive	Replaced contactor

December 2019	Equipment	Activity
	Relief valve by septage receiving station	Replaced scum line relief valve
	Boiler	Reattached linage for digester gas
	Primary clarifier #2 scum trough	Replaced limit switch

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Safety and Training 2019



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 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. 2019 was an incident free year. In recognition of this achievement - each employee received a cash incentive reward from Veolia Water for 8 years no loss time.

Management, Operation and Maintenance Technician Training

The California Water Environmental Association and Rural Community Assistance Corporation provide technical training to support the re-certification of professional licenses which Veolia Water staff attended throughout 2019.

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

2019 Safety Training



2019 Veolia M&C EHS Training Calendar

Month	Primary Safety Topic	Notes and Additional EHS Topics for Affected Employees
1st Quarter		
January Online - JJK	HazCom: What You Need to Know OSHA Annual	Brief employees on site SDS locations and types of HazMat labeling systems used onsite Laboratory Chemical Hygiene Plan , where applicable -annual review, certification, and training
February Online - JJK	2 Online Courses: Fire Prevention & Response Fire Extinguisher Use OSHA Annual	All 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 outside vendor for hands-on training in lieu of Fire Extinguisher Use
March Classroom	Lockout/Tagout	Review Site LOTO Program Changes - e.g., new equipment or equipment changes that require updates to site Energy Control Procedures NOTE: Review the Veolia Global High Risk Management Standard (HRMS) PDF with employees during the training.
2nd Quarter		
April Classroom	Confined Spaces & Permit Spaces OSHA Annual	Review Site PRCS Program Changes, if any - e.g., new spaces, procedures, etc. NOTE: Review the Veolia Global High Risk Management Standard (HRMS) PDF with employees during the training.
May Online - JJK	Ergonomics Industrial	EMS Awareness - Classroom For ISO 14001 Sites Only
June Classroom	Hearing Conservation and Safety OSHA Annual	For employees who are included in the facility's Hearing Conservation Program
3rd Quarter		
July Online - JJK	Crane Safety for General Industry	NOTE: Review/provide the Veolia Global High Risk Management Standard (HRMS) PDF with to employees. NOTE 2: This training does not qualify employees to operate cranes at Veolia facilities. Additional hands-on training by qualified instructor is required.
August Classroom	Fall Protection	NOTE: Review the Veolia Global High Risk Management Standard (HRMS) PDF with employees during the training.
Sept. Classroom	Respiratory Protection OSHA Annual	For affected workers who must don respirators as part of their work requirements.
4th Quarter		
October Online - JJK	Slips and Trips - Workplace Safety	
November Classroom	Cold Stress and Winter Safety	
December Online - JJK	Bloodborne Pathogens: Safety in the Workplace OSHA Annual	For all employees who are eligible for the safety bonus or otherwise designated to provide first aid as part of their work requirements - Not required if employees receive BBP training as part of first aid training



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Veolia International Safety Week Activities September 16-20, 2019



Above and Center Right: John Bailey, Veolia Water Assistant Project Manager, John O'Hare, Veolia Water Project Manager, Paul Bailey, Veolia Water Operator, Lynda Farmery, Admin./Scheduler Planner/Safety Coordinator, Veolia Water Kurt Hawkyard, Veolia Water Laboratory Technician, Alejo Cuntapay, Veolia Water Mechanic
Below Left: Larry Milliken, Veolia Water Operator

Additional Safety Training conducted in 2019

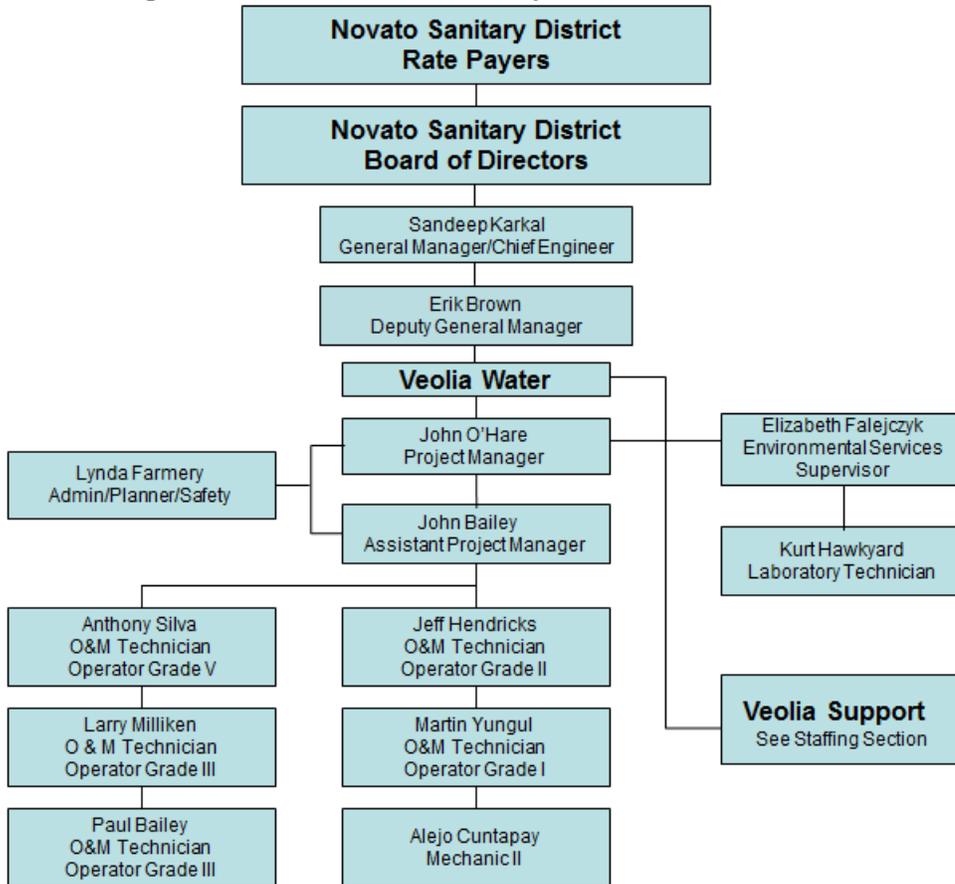
- 1st Aid/CPR/AED Certification Training
- Ladder Safety
- Interactions With Regulators
- Emergency Action Plan

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

- Great Shakeout – Earthquake Drill

Staffing and Organization

Organization Chart – Novato Sanitary District/Veolia Water



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Staffing and Certification Status (Current)

John P. O'Hare – Project Manger

Grade V California Wastewater Treatment Plant Operator #10669, June 30, 2021

Grade IV, Wastewater Treatment Plant Operator, Association of Boards of Certification # S40011R,
November 21, 2020

Grade VII, Wastewater Treatment Plant Operator, Massachusetts #977, December 31, 2021

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

Grade I, Environmental Compliance Inspection, CWEA #04074112, July 31, 2020

Grade I, Laboratory Analyst, California, CWEA #05013114, March 31, 2020

Grade I, Plant Maintenance Technologist, CWEA #050751016, July 31, 2020

Grade I, Water Distribution Operator, California Department of Public Health #34234 April 1, 2020

John Bailey – Assistant Project Manager

Grade V California Wastewater Treatment Plant Operator #4123, December 31, 2021

Anthony M. Silva – Operator III

Grade V California Wastewater Treatment Plant Operator #10973, December 31, 2020

Grade II Collection System Maintenance Technician, CWEA #354, January 31, 2020

Larry Milliken – Operator III

Grade IV California Wastewater Treatment Plant Operator #41483, August 12, 2020

Paul Bailey – Operator II

Grade II California Wastewater Treatment Plant Operator #28322, December 31, 2020

Martin Yungul – Operator I

Grade II California Wastewater Treatment Plant Operator #43219, July 17, 2022

Jeffrey D. Hendricks – Operator II

Grade II California Wastewater Treatment Plant Operator #28377, December 31, 2020

Grade I Plant Maintenance Technologist #070750011, July 31, 2020

Grade I Collection System Maintenance #801210049, January 31, 2020

Alejo Cuntapay – Maintenance Technician II

Elizabeth G. Falejczyk – Environmental Services Supervisor

Operator III California Wastewater Treatment Plant Operator #6334, August 17, 2021

Kurt Hawkyard – Laboratory Technician/Pretreatment Programs Inspector

Laboratory Analyst Grade I #130931002, June 30, 2020

Industrial Waste Grade II #1308211129, June 30, 2020

Environmental Compliance Inspector, Grade II #130821437, March 31, 2020

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

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Additional Veolia Support

- Paul Savage – Vice President of Operations
- Melissa Sandvold – Vice President of Operations
- Aaron Winer, Northern California District Manager
- Matt Nausin – Maintenance Supervisor, Richmond Project
- Dennis Flosi – Instrumentation and Controls Specialist, Richmond Project
- Joe Hart – Regional Asset Manager
- 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
- Matt Belltran – Regional Health and Safety Manager
- Art Fagerström, PE, BCEE, Technical Manager, Corporate Technical Support

2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Contract Adjustments

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 2018/19 service fee adjustment was 2.725%.

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Title 22 – Recycled Water Production Report for 2019

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

In 2019, 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

Novato Sanitary District 2019 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	7Med
January	0.627	0	0	>450	>450	<1	<1
February	0.324	0	0	>450	>450	<1	<1
March	0.308	0	0	>450	>450	<1	<1
April	8.938	3	0	>450	>450	<1	<1
May	14.334	2	0	>450	>450	<1	<1
June	24.399	4.9	2.1	>450	>450	10	<1
July	27.042	31	2	>450	>450	45	<1
August	20.838	14	1	>450	>450	<1	<1
September	21.299	1	0	>450	>450	4	<1
October	19.821	56	4	>450	>450	<1	<1
November	7.445	20	1	>450	>450	<1	<1
December	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL	145.375						

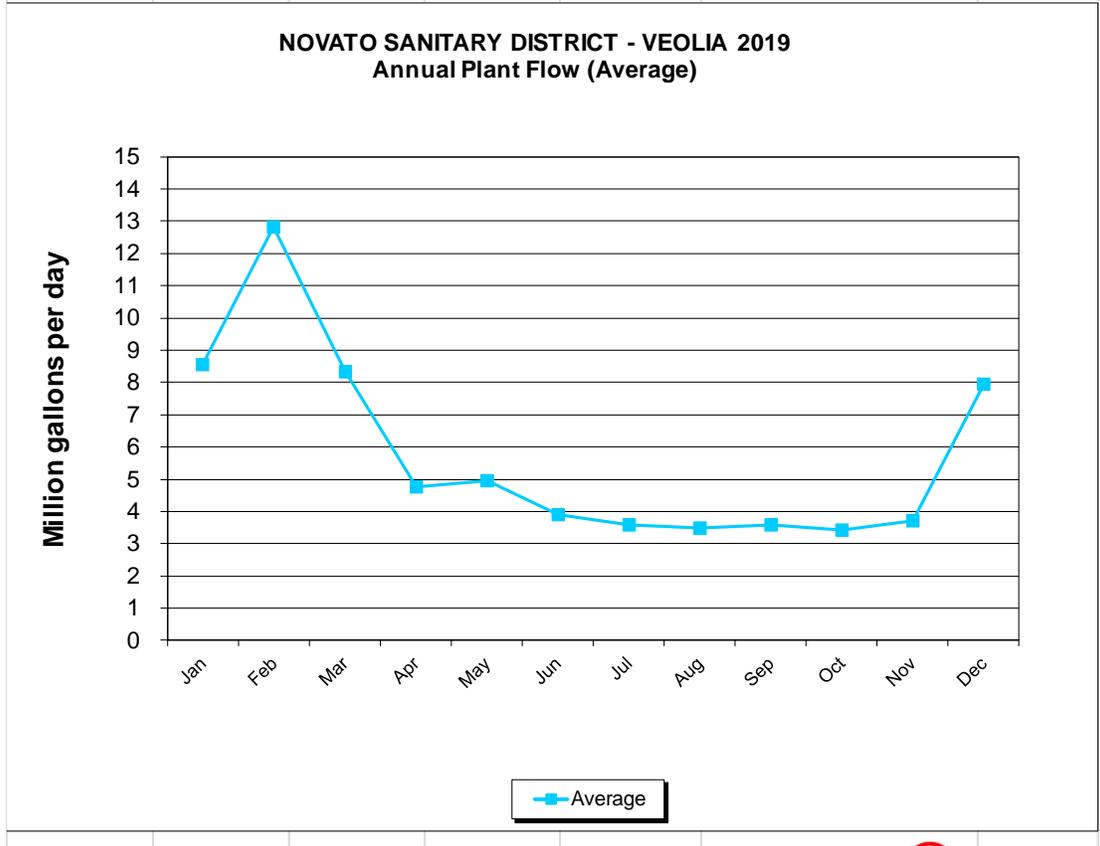
2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

Attachments

Annual Waste Characteristics & Loading Summary

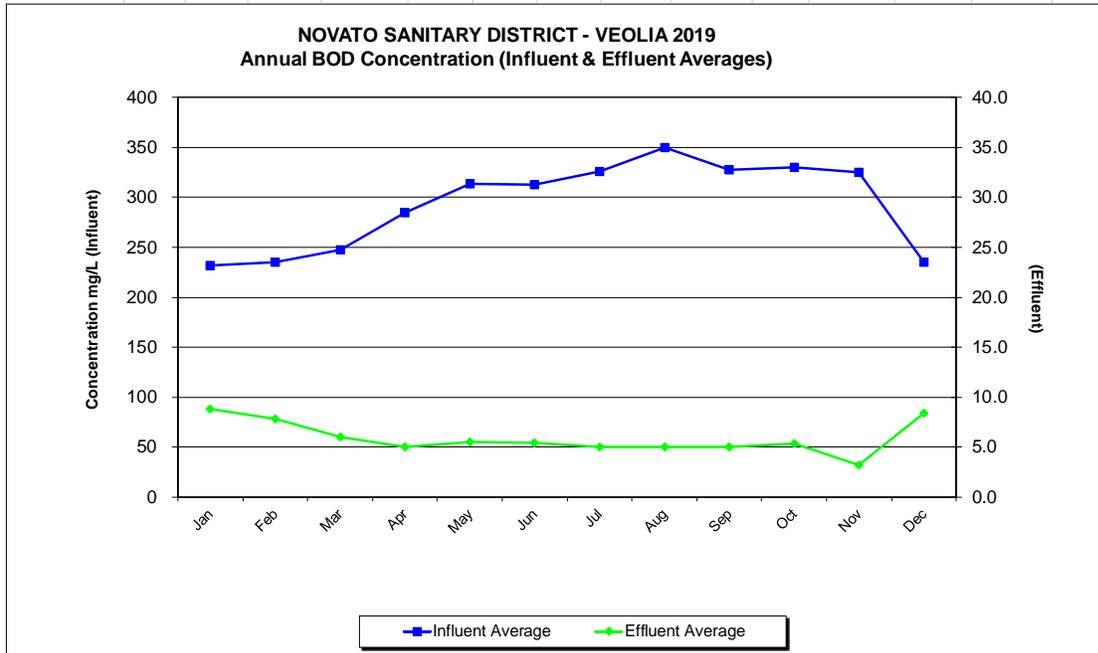
2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA						
PLANT FLOW						
Annual Waste Characteristics & Loading Summary						
(IN GALLONS TIMES 1,000,000)						
YEAR: 2019						PRINT DATE: 29-Jan-2020
	Total Flow	High	Low	Average		
January	265.45	24.95	3.92	8.56		
February	359.02	30.32	6.07	12.82		
March	258.23	14.11	5.52	8.33		
April	142.91	6.41	3.79	4.76	Peak Wet Weather Flow (MAX Day)	12.82
May	153.97	8.98	3.89	4.97	Max Peak Wet Weather (1-3 Hour)	30.32
June	117.14	4.56	3.03	3.90		
July	110.73	4.29	3.31	3.57		
August	108.06	4.03	3.04	3.49	Three month dry weather averages:	3.49
September	107.47	4.45	3.23	3.58		3.58
October	105.99	3.85	2.93	3.42		3.42
November	111.31	7.73	3.24	3.71		
December	246.81	18.54	4.77	7.96		
ANNUAL TOTAL	2087.09					
ANNUAL MAX.	359.02	30.32			Max.	30.32
ANNUAL MIN.	105.99		2.93		Min.	3.42
ANNUAL AVG.	173.92			5.76	Avg. Dry Weather Flow	3.50



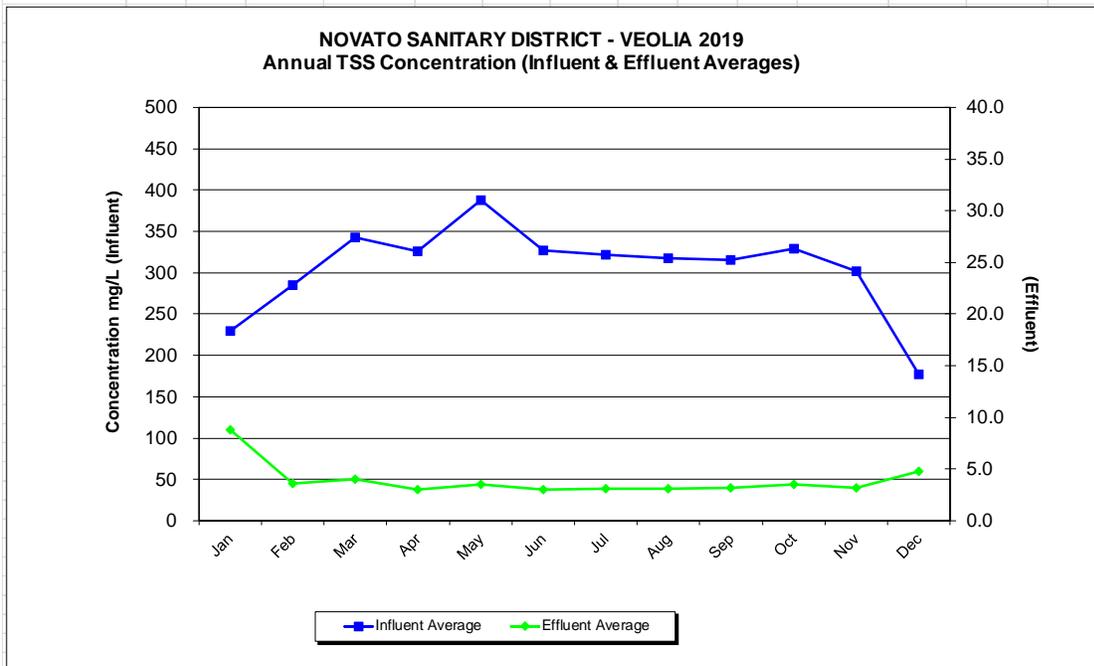
2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA															
BOD (Influent & Effluent)															
Annual Waste Characteristics & Loading Summary															
YEAR: 2019												PRINT DATE: 15-Jan-2020			
	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	400	170	232	5	35374	9302	16835	19.0	5.0	8.8	6	1665	211	777	
February	250	220	235	4	61111	15152	36892	15.0	5.0	7.8	5	1877	209	636	
March	330	170	248	4	25583	10180	16213	10.0	5.0	6.0	5	1023	236	486	
April	320	285	285	4	12185	10392	11302	5.0	5.0	5.0	5	245	170	201	
May	380	190	314	5	21804	10515	13507	6.0	5.0	5.5	6	344	180	244	
June	360	260	313	4	11030	8393	9772	7.0	4.0	5.4	5	220	130	175	
July	410	280	326	5	12260	7730	9841	5.0	5.0	5.0	5	175	138	150	
August	410	260	350	4	11729	7503	10008	5.0	5.0	5.0	14	168	136	148	
September	400	300	328	4	11409	8081	9376	5.0	5.0	5.0	10	186	135	147	
October	350	310	330	5	10917	8765	9543	7.0	5.0	5.3	6	200	135	154	
November	360	300	325	4	13211	8532	9926	4.0	3.0	3.2	5	113	84	97	
December	320	180	235	4	32079	10408	16824	14.0	5.0	8.4	5	908	260	540	
ANNUAL HIGH	410	310	350	5	61111	15152	36892	19.0	5.0	8.8	14	1877	260	777	
ANNUAL LOW	250	170	232	4	10917	7503	9376	4.0	3.0	3.2	5	113	84	97	
ANNUAL AVG.	358	244	293	4	21558	9579	14170	8.5	4.8	5.9	6	594	169	313	



2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

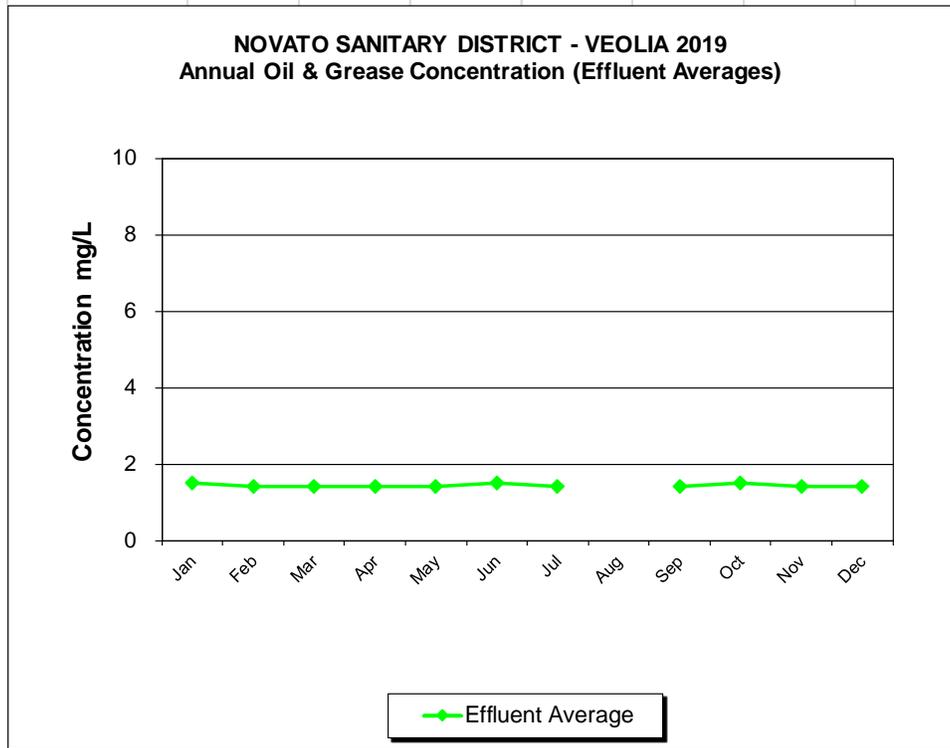
NOVATO SANITARY DISTRICT - VEOLIA SUSPENDED SOLIDS (Influent & Effluent)														
Annual Waste Characteristics & Loading Summary														
YEAR: 2019														
	PRINT DATE: 15-Jan-2020													
	INFLUENT							EFFLUENT						
	Concentration (mg/L)			No. of Samples	Loading (lb/day)			Concentration (mg/L)			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average	High	Low	Average		High	Low	Average
January	295	117	229	5	47443	9989	18506	19.0	5.0	8.8	5	1665	211	777
February	394	166	285	4	84823	15808	41870	4.0	3.0	3.6	4	978	189	596
March	449	236	343	4	24150	18296	21315	8.0	3.0	4.0	4	819	142	332
April	420	266	326	4	17059	9872	12996	3.0	3.0	3.0	4	147	102	125
May	555	316	388	5	31845	10581	17862	4.0	3.0	3.5	5	231	97	151
June	377	279	327	4	11906	8074	10251	3.0	3.0	3.0	4	110	87	97
July	418	250	322	6	13526	7256	9846	4.0	3.0	3.1	6	115	83	95
August	361	266	318	4	10327	7676	9098	4.0	3.0	3.1	4	114	82	91
September	344	283	316	4	10300	8237	9039	4.0	3.0	3.2	4	120	81	94
October	405	280	329	5	11552	8119	9481	6.0	3.0	3.5	5	171	81	101
November	344	258	302	4	12623	7337	9224	4.0	3.0	3.2	4	113	84	97
December	239	99	177	4	23959	6424	12529	11.0	3.0	4.8	4	714	156	313
ANNUAL HIGH	555	316	388	6	84823	18296	41870	19.0	5.0	8.8	6	1665	211	777
ANNUAL LOW	239	99	177	4	10300	6424	9039	3.0	3.0	3.0	4	110	81	91
ANNUAL AVG.	383	235	305	4	24959	9806	15168	6.2	3.2	3.9	4	441	116	239



2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

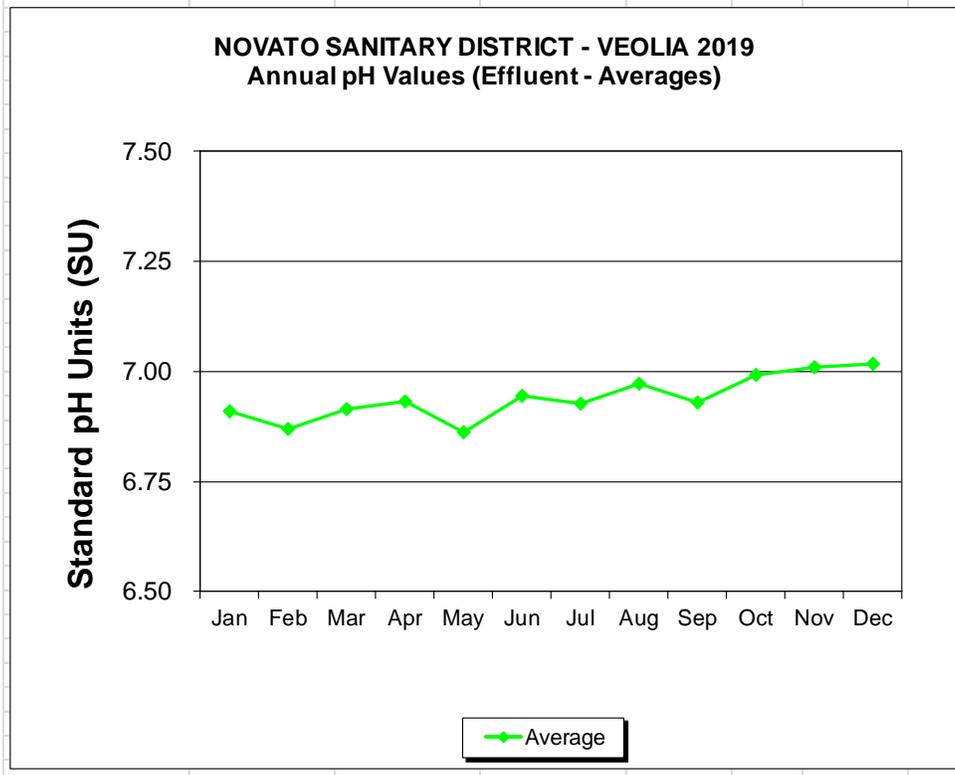
NOVATO SANITARY DISTRICT - VEOLIA							
OIL & GREASE (Effluent)							
Annual Waste Characteristics & Loading Summary							
YEAR: 2019				PRINT DATE: 30-Jan-2020			
EFFLUENT							
	Concentration (mg/L) *			No. of Samples	Loading (lb/day)		
	High	Low	Average		High	Low	Average
January	1.5	1.5	1.5	1	131	131	131
February	1.4	1.4	1.4	1	274	274	274
March	1.4	1.4	1.4	1	165	165	165
April	1.4	1.4	1.4	1	66	66	66
May	1.4	1.4	1.4	1	45	45	45
June	1.5	1.5	1.5	1	57	57	57
July*	1.4	1.4	1.4	1	40	40	40
August*							
September	1.4	1.4	1.4	1	41	41	41
October	1.5	1.5	1.5	1	43	43	43
November	1.4	1.4	1.4	1	43	43	43
December	1.4	1.4	1.4	1	81	81	81
ANNUAL HIGH	1.5	1.5	1.5		274	274	274
ANNUAL LOW	1.4	1.4	1.4		40	40	40
ANNUAL AVG.	1.4	1.4	1.4		90	90	90

* monthly values reported without the < sign



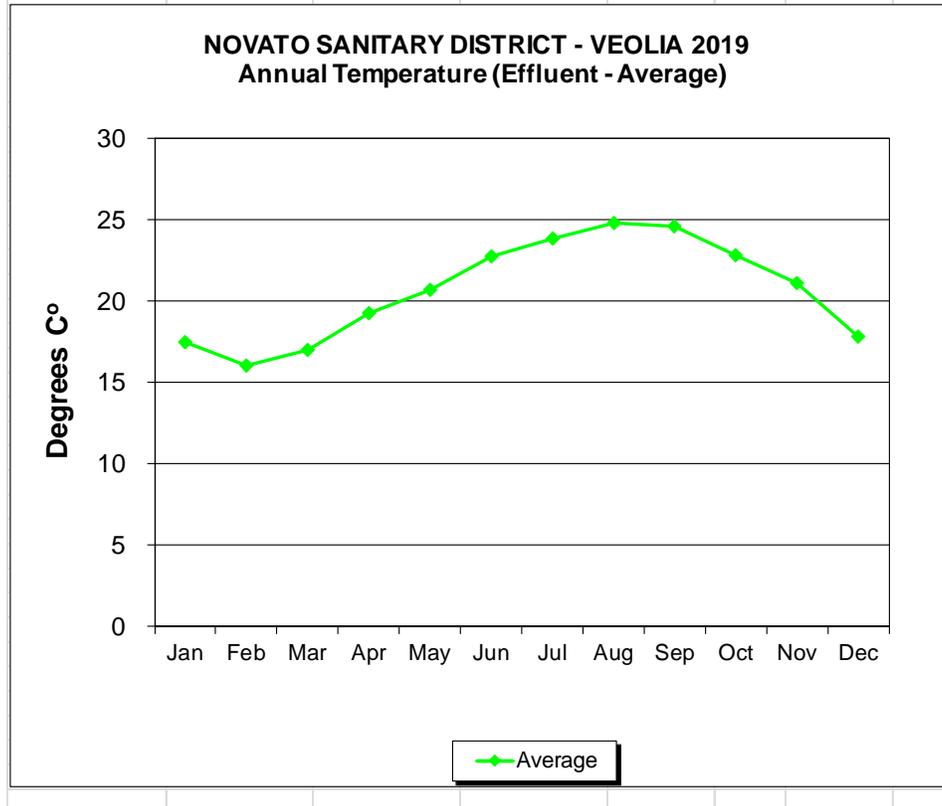
2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA							
pH (Effluent)							
Annual Waste Characteristics & Loading Summary							
YEAR: 2019				PRINT DATE: 15-Jan-2020			
	High	Low	Average	Number of Samples			
January	7.1	6.7	6.9	23			
February	7.0	6.8	6.9	20			
March	7.0	6.8	6.9	21			
April	7.1	6.9	6.9	22			
May	6.9	6.8	6.9	23			
June	7.0	6.9	6.9	20			
July	7.1	6.8	6.9	23			
August	7.2	6.7	7.0	22			
September	7.1	6.6	6.9	21			
October	7.2	6.8	7.0	23			
November	7.2	6.9	7.0	21			
December	7.2	6.9	7.0	22			
				Number of Samples Total = 261			
ANNUAL MAX.	7.20	6.90	7.02				
ANNUAL MIN.	6.90	6.60	6.86	1st Qtr.	64	2nd Qtr.	65
ANNUAL AVG.	7.09	6.80	6.94	3rd Qtr.	66	4th Qtr.	66



2019 ANNUAL OPERATIONS AND MAINTENANCE REPORT FOR THE NOVATO SANITARY DISTRICT

NOVATO SANITARY DISTRICT - VEOLIA							
TEMPERATURE (Effluent)							
Annual Waste Characteristics & Loading Summary							
YEAR: 2019				PRINT DATE: 15-Jan-2020			
	High	Low	Average	Number of Samples			
January	18.5	15.9	17.5	23.0			
February	18.4	14.6	16.1	20.0			
March	18.7	15.6	17.0	21.0			
April	21.1	18.0	19.3	22.0			
May	21.5	19.6	20.7	23.0			
June	23.8	21.2	22.8	20.0			
July	24.5	23.0	23.9	23.0			
August	26.6	23.6	24.9	22.0			
September	25.6	23.3	24.6	21.0			
October	24.3	21.4	22.8	23.0			
November	22.5	18.2	21.1	21.0			
December	19.1	16.1	17.8	22.0			
				Number of Samples Total =		261	
ANNUAL MAX.	26.6	23.6	24.9				
ANNUAL MIN.	18.4	14.6	16.1	1st Qtr.	64	2nd Qtr.	65
ANNUAL AVG.	22.1	19.2	20.7	3rd Qtr.	66	4th Qtr.	66



NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

TITLE: Wastewater Operations Report, January 2020.	MEETING DATE: February 10, 2020 AGENDA ITEM NO.: 6.b.
RECOMMENDED ACTIONS: Receive Wastewater Operations Report for January 2020: <ul style="list-style-type: none">• Collection System• Treatment Facilities• Reclamation Facilities	
SUMMARY AND DISCUSSION: <p>The January 2020 Wastewater Operations Report incorporating operations reports for collections system, wastewater treatment facilities, and the reclamation facilities is attached.</p> <p>District and Veolia staff will be present at the meeting to provide overviews of the reports for their operational areas, and be available to discuss the reports or respond to any questions.</p>	
ATTACHMENTS: 1. Wastewater Operations Reports for the month of January 2020.	
STRATEGIC PLAN INFORMATION: This item addresses Goal 1 (Operational Excellence) and Goal 2 (Reliable and Efficient Facilities) of the latest Strategic Plan Update.	
DEPT. MGR.: JO (Veolia), JA, JJB	GENERAL MANAGER: SSK

**Novato Sanitary District
Wastewater Operations - Collection System Operations Report
January 2020**

1.0 General:

The equivalent of about seven (7) full time employees (FTEs) worked on collection system maintenance activities during the month. The breakdown of staff time for the month in terms of equivalent FTE hours utilized, works out approximately as follows:

- 2.2 FTE field workers for Sewer Maintenance (main line cleaning)
- 1.4 FTE field workers for Pump Station Maintenance
- 0.2 FTE field workers for Closed Circuit Television (CCTV) work
- 0.1 FTE field workers for Underground Service Alert Mark and Locate (USA)
- 1.3 FTE field workers for time spent on data input, training, service calls, overflow response, or any other activity that does not directly relate to the activities listed above, or special activities (for e.g. smoke testing of mainlines), and
- 1.8 FTE field workers for vacation, holiday or sick leave.

2.0 Collection System Maintenance:

Performance metrics are presented in the attached graphs showing the length of line cleaned/month, footage cleaned/hour worked, overflows/month, and the CCTV footage achieved. A brief discussion is also provided below.

Line Cleaning Performance:

The sewer system ICOM3 Computerized Maintenance Management System (CMMS) generated 463 work orders for the month. Collections staff completed 451 work orders, leaving 12 work orders outstanding. The completed work orders resulted in 92,891 feet of sewer pipelines cleaned by staff. Staff will work to reduce the backlog over the next few months.

Closed Circuit Television (CCTV) Performance:

The District's CCTV equipment was in the field for three (3) working days and televised a total of 2,876 feet of sewer main.

CCTV Findings:

- Infrastructure-related: CCTV work did not identify any new structural issues.
- O&M related: CCTV work did not identify any area that would require a change in sewer line maintenance operations.

3.0 Pump Station Maintenance: Collections staff conducted 158 lift station inspections this month. Of these, 39 inspections were generated through the District's JobsCal Plus CMMS system. There are 0 outstanding work orders for the month. A Pump Stations' Work Order Statistics summary is attached.



Parking stripes in front of the new modular building

**Novato Sanitary District
Wastewater Operations - Collection System Operations Report
January 2020**

4.0 Air Relief/Vacuum Valves (ARVs):

Staff completed maintenance inspections on three (3) air relief/vacuum valves this month, no issues were identified.

5.0 Safety and Training:

General:

Collections staff attended four (4) safety tailgate meetings in January.

Specialized Training:

- Fire extinguisher training.
- Pump station Standard Operating Procedures (SOPs) review.

Safety performance:

There were no lost time accidents for the month of January.

6.0 Miscellaneous Projects: Collections crew has been working diligently to catch up on line cleaning and pump station work orders this month.

- Parking stripes painted in front of the new modular maintenance building.
- Collections staff installed new pressure gauges on the force main for Marin Village Pump station.
- They also replaced a broken pressure gauge at Bel Marin Keys PS.
- Staff installed a new Smartcover® sensor to a manhole lid on Center Rd. to continue monitoring flows through the wet winter season. The previous unit was removed and is currently being used to monitor levels at the Rowland Plaza PS.
- The Ignacio Force Main receiving pit rehabilitation project has begun, and is expected to be completed by the week of February 10th.
- Congratulations to Collection System Worker II (CSW II) Joe Moreno for receiving the CWEA Redwood Empire Section Collection System Worker of the Year award!



Exposed aggregate from H2S
at the Ignacio receiving pit.

7.0 Sanitary Sewer Overflows (SSOs):

There were zero (0) sanitary sewer overflow (SSO) in January. The No Spills certification ID is #2563970.

Novato Sanitary District
Collection System Monthly Report For January 2020 (as of January 31, 2020)

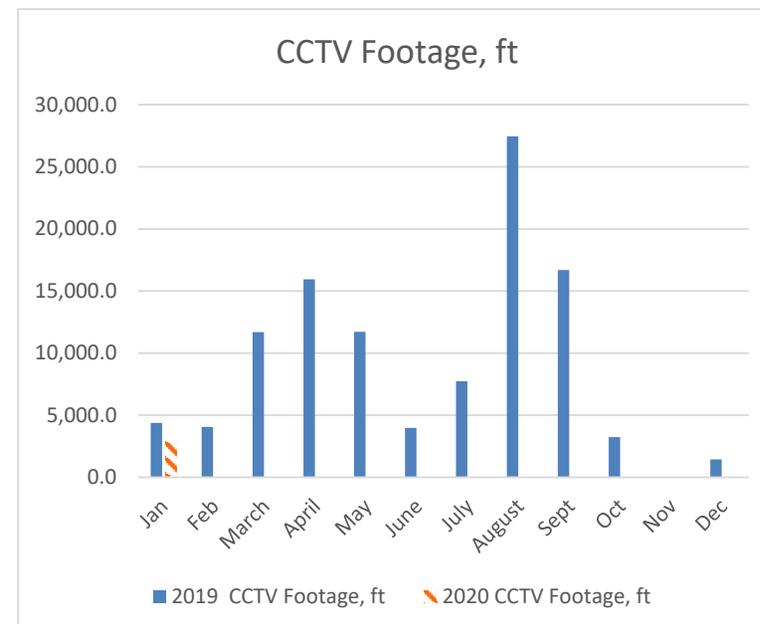
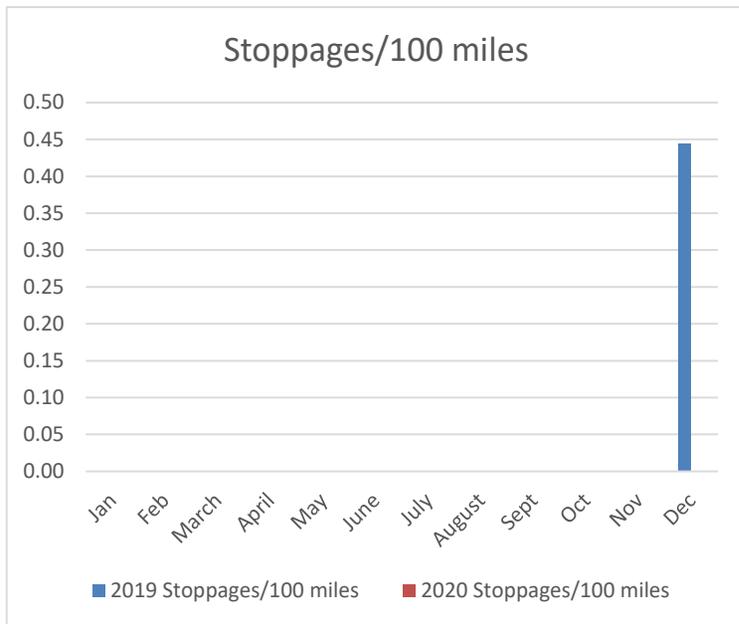
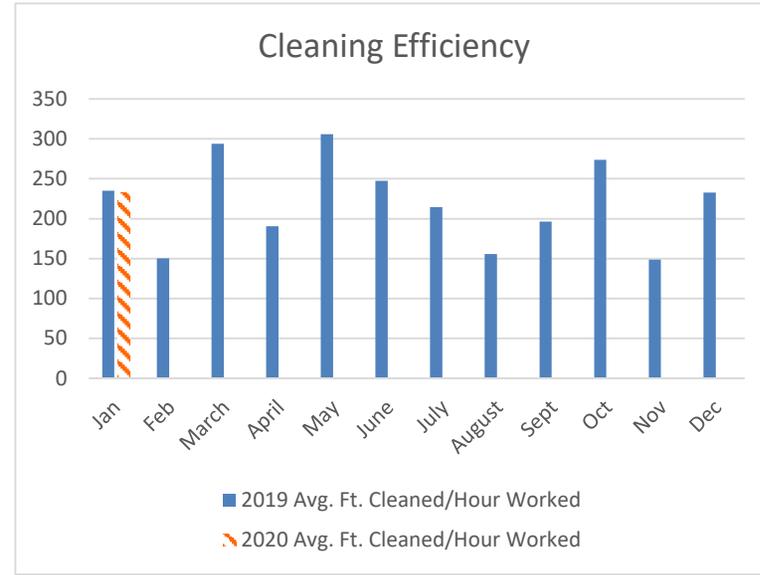
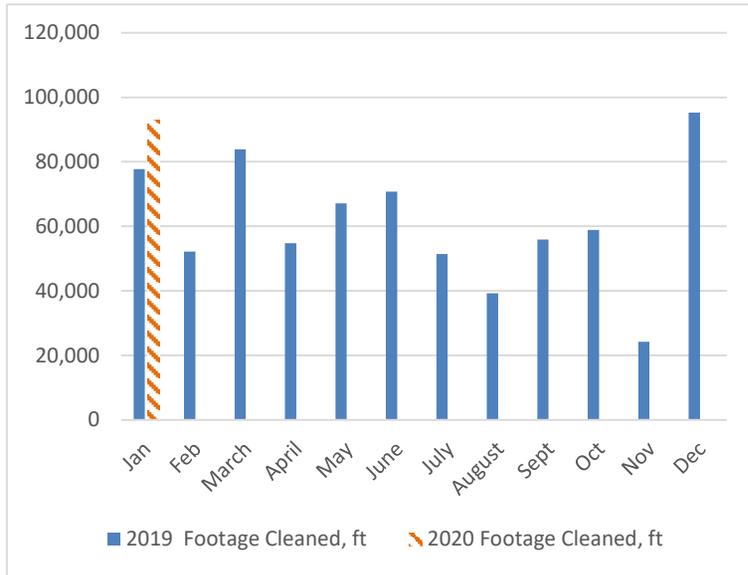
	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Year to Date	Average Year to Date
A. Employee Hours Worked														
Number of FTEs (main line cleaning)	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.2
Number of FTEs (other)	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.1
Number of FTEs (USAs)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Number of FTEs (CCTV)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Total, FTEs	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.3
Regular Time Worked, (main line cleaning), hrs	401												401	401
Regular Time Worked on Other, hrs ⁽¹⁾	228												228	228
Regular Time Worked on USAs	20												20	20
Regular Time Worked on CCTV (2)	39												39	39
Total Regular time, worked, hrs	687	0	0	0	0	0	0	0	0	0	0	0	687	57
Total Vacation/Sick Leave/Holiday, hrs	319												319	319
Vacation/Sick Leave/Holiday, FTEs	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.1
Overtime Worked on Coll. Sys., hrs	12												12	12
Overtime Worked on Other, hrs (1)	7												7	7
Overtime Worked on USAs, hrs	0												0	0
Overtime Worked on CCTV ⁽²⁾	0												0	0
Total Overtime, hrs	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19	19
B. Productivity														
1. Line Cleaning														
Rodder Work Orders generated	36												36	36
Rodder 3208 ft. cleaned	6,810												6,810	6,810
Rodder - outside services, ft cleaned	0												0	0
Flusher Work Orders generated	427												427	427
Truck 3205V ft. cleaned	4,329												4,329	4,329
Truck 3206V ft. cleaned	36,952												36,952	36,952
Truck 3209F ft. cleaned	44,800												44,800	44,800
Flusher - outside services, ft. cleaned	0												0	0
Total Footage cleaned ⁽³⁾	92,891	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92,891	92,891
Work Orders completed	451												451	451
Work Orders backlog	12												12	12
2. Closed Circuit Television (CCTV)														
Camera Work Orders generated	0												0	0
CCTV Truck 3126T, ft. videoed	2,876												2,876	2,876
CCTV (hand cam), ft. videoed	0												0	0
CCTV Inspection - outside services, ft. videoed	0												0	0
Total CCTV footage ⁽³⁾	2,876	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,876	2,876
C. Sanitary Sewer Overflows (SSOs)														
Minor (Category III)	0												0	NA
Major (Category II)	0												0	NA
Major (Category I)	0												0	NA
Overflow Gallons	0												0	NA
Volume Recovered	0												0	NA
Percent Recovered	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D. Service Calls (non-SSO related)														
Service calls, normal hours, #	6												6	6
Normal hours S.C. response time, mins (avg.)	11.7												12	12
Service Callouts, after hours, #	1												1	1
After Hours S.C. response time, mins (avg.)	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	3
E. Benchmarks														
Average Ft. Cleaned/Hour Worked	232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	232
Total Stoppages/100 Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA
Average spill response time (mins)	0	0	0	NA	NA	NA	0	NA	NA	NA	0	NA	NA	0
Callouts/100 Miles	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Overtime hours/100 Miles	5	0	0	0	0	0	0	0	0	0	0	0	5.33	0
Overflow Gallons/100 Miles	0	0	0	0	0	0	0	0	0	0	0	0	0	0

⁽¹⁾This category includes time spent on: Data input, Training, Service Calls, Overflow Response, as well as any other activity that does not directly relate to main line cleaning or CCTV work.

⁽²⁾This category separates time spent on CCTV from other Collection System maintenance activities.

⁽³⁾Does not include outside services (tracked separately)

Collection System: 2019 & 2020 Graphs



Novato Sanitary District

Pump Station Monthly Report For January 2020 (as of January 31, 2020)

	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Year to Date	Average Year to Date
Employee Hours Worked													0	
Number of Employees (FTEs)	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.1
Regular Time Worked on Pump Sta	264												264	
Overtime Worked on Pump Sta	46												46	
After Hours Callouts	0	0	0	0	0	0	0	0	0	0	0	0	0	
Average Callout response time (mins)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Work Orders														
Number generated in month	39												39	39
Number closed in month	39												39	39
Backlog	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**PUMP STATIONS
WORK ORDER STATISTICS
January 1, 2020-January 31, 2020**

	Open Work Orders Due Prior to 1/1/2020	Open Work Orders 1/1/2020-1/31/2020	Total Open Work Orders
Preventive		39	39
Corrective	0	0	0
Total	0	39	39

	Closed Work Orders 1/1/2020 -1/31/2020
Preventive	39
Corrective	0
Total	39

Total Outstanding Work Orders as of 1/31/2020	0
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Item 6.b.
Treatment Facilities
(Pages 73 to 108)

February 3, 2020

Mr. Sandeep Karkal
General Manager – Chief Engineer
Novato Sanitary District
500 Davidson Street
Novato, CA 94545

Subject: Veolia Water Operations Report – January 2020

Dear Mr. Karkal:

I am pleased to provide the Monthly Operations report for January 2020.

As always, please give me a call at 707-292-3022 should you have any questions.

Best regards,

A handwritten signature in blue ink that reads "John P. O'Hare". The signature is fluid and cursive.

John P. O'Hare
Project Manager, Veolia



MONTHLY OPERATIONS REPORT
January 2020

Prepared for

NOVATO SANITARY DISTRICT (NSD)
WASTEWATER TREATMENT PLANT
500 Davidson Street
Novato, CA 94945

Prepared by

Veolia Water West Operating Services, Inc. (VWWOS)

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- A: TREATMENT PLANT PERFORMANCE SUMMARY
- B: SAFETY AND TRAINING
- C: OPERATIONS AND MAINTENANCE STATUS / REVIEW
- D: ENVIRONMENTAL SERVICES ACTIVITIES SUMMARY
- E: ADMINISTRATION
- F: ODORS & LANDSCAPING
- G: MISCELLANEOUS

ATTACHMENTS

- 1) Photos
 - 2) Laboratory Data
 - 3) Recycled Water Report
 - 4) Annual Performance Summary - Graphs
 - 5) Process Control Data / Graphs
 - 6) Neighborhood Complaints Received
 - 7) Jerome Meter Readings and Locations
-

A: TREATMENT PLANT PERFORMANCE SUMMARY – January 2020

National Pollution Discharge Elimination System Permit – Table 1.0

Parameter	Value		Limits	
	Ave	Max		
Flow, MGD (monthly ave/max)	5.21	8.82	N/A	
Influent				
BOD ₅ , lb/day (month ave/max)	11,227	16,131	N/A	
TSS, lb/day (monthly ave/max)	10,212	13,499	N/A	
Effluent				
BOD ₅ , mg/L (monthly ave/max weekly ave)	<5	<6	15	30
TSS, mg/L (monthly ave/max weekly ave)	<3	4	10	20
BOD ₅ - % Removal, Average	98		85 minimum	
TSS - % Removal, Average	99		85 minimum	
Ammonia, mg/L – (monthly ave/daily max)	1.06	1.06	5.9	21
pH, su (min / max)	7.3	7.9	6.5	8.5
Enterococcus, MPN/100 ml (30 day geo mean)	2.77		35	
Fecal Coliform, MPN/100 ml (monthly median)	6.8		140	
Fecal Coliform, MPN/100 ml (90 th PCTL)	6.8		430	
Total Coliform, MPN/100 ml (5 sample median)	N/A		240	
Total Coliform, MPN/100 ml (monthly maximum)	N/A		10,000	

Peak Rainfall Flow Rate = 14 million gallon per day, January 16, 2020, 10:56 am

Total Rainfall = 1.12 inches

Title 22 - Recycled Water Production and Quality – Table 2.0

Description	Units	Value	Limit
Potable Water Provided	Million Gallons	1.044	N/A
Volume Produced	Million Gallons	N/A	N/A
Average Turbidity	NTU	N/A	2.0
Turbidity > 5 NTU (in 24 hour)	Minutes	N/A	72
Minimum CT (disinfection)	mg-min/L	N/A	450 minimum
Minimum Dissolved Oxygen (DO)	mg/L	N/A	2 mg/L minimum
Maximum Total Coliform	MPN/100 ml	N/A	240
Maximum Total Coliform 2 Samples 30 days	MPN/100 ml	N/A	23
Total Coliform 7 Sample Median	MPN/100 ml	N/A	2.2

Discussion of Violations / Excursions

- National Pollutant Discharge Elimination System Permit (NPDES) Limits - None
- Reclaimed (Recycle) Water - None
- Recycled Water Permit – None
- Bay Area Air Quality Management District – None

B: SAFETY AND TRAINING:

- Monthly plant safety inspections for Novato Wastewater Treatment Plant and Ignacio Transfer



- Pump Station completed.
- No safety incidents for the month of January 2020.
- Monthly Safety Topics: Online Training – HazCom – What you need to know – Occupational Safety and Health Administration (OSHA).
- OSHA 301A Log posted.

C: OPERATIONS & MAINTENANCE STATUS / REVIEW:**Key events for the period:****Wastewater Treatment Plant Power Outages**

- No power outages to report in January 2020.

Novato Wastewater Treatment Plant

- Routine rounds, readings and preventative maintenance.
- Calcon Systems replaced the variable frequency drive on mixed liquor pump #3.
- Leete Generators repaired a small fuel line leak on emergency generator #2.
- Removed and refurbished digester #2 mixing pump. Installed the spare mixing pump.
- Removed waste activated sludge pump #2 for refurbishing. Installed the spare pump.
- Replaced the high pressure water pump for gravity belt thickener (GBT) #1.
- Replaced the electrical motor for the high pressure water pump for GBT #2.

Equipment Out of Service – Due to Planned Servicing, Maintenance, Replacement, Standby

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

Ignacio Transfer Pump Station

- Routine rounds, readings and preventative maintenance.

Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- None

Recycled Water Plant (RWP)

- Routine maintenance was performed.

Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- None

Sludge Lagoons (and Reclamation Area)

- Conducted routine checks.
- Exercised the sludge lagoons inlet and outlet valves.

D: ENVIRONMENTAL SERVICES ACTIVITIES SUMMARY

Discharge to San Pablo Bay – January 1 – 31, 2020

Regulatory Programs:**Laboratory Program****Environmental Laboratory Accreditation Program**

Received the renewed program certificate.

Enterococcus

When effluent is discharged to San Pablo Bay the bacterial requirement includes monitoring for the Enterococcus parameter. The recycled water use agreement with the California State Coastal Conservancy requires that Enterococcus data be provided, which continued through January 2020.

Whole Effluent Toxicity Testing

Quarterly Acute and Chronic Toxicity is required during discharge to San Pablo Bay. Testing was performed from January 14th thru 17th. Both analyses were performed by Aqua Science in Davis, CA. Acute Toxicity testing results yielded 100% survival.

Bay Area Clean Water Agency (BACWA)

Liz Falejczyk, Veolia Water Environmental Services Supervisor and Erik Brown, Novato Sanitary District Deputy General Manager attended the annual meeting.

Pretreatment Program**Compliance Reporting**

Received periodic reports of continued compliance from all Significant Industrial Users (SIUs).

Discharge Permits

- Issued two Temporary Non-Domestic Discharge Permits.

Inspections and Sampling

- Inspected one new Non-significant Categorical Industrial User.
- Received inspection forms from Central Marin Sanitation Agency for all of the dental offices inspected in Novato, CA in 2019.

Significant Industrial User Invoicing

Liz Falejczyk collaborated with Lara Creamer, Novato Sanitary District Finance Officer to complete the quarterly and annual billing for two SIU's for permit issuance and sampling costs.

Fats, Oils and Grease Program**Compliance Reporting**

- Received support documentation confirming compliance from three Food Service Establishments.

E: ADMINISTRATION:

- December 2019 Electronic Discharge Monitoring Report (EDMR-US EPA) and December 2019 Self-Monitoring Report (SMR-State of California) submitted on January 28, 2020.



- 2019 Annual Self-Monitoring Report (SMR-State of California) submitted on January 28th

F: ODORS & LANDSCAPING:

- Jerome meter (H₂S) parts per million (ppm) readings performed in adjacent neighborhood.
- Values reported averaged 0.0005 ppm which are well below the odor threshold.

G: MISCELLANEOUS

- Process Control Management Plan (PCMP) meetings held weekly with the Veolia staff.

Veolia Support Staff On/Off Site (Various Times)

Art Fagerström, PE, BCEE, Veolia Technical Manager, Corporate Technical Support

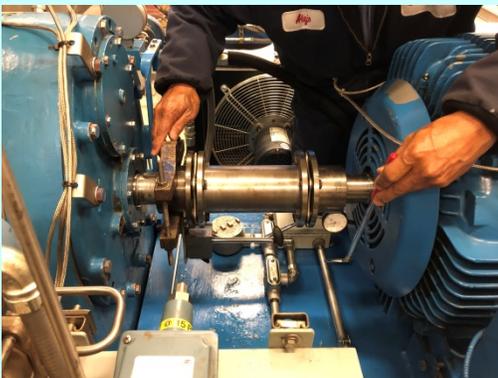
Melissa Sandvold, Veolia West Region VP of Operations

James Loven, Veolia Central/West Technical Director

Joe Hart, Veolia Regional Asset Manager

1) PHOTOS

PLANT OPERATION AND MAINTENANCE JANUARY 2020



Above Left – Commercial crane setting up to remove and replace digester #2 mixing pump
Above Center – John Bailey, Veolia Assistant Plant Manager providing oversight for the digester mixing pump project
Above Right – Replacement of the refurbished digester mixing pump
Below Left – Alejo Cuntapay , Veolia Mechanics performing shaft alignment on Turblex® multistage blower #2
Below Center – Recycled Water Plant – Clearwell facing east
Below Right – John Bailey providing assistance with the reinstallation of the waste activated sludge pump

2) LABORATORY DATA

Novato Sanitary District
Conventional Pollutants Report



January, 2020

Date	INFLUENT - A001			Effluent - E002							
	Flow Total	pH	Ammonia	Coliform / Bacteria			pH	Ammonia	Oil & Grease	Temp	Rainfall
				Fecal	Entero	Total					
	MGD	su	mg/L	MPN/100 mL			su	mg/L	mg/L	Deg C	Inches
01/01/20	6.29				<1.0		7.0			17.4	0.00
01/02/20	5.88	7.4			<1.0		6.9			18.0	0.00
01/03/20	5.72	7.3			4.1		6.9			17.7	0.00
01/04/20	5.40										0.00
01/05/20	5.25										0.00
01/06/20	5.08	7.8		6.8	<1.0		7.0			17.5	0.00
01/07/20	5.09	7.4			<1.0		7.1			17.5	0.00
01/08/20	4.70	7.4			<1.0		7.1	1.06	<1.4	17.3	0.00
01/09/20	5.00	7.5					7.0			17.6	0.11
01/10/20	4.58	7.4	32				7.0			16.9	0.00
01/11/20	4.90										0.01
01/12/20	4.72										0.00
01/13/20	4.77						7.0			17.6	0.02
01/14/20	4.64	7.9			3.0		7.1			17.2	0.01
01/15/20	4.44	7.4			23.1		7.2			17.1	0.00
01/16/20	8.82	7.4			22.5		7.1			17.3	0.72
01/17/20	6.56	7.5	26				6.9			16.8	0.04
01/18/20	5.86										0.00
01/19/20	5.46										0.00
01/20/20	5.47				8.6		7.1			16.9	0.00
01/21/20	5.47	7.5			8.0		7.1			17.8	0.07
01/22/20	5.01	7.6			2.0		7.0			17.3	0.01
01/23/20	5.11	7.3	29				7.1			17.3	0.00
01/24/20	5.11						6.9			17.3	0.00
01/25/20	4.82										0.00
01/26/20	5.25										0.12
01/27/20	4.72	7.3					7.1			17.9	0.00
01/28/20	4.46	7.5			5.0		7.1			17.8	0.01
01/29/20	4.56				<1.0		7.1			17.7	0.00
01/30/20	3.00	7.8			<1.0		7.1			18.1	0.00
01/31/20	5.36	7.6					7.0			17.9	0.00
Monthly											
Minimum	3.00	7.3	26	6.8	<1.0		6.9	1.06	<1.4	16.8	0.00
Maximum	8.82	7.9	32	6.8	23.1		7.2	1.06	<1.4	18.1	0.72
Total	161.50										1.12
Average	5.21	7.5	29				7.0	1.06	<1.4	17.5	0.04
Geomean					2.77						

Novato Sanitary District
BOD/TSS Report



January, 2020

Date	Flow MGD	Influent				Effluent				BOD % Removal PERCENT	TSS % Removal PERCENT
		BOD		TSS		BOD		TSS			
		mg/l	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	lb/d		
01/01/20	6.29										
01/02/20	5.88	130	6,375	183	8,974	<6	<294	<3	<147	95.4	98.4
01/03/20	5.72										
01/04/20	5.40										
01/05/20	5.25										
01/06/20	5.08										
01/07/20	5.09	380	16,131	318	13,499	<5	<212	<3	<127	98.7	99.1
01/08/20	4.70					<5	<196	<3	<118		
01/09/20	5.00										
01/10/20	4.58										
01/11/20	4.90										
01/12/20	4.72										
01/13/20	4.77										
01/14/20	4.64										
01/15/20	4.44	260	9,628	257	9,517	<5	<185	3	111	98.1	98.8
01/16/20	8.82										
01/17/20	6.56										
01/18/20	5.86										
01/19/20	5.46										
01/20/20	5.47										
01/21/20	5.47	280	12,774	213	9,717	<5	<228	<3	<137	98.2	98.6
01/22/20	5.01										
01/23/20	5.11										
01/24/20	5.11										
01/25/20	4.82										
01/26/20	5.25										
01/27/20	4.72										
01/28/20	4.46										
01/29/20	4.56			246	9,355			4			98.4
01/30/20	3.00										
01/31/20	5.36										
Weekly Averages											
01/04/20	Week 1	130	6,375	183	8,974	6	294	3	147		
01/11/20	Week 2	380	16,131	318	13,499	5	204	3	122		
01/18/20	Week 3	260	9,628	257	9,517	5	185	3	111		
01/25/20	Week 4	280	12,774	213	9,717	5	228	3	137		
	Week 5										
Monthly											
Minimum	3.00	130	6,375	183	8,974	<5	<185	<3	111	95	98
Maximum	8.82	380	16,131	318	13,499	<6	<294	4	<147	99	99
Total	161.50										
Average	5.21	263	11,227	243	10,212	<5	<223	<3	<128	98	99

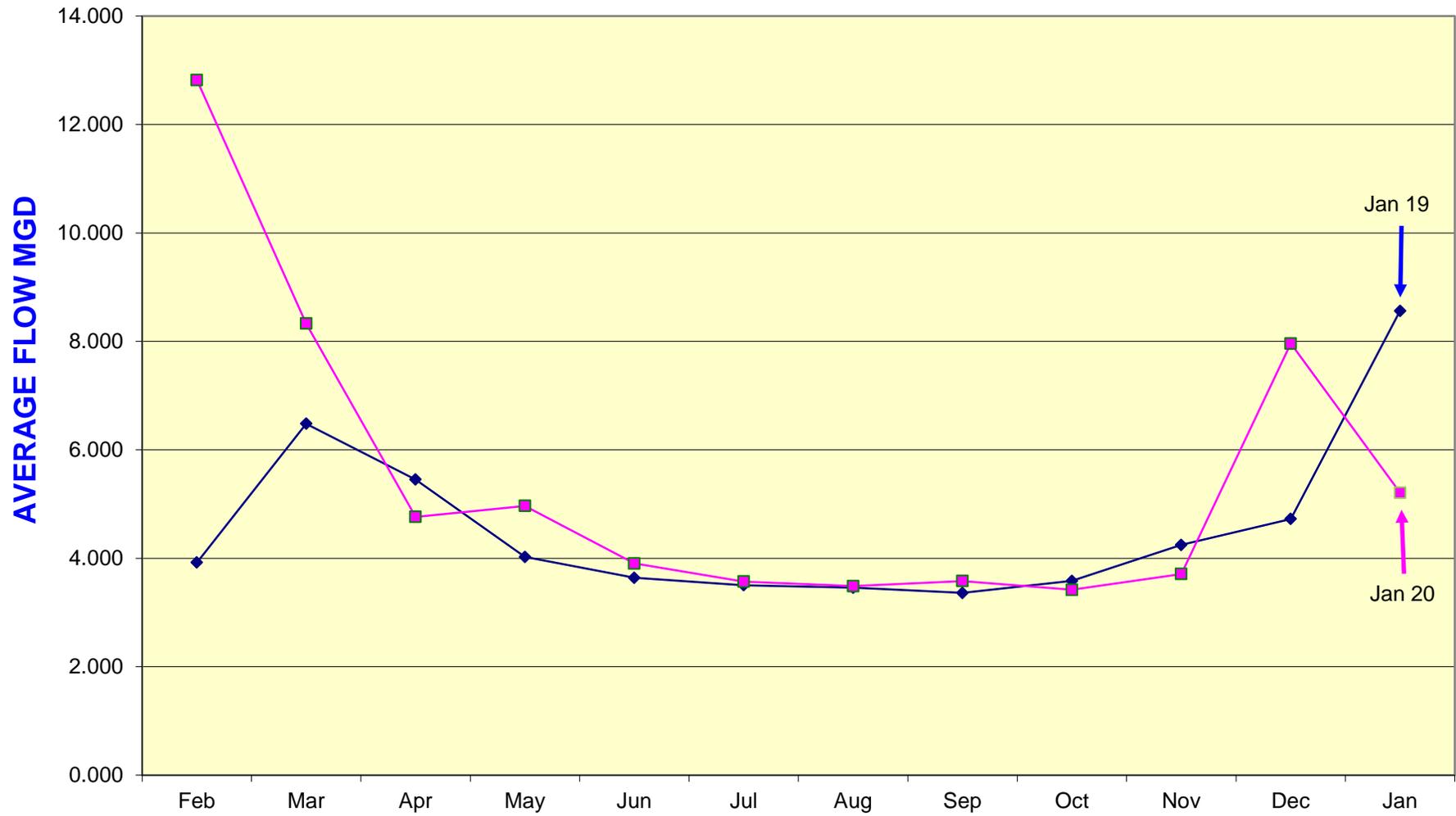
3) *RECYCLED WATER REPORT*

NOVATO SANITARY DISTRICT
 RECYCLED WATER
 COMPLIANCE SUMMARY REPORT

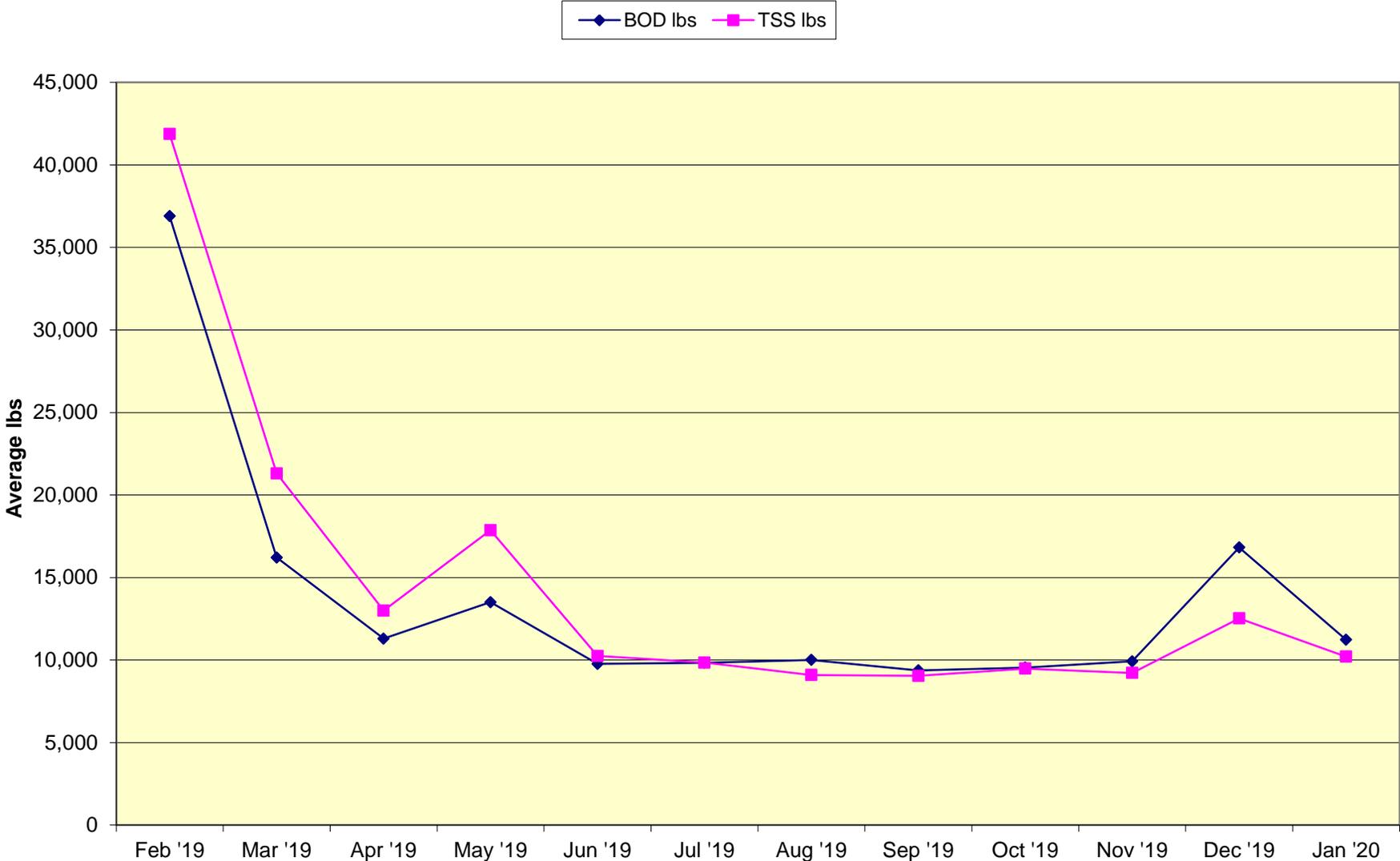
Date	Filter Influent Flow MGD	Recycled Water Flow to Plum St. MGD	Potable Water To Plum St Tank MGD	Recycled Water Influent Turbidity Ave. NTU	Minutes Over 5 NTU Turbidity (m)	Filter Effluent 24 Hr Average Turbidity NTU	Filter Effluent Dissolved Oxygen (mg/l)	Filter Effluent Total Coliform MPN/100ml	Disinfection CT Value mg-min/l
1/1/2020	0.000	0.000							
1/2/2020	0.000	0.000							
1/3/2020	0.000	0.000							
1/4/2020	0.000	0.000							
1/5/2020	0.000	0.000							
1/6/2020	0.000	0.000							
1/7/2020	0.000	0.000	0.228						
1/8/2020	0.000	0.000							
1/9/2020	0.000	0.000							
1/10/2020	0.000	0.000							
1/11/2020	0.000	0.000							
1/12/2020	0.000	0.000							
1/13/2020	0.000	0.000							
1/14/2020	0.000	0.000	0.330						
1/15/2020	0.000	0.000							
1/16/2020	0.000	0.000							
1/17/2020	0.000	0.000							
1/18/2020	0.000	0.000							
1/19/2020	0.000	0.000							
1/20/2020	0.000	0.000							
1/21/2020	0.000	0.000							
1/22/2020	0.000	0.000							
1/23/2020	0.000	0.000							
1/24/2020	0.000	0.000	0.040						
1/25/2020	0.000	0.000							
1/26/2020	0.000	0.000	0.220						
1/27/2020	0.000	0.000							
1/28/2020	0.000	0.000	0.009						
1/29/2020	0.000	0.000	0.217						
1/30/2020	0.000	0.000							
1/31/2020	0.000	0.000							
Total	0.000	0.000	1.044						
Minimum	0.000	0.000	0.009						
Maximum	0.000	0.000	0.330						
Average	0.000	0.000	0.174						

4) ANNUAL PERFORMANCE SUMMARY – GRAPHS

WASTEWATER INFLUENT FLOW COMPARISON

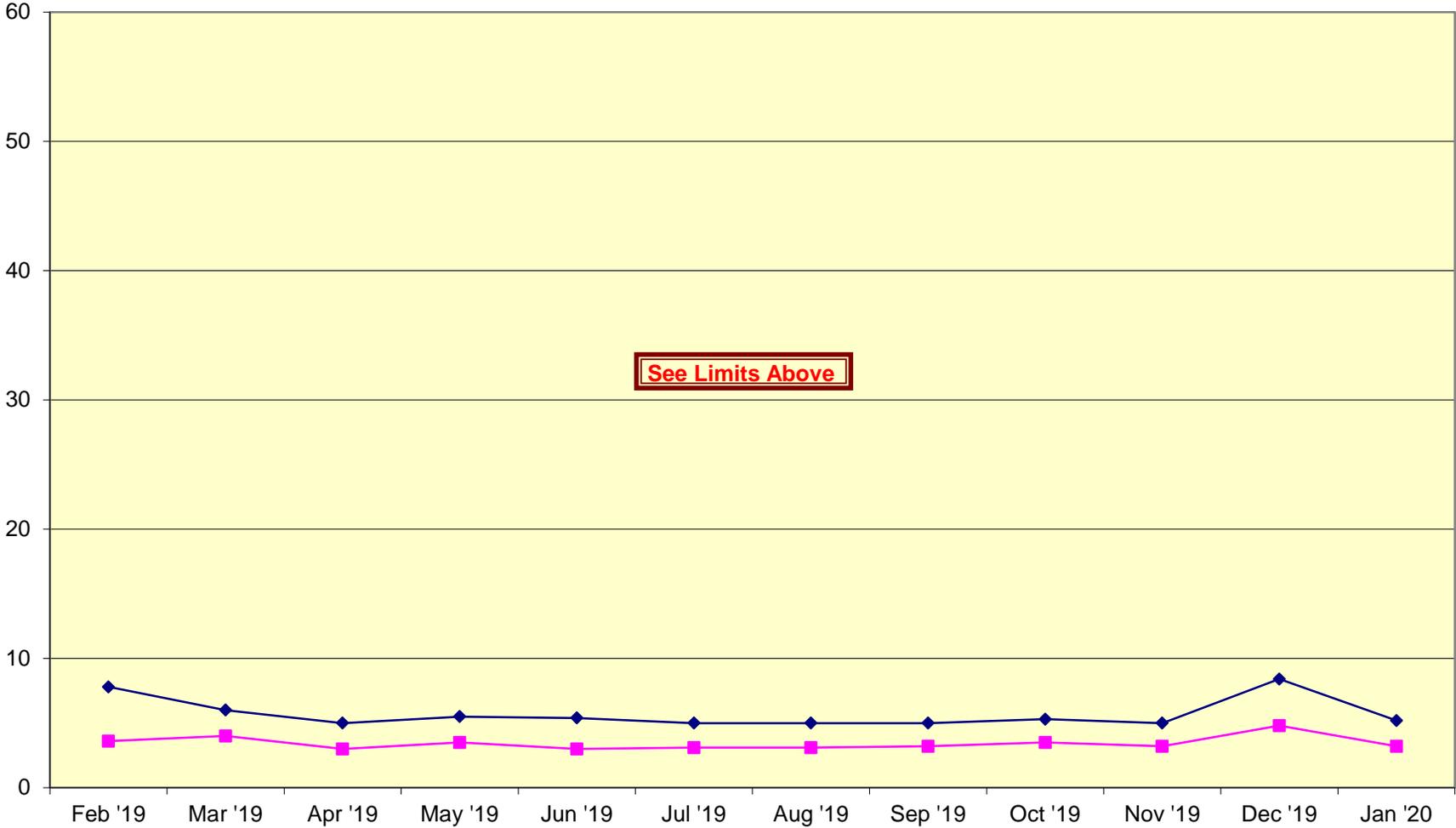


Influent Load BOD / TSS lbs



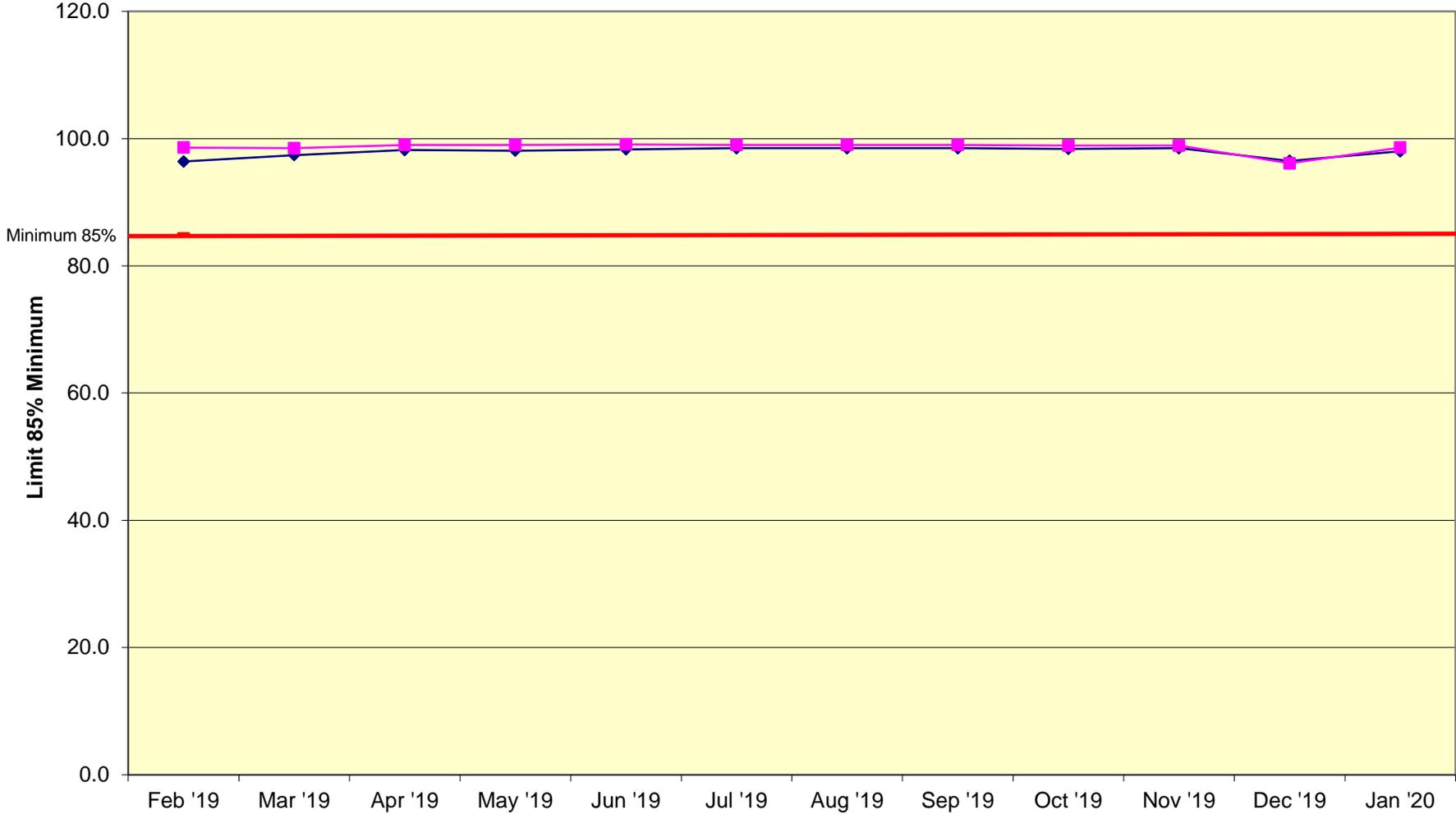
Effluent BOD / TSS Concentration

NPDES LIMITS WET SEASON
BOD & TSS - 30 mg/L Monthly Ave, 45 mg/L Weekly Ave
 NPDES LIMITS DRY SEASON
 BOD - 15 mg/L Monthly Ave, 30 mg/L Weekly Ave
 TSS - 10 mg/L Monthly Ave, 20 mg/L Weekly Ave
 WDR (Waste Discharge Requirements) RECLAMATION
 BOD - 40 mg/L

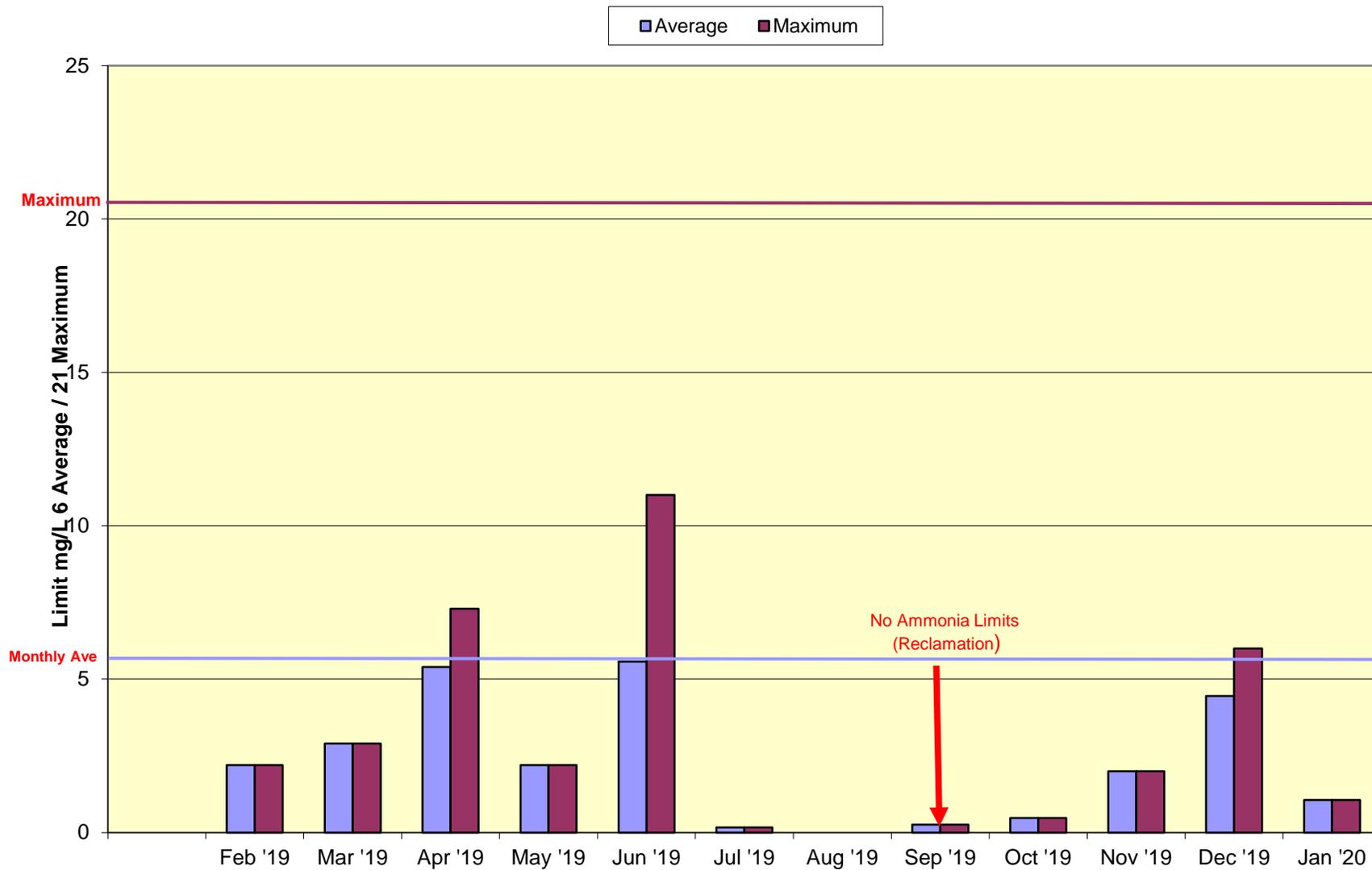


BOD / TSS Percent Removal

◆ BOD ■ TSS

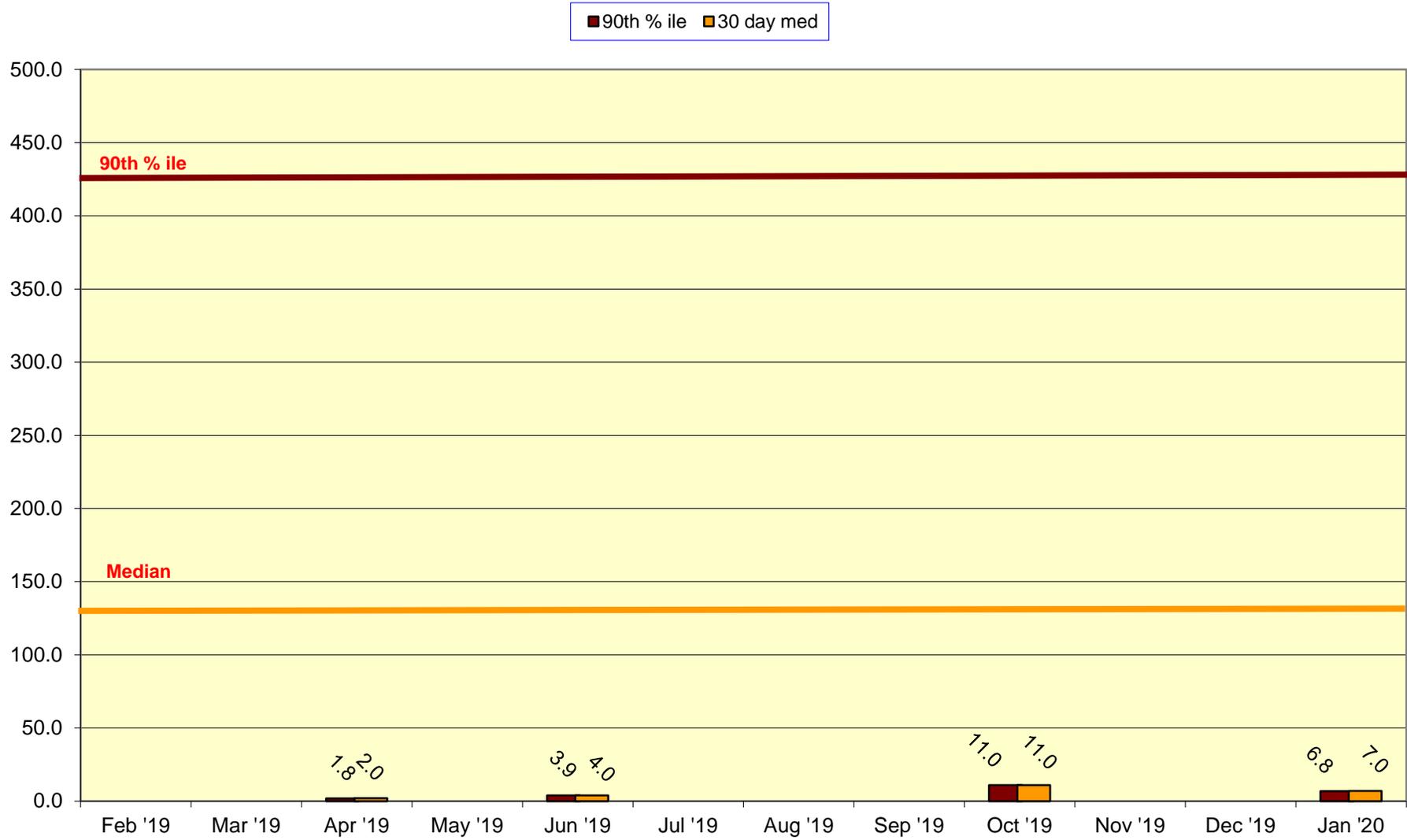


Effluent Ammonia



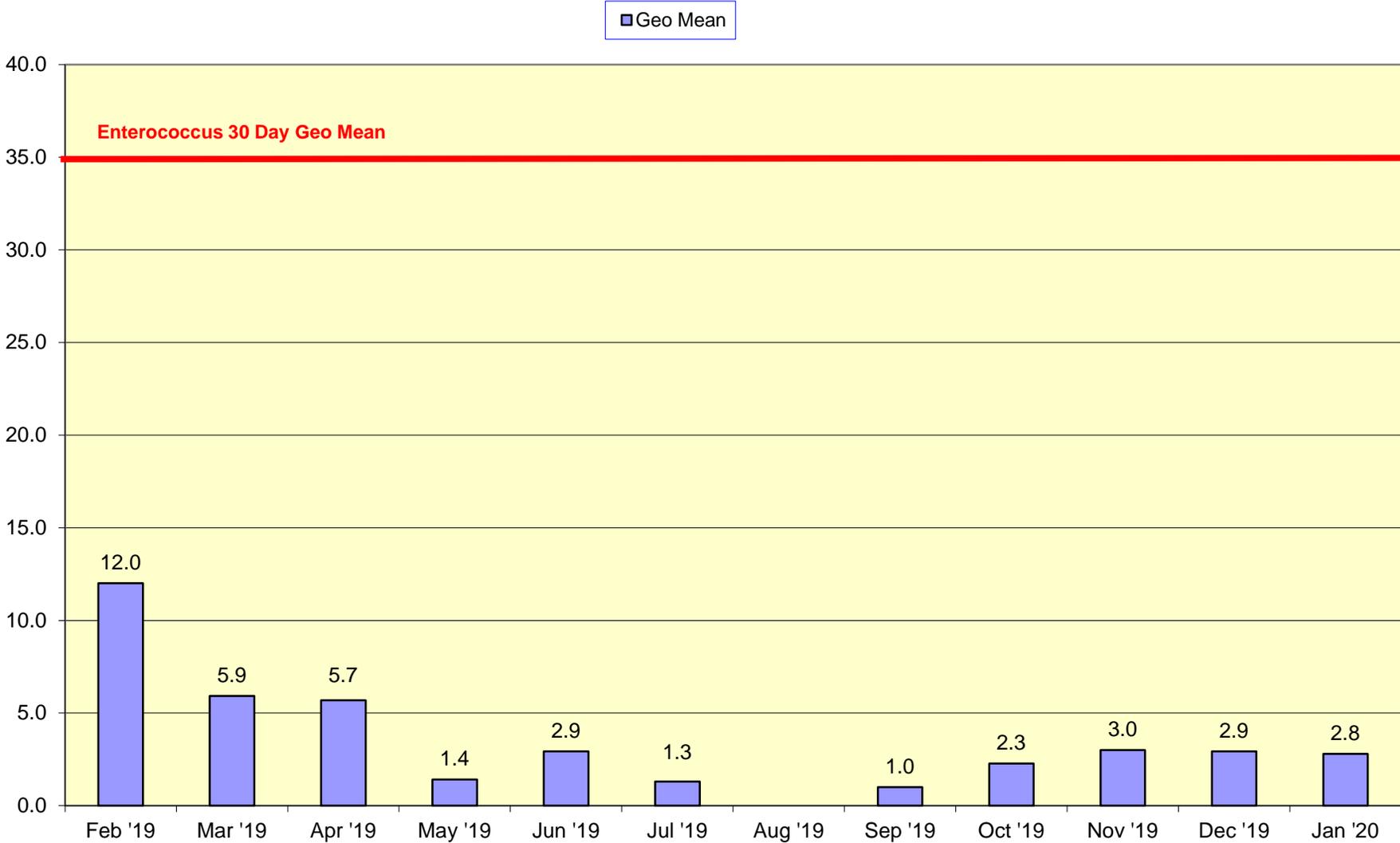
Disinfection - Fecal Coliform

LIMITS - NPDES
 Fecal 140 mpn monthly median
 Fecal 430 mpn 90th percentile 30 day



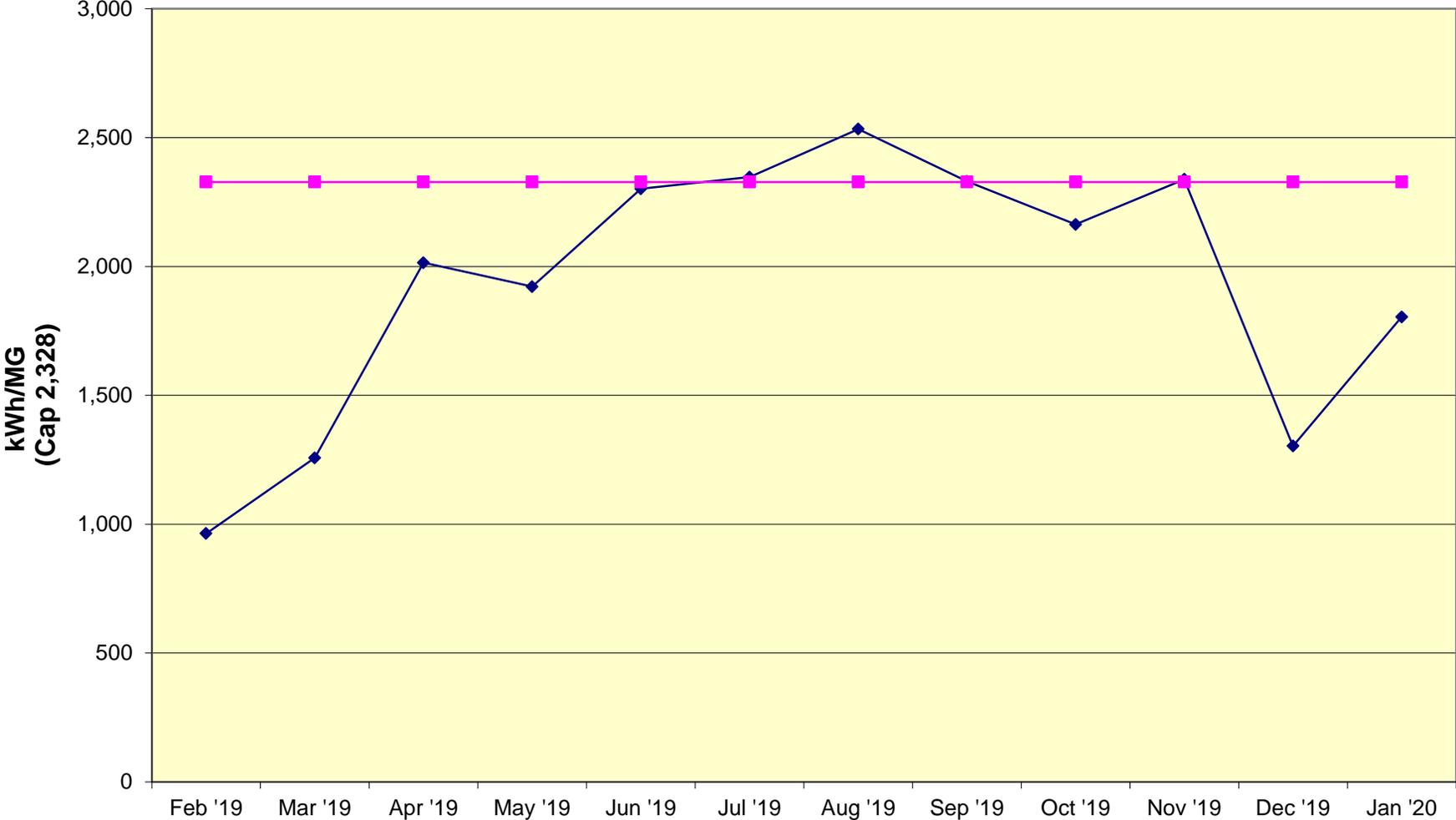
Disinfection - Enterococcus

LIMITS - NPDES
Enterococcus 30 day geo mean 35 mpn /100ml

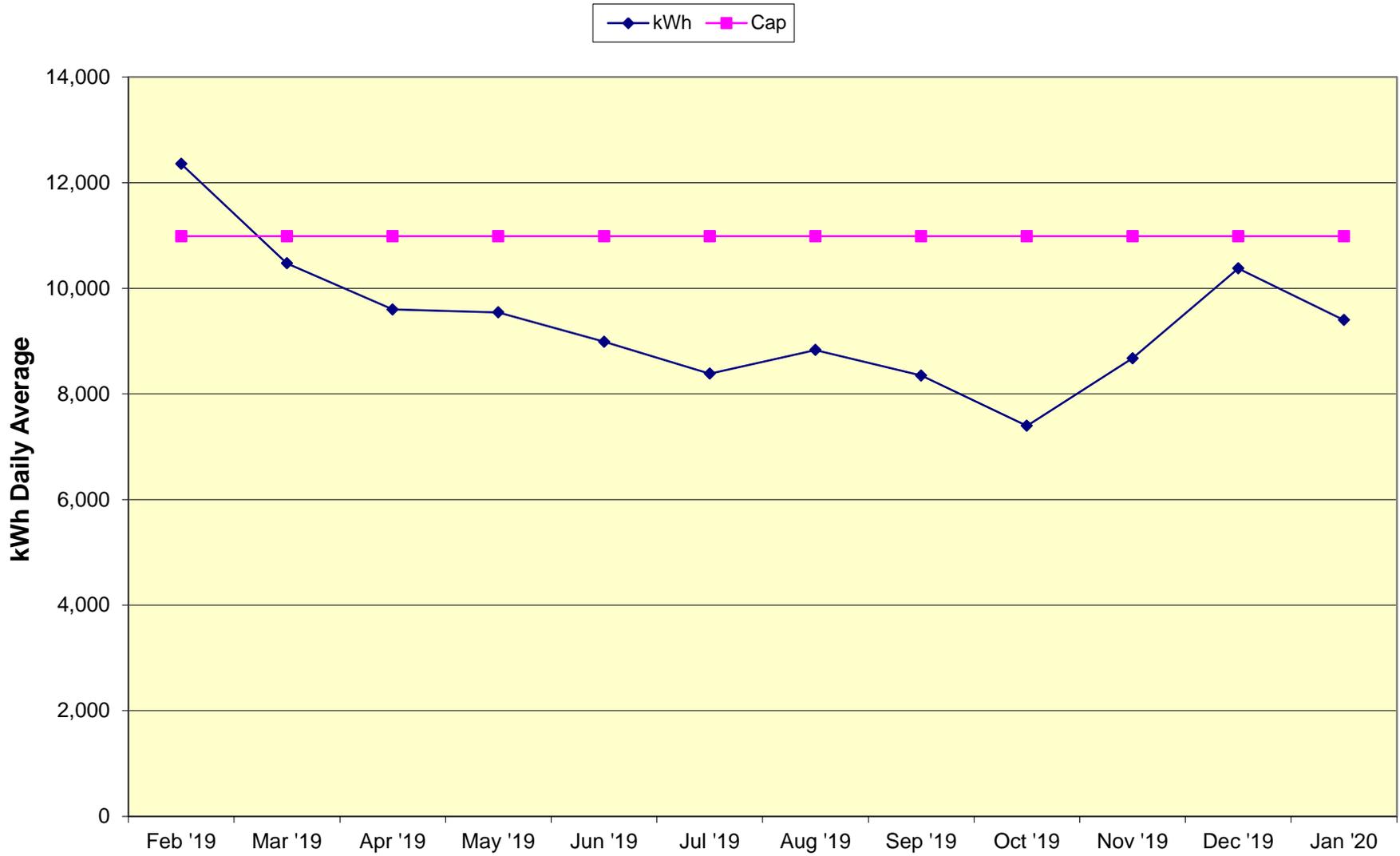


Energy kWh/MG

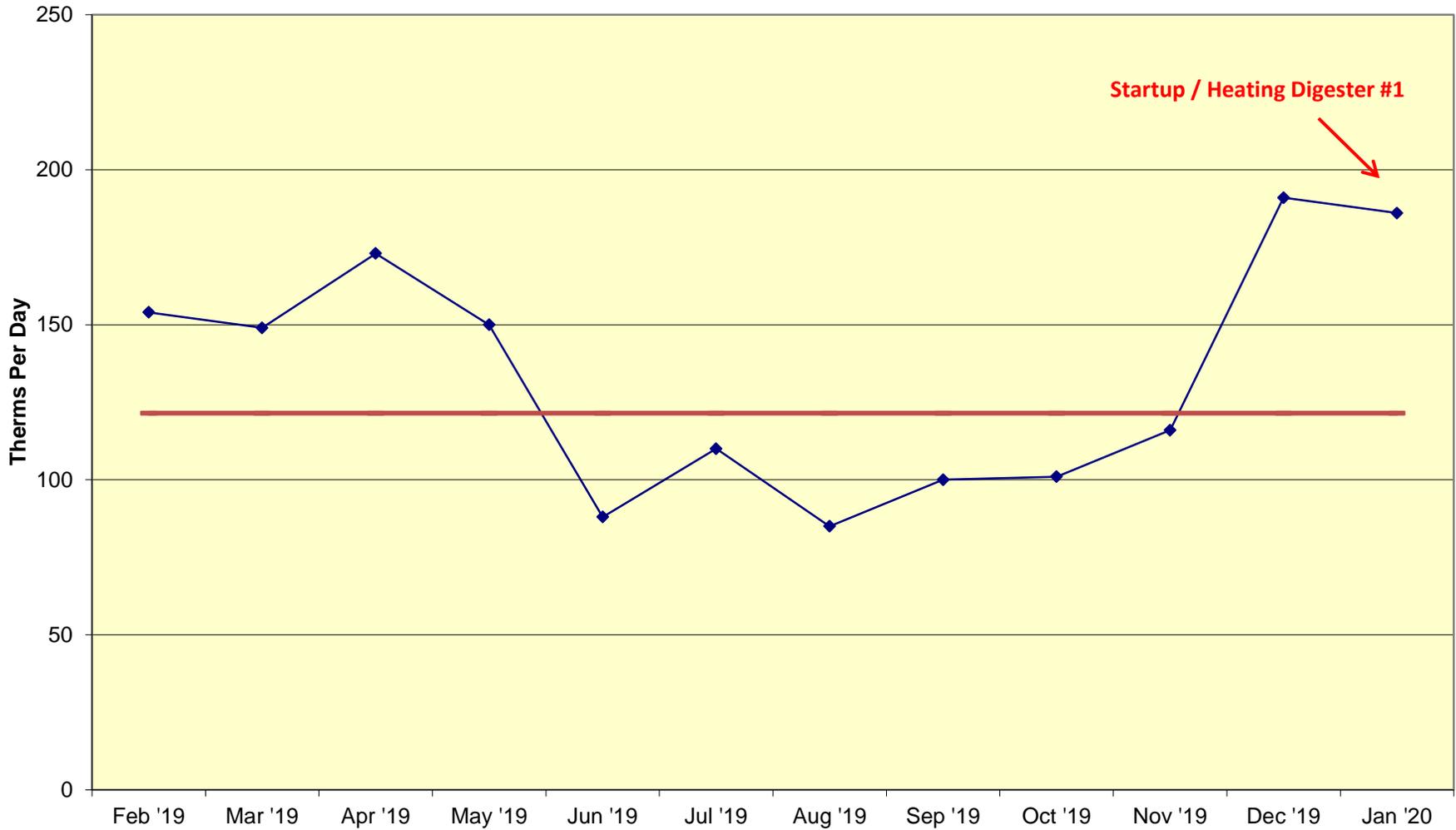
◆ kW/MG ■ Cap



Energy kWh



Natural Gas Use

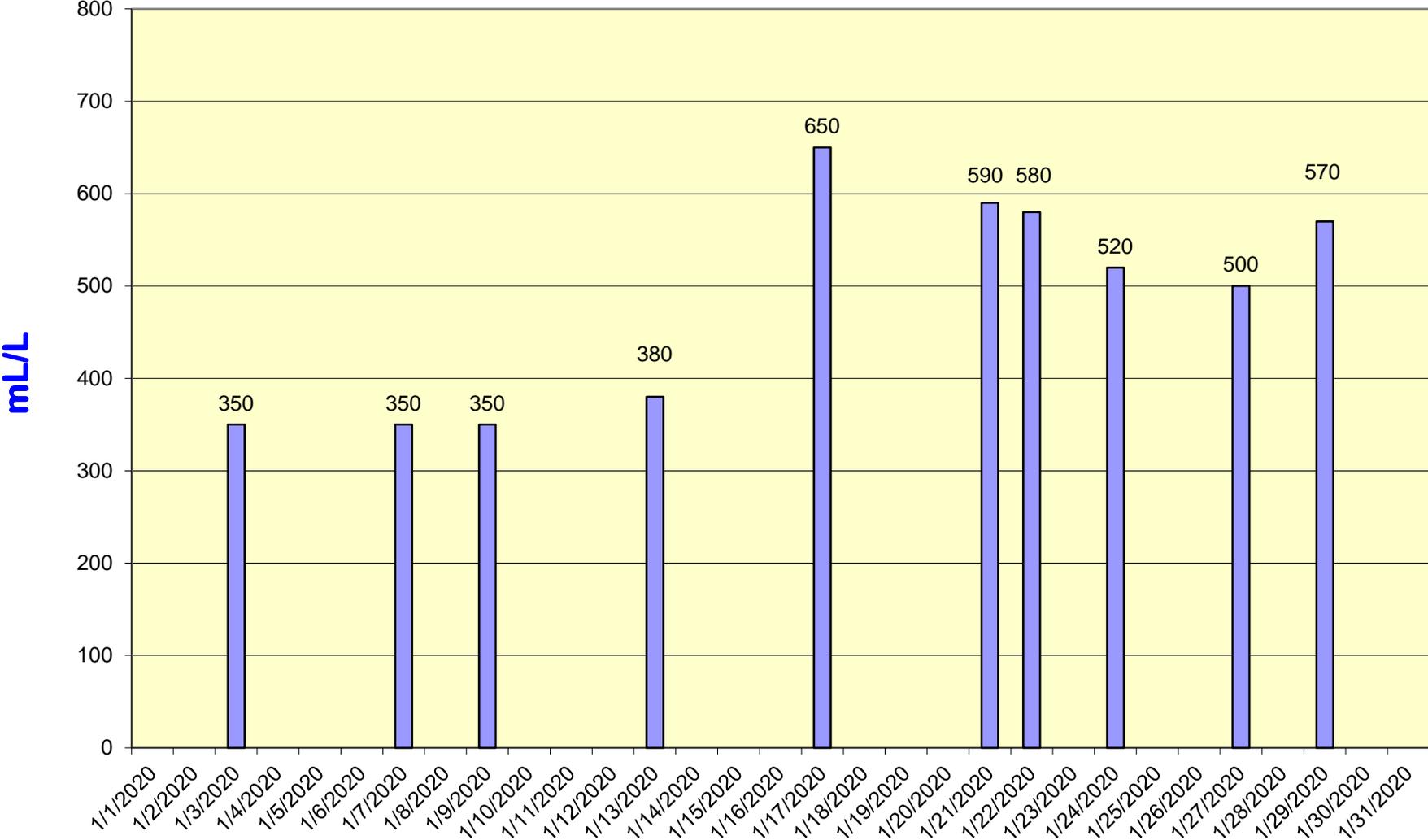


5) PROCESS CONTROL DATA / GRAPHS

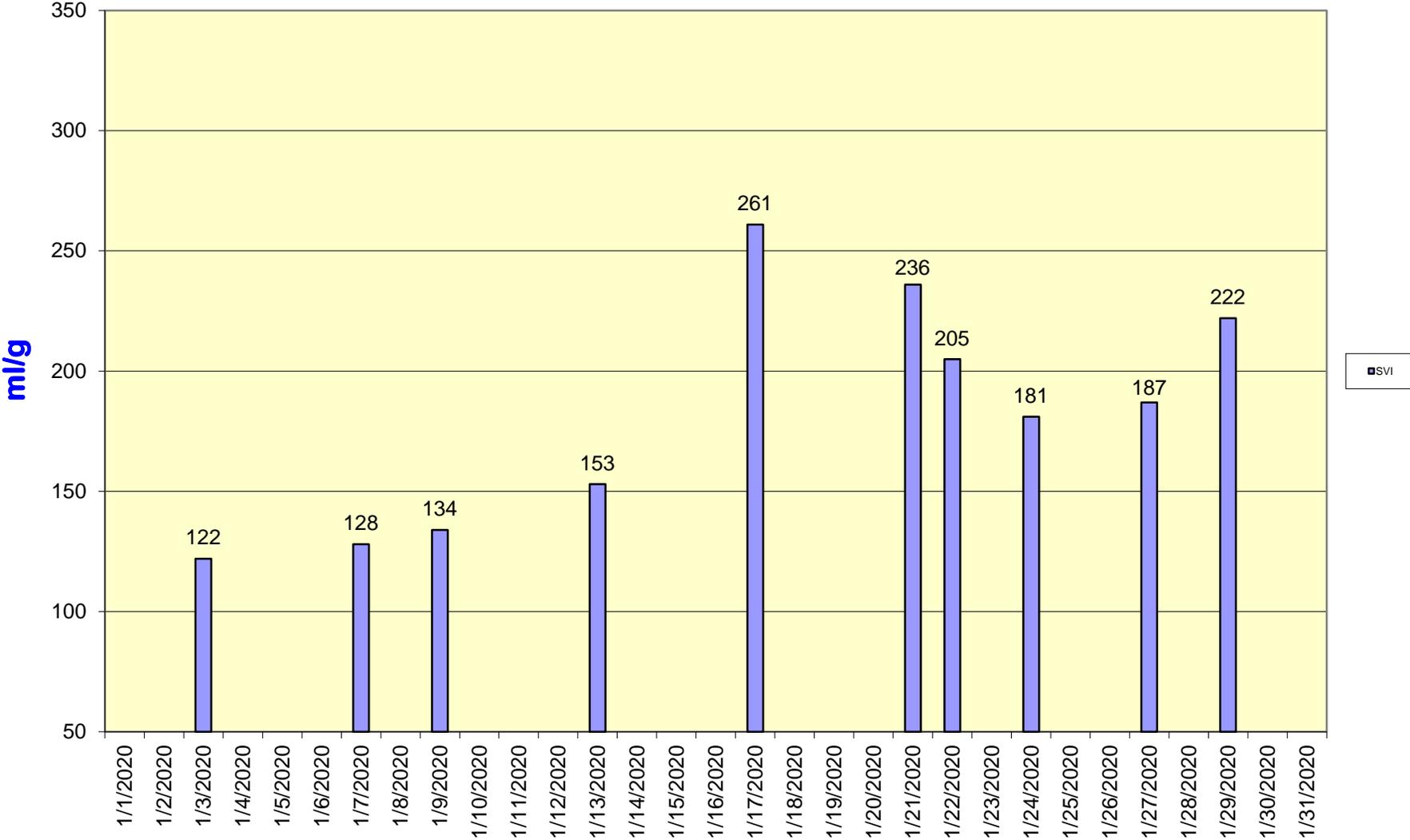
Process Control Data

	Influent Flow	Settleability	MLSS Concentration	MLSS Inventory	MCRT	SVI
1/1/2020	6.29					
1/2/2020	5.88					
1/3/2020	5.72	350	2,880	51,305	6.8	122
1/4/2020	5.40					
1/5/2020	5.25					
1/6/2020	5.08					
1/7/2020	5.09	350	2,730	48,633	7.2	128
1/8/2020	4.70					
1/9/2020	5.00	350	2,620	46,673	7.8	134
1/10/2020	4.58					
1/11/2020	4.90					
1/12/2020	4.72					
1/13/2020	4.77	380	2,490	44,357	7.5	153
1/14/2020	4.64					
1/15/2020	4.44					
1/16/2020	8.82					
1/17/2020	6.56	650	2,500	44,536	7.7	261
1/18/2020	5.86					
1/19/2020	5.46					
1/20/2020	5.47					
1/21/2020	5.47	590	2,500	44,536	7.1	236
1/22/2020	5.01	580	2,830	50,414	10.2	205
1/23/2020	5.11					
1/24/2020	5.11	520	2,880	51,305	7.6	181
1/25/2020	4.82					
1/26/2020	5.25					
1/27/2020	4.72	500	2,680	47,742	7.9	187
1/28/2020	4.46					
1/29/2020	4.56	570	2,590	46,139	8.4	222
1/30/2020	3.00					
1/31/2020	5.36		2,540	45,248	9.1	
Minimum	3.00	350	2,490	44,357	6.8	122
Maximum	8.82	650	2,880	51,305	10.2	261
Total	161.50					
Average	5.21	484	2,658	47,353	7.9	183

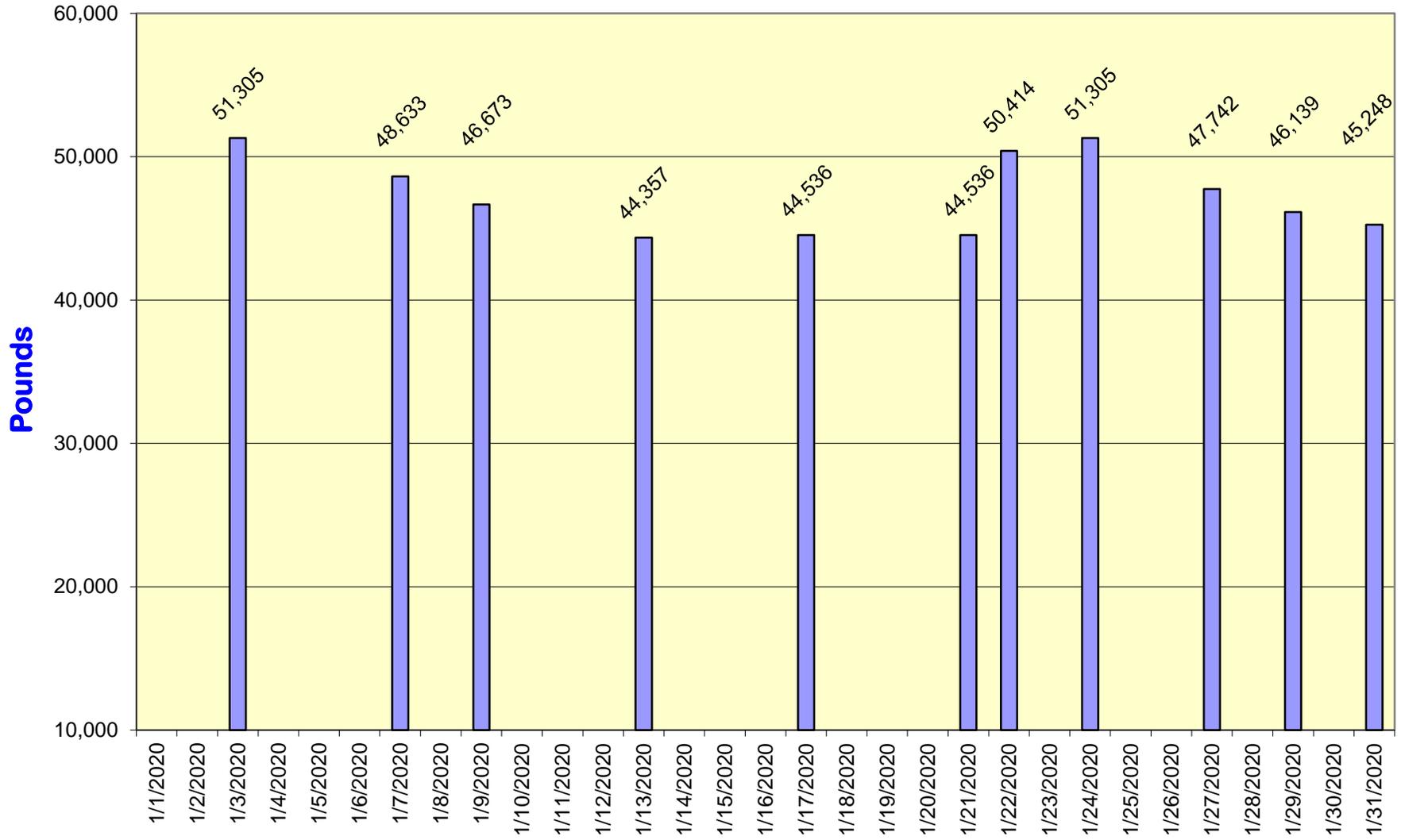
Settleability



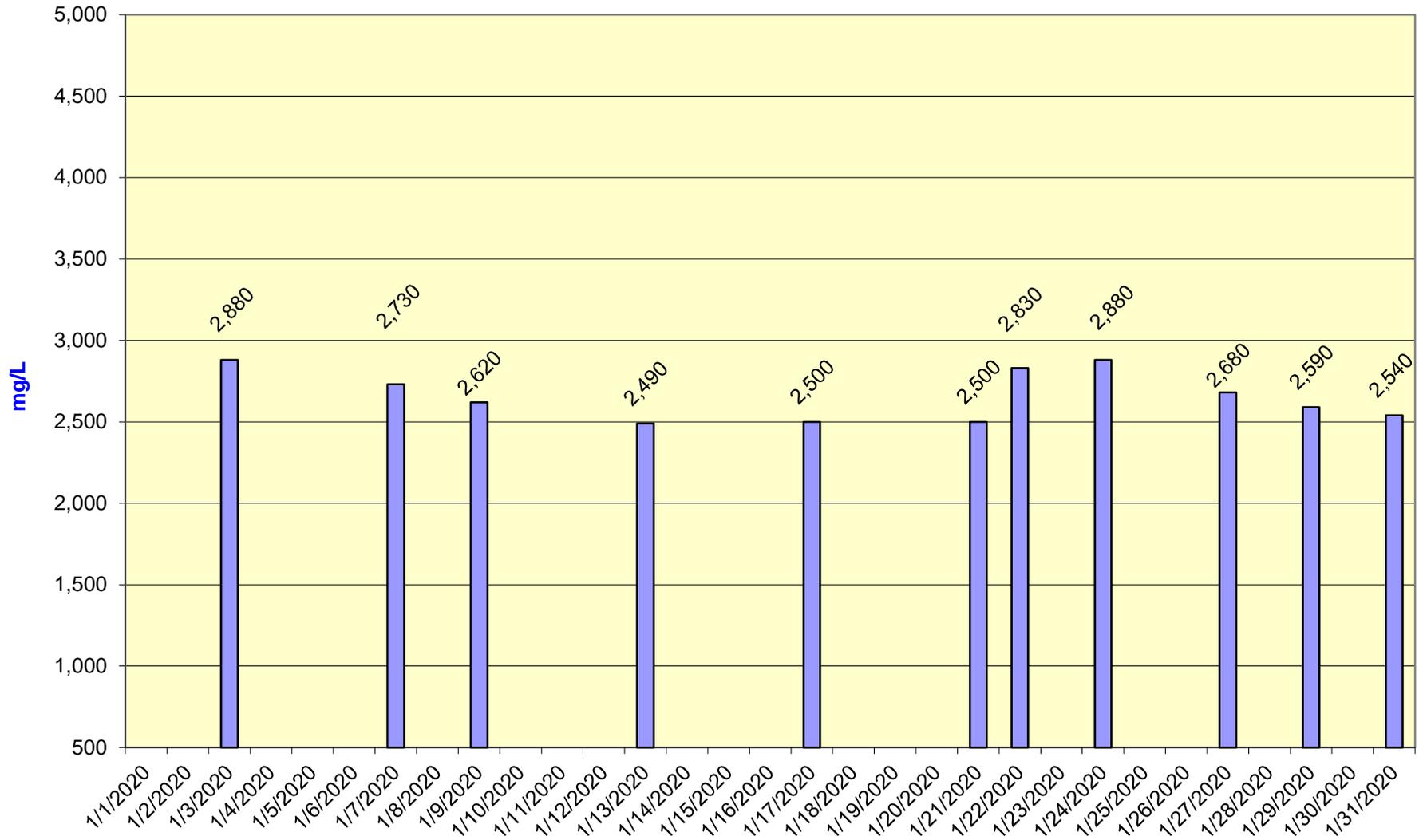
Sludge Volume Index



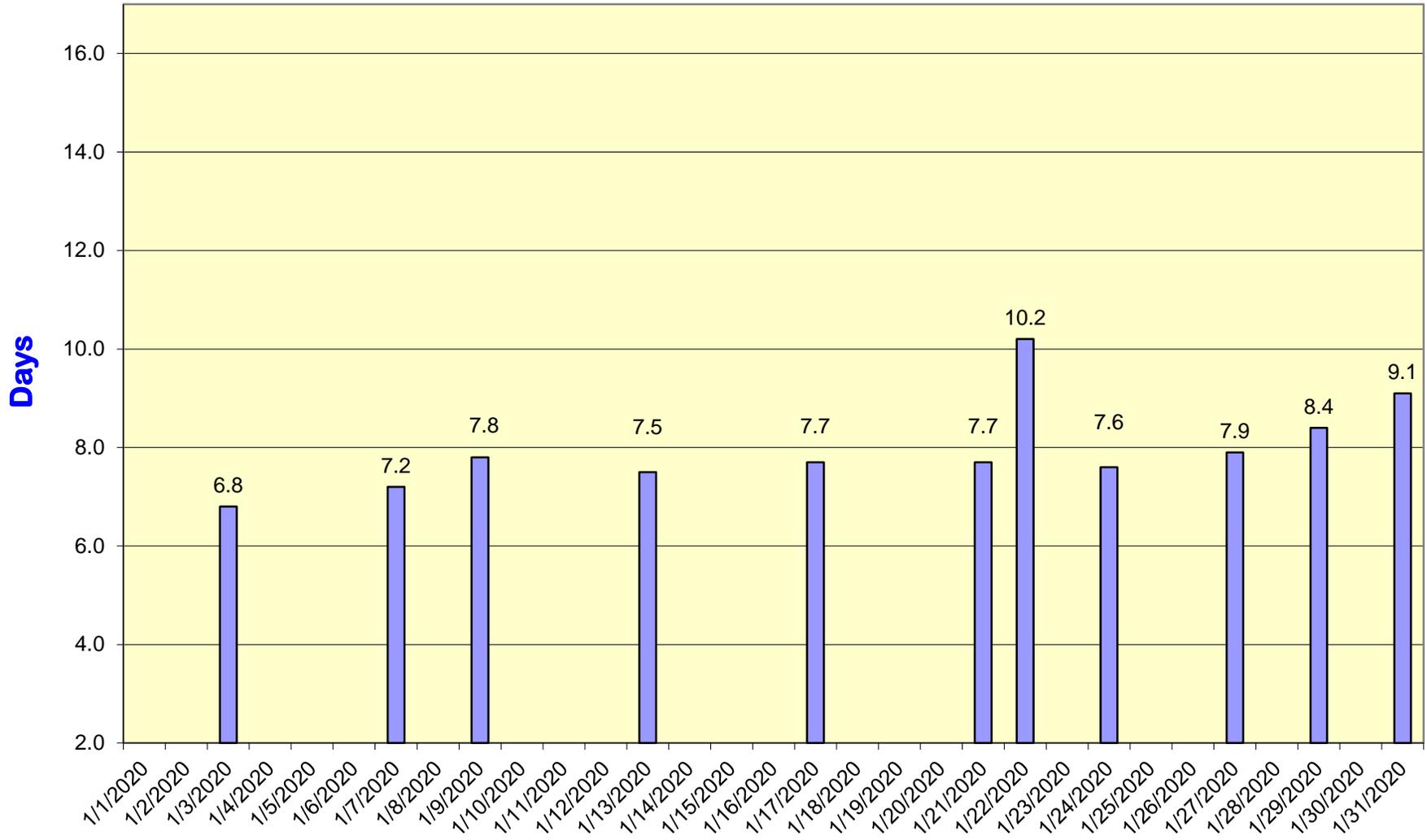
MLSS Inventory



MLSS Concentration

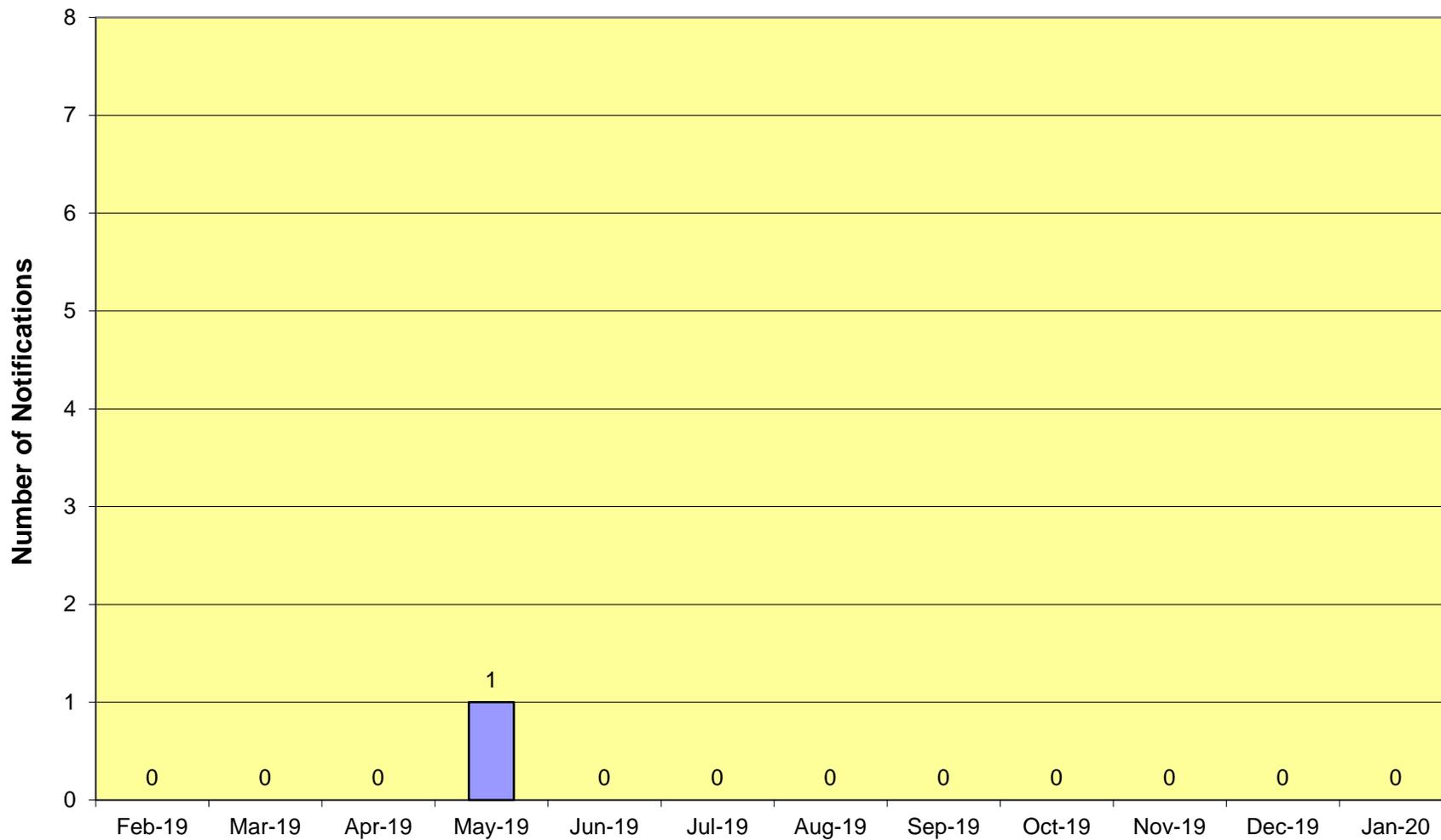


Mean Cell Residence Time



6) NEIGHBORHOOD COMPLAINTS RECEIVED

Neighborhood Complaints Received

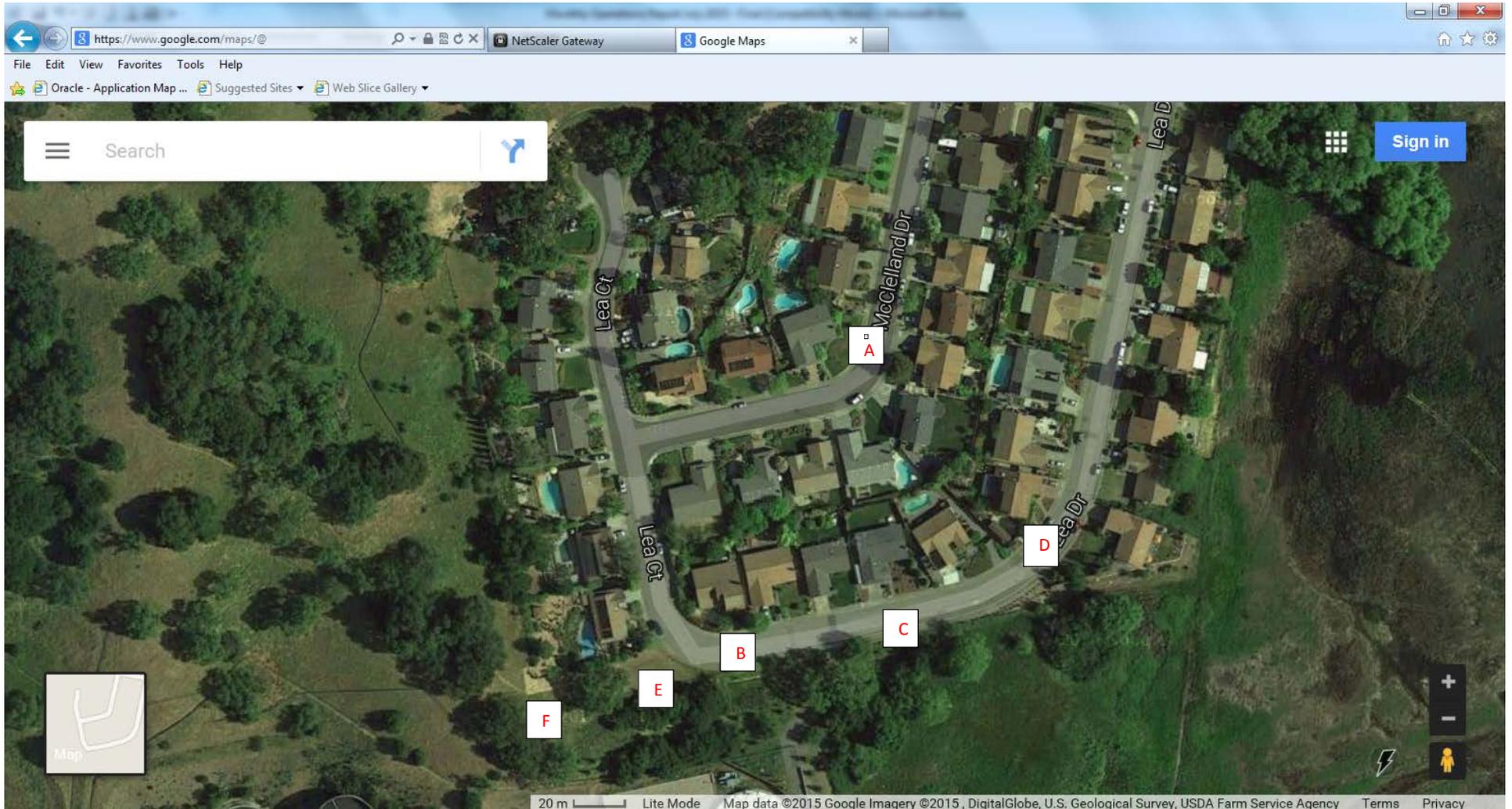


7) JEROME METER READINGS & LOCATIONS

JEROME METER READINGS - JANUARY 2020

Sample Location	Min	Max	Ave	NOTES / COMMENTS
A: McLelland	0.001	0.001	0.0010	Neighborhood
B: Lea 1	0.000	0.001	0.0005	Neighborhood
C: Lea 2	0.000	0.001	0.0005	Neighborhood
D: Lea 3	0.001	0.001	0.0010	Neighborhood
E: Lea 4	0.001	0.001	0.0010	Neighborhood
F: Lea 5	0.001	0.001	0.0010	Neighborhood

NEIGHBORHOOD JEROME METER LOCATIONS – LEA AND McCLELLAND



NOVATO SANITARY DISTRICT
Wastewater Operations - Reclamation Facilities Report
January 2020

1.0 Summary:

1.1 During January 2020:

- The treatment plant was in bay discharge mode throughout January 2020.
- District drainage pump stations at Sites 3 and 7 pumped approximately 119 MG combined.
- A sink hole developed in the vicinity of the bay outfall pipe on the southern side of Bel Marin Keys Blvd. where the outfall crosses under Bel Marin Keys Blvd. A trench plate was placed on top of the sink hole along with barricades. A project to determine the root cause of the sink hole and repair the pipeline is being planned for Spring 2020.

2.0 Ranch Operations:

- 2.1 Drainage Pump Stations No. 3 and 7 pumped 80 MG and 39 MG, respectively in January.
- 2.2 A new Caltrans storm water flow control structure near the entrance to Site 2 was partially opened allowing storm water to flow into the District's drainage ditches and to Drainage Pump Station #3 where the storm water was pumped into Novato Creek. This storm water flow caused some foaming on the side of SR 37, which generated an after-hours callout on 1/8/2020. District staff responded and determined that the foamy water was not related to the District Operations.
- 2.3 There were no ranching activities during January 2020.

3.0 Irrigation Parcels:

- 3.1 No irrigation occurred in January 2020.

4.0 Irrigation Pump Station:

- 4.1 The Wildlife Pond maintained an elevation of 5.5 feet January 2020.
- 4.2 Storage pond Nos. 1 and 2 maintained an elevation of 3.5 feet in January.
- 4.3 Linscott Engineering removed a section of the discharge piping on Irrigation Pump #3 in order to replace a small section of pipe that was showing signs of corrosion. Repairs should be completed in Feb. or March 2020 in order to prepare for irrigation season.



1. Section of 14 inch discharge piping for Irrigation Pump #3. Corrosion is near the area where piping was cut.

5.0 Biosolids (sludge) Handling & Disposal:

- 5.1 No biosolids activities occurred in the District Reclamation areas in January 2020.

NOVATO SANITARY DISTRICT														
Reclamation Facility - Monthly Statistics for Calendar Year 2020, as of January 31, 2020														
	January	February	March	April	May	June	July	August	September	October	November	December	Total Year to Date	Annualized Monthly Average
Irrigation Pump Station														
Plant flow to ponds (MG)	0												-	
Irrigation (MG)	0												-	
Irrigation Pump 1 Hours	0												-	
Irrigation Pump 2 Hours	0												-	
Irrigation Pump 3 Hours	0												-	
Washdown Water Pump Hours	0												-	
Wildlife Feed Pump Hours	0												-	
Water Circulated through Wildlife Pond (MG)	0												-	
Strainer No. 1 Hours	0												-	
Strainer No. 2 Hours	0												-	
Pond 1 Gauge @ Beginning of Month (feet)	3.5													
Pond 1 Gauge @ End of Month (feet)	3.5													
Pond 1 Gallons Stored @ End of Month(MG)	24													
Pond 2 Gauge @ Beginning of Month (feet)	3.5													
Pond 2 Gauge @ End of Month (feet)	3.5													
Pond 2 Gallons Stored @ End of Month(MG)	31													
Total Irrigation Water Stored (MG)	55													
Drainage Pump Station No. 3														
Drainage Pump No. 1 Hours	0												0	
Drainage Pump No. 2 Hours	266.6												266.6	
Drainage Pump No. 3 Hours	0												0	
Total Gallons Stormwater Pumped (MG)	79.98												79.98	79.98
Drainage Pump Station No. 7														
Drainage Pump No. 1 Hours	0												0	--
Drainage Pump No. 2 Hours	0												0	--
Drainage Pump No. 3 Hours	85.6												85.6	--
Total Gallons Stormwater Pumped (MG)	38.52												38.5	38.5

NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

TITLE: Capital Projects: Collection System Improvements, Account No. 72706: Bel Marin Keys Sewer Rehabilitation, Notice of Completion (NoC)	MEETING DATE: February 10, 2020 AGENDA ITEM NO.: 7.a.															
RECOMMENDED ACTION: Grant Final Acceptance of the Project and authorize staff to file the Notice of Completion.																
SUMMARY AND DISCUSSION: <p>On March 18, 2019, the District’s Board of Directors awarded the Contract for the Bel Marin Keys Blvd. Sewer Rehabilitation Project to Michels Pipeline Construction (Contractor) for a low bid amount of \$279,970.00. The Notice to Proceed was issued on May 13, 2019 and work achieved substantial completion about September 15, 2019.</p> <p>At this time, the Contractor has completed the contract work and the project is ready for final acceptance. There were four Change Orders (CCOs) for the project as per the below table, and the final cost of the project is \$339,074.05 or \$59,104.05 (21.1%) above the original bid amount. Note that the bulk of the change orders is from CCO No. 1 (which was due to an unforeseen condition) and CCO No. 3 (which is also a related unforeseen condition). Additionally, CCO No. 2 was generated to address a developing situation in a separate pipe in the Vineyard Creek zone at Angelica Court. Absent these developments outside the District’s and the Contractor’s control, the project would have resulted in a net credit to the District.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 10%;">CO No. 1</td> <td style="width: 70%;">Unforeseen Condition - Point repair of 10-inch sewer main.</td> <td style="width: 20%; text-align: right;">\$33,630.65</td> </tr> <tr> <td>CO No. 2</td> <td>Owner generated - Lining 268 ft. of 8-inch sewer main on Angelica Ct.</td> <td style="text-align: right;">\$29,212.00</td> </tr> <tr> <td>CO No. 3</td> <td>Credit to Contractor for lost liner material due to field discovery of damaged pipe.</td> <td style="text-align: right;">\$16,427.60</td> </tr> <tr> <td>CO No. 4</td> <td>Balancing change order for final quantities.</td> <td style="text-align: right;">(\$20,166.2)</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total Change Orders</td> <td style="text-align: right;">\$59,104.05</td> </tr> </table>		CO No. 1	Unforeseen Condition - Point repair of 10-inch sewer main.	\$33,630.65	CO No. 2	Owner generated - Lining 268 ft. of 8-inch sewer main on Angelica Ct.	\$29,212.00	CO No. 3	Credit to Contractor for lost liner material due to field discovery of damaged pipe.	\$16,427.60	CO No. 4	Balancing change order for final quantities.	(\$20,166.2)	Total Change Orders		\$59,104.05
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CO No. 4	Balancing change order for final quantities.	(\$20,166.2)														
Total Change Orders		\$59,104.05														
<p>It is recommended that final acceptance be granted and staff be authorized to file the Notice of Completion (NoC).</p>																
STRATEGIC PLAN INFORMATION: This item addresses Goal 1 (Operational Excellence) and Goal 2 (Reliable and Efficient Facilities) of the latest Strategic Plan Update.																
DEPT.MGR.: EB	GENERAL MANAGER: SSK															

NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

TITLE: Collection System Improvements, Account No. 72706: Golden Gate Rush Creek Sewer Phase II, Approve Change Orders and Notice of Completion (NoC)	MEETING DATE: February 10, 2020 AGENDA ITEM NO.: 7.b.																
RECOMMENDED ACTIONS: Approve a Balancing Change Order in the amount of \$111,265, grant Final Acceptance of the Project, and authorize staff to file a Notice of Completion.																	
SUMMARY AND DISCUSSION: <p>On August 12, 2019, the District's Board of Directors awarded the Contract for the Golden Gate Rush Creek Sewer Phase II project to JMB Construction, Inc. (Contractor) for a low bid of \$618,281.00. The Notice to Proceed was issued on October 14, 2019 and work achieved substantial completion about December 12, 2019.</p> <p>During the course of the work several <u>unforeseen</u> conditions were found that resulted in change orders or increased unit cost quantities; the more notable ones are as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="text-align: center;">Unforeseen Condition</th> <th style="text-align: center;">Amount</th> </tr> </thead> <tbody> <tr> <td>Unmarked storm drain crossing trench alignment, not shown on the Plans results in change order:</td> <td style="text-align: right;">\$5,186.00</td> </tr> <tr> <td>*Deep strength (16") asphalt pavement resulting in increased trench repair material quantity:</td> <td style="text-align: right;">\$86,400.00</td> </tr> <tr> <td>*Alignment change on Golden Gate Place to avoid storm drain results in additional pipeline abandonment quantity:</td> <td style="text-align: right;">\$9,380.00</td> </tr> <tr> <td>*Increased quantity for concrete flatwork quantity:</td> <td style="text-align: right;">\$12,460.00</td> </tr> <tr> <td>*Increased sewer lateral footage quantity:</td> <td style="text-align: right;">\$15,040.00</td> </tr> <tr> <td>Miscellaneous unit price quantity adjustments to balance:</td> <td style="text-align: right;"><\$12,015.00></td> </tr> <tr> <td>Total Change Orders</td> <td style="text-align: right;">\$116,451.00</td> </tr> </tbody> </table> <p>Adjustments to the bid item quantities (denoted by *) require a balancing change order in the amount of \$111,265.00.</p> <p>As noted above, the bulk of the change order is from an \$86,400 item for trench repairs mandated to the Contractor by City of Novato staff. For the increased cost for trench repair, staff was notified by the Contractor of the potential increased quantity, but the total additional quantity was unknown. A request by District staff to the City of Novato staff to modify trench repair requirements was unsuccessful, so every effort was made by the Contractor and District staff to minimize the cost. At this time, final pavement is not complete and staff will put together a project to complete it when weather improves.</p> <p>At this time, the Contractor has completed the Contract work and the project is ready for final acceptance. The final cost of the project is \$734,732.00 or \$116,451.00 (18.8%) above the bid amount. Absent the \$86,400 trench repair cost mandated by City of Novato staff, the final project cost would have been \$30,051.00 (or 4.9%) above the bid amount.</p> <p>It is recommended that the Board approve the balancing change order, grant final acceptance, and authorize staff to file the Notice of Completion (NoC).</p>		Unforeseen Condition	Amount	Unmarked storm drain crossing trench alignment, not shown on the Plans results in change order:	\$5,186.00	*Deep strength (16") asphalt pavement resulting in increased trench repair material quantity:	\$86,400.00	*Alignment change on Golden Gate Place to avoid storm drain results in additional pipeline abandonment quantity:	\$9,380.00	*Increased quantity for concrete flatwork quantity:	\$12,460.00	*Increased sewer lateral footage quantity:	\$15,040.00	Miscellaneous unit price quantity adjustments to balance:	<\$12,015.00>	Total Change Orders	\$116,451.00
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DEPT. MGR.: EB	GENERAL MANAGER: SSK																

NOVATO SANITARY DISTRICT BOARD AGENDA ITEM SUMMARY

TITLE: Capital Projects Update, January 2020.	MEETING DATE: February 10, 2020 AGENDA ITEM NO.: 7.c.
RECOMMENDED ACTIONS: Receive Capital Projects Update for January 2020.	
SUMMARY AND DISCUSSION: The January 2020 Capital Projects Update is attached. District staff will be present at the meeting to provide an overview of the memo, and be available to discuss the status of the various projects or respond to any questions.	
ATTACHMENTS: 1. Capital Projects Update, January 2020.	
STRATEGIC PLAN INFORMATION: This item addresses Goal 1 (Operational Excellence) and Goal 2 (Reliable and Efficient Facilities) of the latest Strategic Plan Update.	
DEPT. MGR.: EB	GENERAL MANAGER: SSK

**Novato Sanitary District
Capital Improvement Program (CIP)
Capital Projects Update
January 2020**

Account No. 72403: Pump Station Improvements

This ongoing, long-term account provides for replacing the District's underground-type pump stations with submersible pump-type pump stations.

1. Rowland Plaza Pump Station: Project to convert the Gorman Rupp style wet well/dry well pump station to submersible pump-type station and new emergency generator.
 - Project currently in design.
 - Estimated start of construction, Summer 2020.
2. Marin Village Pump Station: Project to replace the existing wetwell/drypit type pump station with new submersible pump-type station.
 - Agreement for design services has been sent to Consultant for signature.
 - Estimated start of construction, Summer 2021.
3. Olive Pump Station: Project to replace the existing natural gas generator with a new diesel generator, and upgrade electrical switchgear and related electrical equipment.
 - Staff have requested a proposal for design services from the District's electrical engineering consultant, ATS Engineering.
 - Staff are researching purchasing of a portable standby generator (as opposed to the current rental), until the project can be implemented.

Account No. 72508: North Bay Water Reuse Authority (NBWRA)

The District is a member agency of the North Bay Water Reuse Authority (NBWRA). Fiscal Year (FY) 19-20 is the sixth year of the multi-year Phase 2 program, including continuing environmental work for currently over \$75 million in recycled water projects across all NBWRA agencies for funding under the US Bureau of Reclamation Title XVI (WaterSMART) program.

- No update this period.

Account No. 72706: Collection System Improvements

2. Redwood Blvd. Sewer Rehab Project: Rehabilitation of about 1,850 feet of 12-inch sewer main along Redwood Blvd. between Lamont Avenue and Diablo Avenue.
 - All work associated with the pipeline installation is complete.
 - Final paving will be performed during Spring of 2020 during favorable weather to ensure the best results.
3. Bel Marin Keys Blvd. Sewer Rehab Project: Rehabilitation of about 900 feet of 10-inch and about 1,410 feet of 8-inch sewer main in Bel Marin Keys Blvd.
 - Authorization to file a Notice of Completion (NOC) for the Project will be presented under a separate Agenda item.

4. Golden Gate Place Phase II: Realignment/replacement of approximately 940 feet of 8-inch sewer with new 8-inch and 10-inch PVC sewer.
 - Authorization to file a Notice of Completion (NOC) for the Project will be presented under a separate Agenda item.
 - Final paving will be performed under a separate contract in Spring 2020 during favorable weather to ensure the best results.
5. Collection System Master Plan (CSMP): Continuing work associated with the CSMP currently underway by the District's consultant Woodard and Curran (W&C):
 - The CSMP has been finalized.
 - Staff are reviewing a proposal from W&C for professional services for project verification and implementation planning.
5. ARV Replacement Project: Replacement of Air Relief Valves (ARV) and modifications of their maintenance vaults at 11 separate locations throughout the system.
 - Award the contract was approved at the January 2020 Board meeting.
 - Contract signed by Contractor and will be executed once District receives all required insurance.
6. Vineyard Creek at Angelica Court Bank Repair:
 - The submittal packages are out for review by the applicable regulatory agencies.
 - May need to reconsider project scope if the results of the hydraulic analysis for creek capacity through the area are not acceptable to regulatory agencies.
7. Del Mar Sewer Replacement: Realignment/replacement of approximately 1,400 lineal feet of 8-inch sewer main with new 10-inch PVC sewer main and appurtenances.
 - District staff is reviewing the 30% design submittal provided by the design engineer Consultant (GHD Engineering).
 - Proposal requested from a utility locator to locate laterals at property lines.
 - Site review with design engineer scheduled for early February.

Account No. 72706-1: Lateral Replacement Program

The District established this program as a sub-account within Account No. 72706, as part of a long-term approach to reducing infiltration and inflow from private residential laterals into the District's collection system.

- The FY 19-20 final budget for this account is \$60,000. Seven grants totaling \$14,000 have been distributed this FY, as of this time.

Account No. 72707: Hamilton Wetlands/Outfall Integration

As noted in prior years, the State Coastal Conservancy's (SCC) goal for their project is to utilize the District's highly treated effluent as a reliable, long-term fresh water source to establish and maintain a brackish marsh habitat at the SCC's Wetlands project.

- The District continued to supply secondary treated effluent to the Project through November 26th per the Interagency Agreement between the District and SCC for use of reclaimed water executed on September 23, 2019. The Project is currently shut down for the winter.

Account No. 72708: Cogeneration/Alt. Energy

- The Board approved a contract with Woodard & Curran (Consultant) to develop a basis of design for a cogeneration project at the September 9, 2019 Board meeting.

Subsequently, the District has been in discussions with a fuel cell technology company which has proposed that the District consider their technology for cogeneration. Before moving forward with the design contract, the District has asked its Consultant to perform a side by side analysis of fuel cell technology as compared to microturbines and internal combustion (IC) engines that were previously studied as part of the Cogeneration Technical Memorandum. Staff expect the analysis to be wrapped up in early March, 2020.

- At the November Board meeting, TerraVerde Energy, LLC (TerraVerde) presented on opportunities in energy saving, use-optimization, and generation, through the deployment of Distributed Energy Resources (DERs) to the District Board. Per the California Energy Commission (CEC) grant administered by MCE, and per direction from the District Board, TerraVerde is developing Requests for Proposals (RFPs) for the DERs selected by the District including:
 - Solar PV arrays with Battery Storage
 - Replacing Interior Lighting w/ LED Lighting and Occupancy Sensors
 - Replacing Exterior Lighting w/ LED Lighting
 - Virtual Power Plant

A draft RFP for PV/Battery Storage is expected early February. Additionally, staff have requested a proposal from an environmental consultant for California Environmental Quality Act (CEQA) studies and documentation for a potential solar PV project.

Account No. 72803: Annual Collection System Repairs

Collection system repairs are generally reported monthly in the Collection System Operations report, and annually in the Uniform Public Construction Cost Accounting Act (UPCAA) staff report.

Account 72804: Annual Reclamation Facilities Improvements

Reclamation facilities improvements are generally reported monthly in the Reclamation Facilities Operations report, and annually in the UPCAAs staff report.

Account No. 72805: Annual Treatment Plant Improvements

Treatment Plant Improvements are generally reported monthly as part of the Wastewater Operations report and reported annually in the UPCAAs staff report.

- Digester No. 1 Cleaning – At its regular meeting of August 12, 2019, the Board approved a contract with Veolia for cleaning of Digester No. 1. Veolia has been working with their contractor to schedule the work.

However, due to some operational challenges with Digester No. 2, Veolia determined that Digester No.1 needed to be brought back online, and the District may opt to clean Digester No. 2 instead, or delay the project until FY 20-21.

Account No. 72806: Annual Pump Station Improvements

Pump station repairs are generally reported monthly as part of the Collection System Operations report, and annually in the UPCA staff report.

Account No. 72807: Annual Ignacio Facility Improvements

This budget account was established in FY 17-18 to fund small projects to maintain the Ignacio facility (excluding the Ignacio Transfer Pump Station), or perform demolition/site clean-up work related to the treatment units of the decommissioned Ignacio Treatment Plant (ITP). Projects are generally reported monthly in the Wastewater Operations report, and annually in the UPCA staff report.

Account No. 72808: Strategic Plan Update:

- No update this month.

Account No. 72809: Novato Creek Watershed

This account and its budget was established as a result of an agreement with the Marin County Flood Control District (MCFCD).

Under this agreement, the District participates in a program with the County of Marin, the City of Novato, and the North Marin Water District to explore alternatives to reduce flooding potential in the lower Novato Creek portion where all of these agencies have facilities that are prone to flood damage.

- No update this period.

Account No. 73003: Administration Building Upgrades/Maintenance Building

This account includes allowances for minor improvements to the Administration Building and work associated with providing a new temporary Maintenance Building.

- Staff moved into the new building the week of January 6, 2020.
- Some cleanup work remains after the two remaining leased modulares are hauled off by Monterey Mechanical Co. in February.

Account No. 73004: Odor and Landscaping Improvements

This account budgets for further work by District and operations staff and the District's Odor Specialist consultant(s) to address and manage any odor issues raised by the District's neighbors. It also includes an allowance to address any landscaping items.

- No update this period.

Account No. 73005: RWF Expansion

This account funds the design and construction of an incremental capacity expansion to the existing Recycled Water Facility (RWF) at the Novato Treatment Plant site. This first expansion was necessitated by the planned expansion by the North Marin Water District (NMWD) of its Central Area Project, which will push NMWD's recycled water distribution pipelines into the Central Novato/Ignacio geographic areas.

- Project complete.

Account No. 73006: NTP Corrosion Control

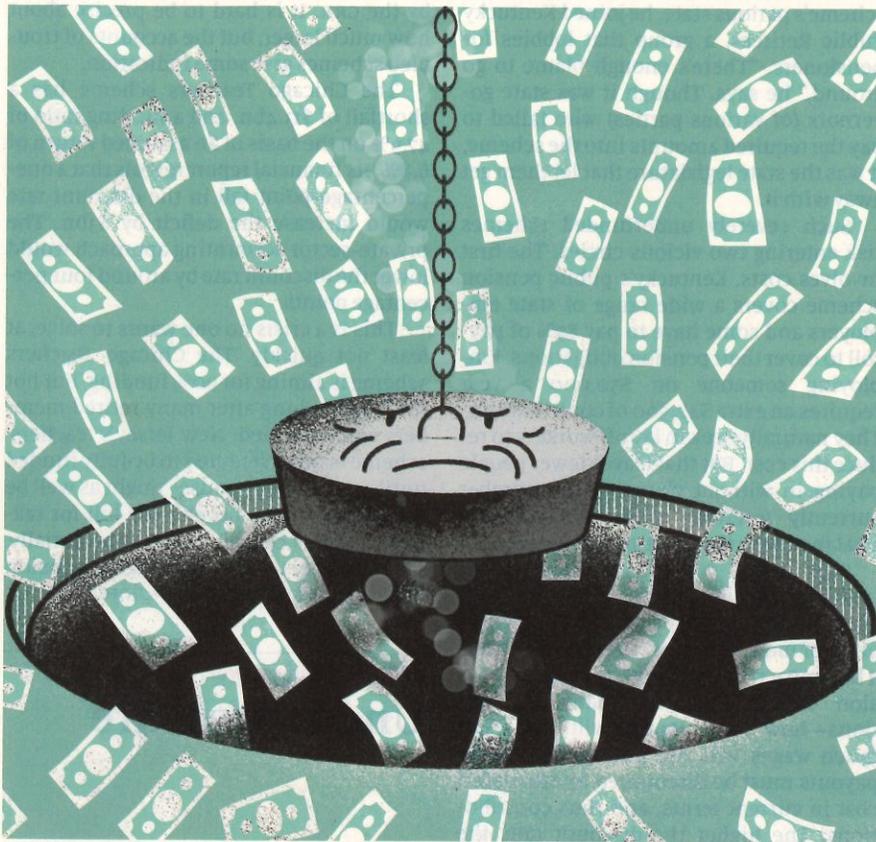
This account includes funds for corrosion control projects at the Novato Treatment Plant site. As the recently constructed facilities age, the effects of the aggressive nature of wastewater corrosion start to appear and need to be addressed.

- The Headworks Protective Coating Project is at the 90% design level. Completion of design and advertisement for bids is expected Spring 2020, with construction during the time of lowest influent flows in late summer/early fall of 2020.

Account No. 73090: Vehicle Replacement

This account includes a FY 19-20 budget amount of \$580,000 for the purchase of a combination jetter/vacuum truck (combo unit), two new portable generators, and an allotment of \$40,000 to overhaul one of the District's existing combo units.

- The Board authorized issuance of a purchase order for a new combo unit at the September 9, 2019 Board meeting. The purchase order has been issued to Owen Equipment, Inc., in the amount of \$444,517.87.
- The Board authorized issuance of a purchase order for two new 30kW portable generators at the November 18, 2019 Board meeting. The purchase order has been issued to Bay City Electric Works in the amount of \$65,773.90.



Public pensions

State of denial

Police officers, teachers and other public workers rely on pension schemes with a multi-trillion-dollar funding hole. A reckoning is coming

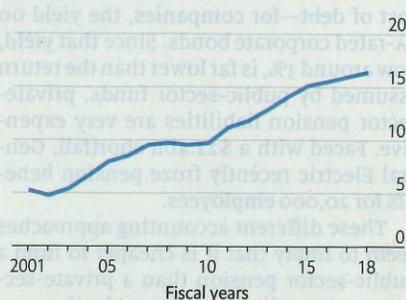
PERHAPS IT TAKES teachers to give politicians a lesson. Any official who wants to understand the terrible state of American public-sector pensions should read the financial report of the Illinois Teachers Pension Fund. Its funding ratio of 40.7% is one of the worst in America, according to the Centre for Retirement Research (CRR) in Boston (see table on next page).

Since it was established in 1939, Illinois officials have not once set aside enough money to fund the pension promises made. As a result, three-quarters of the money the state (or rather the taxpayer) now pays in each year merely covers shortfalls from previous years. The situation is getting worse. In 2009 the schemes' actuaries requested \$2.1bn, but only \$1.6bn was paid. By 2018 the state paid in \$4.2bn, still well short of the \$7.1bn the actuaries asked for. The trustees have warned that the plan would be "unable to absorb any financial shocks created by a sustained downturn in the markets".

Other schemes have attracted similarly stark warnings. Illinois is the class dunce, with six languishing schemes. Chicago Municipal is just 25% funded and the actuaries warn that "the risk of insolvency for the fund has increased". The actuaries of

Thick end of the wedge

United States, annual pension contribution by public-sector employers, % of payroll



Source: Centre for Retirement Research

→ Also in this section

Item 9.a.

- 64 OPEC's waning power **(Pages 119 to 120)**
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- 67 The mood of the markets
- 68 Sentencing Italy's bankers
- 68 How Jim Simons did it
- 70 Free exchange: Do-gooders and do-besters

the Chicago police scheme warn that "this is a severely underfunded plan" with a shortfall of \$10bn; the funded ratio is not projected to reach 50% until 2043.

Offering workers a defined-benefit pension, where an income based on final salary is paid for the rest of their lives, is an expensive proposition, especially as life expectancies lengthen. Pension shortfalls are common across America, with the average public scheme monitored by the CRR just 72.4% funded. That adds up to a collective shortfall of more than \$1.6trn.

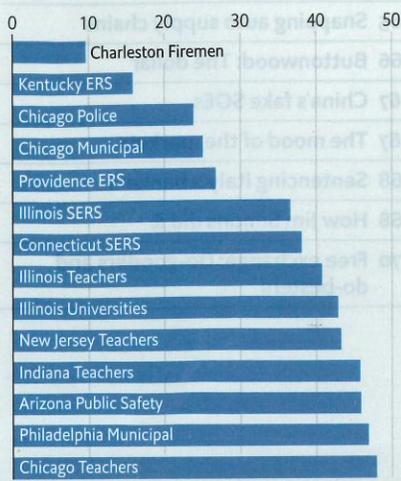
When a scheme is underfunded, one of three things can happen. More contributions can be made, by employers or workers or both. Benefits can be cut. Or the scheme can earn a higher return on its investments to make up for the shortfall.

Cities and states are paying more, but still not enough. In 2001 public-sector employers contributed a further 5.3% of their payroll to meet pension promises; now that figure is around 16.5% on average (see chart). Even so, in no year since 2001 has the average employer contributed as much as demanded by actuaries. Last year's shortfall was just under 1% of payroll.

This reluctance is understandable. Politicians dislike raising taxes—or cutting services to pay for higher contributions. Workers do not want to see their current pay reduced by higher deductions, or their future benefits cut. And in any case, in ▶▶

Awkward ageing

United States, public-sector pension schemes by percentage funded, 2018 or latest available



Source: Centre for Retirement Research

► some states courts have ruled that pension benefits, once promised, cannot be taken away. Arizona attempted a reform in 2012 that would have increased contributions for anyone with less than 20 years' service. Workers sued and the courts ruled in their favour in 2016, requiring the scheme to repay \$220m. Since the failed reform plan was instituted, employers' contributions as a share of payroll have almost doubled.

So states and cities have crossed their fingers and hoped that their investments will bail them out. America's buoyant stockmarket has done its best to help. Returns on government bonds have also been good for much of the past three decades. Even so, the average public-sector scheme is less well funded now than it was in 2001.

And the markets are unlikely to keep being so helpful. In 1982 the government sold long-term Treasury bonds with a yield of 14.6%; now such bonds yield just 2.4%. Equity valuations are high by historic standards. That suggests future returns will be lower than normal.

Kentucky offers a sobering example of how states can spiral towards disaster. In 2001 its retirement system was 120% funded and employers were putting in just 1.9% of payroll. After the dotcom slump, the funding position deteriorated. By 2005 the scheme was less than 75% funded and the required contribution had gone up to 5.3%. But the state fell short of the target every year until 2015, by which point the contribution had leapt to nearly 33% of payroll. In 2018 the actuaries asked for 41%.

Kentucky's scheme covering "non-hazardous" workers (those who are not employed by the emergency services) is just 12.8% funded. One of its beneficiaries is Larry Totten, who worked for Kentucky's park service and retired in 2010 after a 36-

year career. When he found out about the scheme's parlous state, he joined Kentucky Public Retirees, a group that lobbies for pensioners. "There's enough blame to go around," he says. Though it was state governors (of various parties) who failed to pay the required amounts into the scheme, it was the state legislature that let them get away with it.

Such severely underfunded schemes risk entering two vicious circles. The first involves costs. Kentucky's public pension scheme covers a wide range of state employers and some have to pay 85% of payroll to cover their pension obligations. Employing someone on \$50,000 a year requires an extra \$42,500 of contributions. They naturally seek to lay off workers to reduce this cost. But that leaves fewer people paying in without changing the number currently receiving retirement benefits. That increases the short-term squeeze.

The second concerns the accounting treatment of public-sector funds. Many assume nominal returns on their portfolios of 7% or more after fees. This optimism has a big impact. Calculating the cost of a pension promise requires many assumptions—how long people will live, how much wages will rise and so on. Future payouts must be discounted to calculate a cost in current terms, and thus contributions. The higher the discount rate, the lower the current cost and the less employers have to pay in. Public-sector schemes use the assumed rate of investment return as their discount rate—so a high rate lowers the apparent cost.

But if a scheme becomes severely underfunded, a plunge in the stockmarket could leave it unable to cover current payouts. So it must invest in safer, lower-yielding securities, such as government bonds. That reduces the discount rate and makes the pension hole even bigger. Kentucky's non-hazardous scheme uses an expected return of 5.25%, much lower than most public-sector schemes.

These calculations look surreal by comparison with private-sector pension funds. Their accounting rules regard a pension promise as a debt like any other. After all, courts insist pensions have to be paid, whatever the investment returns. The discount rate must therefore be based on the cost of debt—for companies, the yield on AA-rated corporate bonds. Since that yield, now around 3%, is far lower than the return assumed by public-sector funds, private-sector pension liabilities are very expensive. Faced with a \$22.4bn shortfall, General Electric recently froze pension benefits for 20,000 employees.

These different accounting approaches seem to imply that it is cheaper to fund a public-sector pension than a private-sector one. In reality, that cannot be the case. The public-sector pension deficit is there-

fore much larger than the \$1.6trn estimated by the CRR. It is hard to be precise about how much larger, but the accounts of troubled schemes give some indication.

The Chicago Teachers scheme has a shortfall of \$13.4bn, and a funding ratio of 47.9% on the basis of an assumed return of 6.8%. Its financial report reveals that a one-percentage-point fall in the discount rate would increase the deficit by \$3bn. The private-sector accounting approach would lower the discount rate by around four percentage points.

This is a crisis no one wants to solve, at least not quickly. The Chicago Teachers scheme is aiming for 90% funding, but not until 2059—long after many retired members will have died. New Jersey's teachers' scheme is not scheduled to be fully funded until 2048. Such promises might as well be dated "the 12th of never". The bill for taxpayers seems certain to rise substantially. For the states with the biggest pension holes, political conflict is in store. ■

OPEC's waning power

Under pressure

An action-packed year on oil markets could come to a dramatic conclusion

MEMBERS OF THE Organisation of the Petroleum Exporting Countries, or OPEC, live in a state of uneasy anticipation. Concern about climate change may mean demand for oil wanes in the coming decades. OPEC's power in oil markets is fading fast. On November 13th the International Energy Agency (IEA), an intergovernmental forecaster, predicted that by 2030 OPEC and Russia, an ally, would pump just 47% of the world's crude. Yet OPEC has a more immediate problem at hand.

Global demand for oil has been unexpectedly anaemic this year (see chart on next page). Sanford C. Bernstein, a research firm, estimates that it may have risen by just 0.8%, the slowest pace since the financial crisis. OPEC and its allies, led by Russia, are due to meet in Vienna on December 5th and 6th. The first question is whether they will announce a new plan to support the oil price. If they do, the second question is whether they will stick to it.

Technically, a plan is already in place. In December 2018 the broadened OPEC alliance announced a cut in production of 1.2m barrels a day, with the intention of pushing up the price of crude. That agreement has been extended to March 2020. But several OPEC members, including Iraq and Nigeria, have frequently pumped more oil than allowed by last year's deal. ►►