Central Marin Sanitation Agency

COMMISSION REGULAR MEETING AGENDA
Tuesday, April 13, 2021
Via Zoom Electronic Meeting
7:00 p.m.

NOTE: Consistent with the Governor's Executive Order N-25-20 on the Brown Act and the Bagley Keene Act, this Board meeting will be held via Zoom® conferencing. There will be NO physical location of the meeting. Please be advised that this meeting will be recorded. The Agenda packet is available for review and download on the Agency website the Friday before the meeting: **www.cmsa.us**

To participate: Join the Zoom Meeting by clicking the link below, or copy and paste the address into your browser. You may also participate by phone at the number below.

Join Zoom Meeting

Online:
https://zoom.us/j/99180648578

Phone in:
+1 669-900-9128

Meeting ID:
991 8064 8578

Public Comment: Public comments for this meeting can be submitted via email to the Recording Secretary at kbrouillet@cmsa.us. The public comment period opens when the agenda is posted online and will close two hours prior to the start of the meeting. Include your name and the item you'd like to provide written comment on. Written comments submitted will be read into the record during the Public Comment period of the Board meeting.

To provide comments during the meeting:

- If in the Zoom teleconference, use the "raise hand" feature. The Host will notify and unmute you when it is your turn to speak.
- If on a phone, press *9 ("star + 9"), and the Host will notify and unmute you when it is your turn to speak. If you experience an issue providing comments in the meeting, please email those comments to the Recording Secretary at kbrouillet@cmsa.us.

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AGENDA

1. **7:00 p.m.: Call Meeting to Order/Pledge of Allegiance**

2. **Roll Call**

3. **Open Period for Public Participation**
   Open time for public expression, up to two minutes per speaker, on items within CMSA's jurisdiction and not on the Board of Commissioners' agenda. The Board will not discuss or take action during open time, but Board members may briefly respond to statements made or questions proposed by the public, ask for clarification from staff, refer the matter to staff, or request staff to report back to the body at a subsequent meeting concerning any matter, or take action to direct staff to place a matter of business on a future agenda.

4. **Consent Calendar**
   a) Minutes – Regular Board Meeting, March 9, 2021
   b) Treasurer's Report – March 2021
   c) NPDES, Process, and Maintenance Report – March 2021
   d) Performance Metric Report – March 2021
   e) Investments Policy Revision – Reporting Section
   f) FY21 Asset Management Program 3rd Quarter Report
   g) Acceptance of Hauled Wastes Policy
   h) Purchase of an Ion Chromatography System

5. **Public Hearing for the proposed Public Project Bid Ordinance 2021-2 Entitled "An Ordinance Relating to Bid Cost Thresholds and Bidding Procedures for Public Projects"**
   Recommendation: Conduct the public hearing for the proposed Public Project Bid Ordinance 2021-2, pass the Ordinance, and authorize publication of a summary of the passed Ordinance in the Marin Independent Journal newspaper.

6. **Pilot Digester Study Presentation**
   Recommendation: Receive the Pilot Digester Study presentation, and provide comments and/or direction to the General Manager, as appropriate.

7. **Administration Building Roof Replacement Project – Construction Contract Award**
   Recommendation: Award the construction contract for the Administration Building Roof Replacement Project to Stronger Building Services, and authorize the General Manager to execute the contract agreement.

8. **RAS Pumps Replacement Project – Adopt Construction Contract Documents**
   Recommendation: Adopt the construction contract documents for the RAS Pumps Replacement Project, and authorize the General Manager to advertise the project for public bidding.

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9. **Board of Commissioners Meeting Time**
   Recommendation: Consider changing the meeting time of the regular monthly Board of Commissioners meeting.

10. **April Informational Items**
    Recommendation: Informational; provide comments or direction to the General Manager, as appropriate.

11. **North Bay Watershed Association (NBWA) Report***

12. **Oral Reports by Commissioners/General Manager***

13. **Next Scheduled Regular Meeting**
    Tuesday, May 11, 2021 at 7:00 p.m. by Zoom Conference.

*Information not furnished with Agenda

Central Marin Sanitation Agency

COMMISSION REGULAR MEETING MINUTES
Tuesday, March 9, 2021
Via Zoom Electronic Meeting

NOTE: Consistent with the Governor's Executive Order N-25-20 on the Brown Act and the Bagley Keene Act concerning the COVID-19 shelter-in-place protocol, this Board meeting was held via Zoom® conferencing. There was no physical location for the meeting. The minutes are an official record of the Board meeting. There are also official audio and video recordings available on the Agency's website at www.cmsa.us. The time stamps on these minutes refer to the items' start times on the video recording of the meeting. Please contact CMSA at 415-459-1455 for information about receiving a copy of these records.

1. Call Meeting to Order/Pledge of Allegiance

Chair Boorstein called the meeting to order at 7:00 p.m. A quorum was present.

2. Roll Call **00:00**

Present:	Eli Beckman, Michael Boorstein, Maribeth Bushey, Dean DiGiovanni, and Doug Kelly
Absent:	None
Staff Present:	Jason Dow, General Manager; Chris Finton, Treatment Plant Manager; Mark Koekemoer, Regulatory Compliance Manager; and Kate Brouillet, Recording Secretary
Public Present:	None

3. Open Period for Public Participation **00:01:00**

There were no members of the public present.

4. Consent Calendar **00:01:15**

a) Minutes – Regular Board Meeting, February 9, 2021
b) Treasurer's Report – February 2021
c) NPDES, Process, and Maintenance Report – February 2021
d) Performance Metric Report – February 2021
e) CMSA Investments Policy – Financial Policy #531
f) Revised Electrical/Instrumentation Technician Job Description
g) Revised Disposal of Surplus Assets Policy

Comments from the Public

There were no members of the public present.

There was no discussion by the Board.

ACTION: Commissioner DiGiovanni moved to approve Consent Calendar items 4a through 4g; second, Commissioner Beckman.

VOTE: The item was passed unanimously by roll call vote.

AYES: Beckman, Boorstein, Bushey, DiGiovanni, Kelly

NAYS: None

ABSTAIN: None

5. Source Control Program Presentation **00:02:15**

GM Dow said that CMSA's National Pollutant Discharge Elimination System (NPDES) permit requires the Agency to regulate various contaminants discharged into the sanitary sewer system by certain commercial and industrial wastewater dischargers. He said the Agency has a comprehensive regulatory source control program that is comprised of pollution prevention, Fats Oils, and Grease (FOG) control, Mercury Reduction, and pretreatment programs. He introduced Mark Koekemoer, Regulatory Compliance Manager, to give a presentation on the program's activities.

Mr. Koekemoer gave a PowerPoint presentation that included the background, service areas, metrics, and resources of CMSA's source control program.

The Board thanked Mr. Koekemoer for the presentation, and asked what his vision was for the future of these programs.

Mr. Koekemoer said he would share his ideas with GM Dow who would be able to respond to the Board.

This item was informational and no action was taken by the Board.

DIRECTION: GM Dow to follow up at a future meeting with the vision for the future of the Source Control Program.

Mr. Koekemoer thanked the Board and left the meeting.

6. Proposed Revisions to the CMSA Public Project Bid Ordinance (2021-2) **00:28:00**

GM Dow said that in January 2004, the Board passed a resolution adopting the public project bidding and cost accounting procedures in the Uniform Public Construction Cost Accounting Act (UPCCAA), and adopted a Public Bid Ordinance. He said these procedures replaced the public bid thresholds and procedures of the Sanitary District Act. He said the Ordinance was revised in 2013, and the bid thresholds were adjusted by the UPCCAA Commission in 2019. He said that staff and Bill McInerney, the Agency's contract/construction attorney, have reviewed the 2013 Ordinance and propose several non-substantive revisions to update it. He gave an overview of the changes, and said if the Board accepts the Ordinance revisions and schedules the Public Hearing for the April Board meeting, staff will post a notice of the hearing in the Marin IJ prior to the meeting.

<u>Comments from the Public</u>

There were no members of the public present.

There was no discussion by the Board.

ACTION: Commissioner DiGiovanni moved to accept the proposed Public Bid Ordinance revisions, and schedule the Public Hearing for the revised Ordinance at the April 13, 2021 Board meeting; second, Commissioner Beckman.

VOTE: The item was passed unanimously by roll call vote.

AYES: Beckman, Boorstein, Bushey, DiGiovanni, Kelly

NAYS: None

ABSTAIN: None

7. Information Systems Administrator Classification **00:31:58**

GM Dow said staff has prepared a new Information System Administrator classification whose essential job functions are to manage and administer all of the Agency's information technology systems and provide robust cybersecurity for them. He said the position has a five-step compensation range of $11,591 - $14,090 per month. He said the Administrator classification includes all the Analyst job functions as well as additional responsibilities. He said that to develop an appropriate compensation range, staff surveyed the Agency's thirteen comparator organizations and six wastewater agencies had comparable classifications. He said the proposed compensation range is based on the average of the surveyed agencies.

Commissioner Kelly recommended that compensation comparators include examples from the private sector.

The Board had a brief discussion regarding secure documentation to address "single-point-of-failure," and asked about the fiscal impact of the new classification.

GM Dow said he would review IT documentation with Tuomas Groves, IS Analyst, and that the fiscal impact of the new position was minimal.

ACTION: Commissioner Kelly moved to approve the Information System Administrator job description and compensation range; second, Commissioner Beckman.

VOTE: The item was passed unanimously by roll call vote.

AYES: Beckman, Boorstein, Bushey, DiGiovanni, Kelly

NAYS: None

ABSTAIN: None

DIRECTION: GM Dow to discuss the documentation for IT processes and security with Mr. Groves, who will be moving into the new IS Administrator position.

8. Modified Administrative Leave Benefit **00:42:58**

GM Dow said that CMSA employees receive a vacation leave benefit pursuant to the Board approved Personnel Policy #302. He said that for each pay period, employees receive a vacation accrual in hourly increments based on their years of service. He said if an employee is at their

vacation accrual limit, they will not accrue any more leave until their total accrued amount is below the limit. He said unrepresented employees receive administrative leave in addition to vacation leave, which adds another 1.538 hours of accrual per pay period to the vacation accrual. He said occasionally, for some employees whose vacation accrual is approaching the limit, this additional accrual amount each pay period complicates vacation time management. He said staff discussed options with each non-exempt employee, and all agreed with the policy revision to align the handling of their administrative leave benefit with that of the exempt employees.

The Board had no discussion.

ACTION: Commissioner DiGiovanni moved to approve the revised Administrative Leave section of Personnel Policy #302; second, Commissioner Beckman.

VOTE: The item was passed unanimously by roll call vote.

AYES:	Beckman, Boorstein, Bushey, DiGiovanni, Kelly
NAYS:	None
ABSTAIN:	None

9. Revised Hours of Work Policy - Teleworking **00:47:28**

GM Dow summarized the proposed revision for Personnel Policy #205 – Hours of Work, and said that staff believes that temporary, short duration teleworking can be a benefit to employees and the Agency for certain situations, such as childcare assistance, modified duty assignments, and attendance at virtual training and development events. He said that if approved, staff will work with the Agency's employment law attorney to prepare a detailed telework procedure for use after the COVID shelter-in-place order is lifted.

The Board had a brief discussion and asked a few questions, including what types of situations would qualify for employees' use of teleworking.

GM Dow responded to the Board's questions, and gave examples of the types of situations where teleworking would be appropriate for CMSA employees.

ACTION: Commissioner DiGiovanni moved to approve the revised Personnel Policy #205 – Hours of Work; second, Commissioner Beckman.

VOTE: The item was passed unanimously by roll call vote.

AYES:	Beckman, Boorstein, Bushey, DiGiovanni, Kelly
NAYS:	None
ABSTAIN:	None

10. March Informational Items **01:00:36**

Commissioner Kelly asked about item A, the MCE check, why the amount was about twice as high for October as for the months of November and December, 2020.

GM Dow responded that the most likely reason was the variation in the amount of organic waste that was received during those time periods, and testing a change in the cogeneration system operating strategy to extend biogas use to reduce the purchase of natural gas and electricity.

This item was informational and no action was taken by the Board.

11. North Bay Watershed Association (NBWA) Report **01:02:03**

Commissioner Boorstein said he attended the March 5, 2021 NBWA Board meeting, and reported there was a presentation entitled, "San Francisco Bay Regional Water Quality Control Board Update on Water Quality Impacts Related to People Experiencing Homelessness." He said it covered social welfare, housing, sanitary facilities, and garbage collection issues. He said he has forwarded the presentation to the Recording Secretary to send to the Board members.

12. Oral Reports by Commissioners/General Manager **01:07:40**

Commissioner Kelly reported that RVSD is now providing services for Murray Park, and is contemplating taking over servicing San Quentin Village. He thanked GM Dow and his staff for their assistance in providing maps and information for the SQV lift station that CMSA refurbished.

GM Dow said he would pass Commissioner Kelly's appreciation on to staff, and acknowledged Chris Finton, Treatment Plant Manager, for the great work to upgrade the station.

Chair Boorstein reported that RVSD has a new online tool available on their website that shows the location of sewer pipes in their service area, and the contact information for the property owner.

GM Dow referred to his handout and reported that Phase I of the Pilot Digester Study has been completed, and Joyce Cheung, one of the Agency's Associate Engineers, is scheduled to give a presentation on the study results at the April meeting.

13. Next Scheduled Meeting **00:57:22**

The next regular Board meeting is Tuesday, April 13, 2021 at 7:00 p.m. by Zoom Conference.

Chair Boorstein adjourned the meeting at 8:15 p.m.

Respectfully submitted,

_____ _____

Kate Brouillet, Recording Secretary Dean DiGiovanni, Secretary

CENTRAL MARIN SANITATION AGENCY
TREASURER'S REPORT
As of the Month Ended March 31, 2021

Description	Account Type	Book Value	Market Value (1)	% Portfolio	Projected Year End
Cash in Banks:					
WestAmerica Bank *(See Schedule 1 for Account Activity)*	General Acct	$ 552,027.38	$ 552,027.38		
US Bank 2015 Revenue Bonds (Restricted)	Debt Serv Acct	1.67	1.67		
US Bank 2020 Revenue Bonds (Restricted)	Project/DS Acct	8,142,659.43	8,142,659.43		
Wells Fargo Bank (Restricted) (2/28/21)	Escrow Acct	81,181.90	81,181.90		
Total cash in banks		**$ 8,775,870.38**	**$ 8,775,870.38**		
Pooled Short-Term Investments:					
CAMP Cash Reserve Pool: .08% at 3/31/21	Investment Acct	$ 381,120.47	$ 381,120.47	2.0%	
Local Agency Investment Fund (LAIF): .357% at 3/31/21	Investment Acct	18,756,070.33	18,756,070.33	98.0%	
Total pooled short-term investments		**$ 19,137,190.80**	**$ 19,137,190.80**	**100.0%**	
Designations of Pooled Short-Term Investments:					
Current Operating Fund (2)		$ 3,126,375.30	$ 3,126,375.30	16.3%	
Operating Reserve (Unrestricted) (3)		3,267,204.50	3,267,204.50	17.1%	$ 3,267,205
Capital Reserves (Restricted) (4) - *See Schedule 2*		2,237,200.00	2,237,200.00	11.7%	$ 989,252
Capital Reserves (Unrestricted) (5) - *See Schedule 2*		10,006,411.00	10,006,411.00	52.3%	$ 6,763,503
Contingency and Emergency Reserve (Unrestricted)		500,000.00	500,000.00	2.6%	$ 500,000
Total designations of pooled short-term investments		**$ 19,137,190.80**	**$ 19,137,190.80**	**100.0%**	

NOTES:
(1) Market values are per the fiscal agent's respective monthly statements
(2) Current operating fund is residual of other designations
(3) Operating reserves calculated at 25% operating budget
(4) Includes capacity charges and debt service coverage
(5) Includes capital fee charges

Statement of Compliance
The above portfolio of investments is in compliance with the Agency's investments policy, adopted annually, and California Government Code Section 53601, authorized investments, and 53646, investments policy. In addition, the Agency does have the financial ability to meet its cash flow requirements for the next six months.

Kenneth Spray, CPA
Administrative Services Manager

Central Marin Sanitation Agency
Schedule 1 - Operating Account Activity for WestAmerica Bank
For the Month of March 2021

Beginning Balance at March 1, 2021	$	145,301.53
Cash Receipts (Deposits into Westamerica):		
Transfers from LAIF	$	600,000.00
Capacity Charges: (SRSD: 840 fixture units & 24 high strength units)		364,226.39
Permit and Inspection Fees		826.48
LGVSD - Pollution Prevention & FOG (FY21 2Q: October-December)		1,009.89
SRSD - FOG Program (FY21 2Q: October-December)		6,292.73
Almonte FOG Program (FY21 2Q: October-December)		699.20
Revenue from Haulers & RVs		11,875.66
Revenue from Organic Waste Programs		10,004.01
SQSP Wastewater Services Contract (FY21: January)		132,683.00
SQ Village Operations & Maintenance Contract (FY21: January)		679.71
Marin Airporter Property Use (FY21: March)		5,400.00
Misc Revenue: CalCARD Incentive Payment, proceeds from sale of old tool boxes		368.88
US Bank 2020 Revenue Bonds progress reimbursement #1		870,607.80
Void checks: Sentry & Koff		8,200.00
Total Cash Receipts	$	2,012,873.75
Cash Disbursements (Withdrawals from WestAmerica):		
March 2021 Operating account disbursements register (*see Schedule 1a*)	$	1,243,739.95
Regular Payroll paid 03/12/21		145,588.72
Regular Payroll paid 03/26/21		147,788.26
Net Payroll Board compensation (03/12/21)		1,263.59
Board reported as full stipend on Disbursement Register		(1,350.00)
Transfers to EFTPS Federal Payroll Taxes (03/12, 03/12, 03/30)		68,807.60
Bank reconciliation adjustment		92.14
Bank Fee		217.64
Total Cash Disbursements	$	1,606,147.90
Ending balance at March 31, 2021	$	552,027.38

Central Marin Sanitation Agency
Schedule 1a - Operating Account Disbursements Register
For the Month of March 2021

Number	Date	Vendor/Payee	Amount	Description
2020715				Last check from prior month's register
2020716	3/1/2021	Byron Jones	240.37	Reimbursement for retiree health benefits by check, March 2021
2020717	3/1/2021	Phillip Frye	238.25	Reimbursement for retiree health benefits by check, March 2021
2020718	3/1/2021	CAL-CARD	6,217.60	State of California Purchase Card, December-January 2021
2020719	3/1/2021	VOID		
2020720	3/1/2021	VOID		
2020721	03/03/2021	Alpha Analytical Lab Inc.	1,140.00	Pilot digester study sample analyses
2020722	03/03/2021	Amazon	2,335.70	Server data cabinet, computer peripherals, hilltop radio spare, front gate and door phones, control room rack, webcams, breakroom supplies, and radio mics.
2020723	03/03/2021	California Department of Tax Fee Adm	69.00	Underground Storage Tank maintenance fee
2020724	03/03/2021	California Public Employee	3,584.00	Reimbursement for retiree health benefits by check, March 2021
2020725	03/03/2021	CDW Government, Inc.	174.30	License fees for Office 365 back-up server
2020726	03/03/2021	CWEA TCP	768.00	Membership fees (4 employees)
2020727	03/03/2021	Evoqua Water Tech LLC	9,995.09	Hydrogen peroxide (1 delivery)
2020728	03/03/2021	Justifacts Credential	91.21	Lab Analyst Recruitment: Background check (1 employee)
2020729	03/03/2021	P.G.& E.	6,695.04	Electricity service, 01/14-02/13/2021
2020730	03/03/2021	Pacific EcoRisk	3,708.00	NPDES chronic toxicity testing
2020731	03/03/2021	Platt	24.13	Gate lighting supplies
2020732	03/03/2021	Rock Steady Juggling	400.00	Pub Ed Program: Virtual outreach at one school (Note B)
2020733		VOID		
2020734	03/03/2021	Univar USA Inc	5,571.65	Sodium bisulfite (1 delivery)
2020735	03/12/2021	Alpha Analytical Lab Inc.	880.00	NPDES Permit, biosolids, and nutrient sample analyses (4 invoices)
2020736	03/12/2021	Aramark Uniform Services	143.17	Uniform item for new hire
2020737	03/12/2021	Aramark Uniform Services	1,070.11	Uniform service, February 2021
2020738	03/12/2021	CAL-CARD	15,577.84	State of California Purchase Card, January-February 2021
2020739	03/12/2021	VOID	-	
2020740	03/12/2021	VOID	-	
2020741	03/12/2021	VOID	-	
2020742	03/12/2021	CDW Government, Inc.	14,553.99	Annual Office 365 license and server fees
2020743	03/12/2021	Denali Water Solutions	7,120.82	Biosolids hauling, January 2021 (2 invoices)
2020744	03/12/2021	Evoqua Water Tech LLC	259.24	Laboratory DI water tank refills
2020745	03/12/2021	Frontier Analytical Lab.	900.00	PCB testing
2020746	03/12/2021	GHD Inc	2,774.00	Prof Svcs: SQPS FY 19 CIP - Electrical, instrumentation and mechanical improvements, February 2021
2020747	03/12/2021	Hazen and Sawyer	499.79	Prof Svcs: Process control consulting, July 2020
2020748	03/12/2021	Horizon Dist. Inc	339.85	SQV PS Maint: tarp and marking flags (Note B); organic weed control spray (3 invoices)
2020749	03/12/2021	IEDA, Inc.	867.00	Labor relations consulting, March 2020
2020750	03/12/2021	JDH Corrosion Consultants, Inc.	4,722.50	Prof Svcs: 2021 Cathodic Protection Survey
2020751	03/12/2021	Kone Inc	413.93	Elevator repair
2020752	03/12/2021	Lord and Sons Inc	3,626.06	Stainless steel hardware for piping and valves (4 invoices)
2020753	03/12/2021	Lystek International LTD	10,036.00	Biosolids beneficial reuse fee, February 2021
2020754	03/12/2021	Marin Color Service	340.31	Paint and painting supplies
2020755	03/12/2021	Marin Independent Journal	545.74	Public Notices (3): FOG Ordinance notice and summary; Notice inviting bids for Administrative roof replacement project
2020756	03/12/2021	Marin Municipal Water District	2,923.01	Water and fire line service, December-February 2021 (4 invoices)
2020757	03/12/2021	Marin Office Supply	1,016.71	Printer toner cartridges and misc. office supplies, February 2021
2020758	03/12/2021	Marin Resource Recovery Center	176.00	Yard waste disposal
2020759	03/12/2021	Marin Sanitary Service	6,401.14	Grit box, rag bin, and trash disposal, February 2021 (5 invoices)
2020760	03/12/2021	McMaster-Carr Supply Co.	5,400.44	Expansion joint, neoprene sheets for seals, pump guard materials, mounting base and anchors, strut parts, battery cable, and misc. hardware and janitorial supplies (15 invoices)
2020761	03/12/2021	VOID	-	
2020762	03/12/2021	Michael Foster	1,661.07	Check valve replacement
2020763	03/12/2021	Platt	440.99	Electrical fittings, wire, and conduit (2 invoices)
2020764	03/12/2021	SHAPE Incorporated	19,864.16	SD2 PS Maint: Spare impeller (Note B)
2020765	03/12/2021	SPURR	4,891.58	Natural gas supply, January 2021
2020766	03/12/2021	ULINE	787.57	Nitrile gloves (22 boxes/100)

Central Marin Sanitation Agency
Schedule 1a - Operating Account Disbursements Register
For the Month of March 2021

Number	Date	Vendor/Payee	Amount	Description
2020767	03/12/2021	Univar USA Inc	3,659.96	Sodium hypochlorite (1 delivery)
2020768	03/12/2021	VWR International	284.59	Hydro meter supplies, and solutions, filters, and chemicals for laboratory
2020769	03/12/2021	Waste Management	12,441.30	Biosolids disposal, February 2021
2020770	03/12/2021	West Yost Water Engineered	7,696.25	Prof Svcs: RAS Pumps Replacement Project - Design Services, January 2021
2020771	03/12/2021	Wiley Price & Radulovich	638.00	Prof Svcs: Employment law, February 2021
2020772	03/12/2021	Navia Benefit Solutions	885.27	Flexible spending account, PPE 03/06/2021
2020773	03/12/2021	SEIU Local 1021	1,058.13	Union dues, PPE 03/06/2021
2020774	03/18/2021	Alcohol & Drug Testing Svcs	55.00	Lab Analyst Recruitment: Pre-employment testing (1 employee)
2020775	03/18/2021	Allied Fluid Products Corp	1,060.48	Gaskets for piping and valves
2020776	03/18/2021	Alpha Analytical Lab Inc.	520.00	Industrial User sample analyses (2 invoices)
2020777	03/18/2021	Aramark Uniform Services	65.07	Uniform item for new hire
2020778	03/18/2021	AT&T Dataplan	470.38	Fax and emergency phone service, 02/02-03/01/2021
2020779	03/18/2021	Atmospheric Analysis	1,730.00	Annual digester gas monitoring
2020780	03/18/2021	Automation Direct Co., Inc.	1,076.10	Hypochlorite tank electrical panel upgrade parts (4 invoices)
2020781	03/18/2021	Burlingame Engineers, Inc.	19,136.65	Replacement of hypochlorite tank No. 2
2020782	03/18/2021	Comcast	195.01	Internet service, 03/04-04/03/2021
2020783	03/18/2021	EDIS	6,477.54	Dental administrative fee and deposit replenishment, April 2021
2020784	03/18/2021	VOID	-	
2020785	03/18/2021	VOID	-	
2020786	03/18/2021	VOID	-	
2020787	03/18/2021	Fastenal Company	644.01	Maintenance vending machine replenishment, February 2021
2020788	03/18/2021	GHD Inc	8,271.15	Prof Svcs: FOG Storage and Biogas Treatment Upgrades - Design Services, February 2021
2020789	03/18/2021	Hagel Supply Co.	307.06	Cleaning and utility supplies (2 invoices)
2020790	03/18/2021	Home Depot Credit Services	549.39	Misc. electrical, hardware, and landscaping supplies
2020791	03/18/2021	Horizon Dist. Inc	406.31	Landscaping weed control supplies
2020792	03/18/2021	Jackson's Hardware	561.94	Safety footwear (1 employee) and misc. hardware supplies, February 2021 (8 invoices)
2020793	03/18/2021	Koff & Associates, Inc.	3,000.00	Laboratory Analyst Recruitment, February 2021, payment #4
2020794	03/18/2021	Kone Inc	153.94	Elevator maintenance monthly fee, March 2021
2020795	03/18/2021	Northeast-Western	368,009.00	Cogeneration engine pre-purchase payments, February 2021 (2 invoices)
2020796	03/18/2021	Pace Supply Corp.	239.39	Biotower seal; plumbing parts (2 invoices)
2020797	03/18/2021	Platt	358.31	Wire for VFDs; fittings (3 invoices)
2020798	03/18/2021	R & B Company	3,192.45	TSS meter pipe components
2020799	03/18/2021	Royal Wholesale Electric	22,651.94	Portable generator breaker for electrical switchgear
2020800	03/18/2021	SHAPE Incorporated	8,512.90	SQV PS Maint: 5HP pump for Heron Ct (Note B)
2020801	03/18/2021	Super Bright LEDs, Inc	490.60	LED bulbs (2 invoices)
2020802	03/18/2021	The Lab Depot	1,028.50	Reagents for process control
2020803	03/18/2021	VAG USA, LLC	1,186.08	SD2 PS Maint: Air release valve parts (Note B)
2020804	03/18/2021	Water Components & Bldg. Supp.	336.36	SD2 PS Maint: Night-work tools
2020805	03/18/2021	Wells Fargo Vendor	755.94	Lease payment for three printer/copiers, 03/20-04/19/2021
2020806	03/18/2021	Woodland Center Auto Supply	23.20	Lights and fuses for Agency electric carts
2020807	03/26/2021	Navia Benefit Solutions	885.27	Flexible spending account, PPE 03/20/2021
2020808	03/26/2021	SEIU Local 1021	1,097.15	Union dues, PPE 03/20/2021
2020809	03/29/2021	Abba Pump Parts & Services	1,807.22	Thrust bearing housing for Biotower Pump No. 4
2020810	03/29/2021	Allied Fluid Products Corp	75.56	Gaskets
2020811	03/29/2021	Amazon	1,427.86	iPad and cases, breakroom supplies, antenna spare, and electric stapler.
2020812	03/29/2021	Antonette Anunciacion	79.25	Employee Exp Reimb: mileage to preemployment testing
2020813	03/29/2021	Calmat Co./Shamrock Materials	80.94	Propane
2020814	03/29/2021	CDW Government, Inc.	3,617.27	iPads for maintenance staff (10)
2020815	03/29/2021	Denali Water Solutions	6,937.34	Biosolids hauling, February 2021 (2 invoices)
2020816	03/29/2021	Environmental Express Inc.	517.43	Piping for laboratory
2020817	03/29/2021	Evoqua Water Tech LLC	10,329.37	Hydrogen peroxide (1 delivery)
2020818	03/29/2021	Fisher Scientific	1,766.12	Solutions, chemicals, vials, buffers, and testing supplies for laboratory, February 2021

Central Marin Sanitation Agency
Schedule 1a - Operating Account Disbursements Register
For the Month of March 2021

Number	Date	Vendor/Payee	Amount	Description
2020819	03/29/2021	GSE Construction Company Inc.	238,602.00	Prof Svcs: Cogeneration System Installation Project, progress payment #1
2020820	03/29/2021	Hach Company	471.98	Vials and chemicals for laboratory (3 invoices)
2020821	03/29/2021	JM Squared & Associates, Inc.	5,159.25	Prof Svcs: SD2 PS Maint - Seal Assembly for Campbell-Bishop PS (Note B)
2020822	03/29/2021	Kaman Industrial Technologies	12,892.66	Sluice gates for aeration system
2020823	03/29/2021	Koff & Associates, Inc.	6,000.00	Replacement for lost check
2020824	03/29/2021	Kunning Zhu	1,095.00	Employee Expense Reimb: Pittcon virtual conference
2020825	03/29/2021	Navia Benefit Solutions	61.80	Monthly fee
2020826	03/29/2021	Platt	414.92	Wire for VFDs
2020827	03/29/2021	Pure Air Filtration	13,667.85	Odor scrubber absorbent media
2020828	03/29/2021	Ross Valley Sanitary District	1,492.00	Pub Ed Program: Comcast PSAs (November 2020-February 2021)
2020829	03/29/2021	Super Bright Leds, Inc	674.68	LED bulbs (2 invoices)
2020830	03/29/2021	TEC Associates Inc	449.15	LEL gas detector meter parts
2020831	03/29/2021	The Hellan Strainer Company	1,008.29	Process tank 3W strainer parts
2020832	03/29/2021	Univar USA Inc	3,586.62	Sodium hypochlorite (1 delivery)
2020833	03/29/2021	Water Components & Bldg. Supp.	60.36	Sealant
2020834	03/29/2021	Waters, Jeff	150.00	Employee Expense Reimb: Renewal for Operator Certification
2020835	03/29/2021	Western Exterminator Co. Inc.	188.50	Pest control, February 2021
		TOTAL - CHECKS	**942,209.40**	

Payments by ACH:

Date	Vendor/Payee	Amount	Description
03/04/2021	Cal Public Employee Retirement	69,594.11	Medical insurance
03/12/2021	CalPERS	41,831.86	Retirement pension contribution: Agency and employees, PPE 03/06/2021 (Note C)
03/26/2021	CalPERS	42,447.57	Retirement pension contribution: Agency and employees, PPE 03/20/2021 (Note C)
03/12/2021	Employment Development Department	13,636.55	State and SDI Taxes, PPE 03/06/2021
03/12/2021	Employment Development Department	16.20	State and SDI Taxes - Board meeting stipends, March 2021
03/26/2021	Employment Development Department	13,741.55	State and SDI Taxes, PPE 03/20/2021
03/30/2021	Employment Development Department	493.40	State and SDI Taxes for 4th Quarter 2020
03/12/2021	ICMA Retirement Trust-457	2,600.00	Deferred compensation contributions, PPE 03/06/2021 (Note A)
	ICMA Retirement Trust-457	2,600.00	Deferred compensation contributions, PPE 03/20/2021 (Note A)
03/04/2021	Lincoln Financial Group	2,653.30	Life insurance
03/12/2021	Nationwide Retirement	23,206.18	Deferred compensation and MARA contributions, PPE 03/06/2020 (Note A)
03/26/2021	Nationwide Retirement	21,191.02	Deferred compensation and MARA contributions, PPE 03/20/2021 (Note A)
03/04/2021	Vision Service Plan (CA)	887.75	Vision insurance
03/02/2021	Payments to 29 retirees	7,613.19	Reimbursement for retiree health benefits
03/01/2021	Public Agency Retirement Svcs	72.00	Retirement pension contribution: part-time and internship employees, PPE 02/26/2021 (Note C)
03/04/2021	Public Agency Retirement Svcs	59.71	Trust Administrator fee, 12/31/2019-12/31/2020
03/12/2021	Public Agency Retirement Svcs	67.72	Retirement pension contribution: part-time and internship employees, PPE 03/06/2021 (Note C)
03/26/2021	Public Agency Retirement Svcs	101.28	Retirement pension contribution: Board members, March 2021
03/29/2021	Public Agency Retirement Svcs	58.72	Retirement pension contribution: part-time and internship employees, PPE 03/20/2021 (Note C)
03/29/2021	Public Agency Retirement Svcs	36.76	Retirement pension contribution: Last check for one employee
03/19/2021	Carollo	52,031.25	Prof Svcs: Cogeneration Engine Installation Project - Design Services, February 2021
03/15/2021	Lee & Ro	639.00	Prof Svcs: Secondary Clarifier No. 3 Rehabilitation Project - Design Services, February 2021
03/15/2021	Nitel Inc	1,301.43	Primary telephone and internet service, March 2021
03/29/2021	Sentry	3,300.00	Replacement for lost check
	TOTAL - ACH	**300,180.55**	

Central Marin Sanitation Agency
Schedule 1a - Operating Account Disbursements Register
For the Month of March 2021

Board Member Compensation:

Date	Vendor/Payee	Amount	
3/12/2021	Dean DiGiovanni	225.00	Stipend for 03/09/2021 Regular Board meeting
3/12/2021	Douglas T Kelly	225.00	Stipend for 03/09/2021 Regular Board meeting
3/12/2021	Eli H. Beckman	225.00	Stipend for 03/09/2021 Regular Board meeting
3/12/2021	Maribeth Bushey	225.00	Stipend for 03/09/2021 Regular Board meeting
3/12/2021	Michael Owen Boorstein	450.00	Stipend for 03/09/2021 Regular Board meeting and 03/05/2021 NBWA Board meeting
TOTAL - BOARD MEMBER COMPENSATION		**1,350.00**	

GRAND TOTAL	**1,243,739.95**

Notes:

A: Not an Agency Expense. Expense funded through Payroll deduction.

B: Not an Agency Expense. CMSA will be reimbursed for this expense.

C: CMSA is partially reimbursed for this expense per Employee Labor Agreements.

CENTRAL MARIN SANITATION AGENCY
SCHEDULE 2 - CAPITAL RESERVES SUMMARY FOR TREASURER'S REPORT

Year-to-Date as of the Month Ended March 31, 2021

Restricted Capital Reserves Sources and Uses	Monthly Amounts Received (Used)	YTD Amounts Received (Used)
Capacity charges revenue	$ 390,800	$ 1,370,722
Debt coverage collection revenue	-	989,252
Total restricted capital reserve funding sources	390,800	2,359,974
Capacity charges usage for capital (1st)	-	(979,922)
Debt coverage usage for capital (2nd)	-	(134,686)
Total restricted capital reserve uses	-	(1,114,608)
Net change		1,245,366
Balance - beg of year		991,834
Balance - end of month/year		$ 2,237,200
Unrestricted Capital Reserves Sources and Uses		
Capital fee revenue	$ -	$ 939,000
Unrestricted operating-reserve-transfer-in	-	-
SRF/FEMA cost reimb proceeds received	-	-
Total unrestricted capital reserve funding sources	-	939,000
Capital fee usage to fund CIP (3rd)	-	-
Unrestricted capital reserve draw (4th)	-	-
Short-term cash flow balancing	-	-
Total unrestricted capital reserve uses	-	-
Net change		939,000
Balance - beg of year		9,067,411
Balance - end of month/year		$ 10,006,411
Total capital reserve balances		$ 12,243,611
Total approved CIP budget		$ 8,559,701
Total CIP funded from capital reserve sources		(1,881,538)
Total approved capital budget remaining		$ 6,678,163

Note: All CIP funding for the month of March 2021 in the amount of $766,930 was provided from the 2020 revenue bonds Project Fund

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Chris Finton, Treatment Plant Manager

Approved: Jason Dow, General Manager

Subject: March 2021 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

Recommendation: Accept the March 2021 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report.

I. NPDES Permit Compliance

Our NPDES permit testing for March showed that the CMSA treatment plant effluent was in compliance with all permit limits. The Monthly Compliance Summary Table shows the results by permitted parameter, the sample's frequency, the sample results, and the permit limit. We successfully passed the March 96-hour flow-through bioassay test. CMSA's NPDES permit specifies quarterly monitoring for enterococcus bacteria and for each wet-weather blend event to verify compliance with established effluent limits. The enterococcus geometric mean this past quarter was 4.8 MPN, well below the 35 MPN permit limit.

II. Influent Flow

Central Marin County experienced some unsettled weather in the first half of the month and then blossomed into spring with warm afternoon temperatures reaching as high as 84° F with clear cold mornings. There was a total of 1.87 inches of rain in March as recorded by the Agency's rain gauge. CMSA did not exceed its maximum secondary capacity of 30 MGD, and the treatment plant's average daily influent flow was 10.6 MGD.

The CMSA treatment plant and each satellite collection agency's daily average and total monthly influent flows are shown in the table below:

March Monthly Influent Flows	**San Rafael (SRSD)**	**Ross Valley (RVSD)**	**San Quentin (SQSP)**	**Corte Madera (SD#2)**	**CMSA Plant Total**
Average Daily (MGD)	4.1 MGD	5.1 MGD	0.52 MGD	0.96 MGD	10.6 MGD
Total for Month (MG)	126.7 MG	155.5 MG	16.1 MG	29.9 MG	328.2 MG
Percent of Flow	38.6 %	47.4%	4.9 %	9.1 %	100 %

Wet Weather Peak Flow*	San Rafael (SRSD)	Ross Valley (RVSD)	San Quentin (SQPS)	Corte Madera (SD2)	CMSA
03/18 Total Days Flow	5.6 MG	6.5 MG	0.62 MG	1.4 MG	14.1 MG
Peak Flow Rate	11.7 MGD	14.7 MGD	2.1 MGD	2.9MGD	26.4 MGD

***** The time for peak flows and maximum day's flow varies depending on an area's rainfall during the storm.

III. **Treatment Process**

Small rain events early in the month required operators to place additional process tanks into service, and then remove them from service a few days later when influent flows subsided to maintain the proper amount of treatment equipment online. Additionally, staff loaded tanker trucks with 77,000 gallons of waste activated sludge to assist Las Gallinas Valley Sanitary District with the start-up of their new aeration system and worked to decommission the pilot anerobic digesters and associated equipment and prepare the entire skid for long-term storage.

The Mixed Liquor Suspended Solids (MLSS) inventory averaged 906 mg/l in March, an 8.5% increase in inventory from last month. The solids inventory is in alignment with our target Mean Cell Residence Time (MCRT) of 2.6 days.

Graph #3 shows the coliform most probable number (MPN), which represents the effectiveness of the disinfection process. All twelve coliform samples collected in March were well below our daily permit limit of 10,000 MPN and below our monthly KPI of 30 MPN. The total coliform monthly geometric mean for March was 2.0 MPN, below our permit's monthly limit of 240 MPN.

Graph #4 shows the Total Suspended Solids (TSS), which is a good indicator of the effluent quality. The TSS monthly average in March was 7.2 mg/l, which is 48.0% of our Key Performance Indicator (KPI) of 15 mg/l, and is 24.0% of our permit's monthly average limit of 30 mg/l.

IV. Maintenance Activities

The cogeneration system produced 96.8% of the Agency's power in March, and MCE supplied the balance. The system, as indicated on Graph #8, was temporarily offline on March 1 and March 3 to replace a temperature probe and wiring, and again on March 25 to replace a leaking oil system site gauge.

The majority March's work activities were spent performing annual process equipment preventative maintenance. In addition, technicians installed flush ports onto chlorine sample lines in contact tank No's 5 and 6; installed water service at the Heron Court pump station; replaced a leaking section of a chlorine solution line in Gallery B; repaired concrete floors in the digester pump mix room; replaced digester membrane cover blower fan No. 1; and assisted the contractor that was replacing odor control media at the Organic Waste Receiving Facility.

Attachment: March 2021 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

March 2021

Uploading waste activated sludge for use as "seed" material in Las Gallinas Valley Sanitary District's new activated sludge process.

Monthly Compliance Summary Table

Central Marin Sanitation Agency

March, 2021

Final Effluent Monitoring

Parameter	Frequency	Units	Results	Limit
Carbonaceous BOD Highest Weekly Average	Weekly	mg/L	11.5	Maximum 40
Carbonaceous BOD Monthly Average	Monthly	mg/L	9.2	Maximum 25
Carbonaceous BOD Monthly Removal Rate	Monthly	%	96.5	Minimum 85
Total Suspended Solids Highest Weekly Average	Weekly	mg/L	9.0	Maximum 45
Total Suspended Solids Monthly Average	Monthly	mg/L	7.2	Maximum 30
Total Suspended Solids Monthly Removal Rate	Monthly	%	97.7	Minimum 85
Chlorine Residual Instant Limit	Instant	mg/L	ND	Maximum 0.0
Ammonia Monthly Average	Monthly	mg/L	34.7	Maximum 60
Ammonia Maximum Daily	Daily	mg/L	34.7	Maximum 120
pH Lower Limit	Continuous	SU	6.8	Minimum 6
pH Upper Limit	Continuous	SU	7.9	Maximum 9
Bacteriological Analysis				
Total Coliform Monthly Geometric Mean	3 X Week	MPN/100mL	2.0	Maximum 240
Total Coliform Daily Maximum	3 X Week	MPN/100mL	11.0	Maximum 10,000
Enterococcus Quarterly Geometric Mean	Quarterly	MPN/100mL	4.8	Maximum 35
Flow Through Bioassay				
Acute Toxicity 11 Sample 90th Percentile	Monthly	% survival	100	Minimum 70
Acute Toxicity 11 Sample Median	Monthly	% survival	100	Minimum 90
Metals Analysis				
Copper Daily Limit	Monthly	ug/L	8.3	Maximum 85
Copper Monthly Average	Monthly	ug/L	8.3	Maximum 49
Cyanide Daily Limit	Monthly	ug/L	2.0	Maximum 41
Cyanide Monthly Average	Monthly	ug/L	2.0	Maximum 21
Mercury Weekly Average	Weekly	ug/L	0.0033	Maximum 0.072
Mercury Monthly Average	Monthly	ug/L	0.0033	Maximum 0.066
Mercury Monthly Loading	Monthly	kg/mo	0.00353	
Mercury Annual Loading (watershed permit)	Jan-Dec	kg/yr	0.01776	Maximum 0.11
Permit Analysis				
Dioxin - Total Equivalents (TEQ) Daily Maximum	1/Permit Cycle	ug/L	*	Maximum 2.8E-08
Dioxin - Total Equivalents (TEQ) Monthly Average	1/Permit Cycle	ug/L	*	Maximum 1.4E-08
Polychlorinated Biphenyls (PCBs) Daily Limit	1/Permit Cycle	ug/L	*	Maximum 0.017
Polychlorinated Biphenyls (PCBs) Monthly Limit	1/Permit Cycle	ug/L	*	Maximum 0.012
Semiannual and Quarterly Analysis				
Oil and Grease Daily Limit	Semiannual	mg/L	ND	Maximum 20
Oil and Grease Monthly Average	Semiannual	mg/L	ND	Maximum 10
Chronic Bioassay Toxicity	Quarterly	Tuc	ND	Maximum 20
Chronic Bioassay Toxicity (3 sample median)	Quarterly	Tuc	ND	Maximum 10
Flow Analysis	**Daily Max**	**Hourly Max**	**5 minute Max**	**Monthly Average**
Effluent Flow	13.4	17.8	19.0	8.8
Influent Flow	14.1	21.9	32.4	10.6
# Days Blended				0

* Monitoring Not Required This Month ND = None Detected X = Data not available at report time J = Detected but not Quantified

Glossary of Terms
NPDES Permit Compliance Summary Table

- **Ammonia**: CMSA's NPDES permit requires that we analyze the final effluent for ammonia due to its toxicity to aquatic organisms and potential for providing nutrients to algae in the San Francisco Bay. The permit has a maximum daily limit of 120 mg/L and a monthly average limit of 60 mg/L. The maximum daily limit is the number that cannot be exceeded on any sample and the monthly average applies to all samples collected in any month (although typically we are required to take only one sample).

- **Biochemical Oxygen Demand (BOD)**: The amount of dissolved oxygen needed by microorganisms (biomass) to stabilize organic material in the effluent. The permit limits for our effluent require that removal of 85% influent BOD, and meet a weekly average of less than 40 mg/L and a monthly average of less than 25 mg/L BOD.

- **Chlorine Residual:** The secondary effluent is disinfected with hypochlorite (chlorine "bleach"), and then the residual chlorine is neutralized with sodium bisulfite to protect the Bay environment. The final effluent chlorine residual limit is 0.0 mg/l, which is monitored continuously.

- **Bacteria:** Coliform and enterococcus bacteria are the indicator organisms for the determination of the effectiveness of the disinfection process.

- **Dioxin - Total Equivalents:** These are 17 dioxin-like compounds that we analyze for twice per year which have permit limits.

- **Oils and Grease:** We are required to monitor our effluent for Oils and Grease quarterly.

- **Flow Through Bioassay:** A 96-hour test in which we test the toxicity of our effluent to young rainbow trout (15-30 days old) in a flow-through tank to determine their survivability under continuous exposure to CMSA effluent. The permit requires that we maintain a 90^{th} percentile survival of at least 70% and an 11-sample median survival of at least 90%. In layman's terms, this means that out of the last 11 samples, only one bioassay may fall below 70% survival, and the middle value—when all 11 samples are placed in numerical order—must be at least 90%.

- **Metals Analysis:** Our permit requires that we analyze our effluent for many different metals on a monthly basis. We have permit limits for three of the metals. The limits are stated as a maximum daily limit and a monthly average limit.

- **pH:** pH is a measurement of acidity, with pH 7.0 being neutral and higher pH values being basic and lower pH values being acidic. Our permit effluent pH must stay within the range of 6.0 to 9.0, which we monitor continuously.

- **Total Suspended Solids (TSS):** Measurement of suspended solids in the effluent. Our permit requires that we remove at least 85% of the influent TSS and that the effluent limit is less than 45 mg/L as a weekly average and less than 30 mg/L as a monthly average.

EXECUTIVE SUMMARY PROCESS PERFORMANCE DATA
March 2021

The removal efficiencies shown are based on the monthly average of the following treatment processes that were in service.

Expected removal efficiencies as outlined in Metcalf & Eddy Wastewater Engineering Manual.

PRIMARY CLARIFIER PERFORMANCE

Average Total Suspended Solids (TSS) in:	343.4	mg/l	
Average TSS out:	83.1	mg/l	
Average Percent Removal Achieved:	73.8	%	**Design 50-70% Removal**
Average Total Carbonaceous Biochemical Oxygen Demand (CBOD) in:	269.8	mg/l	
Average CBOD out:	151.6	mg/l	
Average Percent Removal Achieved:	46.5	%	**Design 25-40% Removal**
Average Plant Influent Flows:	10.6	MGD	

BIOTOWER PERFORMANCE

Average TSS out:	181.9	mg/l	
Average CBOD out:	116.2	mg/l	
Average Percent CBOD Removal Achieved:	22.9	%	**Design 25-30% Removal**

AERATION TANKS/ACTIVATED SLUDGE

Dissolved Oxygen set point:	2.3	mg/l
Average MLSS:	906.1	mg/l
Average MCRT:	2.6	Days
Average SVI:	142	

SECONDARY CLARIFIERS

Average WAS concentration:	6,916	mg/l
Average TSS out:	7.9	mg/l

FINAL EFFLUENT

Average Effluent TSS for the month:	7.2	mg/l	(Maximum Limit: 30mg/l)
Week #1 weekly average	5.1	mg/l	(Maximum Limit: 45mg/l)
Week #2 weekly average	6.7	mg/l	"
Week #3 weekly average	8.1	mg/l	"
Week #4 weekly average	9.0	mg/l	"
Week #5 weekly average	n/a	mg/l	"
Monthly average TSS removal efficiency through the plant:	97.7	%	(Minimum Limit: 85%)

Average Effluent CBOD:	9.2	mg/l	(Maximum Limit: 25mg/l)
Week #1 weekly average	7.3	mg/l	(Maximum Limit: 40mg/l)
Week #2 weekly average	7.3	mg/l	"
Week #3 weekly average	8.3	mg/l	"
Week #4 weekly average	11.5	mg/l	"
Week #5 weekly average	n/a	mg/l	"
Monthly average CBOD removal efficiency through the plant:	96.5	%	(Minimum Limit: 85%)

Disinfection Dosing Rate:		3.1	mg/l	monthly average
Total Coliform Monthly Geometric Mean:		2.0	MPN	(Maximum 240)
The Daily Maximum Total Coliform Count for the month:		11.0	MPN	(Maximum 10,000)
Enterococcus Monthly Geometric Mean:		n/a	MPN	(Maximum 35 MPN)
Effluent pH for the month was:	Min	6.8	MPN	(Min 6.0)
	Max	7.9	MPN	(Max 9.0)

DIGESTER TREATMENT

Average Thickened Waste Concentration from the RDT:	6.53	%	
Average percent of Volatile Solids destroyed:	86.2	%	
Cubic feet of biogas produced:	9,465,680	(Total)	305,345 (Daily Average)
Average temperature of the digester:	101.8	degrees Fahrenheit	

EXECUTIVE SUMMARY PROCESS PERFORMANCE DATA
March 2021

The removal efficiencies shown are based on the monthly average of the following treatment processes that were in service.

DEWATERING

Average Centrifuge Feed concentration:	2.3	%
Average Biosolids concentration:	25.8	%
Average TSS of the Centrate:	196	mg/l
Solids capture of the Centrifuge:	99.25	%
Polymer use per Dry ton of biosolids:	12.81	#/dry ton
Average polymer feed rate per run:	3.33	gpm
Average concentration of the polymer batches:	0.328	%
Average sludge feed rate per run:	54.8	gpm

Comments:
The treatment plant has been running well with final effluent being of very good quality.

Graph #1:
Depicts the total influent flow (from all collection agencies) entering the treatment plant.
The red graph line represents total influent flows; and the blue graph line depicts the CMSA rain gauge recordings for the month. There were no blending events in the month of March.

Graph #2:
Depicts individual collection agency flows.
The Y-axis is in the flow range of 0-15 MGD.

Graph #3:
Depicts the coliform most probable number (MPN) results which are an indication of the performance of the disinfection system.
The monthly Total Coliform Geometric Mean was 1.9 MPN through March, which is less than our KPI of 30 MPN and permit limit of 240 MPN.

Graph #4:
Depicts the total suspended solids in the effluent.
Our monthly average was 7.2 mg/l versus our KPI of 15 mg/l and permit monthly average limit of 30 mg/l. The final effluent suspended solids remained below the KPI for the entire month of March.

Graph #5:
Depicts the effluent CBOD which is measuring the oxygen demand of the wastewater.
The March effluent CBOD average was 8.8 mg/l, well below our NPDES limits of 40 mg/l weekly and 25 mg/l for the month. The high final effluent result on March 24, 20mg/l, was the result of biomass sloughing, which temporarily inflated effluent monitoring numbers when a second biotower was placed back into service.

Graph #6:
Depicts the degree to which the biosolids have been dewatered.
Our biosolids % concentration met or exceeded our KPI of 25% for most March. Dewatering operations did not occur on March 21 and on March 22, a new Operator was being trained on how to run centrifuges and the % concentration was slightly below our KPI.

Graph #7:
Depicts the amount of biogas that is produced in the digesters, measured by a flow meter, and then used to produce electricity.
Biogas production in March averaged 305,345 cubic feet per day, which exceeded our monthly KPI of 200,000 cubic feet per day. On March 15 and 22 the facility received fewer than normal organic waste deliveries.

Graph #8:
This graph depicts the amount of energy produced through cogeneration versus the energy purchased from MCE for Agency operations. The green line represents power exported to the grid.
In March, CMSA exported 15,337 kWh. As depicted on the graph, repair work was completed on March 1 and 3, and again on March 25.

Glossary of Terms
Process Performance Data Sheet

- **Aeration Tanks:** A biological process that takes place after the biotowers, where biomass (microorganisms) is mixed with the wastewater to feed on dissolved and suspended organic material. High speed blowers are used to provide compressed air to mix the tank contents.

- **Anaerobic Digesters:** In the anaerobic digestion process, organic material removed in the primary and secondary clarifiers is digested by anaerobic bacteria. The end products are methane, carbon dioxide, water, stabilized organic matter, and some inorganic material.

- **Biosolids:** Anaerobically digested solids that are removed from the two digesters, dewatered, and then beneficially reused. Beneficial reuse may include landfill alternate daily cover (ADC), land application in the summer as a soil amendment and fertilizer, or converted into a liquid fertilizer for agricultural applications.

- **Biotower:** A biological treatment process, occurring after the primary clarifiers and before the aeration tanks, in which the wastewater trickles over a biomass-covered media. The biomass feeds on the dissolved and suspended solids in the wastewater.

- **Centrifuge:** Process equipment used to dewater biosolids prior to beneficial reuse.

- **Cogeneration System:** A system comprised of a dual-fuel engine coupled to an electric generator that is used to produce energy to power the Agency facilities. Fuels the system uses are methane biogas produced in the anaerobic digesters and, when biogas is not available, purchased natural gas. As well as generating electricity, the system supplies heat for plant processes and building heating.

- **Chlorine Contact Tanks (CCTs):** The final treatment process is disinfection and de-chlorination. The CCTs allow contact time for injected chlorine solution to disinfect the wastewater. Sodium bisulfite, the de-chlorination chemical, is introduced at the end of the CCTs to neutralize any residual chlorine to protect the San Francisco Bay environment.

- **Rotary Drum Thickener (RDT):** Waste activated sludge removed from the secondary clarifiers is thickened in rotary drum thickeners before being transported to the anaerobic digesters. Thickening removes some of the sludge's water content, to decrease hydraulic loading to the digesters.

- **Final Effluent:** After all the treatment processes are completed, the final effluent is discharged into to central San Francisco Bay through a 10,000-foot-long deep-water outfall.

- **Mean Cell Residence Time (MCRT):** An expression of the average time that a microorganism will spend in the secondary treatment system.

- **Mixed Liquor Suspended Solids (MLSS):** The liquid in the aeration tanks is called MLSS and is a combination of water, solids, and microbes. Suspended solids in the MLSS measured in milligrams per liter (mg/l).

- **Most Probable Number (MPN):** Concentrations, or number of colonies, of total coliform bacteria are reported as the "most probable number." The MPN is not the absolute count of the bacteria but a statistical estimate of their concentration.

- **Polymer:** Polymer is added to digested sludge prior to dewatering to improve solids coagulation and water separation.

- **Primary Clarifier:** A physical (as opposed to biological) treatment process where solids that settle or float are removed and sent to the digesters for further processing.

- **Return Activated Sludge (RAS):** The purpose of returning activated sludge (biomass) to the aeration tanks is to maintain a sufficient concentration of microbes to consume the wastewater's dissolved solids.

- **Secondary Clarifiers:** Provides settling for the biomass after aeration. Most of the settled biomass is returned to the aeration tank as return activated sludge (RAS) and some is sent to the RDT unit as waste activated sludge.

- **Sludge Volume Index (SVI):** This is a calculation used to indicate the settling ability of the biomass in the secondary clarifiers.

- **Thickened Waste Activated Sludge (TWAS):** Waste activated sludge is thickened in the RDTs, and then the TWAS product is pumped to the digester for processing.

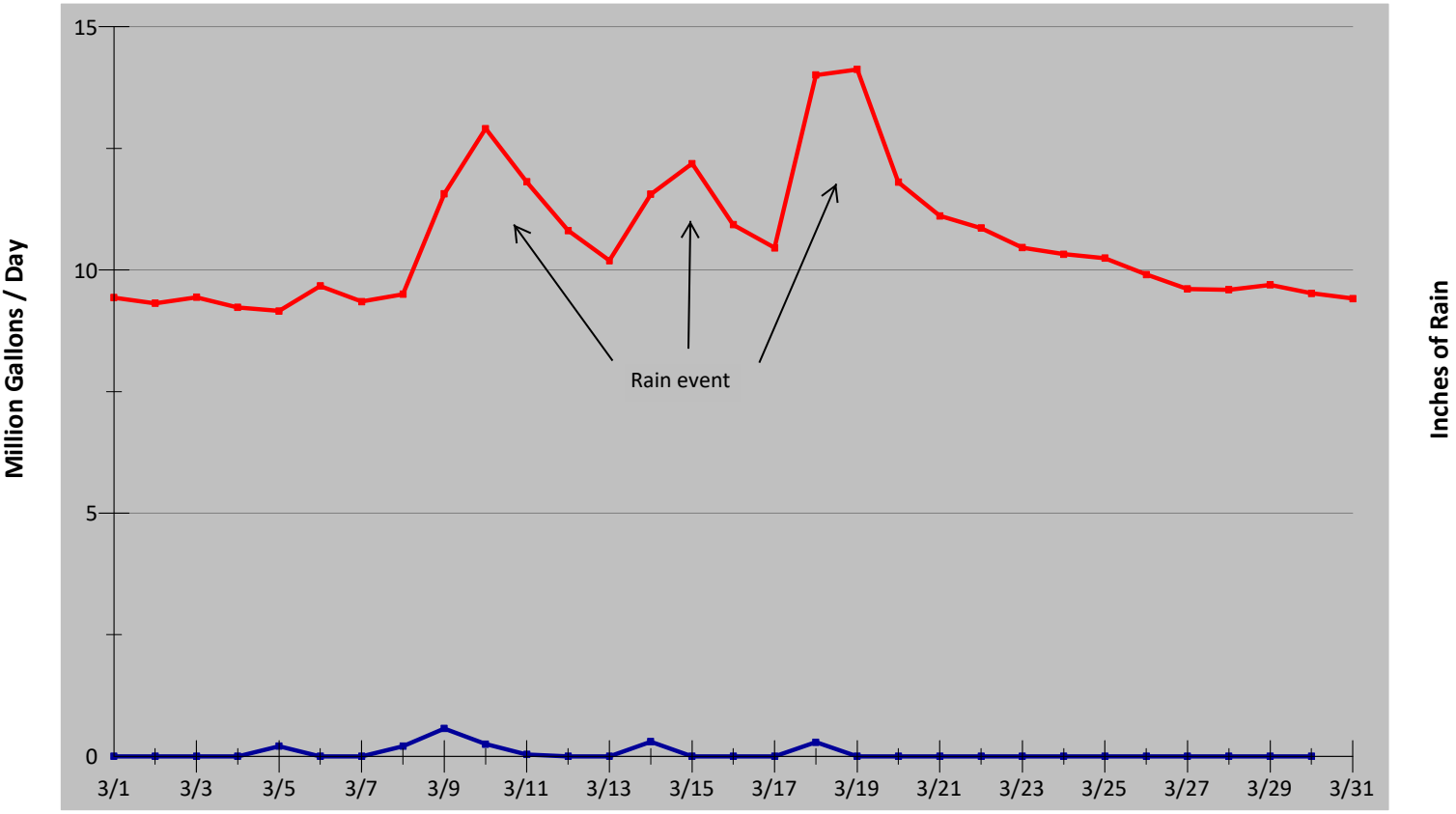
- **Volatile Solids:** Organic content of the wastewater suspended solids.

- **Waste Activated Sludge (WAS):** Biomass that is removed from the secondary clarifiers pumped to the RDTs for thickening.

Units of Measurement

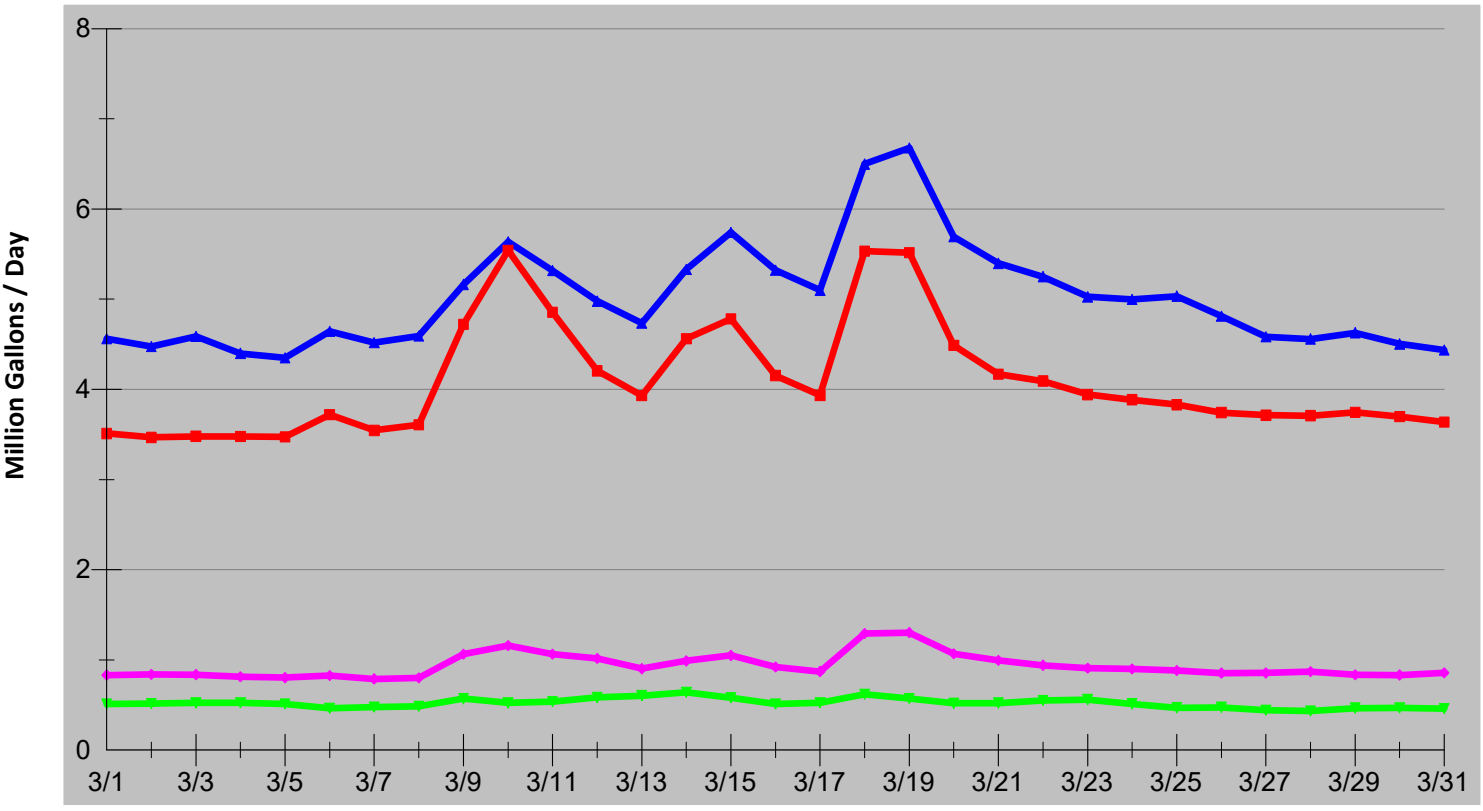
- kg/month (Kilograms per Month): 1 kilogram = 2.205 lbs.
- KPI (Key Performance Indicators): The Agency's process performance goals.
- Kwh (Kilowatt Hours): A unit of electric power equal to using 1 Kw for 1 hour.
- Milligrams per Liter (mg/L): A measure of the concentration by weight of a substance per unit volume. For practical purposes, one mg/L is equal to one part per million (ppm).
- MPN/100mL (Most Probable Number per 100 milliliters): Statistical estimate of a number per 100 milliliters of a given solution.
- Percent by Mass (% by mass): A measure of the combined mass of a solute + solvent.
- Percent by Volume (% by vol): A measure of the volume of a solution.
- ug/L (Micrograms per Liter of Solution): Mass per unit volume.

Graph #1: CMSA Influent Flow



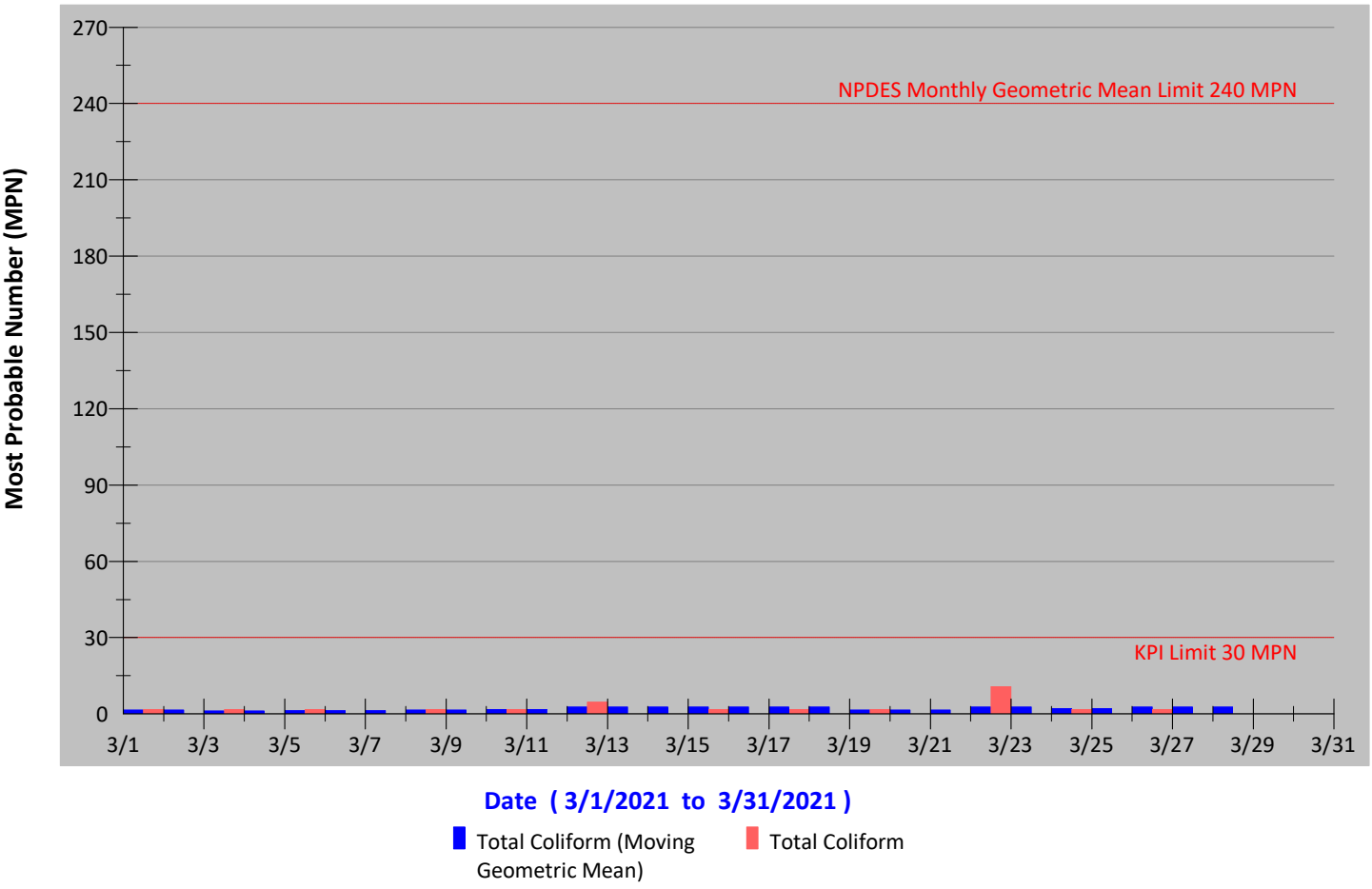
(#1) CMSA Influent Flow

Graph #2: Collection System Influent Flows



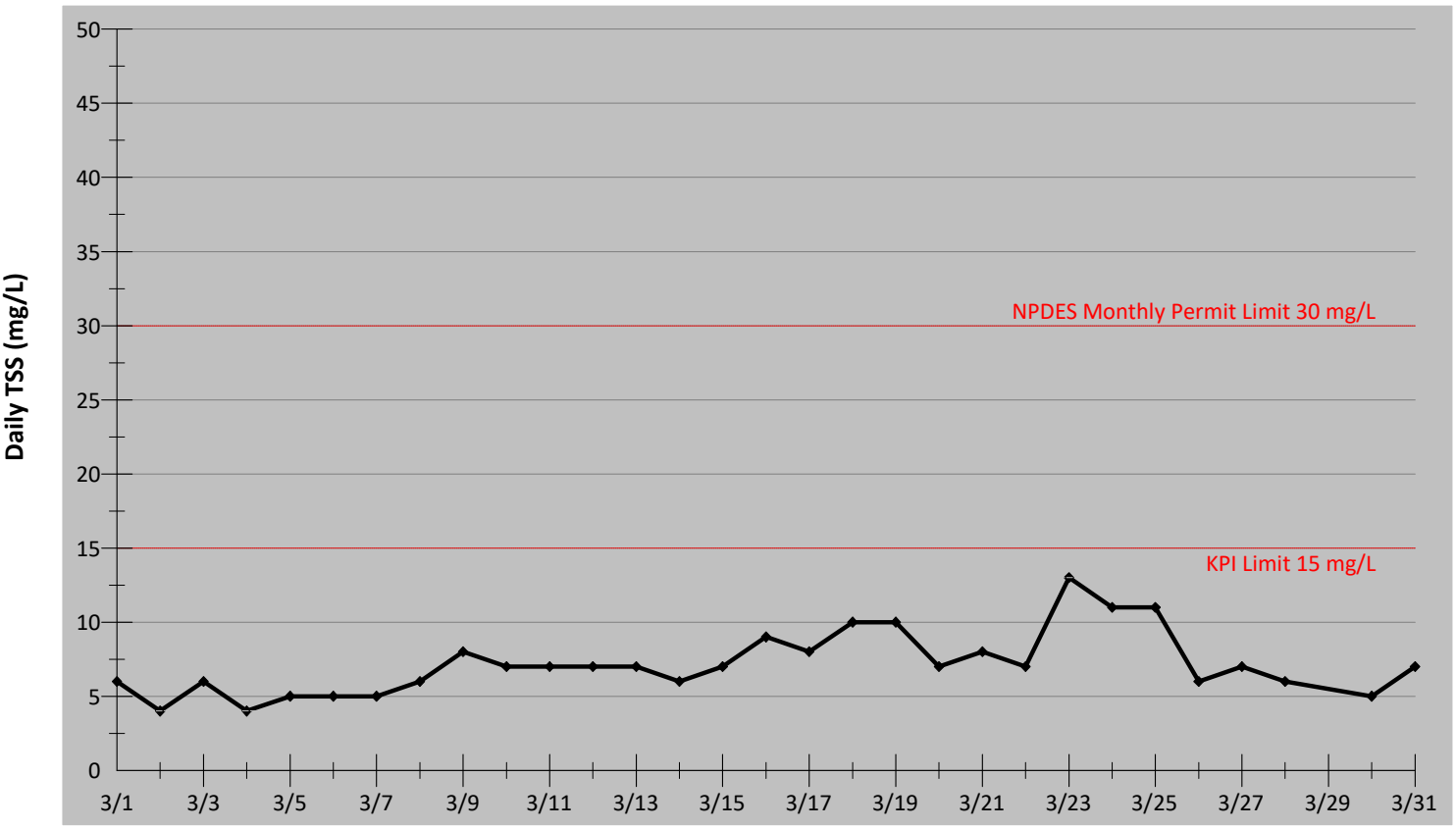
(#2) Collection System Influent Flows

Graph #3: Total Coliform & Monthly Geometric Mean



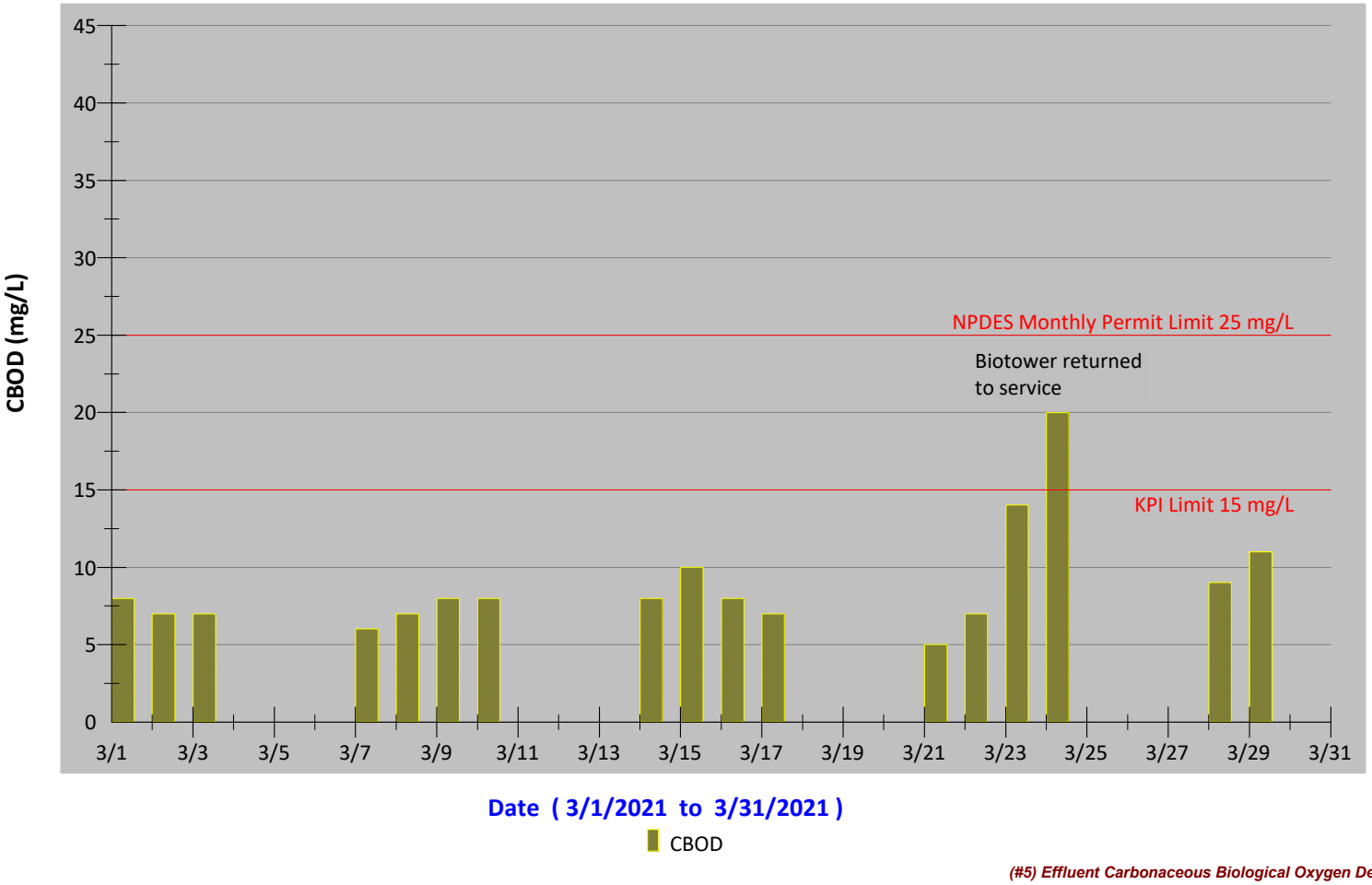
(#3) Total Coliform & Monthly Geometric Mean

Graph #4: Effluent Total Suspended Solids (TSS)



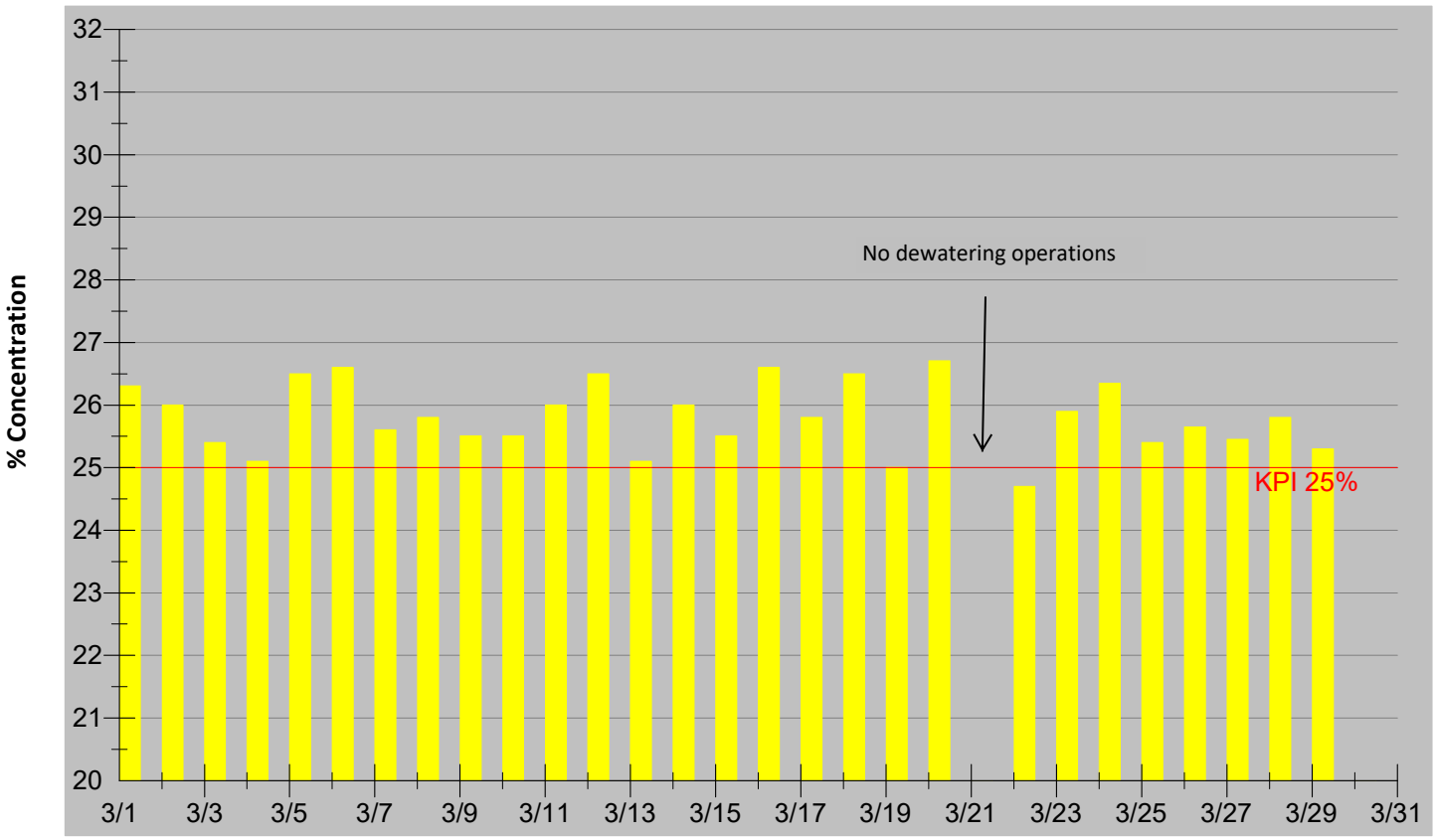
(#4) Effluent Total Suspended Solids (TSS)

Graph #5: Effluent Carbonaceous Biological Oxygen Demand (CBOD)



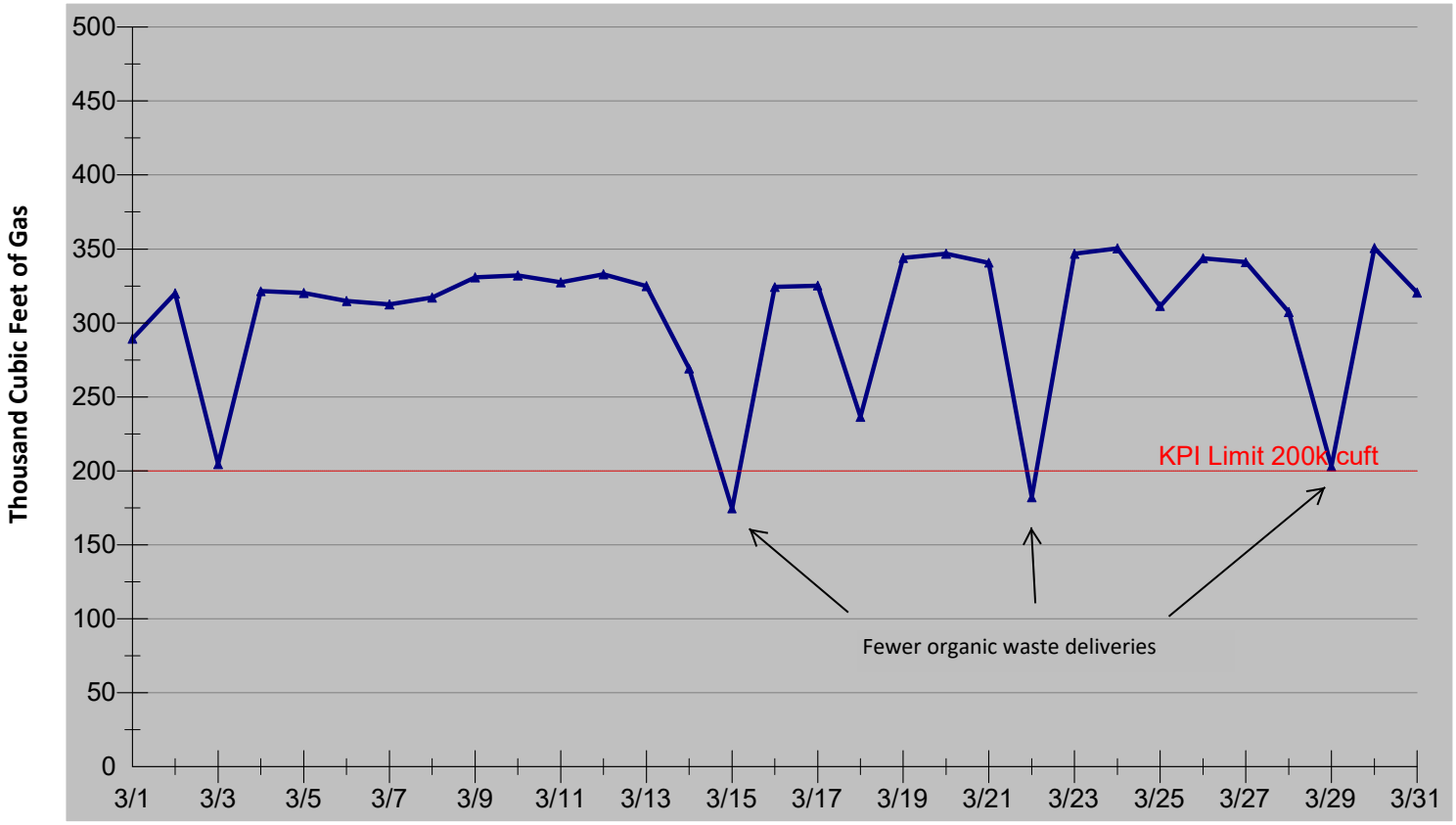
(#5) Effluent Carbonaceous Biological Oxygen Demand (CBO

Graph #6: Biosolids Concentration



(#6) Biosolids Concentration

Graph #7: Biogas Production (Measured Use)

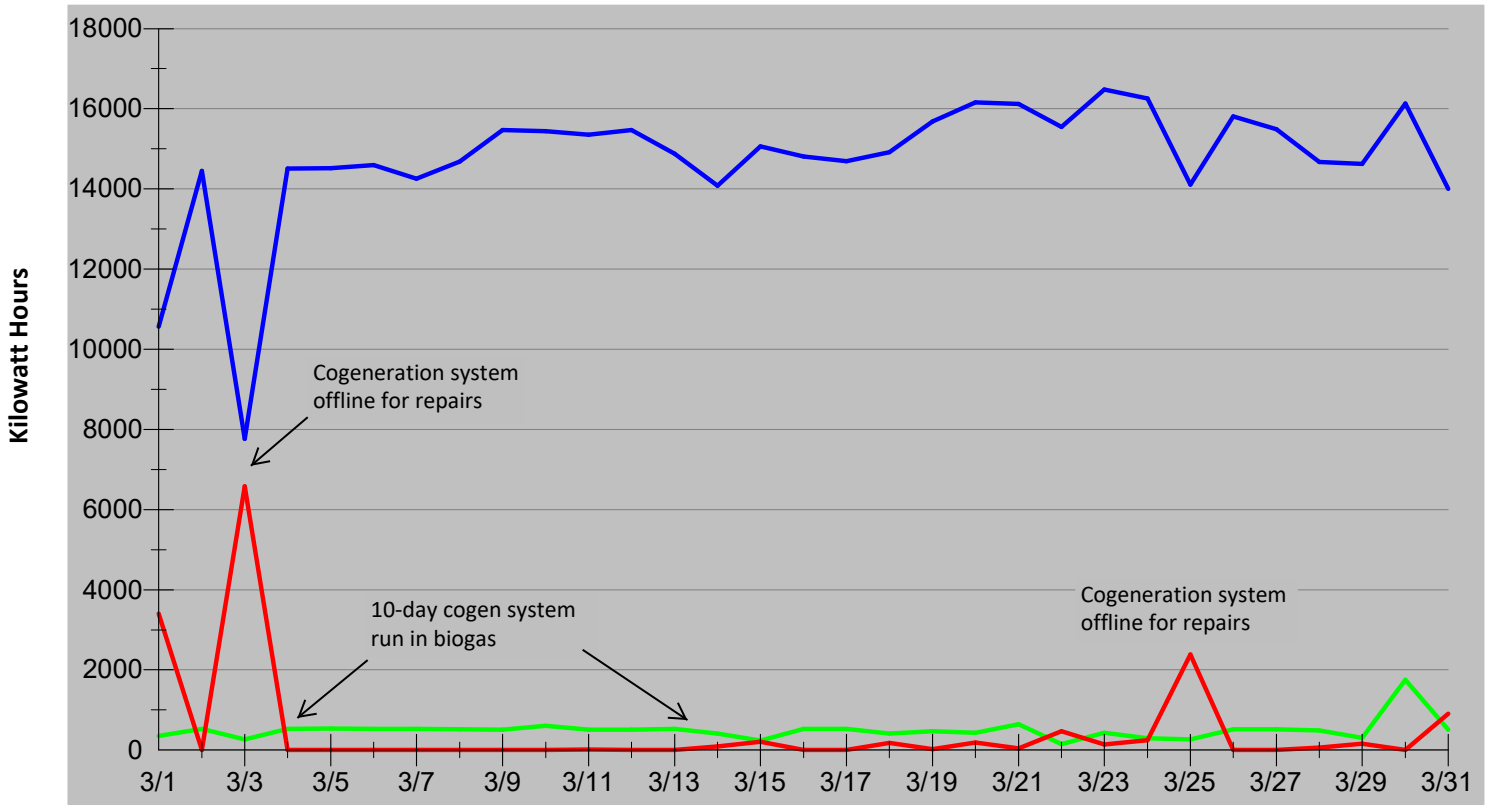


Date (3/1/2021 to 3/31/2021)

▲ Biogas Produced

(#7) Biogas Production

Graph #8: kW/hr Purchased vs. kW/hr Produced vs. kW/hr Exported



Date (3/1/2021 to 3/31/2021)

Kilowatts Produced Utility Export Utility Import

(#8) Kilowatt Hours Purchased vs. Kilowatts Produced

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: Performance Metric Report – March 2021

Recommendation: Accept the March 2021 Performance Metric Report.

Performance Summary: The Agency's performance in operations and maintenance activities, regulatory and environmental compliance, and public education and outreach met or exceeded most of our metric goals/targets. Noteworthy metrics or variances are described below.

Table I – Treatment/Process Metrics

Final effluent quality remains very good, and the cogeneration system operating time on biogas was almost 91% over the month.

Renewable energy exported to MCE continues to be lower than our target range due to operating the cogeneration system in demand following instead of a base output mode. With four months of energy production, natural gas and energy procurement, and power delivery information, staff is preparing an economic evaluation to determine the most economically advantageous mode of operation.

Table II – Employee Metrics

Due to the COVID-19 Public Heath Orders, all training since March 2020 has been internal or web-based. Over the past month several employees completed their LOTO, hearing loss, and fire extinguishers safety training, all supervisor staff attended a virtual unconscious bias training by our employment law attorney, Joan Newman, and all employees took an unlawful harassment and discrimination prevention training.

Table III - Environmental and Regulatory Compliance Metrics

There weren't any final effluent permit exceedances in March.

With the completion of the Pilot Digester Study on March 12, the Process Control Analyses (Item 3) and Quality Control Testing (Item 5) measurements decreased and now are either within or approaching their expected ranges. Both measurements will be within their ranges in April and future months.

Table IV - Public Outreach

There were five odor alerts posted to the website, and the Agency did not receive any public odor complaints. Four were posted for taking primary clarifiers out of service for forecast rain events and one was posted for taking a secondary clarifier out of service for maintenance.

Monthly public education events may include staff attendance at public outreach events, school classroom and/or juggler show presentations, and Agency tours. All public outreach and in-person school events have been cancelled since March 2020 due to the COVID-19 shelter-in-place order.

Public Outreach Events

Date	Event	Attendees
3/26	Bunny Blvd Drive-through Event in Mill Valley	385

School Events – Juggler Show Presentations and Classroom Events

Rock Steady Juggling developed an online outreach presentation to accommodate the current COVID-19 requirements. There were four virtual presentations in March.

Date	School	Attendees
3/10	Lu Sutton Elementary in Novato	275
3/22	Hamilton Elementary in Novato	500
3/23	Olive Elementary in Novato	100
3/26	Cove Elementary in Corte Madera	200

CMSA Tours

- No tours were given in March

Attachment:

- March 2021 Performance Metric Report

CMSA CY20 PERFORMANCE METRICS – March 2021

TABLE I - TREATMENT/PROCESS METRICS

Metric	Definition	Measurement	Range/Target/Goal
1) Wastewater Treated	Volume of wastewater influent treated and disposed, in million gallons (Mg)	328.2 Mg	165 – 820 Mg
2) Biosolids Reuse	Alternate Daily Cover (ADC) at the Redwood Landfill, in wet tons (wt) Fertilizer and soil amendment at land application sites, in wet tons (wt) Bio-Fertilizer production at the Lystek facility, in wet tons (wt)	350.0 wt - 157.5 wt	360 – 665 wt
3) Conventional Pollutant Removal	Removal of the conventional NPDES pollutants - Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD) a. tons of TSS removed; % TSS removal b. tons of BOD removed; % BOD removal	 445.6 tons; 97.7% 349.2 tons; 96.5%	 > 85% > 85%
4) Priority Pollutants Removal	Diversion of priority NPDES metals from discharge to the S.F. Bay: a. % Mercury b. % Copper	 98.9% 89.2%	 88 – 99% 84 – 98%
5) Biogas Production	Biogas generated in our anaerobic digesters, in million cubic feet (Mft^3) Natural gas equivalent of the biogas, in million cubic feet (Mft^3)	9.47 Mft^3 6.05 Mft^3	6.0 to 9.5 Mft^3 3.8 to 6.1 Mft^3
6) Power Produced	Power produced from cogeneration of biogas and purchased natural gas - in kilowatt hours. Power produced from cogeneration of biogas and delivered to the grid Cogeneration system runtime on biogas *, in hours (hrs.); % time during month* Biogas value (natural gas cost equivalent).	456,614 kWh 15,337 kW 675 hrs; 90.7% $37,005	380 to 480,000 kWh 35,000 to 65,000 kWh 558 hrs.; 75% $25,000 to $45,000
7) Efficiency	The cost to operate and maintain the treatment plant per million gallons of wastewater treated, in dollars per million gallons. Energy used, kilowatt hours, per million gallons treated.	$3,530 /Mg 1,437 kWh/Mg	$3,500-$5,500/Mg (wet - dry) 670 - 2,400 kWh/Mg

Table II – EMPLOYEE METRICS

Metric	Definition	Measurement	Target/Goal
1) Employee Training	Hours of internal training – safety, web-based, project, vendor, etc. Hours of external training – employment law, technical, regulatory, etc.	Internal = 137 External = 0	variable
2) Work Orders	Preventative maintenance (PM) labor hours Planned corrective maintenance (CM) labor hours; % of CM+UCM hrs. Unplanned corrective maintenance (UCM) labor hours; % of CM+PM hrs. Ratio of PM to total corrective maintenance (CM + UCM);	1,042 hrs 423 hrs (96.7%) 102 hrs (1.3%) 2.46	300 – 500 hrs ≥ 70% total CM hrs ≤ 30% total hours ≥ 0.45
3) Overtime Worked	Monthly hours of OT worked; *Year to date hours of OT (YTD)* % of regular hours worked; *% Year to date (YTD)*	36.5 hrs; (358.5 hrs) 1.0%; *(1.6%)*	< 5%

CMSA CY20 PERFORMANCE METRICS – March 2021

Table III - ENVIRONMENTAL AND REGULATORY COMPLIANCE METRICS

Metric	Definition	Measurement	Range/Target/Goal
1) Permit Exceedances	# of NPDES permit exceedances	0	0
2) Regulatory Analyses	# of analyses by the CMSA laboratory for NPDES, stormwater, and biosolids regulatory compliance monitoring and reporting	391	150-750
3) Process Control Analyses	# of analyses by the CMSA laboratory for process control monitoring	1,177	400-1,250
4) Contract Laboratory Analyses	# of analyses by contract laboratories for regulatory compliance reporting	66	0-50
5) Quality Control Testing	# of CMSA performed laboratory analyses for QA/QC purposes	387	100-300
6) Water Quality Sample Analyses	# of ammonia, total and fecal coliform, enterococcus, and/or sulfide analyses performed for the CMSA member agencies	70	as-needed
7) Pollution Prevention Inspections	Inspections of industrial and commercial businesses in the Agency's pretreatment and pollution prevention programs and Novato Sanitary District's Mercury Reduction Program – 293 businesses regulated	5	variable
8) FOG Program Inspections	Inspections of food service establishments (FSEs) in the Almonte, TCSD, SD2, RVSD, SRSD, and LGVSD service areas – approx. 311 FSEs are regulated and 25 FSEs have waivers.	75	20 – 50
9) Permits Issued/Renewed	Permits issued for the pretreatment, pollution prevention, and FOG source control programs, and for groundwater discharge	0	variable

Table IV- PUBLIC OUTREACH

Metric	Definition	Measurement	Target/Goal
1) Public Education Events	Attendance at public education outreach events; # of booth visitors; *(YTD)*	0; *(0)*	3,000/year
2) School Events	Participation or sponsorship in school outreach events; attendees; *(YTD)*	1175; *(1552)*	variable
3) Agency Tours	Tours given to students and the public; # of people, *(YTD)*	0; *(2)*	variable
4) Odor Notifications	Number of odor alerts posted to the Agency website	5	1-10
5) Odor Complaints	Number of odor complaints received from the public	0	0

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: Investments Policy Revision – Reporting Section

Recommendation: Approve the revised Reporting Section in the Agency's Investments Policy.

Summary: At the March meeting, the Board approved the Agency's Investment Policy, Financial Policy #531, which is an annual requirement in the California Government Code if a legislative body delegates investment authority. Prior to the meeting, after the agenda packet was distributed and posted, staff realized the Policy's reporting section needed to be updated to align with the recent revisions to the Agency's Treasurers Report. Staff has made the necessary revisions that are shown in the attached revised reporting section.

Attachment:
- Revised Reporting Section from Financial Policy #531: Investments

REPORTING

The Treasurer shall submit a monthly Treasurer's report to the Board that lists the Agency's individual investments, if any, and pooled investments in short-term investment pools. The report shall include the following information for each individual investment: description of investment instrument, issuer name, maturity date, credit rating, yield to maturity, purchase price, par value, current market value, and the source of the valuation. Investments in pools managed by other governments or mutual funds shall include the following information for each pool: pool name, valuation date, yield at valuation date, cost basis if materially different from market value, and market value of the Agency's share of the pool at date of valuation of pool using the pool's valuation method.

The report also shall:

I. State compliance of the portfolio to the statement of investment policy, or manner in which the portfolio is not in compliance,

II. Include a description of any of the Agency's funds, investments or programs that are under the management of contracted parties, including lending programs, and

III. Include a statement denoting the ability of the Agency to meet its expenditure requirements for the next six months or provide an explanation as to why sufficient money may not be available.

IV. The report shall include a list of monthly investment transactions. The requirement for disclosure of monthly investment transactions does not apply to investment pools. This monthly report shall be submitted with the Board's monthly meeting agenda for public review.

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Kevin Lewis, Assistant Maintenance Supervisor

Approved: Jason Dow, General Manager

Subject: FY21 Asset Management Program 3rd Quarter Report

Recommendation: Informational, provide comments or direction to the General Manager, as appropriate.

Summary: Since February 2011, staff has prepared and published an Asset Management Report in October, January, and April, and the annual report is presented in July.

Third Quarter Highlights

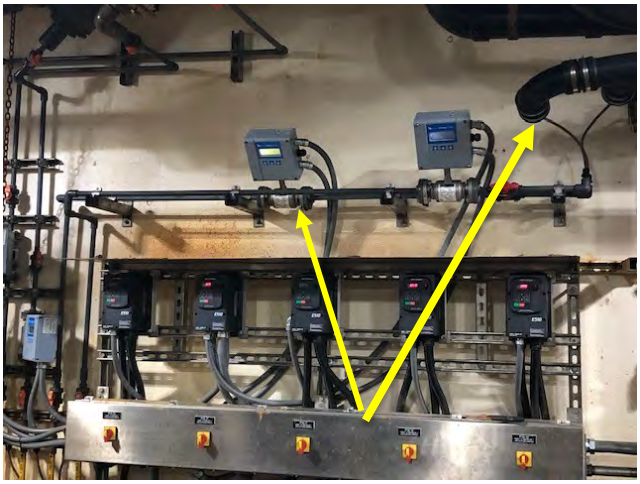
Solids metering probes inserted in piping.

Waste Activated Sludge (WAS) Total Solids Meter

Solids quantities and their concentration in the activated-sludge process is measured to achieve balance, or a correct ratio, for the amount of food (BOD) entering the treatment system and the amount of microorganisms available to consume it. Maintaining a proper Food to Microorganism (F/M) ratio is critical to process performance and to producing a high-quality effluent. CMSA recently installed two total suspended solids meters into both waste activated sludge lines to accurately measure the amount of microorganisms leaving the secondary system. Data from these two new meters and existing instruments in the primary clarifiers and prior to aeration allows continuous monitoring of changing F/M conditions within the secondary treatment process, reducing required suspended solids sampling.

Pressure instrument connected to air piping.

Channel Air Blower Pressure Monitoring – A recommendation, which was recently implemented, from the Agency' Power Delivery/Energy Efficiency (PD/EE) Committee, was to install a pressure indicating transmitter into the channel air system's piping to monitor the fluctuation in pressure which directly correlates with the aeration system's energy consumption. The pressure in this system varies as influent flows increase, or the number of in-service primary clarifiers increases or decreases. The Committee intends to study and use this information to better understand the energy demands on the system and ultimately provide their recommendation on best operational practices and blower changes to reduce energy consumption.



Flow meters and piping to digesters.

Automatic Digester H2S Control System The addition of ferric chloride to the anaerobic digesters is used to control the amount of hydrogen sulfide gas (H2S) produced inside the digesters. Controlling H2S is important to maintaining compliance with the Agency's air quality permit and H2S is very corrosive when combined with water and damaging to cogeneration engines. Last fall, a permanently mounted raw digester gas H2S measuring system was installed and has been gathering data. Recently staff installed an automated ferric chloride dosing system, programmed by the IS Administrator to automatically control ferric chloride dosing based on the measured H2S content of the biogas in the digester. The system consists of pumps, variable frequency drives, magnetic flowmeters, and dual contained piping.

Asset Inventory

Staff conducted a review of Agency assets tracked within the computerized maintenance management systems (CMMS) asset tree. This quarterly exercise is performed to verify active assets within the system. As Agency-managed projects or regularly scheduled maintenance work is completed, both new and old assets must be accounted for in an asset inventory count. Along with entering new and removing obsolete assets from the asset tree, staff removed improperly grouped or classified assets, and removed additional non-critical assets. In all, 102

items were entered, reclassified, or removed from the CMMS asset tree this past quarter. The table below shows the number of assets managed by CMSA and their storage location.

Asset Locations	Total Assets
CMSA	2,497
Sanitary District No. 2	381
San Quentin Prison Pump Station	31
San Quentin Village Sewer Maintenance District	16

Parts Inventory

The parts inventory show below, is comprised of critical spare parts and equipment, and consumable items for Agency and managed pump station assets – Sanitary District No. 2 (Corte Madera), San Quentin State Prison, and San Quentin Village Sewer Maintenance District. Spare parts for CMSA and San Quentin Village are kept at CMSA site-specific parts rooms, Sanitary District No. 2 parts and equipment are stored at Paradise pump station, and San Quentin State Prison parts and equipment are stored at their San Quentin pump station.

Parts Inventory	Parts Quantity	Total Value
CMSA	33,417	$1,630,805
Sanitary District No. 2	357	$239,962
San Quentin Prison	70	$88,935
San Quentin Village	2	$1,331

Asset Improvements, Repairs, and Refurbishment Work

1) CMSA Construction Project Work

Projects in the table below are construction projects that were completed or were in progress over the past quarter. For some of the projects, CMSA staff performed work alongside contractors.

Project Name	CMSA Staff Cost	Total Cost	Status
Cogeneration System Replacement	$21,625	$2,156,386	Engine installed and support equipment pads getting installed.
Switchgear Building HVAC Upgrade	$120	$6,921	90% design, comments submitted
Generator Quick Connect Panel	$1,067	$48,847	100% design complete, Kirk-key design review.
Organic Waste Storage Tank and Biogas Treatment System Upgrades	$1,739	$14,854	Internal team formed and design firm under contract.

2) CMSA Asset Management Improvements

Projects in the table below are considered routine, recurring, and regular maintenance work for the preservation, protection, or replacement of Agency assets.

Area	Equipment	Improvement	Total Cost	Comments
Administration Building	Lights and Fixtures	Pathway lighting	$3,471	Installed area flood light at employee entrance gate.
Administration Building	Lights and Fixtures	LED lighting	$10,625	Incandescent and fluorescent fixtures replacements.
Administration Building	MCC	Annual electrical preventative maintenance	$3,034	Tested MCC buckets, tightened terminals, cleaned, and tested area UPSs.
Headworks	Influent Screens	Bearing replacements	$2,085	Replaced failing screen shaft bearings.
Headworks	Site Sump Pumps	Annual PM and pump base replacement	$7,802	Cleaned-out sump, both sides, and installed a new pump base in the septage hauler side sump.
Headworks	Channel Blowers	Pressure monitoring	$8,807	Installed pressure indicating transmitter and connected to SCADA.
Headworks	Channel Blower Piping	Coating restoration	$9,760	Prepared and painted failed coatings on air valves and couplers.
Gallery System	Tank Drain Piping	Coating restoration	$8,014	Prepared and painted failed coating on piping.
Biotowers	Feed Pump No. 3	Pump refurbishment	$16,090	Refurbished pump, repaired shaft and installed new wear components.
Secondary Clarifiers	Wasting Lines	Install TSS meter	$37,129	Replaced pipe, welded taps, ran conduit, mounted meters, and probes; SCADA integration.
Solids Handling Energy Generation	Sulfatreat Vessel No. 2	Media replacement	$45,616	Contractor removed spent media; placed new foam filter disk and media.
Solids Handling Energy Generation	Cogenerator	Cylinder head replacements	$18,216	Replaced four separate cylinder heads due to valve and seat wear.

Area	Equipment	Improvement	Total Cost	Comments
Digesters	Ferric Chloride Dosing	Flow meter installation	$18,577	Installed two flowmeters and chemical dosing lines for H2S control.
Digesters	Digesters	Biological meter installed	$5,462	Conduit and wiring run to controller; probes installed in OWRF feed line and each digester mix line.
Organic Waste Receiving Facility	Sludge Recirculation Line	Valve replacement	$3,729	Replaced valve and relocated MOV for safer access.
Organic Waste Receiving Facility	Slurry Mixing Pumps	Installed new assemblies	$21,136	Wet-end refurbishment consisting of new impellors, cutting bar plates, and new bearings.
Disinfection and Dechlorination	CCTs Nos.1-4	Tank kickboard replacement	$9,118	Replaced weathered Redwood boards with pressure treated Douglas Fir.
Effluent Sampling	RTU Communicatio n Cabinet	Cleanup and purging	$5,868	RTU panel wiring was cleaned up; unused devices and wiring were removed; drawings were made of the wiring and I/O list updated.

3) CMSA Maintained Assets (San Quentin Prison, Sanitary District No. 2, and San Quentin Village)

Maintenance work performed over the quarter on collection agency assets by CMSA staff, an approved contractor, or service provider.

Asset Owner	Asset	Improvement	Total Cost	Comment
SQVSMD	Sewage pumps	Pump upgrades	$18,135	Replaced 3hp pumps with 5hp pumps to increase pumping capacity during wet weather.

Work Orders – Third Quarter FY21

A work order is a written request that a preventive, corrective, or unplanned corrective maintenance task or project be performed. Work orders are typically generated and sent internally from one department to another. Shown in the table on the following page are the types of work orders prepared by staff, the annual work orders completed, and the total labor hours, by type, to complete the work orders.

Work Order Type	# of WO's	% of Total WO's	Labor Hrs.	% of Total Hrs.
Preventative Maintenance (PM)	283	50.45%	2,767.00	24.90%
Corrective-Planned	174	31.02%	1,322.75	11.90%
Corrective-Unplanned	47	1.78%	176.50	1.59%
Improvement Project Work	5	0.89%	1,335.00	12.01%
Coating Projects	3	0.53%	228.00	2.05%
Safety	18	3.21%	164.25	1.48%
Professional Development/Staff Meetings	16	2.85%	224.25	2.02%
Facilities Administration/Housekeeping	25	4.46%	1,249.25	11.24%
Process Control and Facility Operations	27	4.81%	3,646.00	32.81%
Total	**561**	**100%**	**11,113.00**	**100%**

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: Acceptance of Hauled Wastes Policy

Recommendation: Approve the revised Administrative Policy #10: Acceptance of Hauled Wastes.

Discussion: CMSA has Personnel, Financial, Administrative, and Safety Policy Manuals. Last year, staff reviewed and revised the Financial Policy Manual that was approved by the Board at its October 2020 meeting. Earlier this year, staff began the process to review and update the Administrative Policy Manual that is comprised of 51 general, financial, human resources, contract administration, safety, and security policies and procedures. Several of the policies are Board approved, and staff plans to bring these individually to Board meetings over the next several months, after they are updated by staff, for consideration of approval.

The first of these policies, Administrative Policy #3: Disposal of Surplus Assets, was approved at the March Board meeting. The revised Administrative Policy #10: Acceptance of Hauled Wastes is attached with most of the proposed policy changes shown in red text.

Attachment:
- Administrative Policy #10: Acceptance of Hauled Wastes

ATTACHMENT

POLICY/PROCEDURE #:	**10**
SECTION:	**ADMINISTRATIVE – GENERAL**
SUBJECT:	**Acceptance of Hauled Wastes**
DATE:	**04/13/2021** ***(Board Approved)***

PURPOSE

To identify the types of hauled wastes that the Agency accepts for treatment and processing, and to establish the procedures for receiving the waste materials.

PROCEDURES

I. Types of Wastes Accepted

Portable Toilet: Wastes from portable toilets and similar facilities that are generated and collected in Marin County are accepted at the Agency's septage receiving facility.

Septic Tank: Wastes from residential septic tanks and similar facilities that are generated and collected in Marin County are accepted at the Agency's septage receiving facility.

Wastes from septic tanks serving commercial or industrial facilities are accepted only with prior written approval from the General Manager or designee.

Recreational Vehicles: Waste from recreational vehicle toilets, sinks, and showers are accepted at the Agency's septage receiving facility.

Grease Interceptor Waste: Fats, Oils, and Grease (FOG) from food service establishments that is transported through Marin County is accepted at the Agency's Organic Waste Receiving Facility (OWRF).

Food Waste: Commercial food waste collected from restaurants, schools, and other similar type businesses, and transported to CMSA by Marin Sanitary Service (MSS) are accepted at the Agency's OWRF.

Liquid Organic Wastes: Liquid wastes from food and beverage manufacturing and/or production facilities are accepted at the Agency's OWRF receiving facility.

Vacuum Truck (Vactor) Loads: Debris and material removed from a sanitary sewer collection system by a vacuum truck or similar equipment are accepted at the Agency's vacuum truck receiving facility. See Section VIII below. The other sections of this document do not apply to vacuum truck loads

No hauled industrial wastes are accepted at CMSA. This specifically includes, but is not limited to, wastes from auto washing or repair oil/water separators, and portable toilet loads contaminated with industrial waste.

II. Fees and Charges

All fees and charges, except for the MSS food waste tipping fee, are specified in the CMSA Fee Ordinance. Specific charges are adjusted annually based on the current regional EDU service charge rate.

A monitoring fee is assessed for each septage waste load discharged at the wastewater treatment plant. This "per load" fee recovers the Agency's expenses for collecting and analyzing random samples and for other monitoring activities.

The MSS food waste tipping fee is specified in the Food Waste Processing and Disposal Agreement between CMSA and MSS.

III. Marin County Permit/CMSA Authorized Waste Hauler List

Any truck used to deliver and discharge portable toilet and septic tank hauled wastes at CMSA must have a current permit from Marin County Environmental Health Services.

Each hauler must be on the CMSA Authorized Waste Hauler List prior to discharge of any loads. A hauler will be placed on the list upon request, contingent on verification of Marin County permit(s). A hauler will be removed from the list for serious or repeated violations of CMSA policies, or if their Marin County permit(s) expires.

CMSA shall not receive food waste, FOG, or liquid wastes transported to the Agency in a septage or industrial waste hauling vehicle, unless it can be shown, to the Agency's satisfaction, that the vehicle's storage tank has been properly cleaned to remove all septage and/or similar materials.

IV. Receiving Facilities Hours of Operation

Hauled waste loads are accepted Monday through Friday, during regular business hours, CMSA holidays excluded. Waste receiving at any other time is only by advance arrangement.

During wet weather, haulers should contact CMSA in advance to determine if waste loads are being accepted at the septage receiving facility. Hauled waste loads are generally not accepted at the septage receiving facility during rain events that cause wastewater blending.

V. Delivery Documentation

Hauled waste vehicle drivers must complete a Trucked Waste Record form for each load delivered to CMSA, including the load volume, in gallons. Completed forms shall be left in the administration office before they are granted access to the waste receiving facilities. Each month haulers will be invoiced for disposal fees, based on the information in their completed load forms.

FOG and liquid waste delivery volumes are measured by instruments at the receiving station. If there is a discrepancy between the measured volume and the volume stated on the Trucked Waste Record form, facility measurements will be used for invoicing.

VI. Discharge to Manholes Prohibited

Hauled wastes may be discharged only at the CMSA wastewater treatment plant site. Discharge to sanitary sewer manholes in the CMSA service area is prohibited without prior written approval from the specific sanitary district--Ross Valley Sanitary District, San Rafael Sanitation District, or Sanitary District #2.

VII. Discharge Procedures

Haulers shall follow the procedures below for discharging each waste load.

A. All trucks must stop at the designated location on the Agency entrance road, enter the CMSA Administration Building, and complete a Trucked Waste Record form. CMSA office staff will open the facility security gate once the form has been submitted, to allow trucks to proceed through the security gate, and follow the yellow road striping to the septage receiving station or the white road striping to the OWRF receiving facility.

B. The delivery vehicle's discharge hose must be able to connect to the 4" diameter female cam lock fitting at either receiving station. Drivers must connect their discharge hose to the fitting.

C. The hauler shall clean up the receiving station prior to leaving CMSA. At either receiving station, recycled water is provided to wash down and clean up the station. Drivers should notify CMSA Operations or Administrative staff prior to leaving the Agency if the receiving station is excessively dirty upon their arrival or if there are other problems experienced during their disposal and clean-up activities.

D. CMSA staff will collect random samples from waste loads, or if there is an indication of possible contamination with industrial waste. Sample collection is at the sole discretion of CMSA. The hauler shall assist CMSA staff in obtaining a representative sample of the waste load.

VIII. Vacuum Truck Loads

CMSA only accepts vacuum truck loads that are generated by our JPA member agencies that own and operate the wastewater collection systems in central Marin, or by private haulers working directly for CMSA. The JPA member agencies are:

- San Rafael Sanitation District (SRSD)
- Sanitary District #2 of Marin County (SD#2)
- Ross Valley Sanitary District (RVSD)

Private contractors working on behalf of a JPA member agency will be granted access to the CMSA facilities to dispose of their loads, after CMSA has received notification from the member agency contracting for their services.

CMSA will not accept vacuum loads from outside its service area, or loads from privately owned sewer lines within the service area.

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Mark Koekemoer, Regulatory Compliance Manager

Approved: Jason Dow, General Manager

Subject: Purchase of an Ion Chromatography System

Recommendation: Authorize the General Manager to purchase an Ion Chromatography System from Metrohm for $85,917.

Summary: The Ion Chromatography (IC) System will be used in the Agency's environmental laboratory to conduct anion and total volatile fatty acid (VFA) analyses. The anion analysis determines the concentration of nitrate, nitrite, chloride, fluoride, orthophosphate, and sulfate. The IC VFA analysis determines the concentration of formic, acetic, propionic, isobutyric, butyric, and lactic acids. This IC system will improve VFA laboratory analysis efficiency by replacing previously conducted labor intensive VFA analyses, and will allow laboratory staff to conduct anion analyses in-house that are currently outsourced to commercial laboratories.

Fiscal Impact: The FY21 Capital Improvement Program includes $110,000 for the procurement of the IC System. Staff contacted five laboratory equipment companies to obtain proposals for this equipment. Metrohm and Thermo Fisher Scientific submitted proposals for $85,917 and $94,977, respectively.

Discussion: Staff currently conducts VFA analyses using traditional distillation practices, and these analyses monitor the process performance of CMSA's anaerobic digesters. VFA analyses are conducted daily by laboratory staff and cost approximately $56,113 in labor annually. Anion analyses are required by CMSA's Nutrient Watershed Permit and are outsourced to commercial laboratories. Historical annual anion analyses costs are $2,400. The current total operational costs of these two analyses are $58,513.

Staff conducted a business case evaluation for purchasing the new IC system as compared to continuing with current practices. The estimated new annual IC labor and maintenance costs is $26,492, and based on eliminating the above current cost, the simple payback for the new IC system would be approximately 2.7 years. Should CMSA decide to initiate, or be required to initiate by regulatory entities, any future additional anion or VFA monitoring, this payback period would be further reduced.

Attachment: Metrohm Quote, dated 3/11/2021.

Metrohm USA Inc.

SALES QUOTATION

Quotation Number QUO-21257-Q2S5D5-4

Delivery Address
Central Marin Sanitation Agency
1301 Andersen Drive

San Rafael, CA 94901
United States

Delivery Contact
Mark Koekemoer
Phone: 415459-145-5147
Email: mkoekemoer@cmsa.us

Valid dates	3/8/2021 - 6/16/2021	**Shipping Method**	Best Way (UPS)
Payment Terms	On Approved Credit	**Terms of Delivery**	Free On Board

Dear Mark

Thank you for considering Metrohm USA products and services. I am pleased to send you this quotation for your item(s) of interest.

Sections:

To Place order the following are required:

- Purchase order MUST reference Quote #: QUO-21257-Q2S5D5
- For Service contract, may purchase Total Care New plus up to 90 days from date of install using quote QUO-21515-S7C0C3-0
- Reference deviations from Metrohm USA T&C
- If this purchase is Tax Exempt, you must supply a Tax Exempt certificate with Purchase Order.
- Emailed or Faxed to Customer Support Department
    - Email: CustomerSupport@Metrohmusa.com
    - Fax: 813-316-4900

If you have any questions or would like to amend this document, please feel free to contact us.

Sincerely,

Greg Sand
greg.sand@metrohmusa.com

TO PLACE YOUR ORDER
Email: customersupport@metrohmusa.com
Metrohm USA, Inc.
9250 Camden Field Parkway, Riverview, FL 33578
Toll-free: 866-METROHM (638-7646) • Fax: 813-316-4900 • www.metrohm.com

Metrohm USA Inc.

SALES QUOTATION

Quotation Number QUO-21257-Q2S5D5-4

Description		Total
Line Items 2-8: IC x 2, Autosampler, Detectors		
	Subtotal	*$54,598.20*
Line Items 11-12: PC and Software		
	Subtotal	*$6,708.80*
Line Items 15-20: Columns and Guards		
	Subtotal	*$0.00*
Line Items 23-28: Regeneration and Inverse Suppression Items		
	Subtotal	*$3,869.60*
Line Items 31 and 32: Installation and Training		
	Subtotal	*$5,385.00*
Line Item 35: 10-year Suppressor Warranty		
	Subtotal	*$0.00*
Line Items 38-43: Eluent Production Module for VFA and 300.0		
	Subtotal	*$8,261.00*
Total Discount		**$44,891.40**
Total Amount		**$78,822.60**

Optional Yearly Service Contract after year 1 (Please Reference separate quote QUO-21515-S7C0C3-0) **$11,236.90**

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Metrohm USA Inc.

SALES QUOTATION

Quotation Number QUO-21257-Q2S5D5-4

Line	Item no.	Description	Qty.	Unit Price	Discount	Total
1	IC x 2, Autosampler, Detectors					
2	**29302460**	Compact IC Flex Oven/SeS/Deg	1	$27,795.00	$5,559.00	**$22,236.00**
3	**29250020**	Eco IC	1	$15,092.00	$3,018.40	**$12,073.60**
4	**28580020**	ProfIC Sample Processor: Pump	1	$15,231.00	$3,046.20	**$12,184.80**
5	**62041440**	Sample rack 148x11mL+3x300mL: IC	1	$1,798.00	$359.60	**$1,438.40**
6	**65330110**	IC Equipment: Inline Ultrafiltration	1	$2,294.00	$1,147.00	**$1,147.00**
7	**SNG-IC31000**	11mL vials w/caps, Qty 1000	1	$119.00	$119.00	**$0.00**
8	**28509010**	ProfIC Conductivity Detector MF	1	$6,898.00	$1,379.60	**$5,518.40**
9	Subtotal					**$54,598.20**
10	PC and Software					
11	**66059332**	MagIC Net 3.3 Professional CD: 1 license	1	$8,224.00	$4,112.00	**$4,112.00**
12	**SNG-TI17407**	OptiPlex All In One	1	$3,246.00	$649.20	**$2,596.80**
13	Subtotal					**$6,708.80**
14	Columns and Guards					
15	**61006520**	Metrosep A Supp 5 - 150/4.0	1	$1,812.00	$1,812.00	**$0.00**
16	**61006500**	Metrosep A Supp 5 Guard/4.0	1	$345.00	$345.00	**$0.00**
17	**61005200**	Metrosep Organic Acids - 250/7.8	1	$3,553.00	$3,553.00	**$0.00**
18	**61005250**	Metrosep Organic Acids Guard/4.6	1	$1,151.00	$1,151.00	**$0.00**
19	**ERA-IC1035**	CUSTOM ANION MIX: 3	1	$92.00	$92.00	**$0.00**
20	**ERA-IC1101**	A Supp 5 Eluent 20X Concentrate 1L	1	$102.00	$102.00	**$0.00**
21	Subtotal					**$0.00**
22	(1) Dosino Regeneration and (2) Inverse Suppression Kits					
23	**28000010**	Dosino	1	$2,847.00	$569.40	**$2,277.60**
24	**65330190**	IC Equipment: Dosino Regeneration	1	$977.00	$195.40	**$781.60**

TO PLACE YOUR ORDER

Email: customersupport@metrohmusa.com

Metrohm USA, Inc.

9250 Camden Field Parkway, Riverview, FL 33578

Toll-free: 866-METROHM (638-7646) • Fax: 813-316-4900 • www.metrohm.com

Metrohm USA Inc.

SALES QUOTATION

Quotation Number QUO-21257-Q2S5D5-4

Line	Item no.	Description	Qty.	Unit Price	Discount	Total
25	**62842020**	Adapter sleeve f. Suppressor D22mm Vario	1	$31.00	$6.20	**$24.80**
26	**62832000**	MSM-A Rotor	1	$982.00	$196.40	**$785.60**
27	**GFS-IC5783**	SUPPRESSOR REGENERANT SOLUTION - 1L	1	$50.00	$50.00	**$0.00**
28	**ERA-IC1165**	100mM LICL SUPPRESSOR REGEN. SOLN, 1L	1	$168.00	$168.00	**$0.00**
29	Subtotal					**$3,869.60**
30	Installation and Training					
31	**SER-ICTRNG01**	On-Site Essential IC Training	1	$2,697.00	$0.00	**$2,697.00**
32	**SER-ICINST03**	IC Installation & Familiarization Service	1	$2,688.00	$0.00	**$2,688.00**
33	Subtotal					**$5,385.00**
34	10-year Suppressor Warranty					
35	**SER-ICSUPP02**	10 Year Suppressor Warranty	1	$9,000.00	$9,000.00	**$0.00**
36	Subtotal					**$0.00**
37	Eluent Production Module for VFA and 300.0					
38	**29410010**	Eluent Production Module	1	$9,841.00	$4,920.50	**$4,920.50**
39	**62061110**	Tray with Sensor for 850	1	$1,444.00	$722.00	**$722.00**
40	**62061120**	System connector ProfIC/Compact IC	1	$656.00	$328.00	**$328.00**
41	**28000010**	Dosino	1	$2,847.00	$1,423.50	**$1,423.50**
42	**65330090**	IC Equipment: Additional eluent for 941	1	$1,592.00	$796.00	**$796.00**
43	**62769000**	Sensor FULL compl. for 61626000	1	$142.00	$71.00	**$71.00**
44	Subtotal					**$8,261.00**
Total Discount						**$44,891.40**
Total Amount						**$78,822.60**

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Quotation Number QUO-21257-Q2S5D5-4

31	**SER-ICTRNG01: Training Details**	IC Essential Training is delivered at the customer site at time of instrument installation. Training covers System Startup (Equil, Shutdown), MagIC Net Overview (Workplace, Database, Method, Configuration), Running Determinations, Calibration Reprocessing, Database Management and Tailored Maintenance Plan.	1	$2,697.00	$0.00	**$2,697.00**
32	**SER-ICINST03: Installation Details**	Installation Service for MiVDT, MiPCT (Power Plant), Cation Suppression, Transition Metals (UV-PCR), Cr(VI) or Empower IC systems. Installation Service includes: • Installation of hardware & software • Workplace & environmental suitability assessment • System startup & column conditioning • Linearity & reproducibility test • Pre-defined application checkout • Detailed installation record • Instrument familiarization	1	$2,688.00	$0.00	**$2,688.00**

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Metrohm USA Inc.

SALES QUOTATION

Quotation Number QUO-21257-Q2S5D5-4

Line	Item no.	Description	Qty.	Unit Price	Discount	Total
1	**SER-IC10104**	The Total Care New Plus (TCNP) Service Agreement begins at time of agreement purchase and includes: • Two (2) years of service coverage • Priority response for unlimited repairs including travel, labor and parts • One (1) annual performance maintenance service executed at the beginning of year 2 • Dedicated Technical Support Hotline with TeamViewer Interactive on-line support • 25% Discount on Training Courses held at MUSA facility (Tampa FL, Houston, TX or Fountain Valley, CA) • 5% Discount on Consumables	1	$797.00	$0.00	**$797.00**
2	**SER-IC18844**	The Total Care New Plus (TCNP) Service Agreement includes: • Two (2) years of service coverage • Priority response for unlimited repairs including travel, labor and parts • One (1) annual performance maintenance service executed at the beginning of year 2 • Dedicated Technical Support Hotline with TeamViewer Interactive on-line support • 25% Discount on Training Courses held at MUSA facility (Tampa, FL, Houston,TX or Fountain Valley, CA) • 5% Discount on Consumables	1	$4,837.00	$1,451.10	**$3,385.90**
3	**SER-IC18844**	The Total Care New Plus (TCNP) Service Agreement includes: • Two (2) years of service coverage • Priority response for unlimited repairs including travel, labor and parts • One (1) annual performance maintenance service executed at the beginning of year 2 • Dedicated Technical Support Hotline with TeamViewer Interactive on-line support • 25% Discount on Training Courses held at MUSA facility (Tampa, FL, Houston,TX or Fountain Valley, CA) • 5% Discount on Consumables	1	$4,837.00	$0.00	**$4,837.00**
4	**SER-IC18734**	The Total Care New Plus (TCNP) Service Agreement includes: • Two (2) years of service coverage • Priority response for unlimited repairs including travel, labor and parts • One (1) annual performance maintenance service executed at the beginning of year 2 • Dedicated Technical Support Hotline with TeamViewer Interactive on-line support • 25% Discount on Training Courses held at MUSA facility (Tampa, FL, Houston,TX or Fountain Valley, CA) • 5% Discount on Consumables	1	$1,125.00	$0.00	**$1,125.00**
5	**SER-IC18004**	The Total Care New Plus (TCNP) Service Agreement includes: • Two (2) years of service coverage • Priority response for unlimited repairs including travel, labor and parts • One (1) annual performance maintenance service executed at the beginning of year 2 • Dedicated Technical Support Hotline with TeamViewer Interactive on-line support • 25% Discount on Training Courses held at MUSA facility	1	$1,092.00	$0.00	**$1,092.00**

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SALES QUOTATION

Quotation Number QUO-21257-Q2S5D5-4

Line	Item no.	Description	Qty.	Unit Price	Discount	Total
		(Tampa, FL, Houston,TX or Fountain Valley, CA) • 5% Discount on Consumables				
Total Discount						**$1,451.10**
Total Amount						**$11,236.90**

Metrohm's Standard installation service provides you with all aspects of quality assurance and is the ideal installation product for laboratories operating outside of a regulated environment. In accordance with detailed instructions, your system is properly installed and tested to verify functionality.

Metrohm USA offers a 3 year limited warranty on all new Metrohm Instruments. For complete details, please see our warranty statement at www.metrohmusa.com/Support/Warranty

Please refer to www.metrohmusa.com/Metrohm/How-To-Buy.html for Metrohm USA standard terms and conditions.

Leasing options available

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SALES QUOTATION

Quotation Number QUO-21257-Q2S5D5-4

General Terms and Conditions

Pricing. The above prices and terms are valid for final destination as defined by this quotation. This quotation expires 30 days after date of issue, unless otherwise specified on the first page of this document. Shipments are F.O.B. point of shipment and all title to the equipment and risk of loss and injury shall pass to the buyer upon the transfer of the Equipment to the freight carrier.

Credit Terms. Unless otherwise agreed to in writing, all customer payment terms will be set at Net 30 days after the date of invoice, subject to credit approval. METROHM USA, INC. may require customer to provide a signed credit application prior to establishing payment terms. In some circumstances, partial or upfront payment in advance of purchase maybe necessary, as dictated by customer credit. Please see invoice document for payment remittance information.

Collections Activity. Purchaser may be required to pay interest on any amounts past due at the rate of one (1%) percent per month or as allowable by applicable law, whichever is greater. METROHM USA, INC. reserves and retains a security interest in the Equipment shipped to customer, until all amounts due have been paid in full. In the event of account non-payment, placement with a collections agency, or other action necessary to collect on a past due balance, the Buyer agrees to reimburse collection costs, legal fees, and court cost incurred by METROHM USA, INC. in connection therewith.

Taxes. METROHM USA, INC. standard prices do not include applicable sales, services, use, or similar taxes. The amount of any such tax which METROHM USA, INC. may be required to pay or collect will be added to the invoice and paid by the Buyer unless the Buyer has furnished a valid tax exemption certificate acceptable to the taxing jurisdiction prior to shipment. If an exemption certificate provided to METROHM USA, INC. by Buyer is subsequently, through no fault of METROHM USA, INC., determined to be invalid, METROHM USA, INC. will attempt to acquire an exemption certificate, notarized affidavit of exempt use or other necessary documentation from Buyer. Failure to furnish a valid exemption certificate, notarized affidavit or other necessary documentation in a timely manner, the previously unpaid sales, use or similar excise tax will be billed to and paid by the Buyer.

Product Returns. Items returned for customer convenience (and not for product or part failure or warranty issues) will be subject to a 20% restocking fee ($100 minimum). Customers must contact METROHM USA, INC. customer support (via customersupport@METROHMUSA.com) for a Return Authorization Number (RA#) within 14 days of shipment from METROHM USA, INC. to be eligible for return credit. Customers must return items within 10 days of receiving RA #. Item must be in new and unused condition, packed in original packaging and container, and include all manuals, peripherals and accessories.

Warranties. The equipment listed in this quotation is warranted to be free from defects in workmanship and materials for a limited time period, starting from the date of shipment to the original Customer, provided that the Equipment has been maintained and operated in strict conformity with the Operating Instructions. See our website for more details and to see our industry leading Warranty Statement. . (www.metrohmusa.com/Support/Warranty.html)

DISCLAIMERS. THE EXPRESS WARRANTIES IN THIS LIMITED WARRANTY STATEMENT ARE IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, REGARDING THE PRODUCTS PURCHASED FROM METROHM USA, INC. METROHM USA, INC. EXPRESSLY DISCLAIMS ALL SUCH OTHER WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NON-INFRINGEMENT OF THIRD-PARTY RIGHTS. WITHOUT LIMITING THE FOREGOING, METROHM USA, INC. DOES NOT WARRANT THAT THE OPERATION OF ANY SOFTWARE OR INSTRUMENTS COMPRISING THE PRODUCTS WILL BE UNINTERRUPTED OR ERROR-FREE.

Limitation of Liability. In no event shall METROHM USA, INC. be liable for indirect, incidental, exemplary, or consequential damages, or for loss of profits or loss of use arising from or related to any of the products or services from METROHM USA, INC. In no event shall any liability of METROHM USA, INC. arising in connection with any article sold hereunder (whether such liability arises from a claim based on contract, warranty, tort, indemnity, or otherwise) exceed the actual amount paid by BUYER to METROHM USA, INC. for such article. The remedies provided herein are BUYER'S sole and exclusive remedies, and METROHM USA, INC. shall not be liable for any other claim or damages of any kind related to the products or services.

Intellectual Property. The Sale of equipment to Buyer will in no way transfer to Buyer any right of ownership in any patents, copyrights, trademarks, technologies, designs, specifications, drawings or other intellectual property incorporated into the equipment.

Indemnification. Buyer agrees to indemnity, defend and hold harmless METROHM USA, INC. and its directors, officers, employees, agents, successors and assigns (separately and collectively, the "Indemnitee") from and against any and all third-party liabilities, claims, demands, losses, damages, costs and expenses (including reasonable attorneys' fees) which may be assessed against or incurred by Indemnitee relating to or arising out of (a) any negligence, grossly negligent or intentional misconduct or omission of Buyer or its directors, officers, employees, agents, successors and assigns in connection with the provision or use of Equipment, except to the extent cause by the negligent, grossly negligent or intentional misconduct or omission of Indemnitee; or (b) any material breach of this quotation.

Buyers Delegation. The Buyer may not assign or delegate any of its rights or obligations under any quotation without the prior written consent of METROHM USA, INC. Any attempted assignment or delegation in violation of this paragraph shall be null and void.

Parties Bound. This quotation shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors and assigns where permitted by this quotation.

Miscellaneous. The rights and obligations of the parties and any claims or disputes relating thereto, shall be governed by and construed in accordance with the laws of the State of Florida, and the federal laws of the United States applicable therein, excluding their conflicts of law principles. In the event that any of the provisions of this quotation shall be held by a court or other tribunal of competent jurisdiction to be unenforceable, the remaining portions of this quotation shall remain in full force and effect, provided that in such event the parties agree to negotiate in good faith substitute enforceable provisions which most nearly effect the parties intent in agreeing to be bound by this quotation.

TO PLACE YOUR ORDER

Email: customersupport@metrohmusa.com

Metrohm USA, Inc.

9250 Camden Field Parkway, Riverview, FL 33578

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BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: Public Hearing for the proposed Public Project Bid Ordinance 2021-2 Entitled "An Ordinance Relating to Bid Cost Thresholds and Bidding Procedures for Public Projects"

Recommendation: Conduct the public hearing for the proposed Public Project Bid Ordinance 2021-2, pass the Ordinance, and authorize publication of a summary of the passed Ordinance in the Marin Independent Journal newspaper.

Summary: At the March Board meeting, the Board accepted the proposed revisions to the Public Bid Ordinance and set a public hearing for the April 13 meeting to considering passing it. A summary of the proposed Ordinance was published in the Independent Journal (IJ) newspaper on April 5.

Discussion: Public Bid Ordinance 2021-2 is attached and is posted on the Agency's website. If the Board passes the proposed Ordinance, staff will publish the attached summary of the passed Ordinance in the Marin IJ. A summary of the noteworthy changes is presented below

a) Ordinance title changed from "An Ordinance Relating to Bid Cost Thresholds and Bidding Procedures for Construction Services" to "….. Procedures for Public Projects."

b) An introduction section replaced the title section in the 2013 Ordinance, and the Ordinance is titled the Public Project Bid Ordinance.

c) A background was added to explain the Ordinance history.

d) References to general sections in the Public Contract Code were replaced with specific references.

e) Various abbreviations were added throughout the Ordinance for clarity.

f) Provisions and terms in the Ordinance were revised or added to align with specific language in the Uniform Public Construction Cost Accounting Act (UPCCAA).

g) The 2019 UPCCAA tier limits replaced the prior limits in Attachment 1 – Table 1.

Attachments:
1) Summary of the passed Ordinance for publication.
2) Proposed Public Project Bid Ordinance No. 2021-2

ATTACHMENT 1

SUMMARY OF PASSED ORDINANCE 2021-2

AN ORDINANCE REVISING THE CONSTRUCTION SERVICES ORDINANCE OF CENTRAL MARIN SANITATION AGENCY

The Central Marin Sanitation Agency (CMSA) previously adopted Ordinance 2013-3, an ordinance relating to bid cost thresholds and bidding procedures for construction services, on June 11, 2013.

This passed Ordinance makes numerous edits and revises certain provisions in the Ordinance to improve its readability. Revisions include:

- Ordinance title changed to "…..Procedures for Public Projects."
- Introduction and background sections were added.
- References to general sections in the Public Contract Code were replaced with specific references.
- Provisions and terms were revised or added to align with specific language in the Public Contract Code.
- Force account and purchase order monetary limit increased to $60,000
- Informal bidding monetary limit increased to $200,000

The Board of Commissioners of Central Marin Sanitation Agency, pursuant to Health and Safety Code Section 6490 and 6491.3, conducted a public hearing on the Ordinance at their April 13, 2021 meeting. The Ordinance was passed by the following vote and will be effective beginning on May 13, 2021:

AYES:
NOES:
ABSENT:

A copy of proposed Ordinance can be viewed or downloaded from the Agency's website (www.cmsa.us), or is available at the Agency offices.

_____

Jason R. Dow, P.E.
General Manager

ATTACHMENT 2

CENTRAL MARIN SANITATION AGENCY

AN ORDINANCE RELATING TO BID COST THRESHOLDS AND BIDDING PROCEDURES FOR PUBLIC PROJECTS

Ordinance No. 2021-02

April, 2021

CENTRAL MARIN SANITATION AGENCY

Ordinance No. 2021-2

AN ORDINANCE RELATING TO BID COST THRESHOLDS AND BIDDING PROCEDURES FOR PUBLIC PROJECTS

TABLE OF CONTENTS

CENTRAL MARIN SANITATION AGENCY

Ordinance No. 2021-2

AN ORDINANCE RELATING TO BID COST THRESHOLDS AND BIDDING PROCEDURES FOR PUBLIC PROJECTS

SECTION 1 – INTRODUCTION

The Commission of the Central Marin Sanitation Agency (CMSA) of Marin County does adopt as follows: This Ordinance shall be known as the "Public Project Bid Ordinance of the Central Marin Sanitation Agency" and may be so cited and pleaded. This Ordinance is adopted pursuant to provisions of Section 22000 *et. seq*. of the Public Contract Code ("PCC").

SECTION 2 – BACKGROUND

CMSA passed Ordinance No. 2013-03 on June 2013 to update the original 2004 Ordinance that replaced the bidding procedures and costs thresholds in the Sanitary District Act.

SECTION 3. PURPOSE AND SCOPE

A. The purpose of this Ordinance is to adjust the monetary limits for public projects, as defined in PCC Section 22002 (c), which can be carried out with administrative decision, informally bid, and formally bid procedures. The contracting limits imposed by PCC Section 20803 of the Sanitary District Public Construction Act are superseded by Section 22030 et.seq. of the Uniform Public Construction Cost Accounting Act (UPCCAA).

B. With the adoption of the Ordinance, public projects that are equal to or less than the Tier 1 dollar amount specified in Attachment 1 may be performed by CMSA's staff, by force account with a contractor, by negotiated contract, or by use of a purchase order.

C. Public projects that are equal to or less than the Tier 2 dollar amount specified in Attachment 1 may be bid informally, which requires the maintenance of a list of qualified contractors identified according to categories of work that must be updated annually. All contractors on the list for the applicable category of work being bid are mailed, faxed, or emailed a notice inviting informal bids not less than 10 calendar days before bids are due. The notice is also provided to

specified trade journals as named by the California Uniform Construction Cost Accounting Commission (CUCCAC). The notice shall describe the public project in general terms and how to obtain more detailed information about the public project, and state the time and place for submission of bids.

D. Public projects that are more than the Tier 2 dollar amount specified in Attachment 1 shall, except in the case of an emergency as provided in PCC Section 22035, be bid by formal bidding procedure which includes advertising, a bid period of minimum duration, pre-published public bid open date and time, and opening sealed bids.

SECTION 4. AUTHORITY

The authority for CMSA adoption of these alternative public contract bidding procedures is derived from the UPCCAA for the State of California.

SECTION 5. ADMINISTRATION

A. Public projects, as defined by the UPCCAA and in accordance with the dollar limits listed in Section 22032 (a) & (b) of the Public Contract Code, may be let to contract by informal procedures as set forth therein.

B. A list of contractors identified according to categories of work shall be developed and maintained in accordance with the provisions of PCC Section 22034 and criteria promulgated from time to time by the CUCCAC.

C. Where a public project is to be performed which is subject to the provisions of this Ordinance, a notice inviting informal bids shall be mailed, faxed, or emailed to all contractors for the category of work to be bid, as shown on the list developed in accordance with PCC Section 22034, not less than 10 calendar days before bids are due and to all construction trade journals as specified by the CUCCAC in accordance with PCC Section 22036. Additional contractors and/or construction trade journals may be notified at the discretion of CMSA, provided however:

(1) If there is no list of qualified contractors maintained by CMSA for the particular category of work to be performed, the notice inviting bids shall be sent only to the construction trade journals specified by the CUCCAC.

(2) If the product or service is proprietary in nature such that it can be obtained only from a certain contractor or contractors, the notice inviting informal bids may be sent exclusively to such contractor or contractors.

D. The General Manager is authorized to award informal contracts pursuant to this Section.

E. In January, 2019, the limits shown in Attachment 1 were set by the CUCCAC. The General Manager is authorized to periodically update the Tier amounts in Attachment 1 to reflect the most recent limits set by the CUCCAC.

SECTION 6. ADOPTION AND NOTIFICATION

This Ordinance shall take effect and be in force thirty (30) days from the date of its passage, and before the expiration of fifteen (15) days after its passage, it or a summary of it shall be published once, with the names of the Commissioners voting for and against it, in the Marin Independent Journal, a newspaper of general circulation published in the County of Marin.

PASSED, APPROVED AND ADOPTED by the Board of Commissioners of the Central Marin Sanitation Agency in the County of Marin, State of California, this 13th day of April, 2021 by the following vote:

AYES:

NOES:

ABSENT:

ATTEST:

_____

Michael Boorstein – Commission Chair

_____

Dean DiGiovanni – Commission Secretary

ATTACHMENT 1

The table below shows the CUCCAC amounts for the three Tiers referenced in Ordinance 2021-2, as of April 13, 2021. The General Manager will update the Tier amounts after the CUCCAC approves adjustments.

Table 1

	CUCCAC Limit
Tier 1	$60,000 or less
Tier 2	$200,000 or less
Tier 3	More than $200,000

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Joyce Cheung, Associate Engineer
Peter Kistenmacher, Technical Services Manager

Approved: Jason Dow, General Manger

Subject: Pilot Digester Study Presentation

Recommendation: Receive the Pilot Digester Study presentation, and provide comments and/or direction to the General Manager, as appropriate.

Summary: The 2017 Facilities Master Plan (Master Plan) evaluated long-term opportunities to expand CMSA's renewable power delivery program, and identified that the Agency's two anaerobic digesters have substantial excess capacity to accept additional external organic waste to produce additional biogas. Our digesters currently accept external organic feedstocks, such as FOG and food waste, at a volatile solids loading rate that frequently approaches 30 percent. As noted in the Master Plan, a 30-35% percent threshold has been referenced in a limited number of published industry studies as a potential upper boundary to avoid digester instability and reduced digestion performance. However, codigestion studies were primary with FOG and results are often system specific. Because CMSA is interested in accepting additional external organic feedstocks and has sufficient excess digestion capacity available to do so, a CMSA specific pilot study was recommended to determine what the organic loading rate thresholds are under CMSA's actual operating conditions.

CMSA began planning for the pilot digester study in 2018. With Board approval, staff procured and customized the study equipment, with two 600-gallon digesters, and developed a detailed study plan to test various organic loading rates. The pilot digesters began operation in October 2019 and the study was concluded on March 12, 2021. During this entire process, an inter-departmental team of operations, maintenance, environmental services, laboratory, and engineering staff, as well as multiple technical services department interns worked together and developed creative and innovative ways to construct and operate the equipment.

Technical services also assembled a technical advisory committee of known national and international anaerobic digestion experts to guide CMSA's team in the planning, equipment procurement, and operations of the pilot. These advisors included expert staff from Carollo Engineers, Black & Veatch Corporation, and Veolia Water Technologies, all of whom contributed dozens of hours of their expert staff's time for free for more than two years to

assist CMSA. Their continued input and engagement were critical in procuring the used pilot equipment, setting up the pilot plan, and monitoring and troubleshooting ongoing pilot operations. Additionally, with the help of Black & Veatch, technical services staff was able to leverage the innovative nature of this pilot to obtain free real-time anaerobic digestion performance monitoring equipment (from Sentry Technologies) for the duration of the pilot period, including free periodic data analysis services. The equipment proved to be highly useful in predicting impending digester upsets significantly earlier than CMSA's conventional digestion performance metrics, and is currently being piloted in CMSA's full scale digesters.

Preliminary results of the pilot suggest that CMSA could import substantial amounts of additional external organics to increase its biogas production, far beyond the 30 percent loading threshold referenced in the Master Plan. Associate Engineer Joyce Cheung will summarize the key findings and lessons learned from this pilot study at the April 13 Board meeting.

Figure 1: Pilot Digester Study Trailer

Alignment with Strategic Plan: This project is a strategic action in the Agency's FY21 Business Plan to support Goal 3 – Objective 3.2 as shown below.

Goal Three: *CMSA will further incorporate green business principles and consider renewable resource opportunities in its short- and long-term planning.*

Objective 3.2: *Perform a Digester Volatile Solids Loading (VSL) Pilot Study*

Action: *Complete the Digester Volatile Solids Loading Pilot Study*

Attachment: Pilot Digester Study Presentation Slides (Draft)

ATTACHMENT

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Pilot Digester Study

BOARD PRESENTATION

APRIL 13, 2021

DRAFT

Agenda

- Study Goals and Context
- Study Summary
  - Planning
  - Implementation
  - Troubleshooting
  - Results
- Next Steps
- Questions

DRAFT

CMSA Power Delivery Program

1985
WWTP constructed with 2 anaerobic digesters

2012-2013
Digester Improvements and Organic Waste Receiving Facility

2016
PG&E Interconnection Agreement Modification

2017-2018
Facilities Master Plan

Master plan identified potential organic waste loading limit

2018
PPA with MCE

2019
Cogeneration System Predesign

2019-2021
Pilot Digester Study

2020-2021
Cogeneration System Design and Installation

2021
- New PPA with MCE
- New PG&E Interconnection Agreement

2021
Liquid Organic Waste Storage Tank – Design

2021
Organic waste pilot project with South Bayside Waste Management Authority

2022
Liquid Organic Waste Storage Tank – Construction

Completed

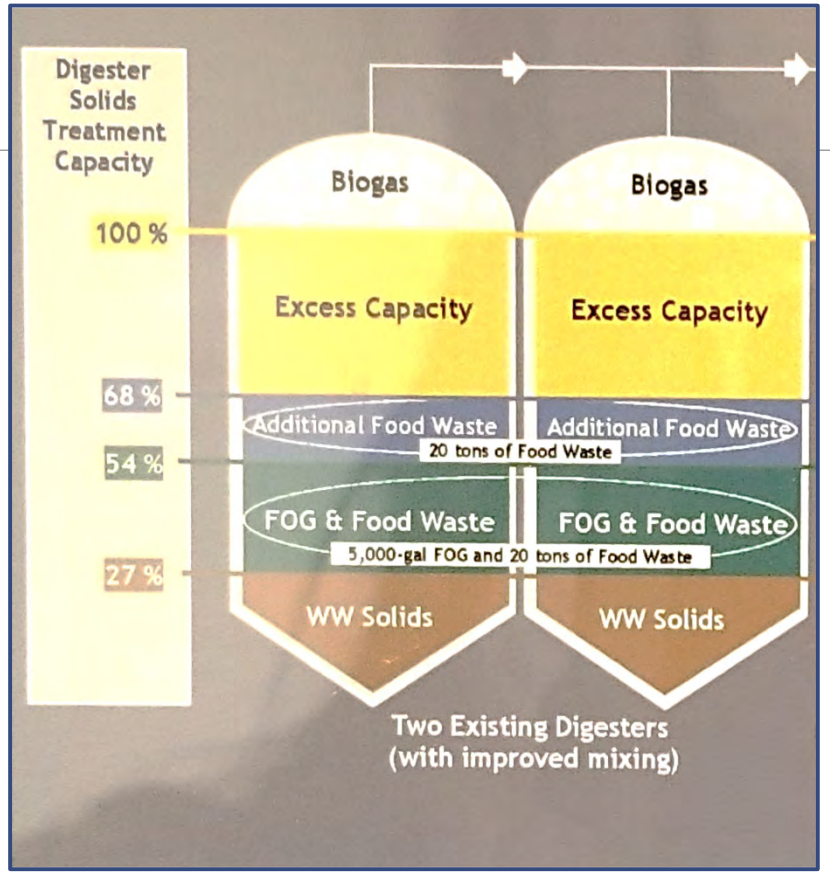
In Progress

Planned

DRAFT

Study Goal

- **Can CMSA sustainably increase external organic loading rate in the digesters above the 30% Master Plan VSL limit?**
- Attempt to match current feedstock characteristics (MSS, FOG) as much as possible.
- Study results can inform future Power Delivery Program Planning



Planning Process

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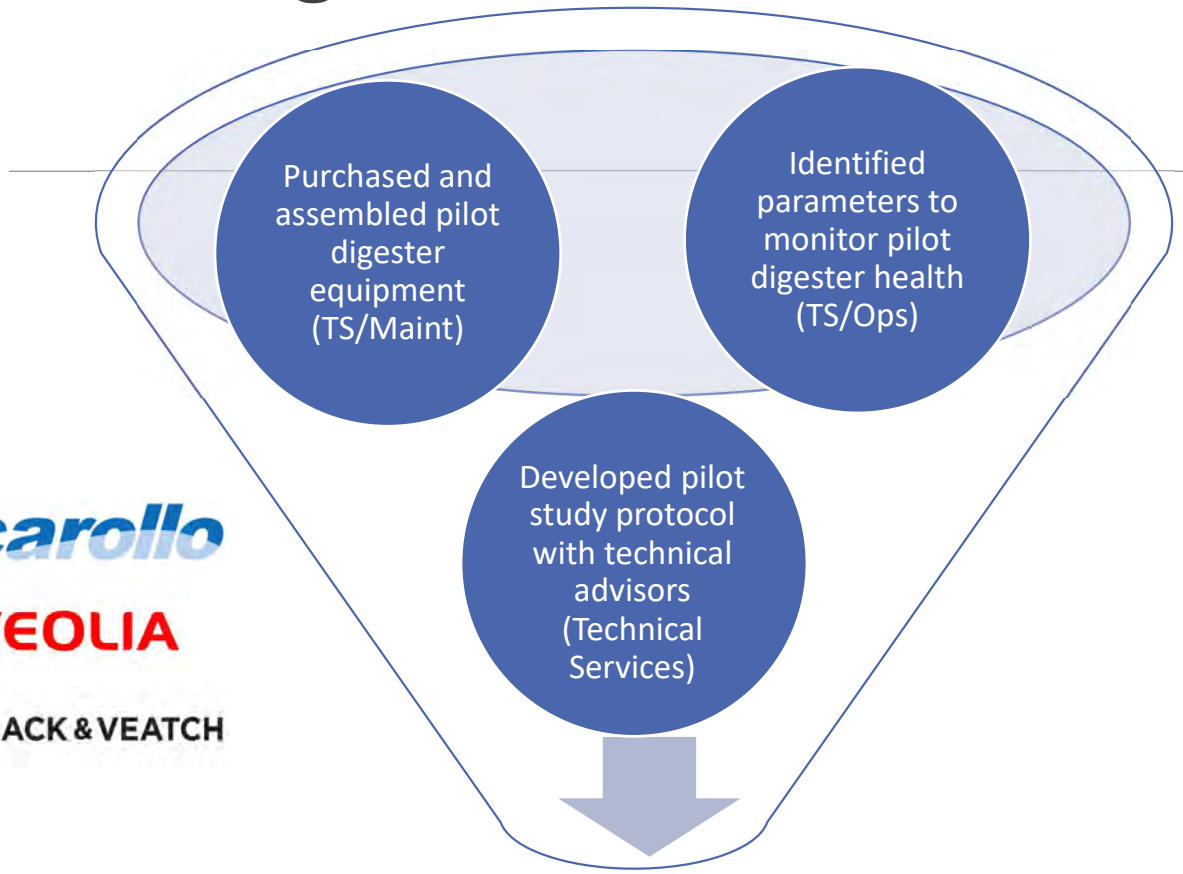

carollo

VEOLIA

BLACK & VEATCH

Begin Pilot Digester Study in October 2019

Parameter	Criteria for Good Digester Health
Ammonia	< 1,500 mg/L
pH	6.8 to 7.2 SU
Gas Generation Rates	No significant day-to-day changes
Gas Methane	exceeding 65%
Gas Carbon Dioxide	below 35%
Volatile solids reduction rate	exceeding 62.5 %
Volatile acids (VA)	less than 100 mg/L
Total alkalinity	1,500 to 3,500 mg/L
VA fluctuations	<10mg/L between days
Total Solids	1.0%-3.0%, ±0.1
Sentry bio-electrode sensor	Daily diurnal pattern corresponding to feeding

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Pilot Test Plan

- Increased organic loading rates at 10% increments
- Digester testing feeding schedule:

Target External Organic Loading Rate (%)	Food Waste (Gal)	FOG (Gal)	TWAS (Gal)	Primary Sludge (Gal)	Total Daily Volume per Digester (Gal)
30	0.77	5.23	6.45	10.75	23.2
40	0.77	8.05	5.39	8.99	23.2
50	0.77	10.87	4.34	7.23	23.2
60	0.77	13.48	3.35	5.59	23.2
60	1.54	12.71	2.96	6.84	23.2
70	2.31	12.71	2.96	6.84	23.2

Process Flow Diagram

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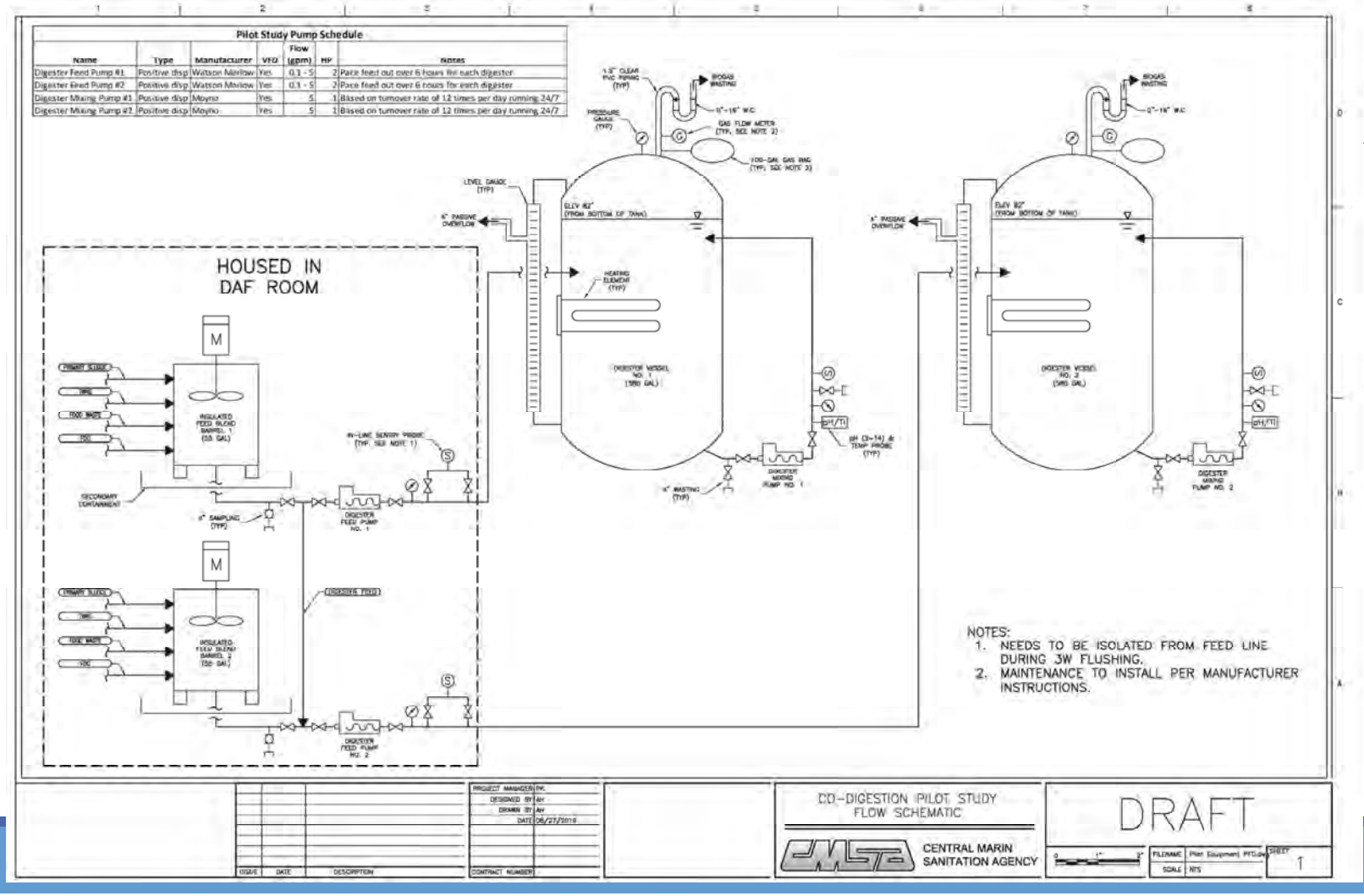

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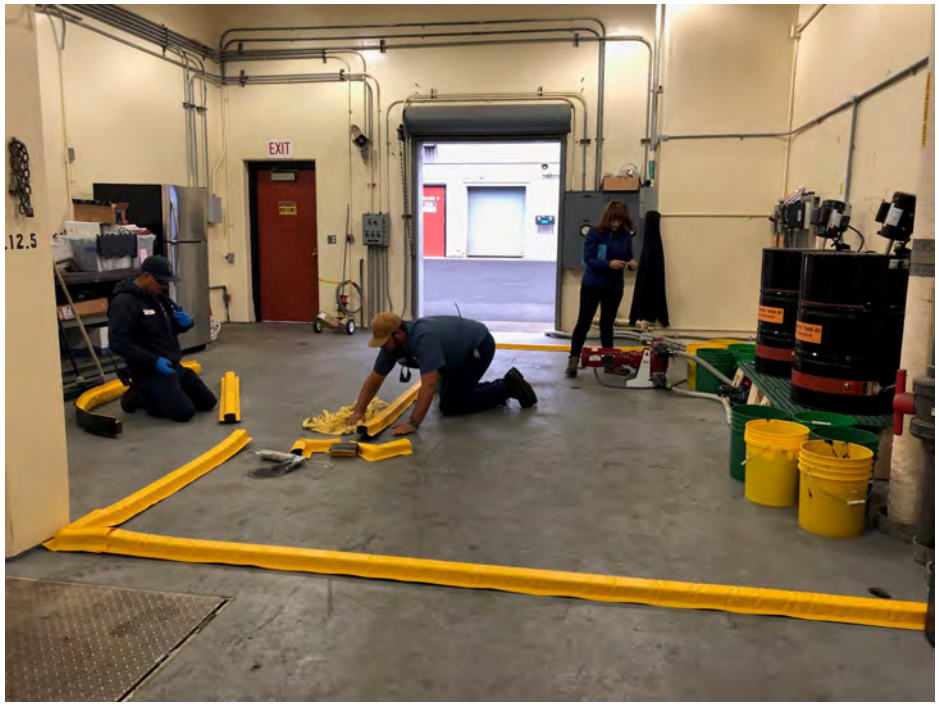
Setup and Installation



Pilot Equipment

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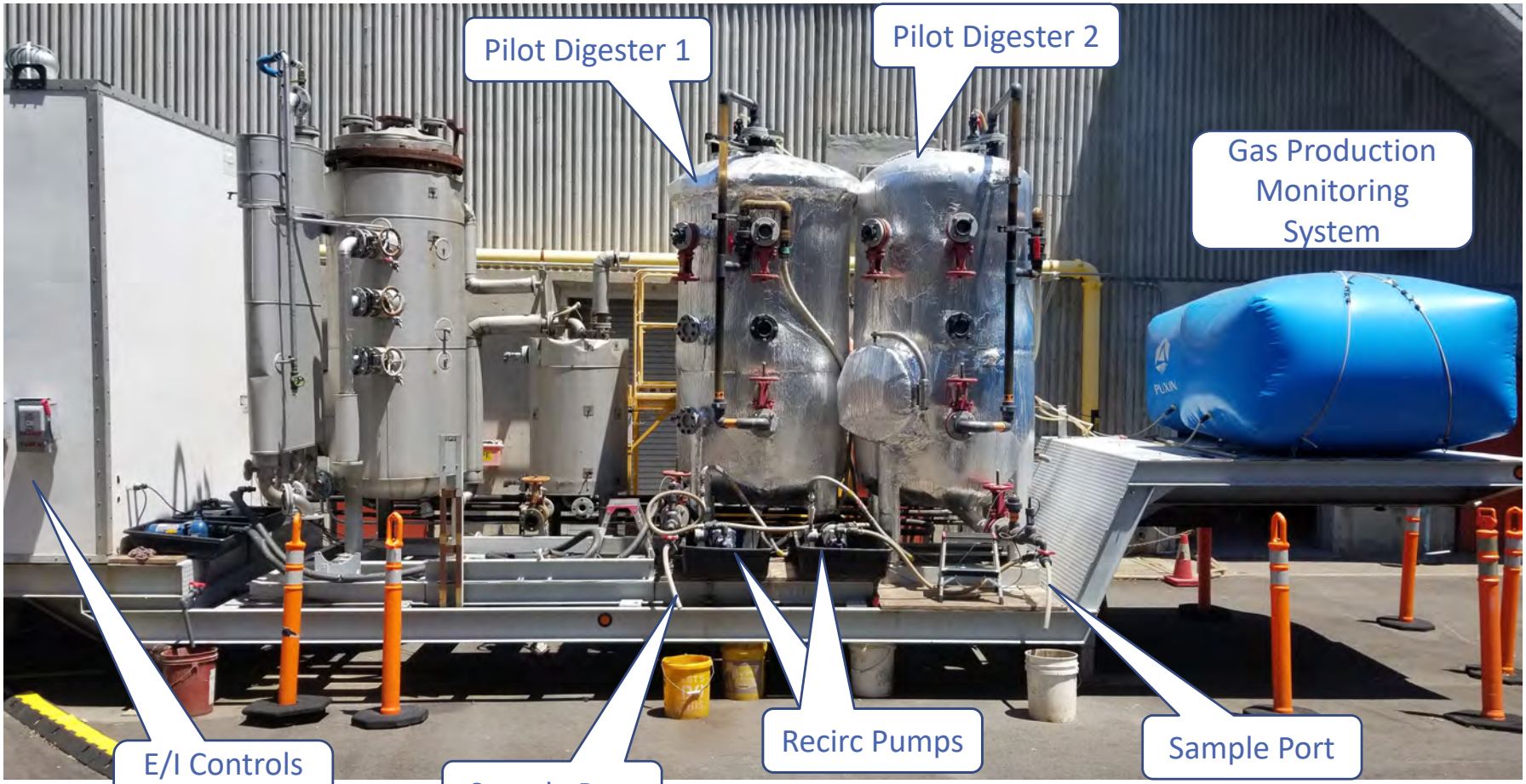

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Gas Production Monitoring System

Average gas generation approximately 80 cf/day

Gas Bags

Gas Counters

E/I Controls Room

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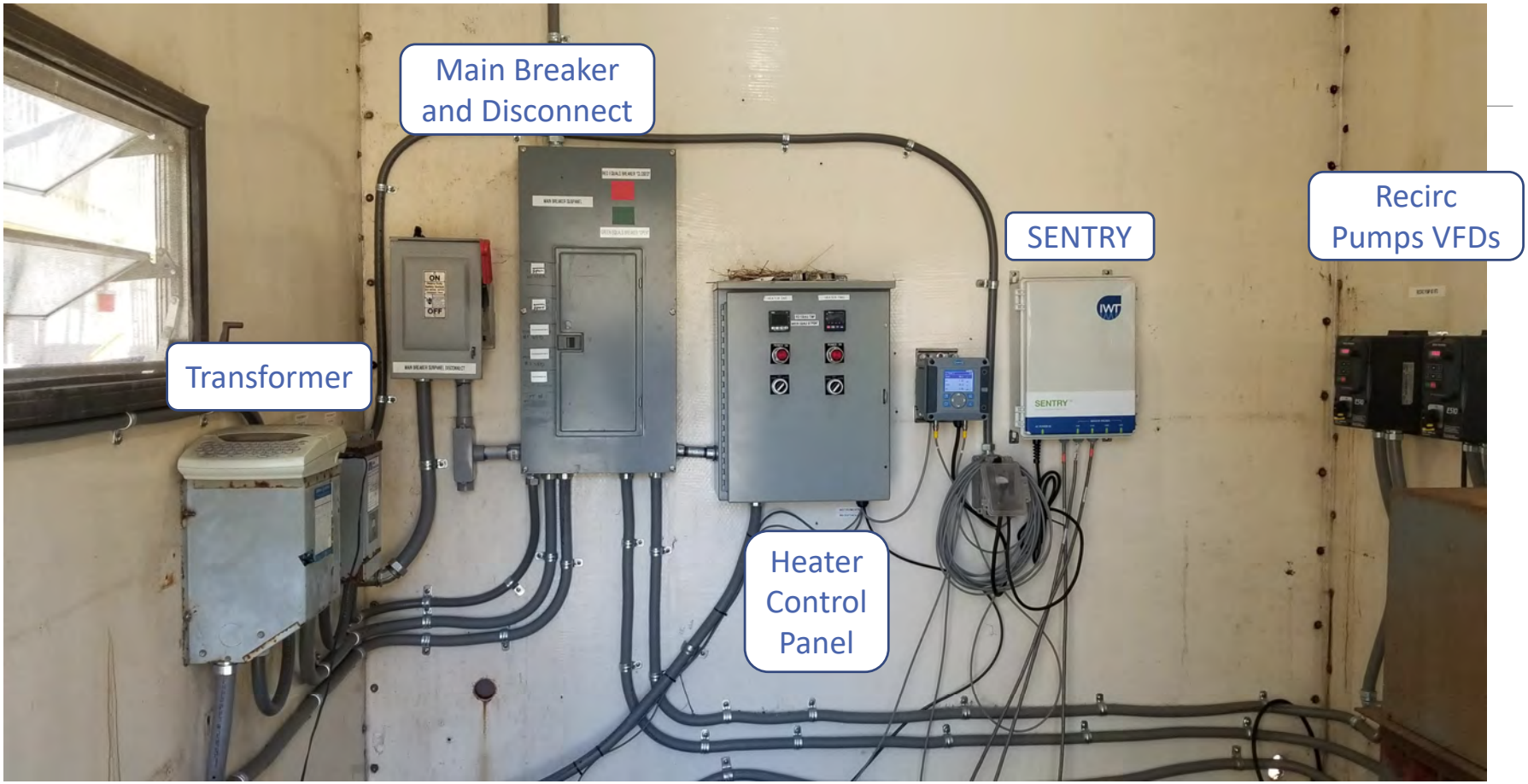

Feedstock Preparation and Mixing Area

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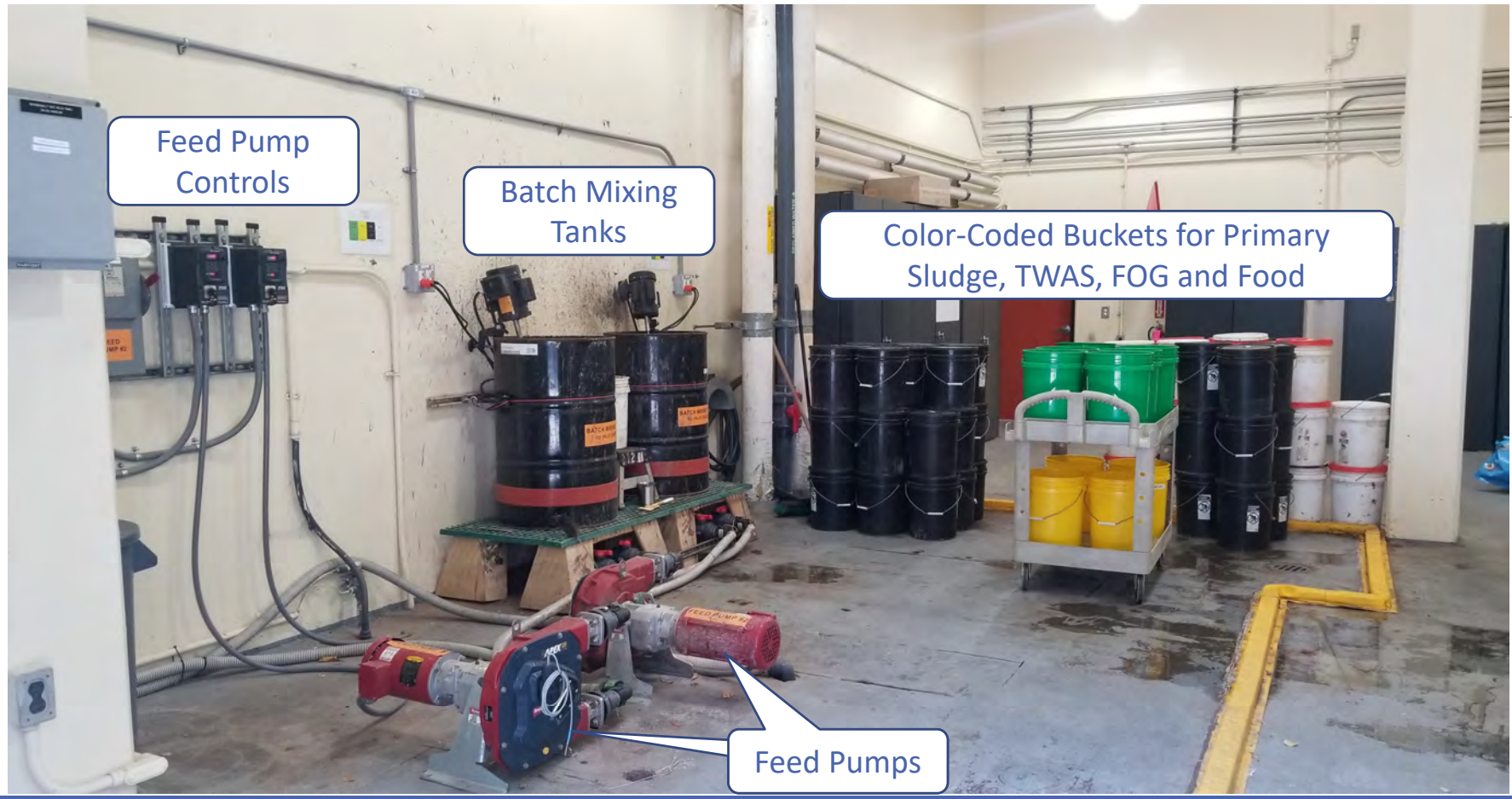

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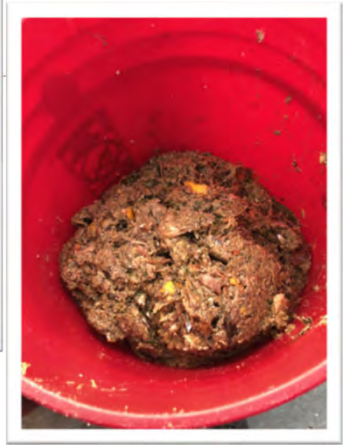
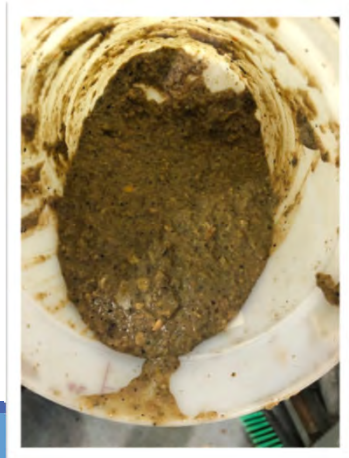
Feedstock Preparation – Food Waste





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Feedstock Preparation – FOG

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Feedstock Preparation – TWAS & PS

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Batch Mixing

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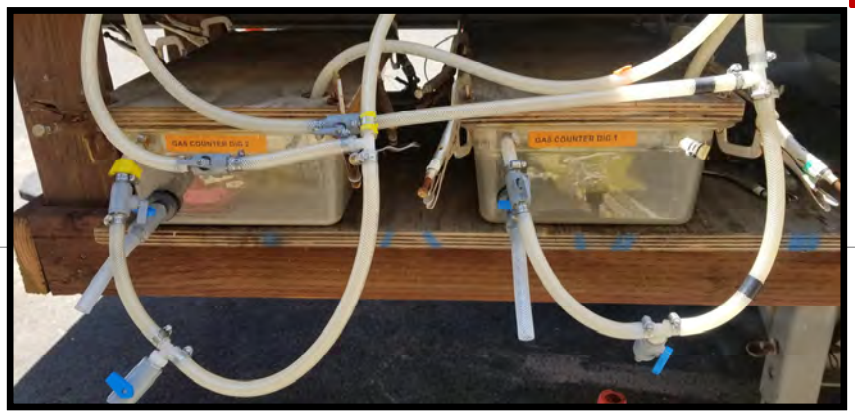
Unforeseen challenges



Gas meter issues

Mix Pump Leaks

Leaky Gas Bags

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Pilot Digester Upset - May 2020

Concentrated grease loadings ("hot loads") injected from May 9 – 14

Hot loads escalated the VFA concentrat and also ramped up productior

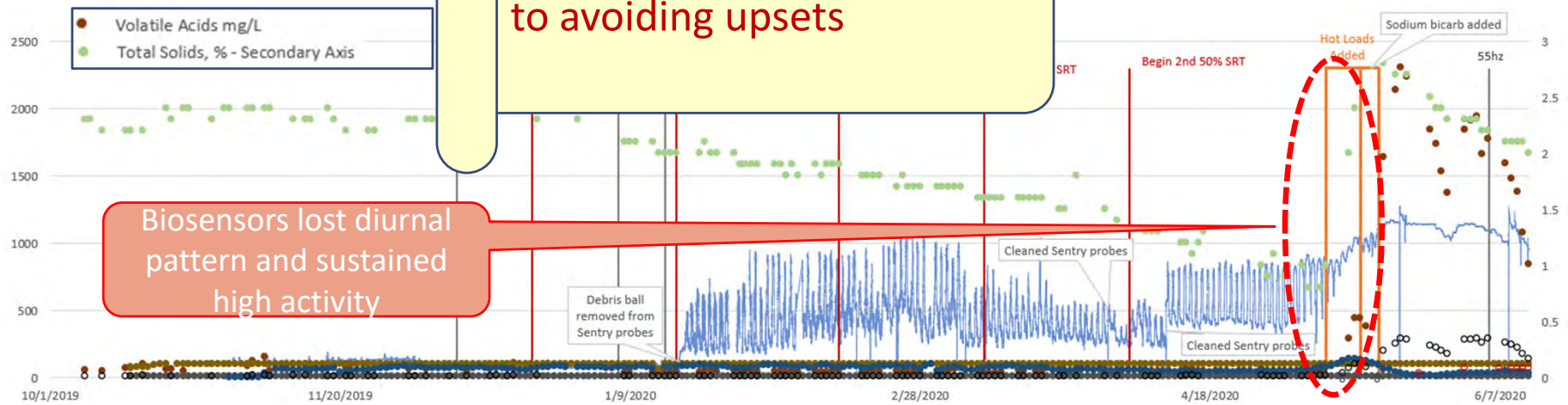
Continued feeding caused

Stopped concentrat

Added sodium bicarbonate May 14 – 17

D1 recovered, but needed to restart D2 on June 3

Lessons Learned:
Daily monitoring of feedstock quality is critical to avoiding upsets



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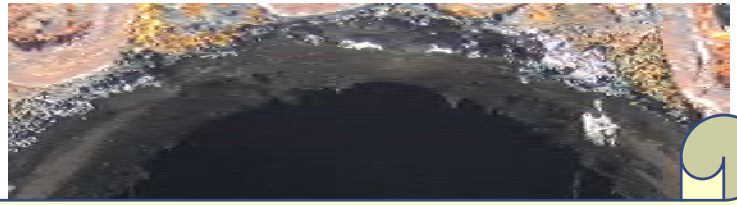
Investigation of D2 Contents

- Tested for Toxicity and Micronutrient deficier
  - Ammonia
  - Heavy Metals (Cu Cr, Fe, Ni, Zn)
  - Cations (Ca, Mg, K
  - Chlorinated Hydrocarbons (SV 846, 8121)



Lessons Learned:

- Increasing mixing rates can help eliminate dead zones
- Reduce sodium bicarbonate additions
- Increase focus on daily feedstock monitoring prior to injection into digester

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Pilot Digester Upset & Remedial Actions - July 2020

A load of high solids FOG was added on July 15

VFAs increased on

Stopped FOG

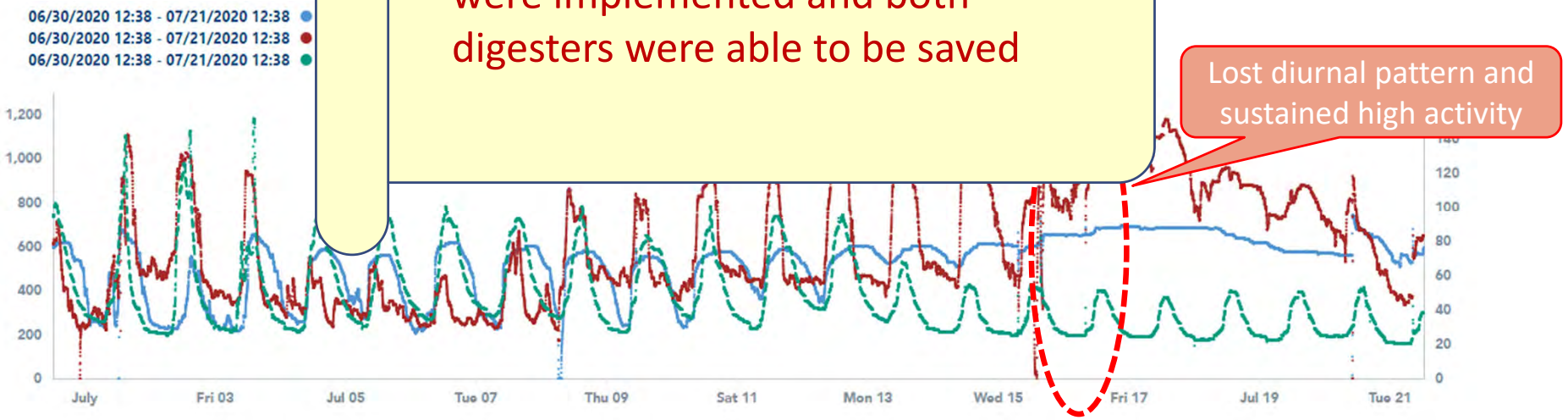
Resume

on

CMSA modified the mixing procedures to monitor the % solids in FOG before feeding it into the digesters

Lessons Learned:

- Lesson learned from prior upset were implemented and both digesters were able to be saved



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Summary of Results

- Pilot digester study ran from October 2019 – March 2021
- Through trial and error, including two digester upsets after concentrated FOG loadings, staff fine-tuned the digester feeding process to mitigate sudden undesired loading spikes.
- Increase in food waste loadings were more stable than FOG loadings
- **Actual external organic waste VSL loading rates reached (average of last 30 days of pilot):**
  - **62% for Pilot Digester #1**
  - **53% for Pilot Digester #2**

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Next Steps

- Review data, summarize findings, document study, including how to manage load spikes

- Pilot study protocols can be replicated for the full-scale digester study as we begin to accept the food waste from South Bayside Waste Management Authority

- Determine whether to design a Phase II of the pilot study

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CMSA Power Delivery Program

1985
WWTP constructed with 2 anaerobic digesters

2012-2013
Digester Improvements and Organic Waste Receiving Facility

2016
PG&E Interconnection Agreement Modification

2017-2018
Facilities Master Plan

Master plan identified potential organic waste loading limit

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Liquid Organic Waste Storage Tank – Design

2021
Organic waste pilot project with South Bayside Waste Management Authority

2022
Liquid Organic Waste Storage Tank – Construction

Completed

In Progress

Planned

DRAFT

Questions?

Thank you!

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Joyce Cheung, Associate Engineer

Approved: Jason Dow, General Manager

Subject: Administration Building Roof Replacement Project – Construction Contract Award

Recommendation: Award the construction contract for the Administration Building Roof Replacement Project to Stronger Building Services, and authorize the General Manager to execute the contract agreement.

Summary: Public bids for the Administration Building Roof Replacement Project (Project) were opened on March 23, 2021. Stronger Building Services located in San Leandro was the lowest, responsive, responsible bidder with a bid amount of $721,000. If the construction contract is awarded, the Project's Notice to Proceed for the construction work will be issued by May 6, 2021 and construction would be substantially completed by July 2021.

Fiscal Impact: The Agency's Capital Improvement Program allocates $889,200 in FY22 for facility roof repairs. There is a $68,500 allowance for maintenance building repairs, if needed, and the remaining $820,700 will be used to fund the Project' construction, engineering services during construction (ESDC), construction management support, the building permit, specialty inspections required by the City of San Rafael, and any change orders.

Background: The Administration Building has a wood-framed metal panel roof that was built during the original facility construction in the early-1980s. The building's roof has reached the end of its useful life as evidenced over the last several years by growing deterioration and leaks due to failing sealants and corrosion where the metal roofing panels interface with underlying metal structural clips. This project replaces the entire metal roof, replaces the patio and lobby skylights, removes dry rot, and provides wood framing for the new patio skylight.

The Board adopted the Project's contract documents and authorized the General Manager to advertise the Project for public bidding at the February 2021 meeting. The Notice Inviting Sealed Bids was issued on February 10, 2021 and was published in the Marin Independent Journal, the Agency's website, and various Builders' Exchanges. Eighteen contractors attended the non-mandatory pre-bid meeting on March 2 and four sealed bids were received on March 23, 2021. Table 1 on the following page summarizes the bid opening results.

Table 1. Bid Opening Results

Contractor	Total Bid Amount	% Above/Below Engineer's Estimate
Engineer's Estimate	*$677,000*	
Pioneer Contractors	$713,000	+5.32%
Stronger Building Services	$721,000	+6.50%
Mars Construction	$750,000	+10.78%
Best Contracting Services	$779,168	+15.09%

Staff reviewed the received bids and although Pioneer Contractors was the apparent low bidder, their bid did not include any project references as required under Section 00 46 00 Section B - "Bidder's Experience and Qualifications." Due to their failure to provide this information with the bid, the bid from Pioneer Contractors was considered non-responsive and therefore rejected from consideration.

Staff has reviewed the bid package, financial qualifications, and safety data from the second lowest bidder, Stronger Building Services, and determined theirs is responsive.

Alignment with Strategic Plan: This project is a strategic action in the Agency's FY21 Business Plan to support Goal 1 – Objective 1.2 as shown below.

Goal One: *CMSA will continue to operate and maintain its wastewater facilities to produce high quality effluent and biosolids, within a changing regulatory environment.*

Objective 1.2: *Manage the Agency's equipment and assets*

Action: *Design a replacement roof for the Administration Building*

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Joyce Cheung, Associate Engineer

Approved: Jason Dow, General Manger

Subject: RAS Pumps Replacement Project – Adopt Construction Contract Documents

Recommendation: Adopt the construction contract documents for the RAS Pumps Replacement Project, and authorize the General Manager to advertise the project for public bidding.

Summary: The construction contract documents for the RAS Pumps Replacement Project (Project) are available for review at the Agency's administrative office. The Project's scope of work includes replacing six return-activated sludge (RAS) pumps that have heavy corrosion and wear, replacing the seal water system, and replacing aging check valves, plug valves, and associated piping and electrical wiring necessary to configure the new RAS pumping system. To facilitate the timely completion of the project, the Board had previously authorized the pre-purchase of the RAS pumps at the January 2021 meeting. If the project is authorized to bid, the construction work is anticipated to begin in July 2021.

Fiscal Impact: The estimated construction cost for this project is $454,000. The Agency's 10-year Capital Improvement Program (CIP) has allocated $877,300 for the design and construction of the RAS Pumps Replacement Project. To-date, $300,819.22 has been authorized for professional engineering design services and the pre-purchase of the RAS pumps. The CIP budget provides sufficient funding to construct the Project based on its estimated cost.

Discussion: The current RAS pumps and associated piping were installed during the original facility construction and began operation in 1985. In recent years, staff observed heavy corrosion and wear on the pump shafts and volute casings. Because the pumps are at the end of their useful service lives, CMSA solicited proposals from qualified engineering firms, and retained West Yost in September 2020 to assess the hydraulic conditions and provide design services to replace the RAS pumping system.

The new RAS pumps were selected based on pump drawdown tests and historical flow data. The Board authorized the pre-purchase of the pumps in January 2021, and the pumps are currently scheduled to be delivered in July 2021.

As part of this project, the existing custom-welded pipe fittings will be replaced with standard reducers, the swing check valves will be upgraded to meet current standard dimensions, the Victaulic couplings and gaskets will be replaced, and the piping and pump bases will be reconfigured to accommodate the new pumps which have bigger suction/discharge dimensions and a slightly larger footprint. The aging seal water system and electrical conduit and wiring from the disconnect switches to the new pumps will also be replaced.

If public bidding is authorized, staff will issue the public bid advertisement immediately after the Board meeting and will present a construction award recommendation at the June Board meeting. Construction is anticipated to begin in July 2021 and be substantially completed by the beginning of the wet weather season. The project's contract documents are available at Agency's administrative office for Board member and public review.

Figure 1: Existing custom-welded fitting on RAS pump suction header

Figure 2: Existing RAS pump

Alignment with Strategic Plan: This project is a strategic action in the Agency's FY21 Business Plan to support Goal 1 – Objective 1.2 as shown below.

Goal One: *CMSA will continue to operate and maintain its wastewater facilities to produce high quality effluent and biosolids, within a changing regulatory environment.*

Objective 1.2: *Manage the Agency's equipment and assets*

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

Subject: Board of Commissioners Meeting Time

Recommendation: Consider changing the meeting time of the regular monthly Board of Commissioners meeting.

Discussion: Chair Boorstein and I were recently discussing the reduced traffic congestion on Highway 101 and some major Marin County roads during the COVID-19 Pandemic, and that traffic may be less in the future as some employers will allow their employees to telework full or part-time. This led to a subsequent conversation about the current Board meeting time and the reason it was moved from 6pm to 7pm several years ago was due to increasing traffic congestion. With the possibility of reduced future traffic, we thought it was an appropriate time to check in with Board members about their interest and availability for an earlier regular monthly Board meeting.

Meeting Time Background: Between 1985 and December 2007, the Board's regular monthly meeting time was 7:30pm and closed sessions were held after the conclusion of the regular meeting. During that time period when an earlier meeting time was discussed, the Board chose not to select an earlier time as it conflicted with one or more Board members' personal or work schedules. In December 2007, after retirement of a long-term Board member, the Board decided to change the meeting time to 7pm.

In January 2013, after several months of late closed session meetings over the prior year, the Board decided to schedule closed sessions before the regular monthly meeting, with the specific time selected by the Board Chair and General Manager based on the projected duration of the closed session discussion. Closed sessions were usually scheduled at 6pm. During the fall of 2014, the Board scheduled special monthly meetings at 5pm, and in January 2015, the Board decided to change the regular meeting time to 6pm.

In February 2016, a few Board members mentioned they regularly get caught in the late afternoon/early evening traffic congestion on Highway 101 and/or on its north and south bounds off-ramps to Interstate 580. Some Board members noted that they are caught in this traffic congestion when driving to the CMSA Board meetings. An outcome of that discussion was the Board decision to move the regular monthly meeting to 7pm when traffic congestion was lighter.

BOARD MEMORANDUM

April 8, 2021

To: CMSA Commissioners and Alternates

From: Kate Brouillet, Administrative Specialist

Approved: Jason Dow, General Manager

Subject: April Informational Items

Recommendation: Informational, provide comments or direction to the General Manager, as appropriate.

A. Report from The Water Research Foundation dated January 2021
Re: Food Waste Co-Digestion at Central Marin Sanitation Agency (CA) – Business Case Analysis Case Study

B. Side Agreement dated March 22, 2021 from the Sewerage Agency of Southern Marin
Re: Employee Assistance

C. Letter dated March 25, 2021 to Anna Gallagher, California Regional Water Quality Control Board
Re: Monthly Self-Monitoring Report (SMR) – February 2021

D. Letter dated March 26, 2021 from Lystek Organic Materials Recovery Center
Re: Product Sales of Lystegro in 2020 – Revenue Sharing Component

E. Check dated March 26, 2021 from Marin Clean Energy
Re: Feed-in-Tariff sales for January 2021

F. Email dated April 4, 2021 from Roger Paskett, City of Mill Valley
Re: Ryan Word

A

Food Waste Co-Digestion at Central Marin Sanitation Agency (CA)

Business Case Analysis Case Study

Glossary	
BioMAT Tariff	Bioenergy Market Adjusting Tariff
CMSA	Central Marin Sanitation Agency
Cogen	Cogeneration
FOG	Fats, oils, and grease
FTE	Full-time equivalent
F2E	Food2Energy
GHG	Greenhouse gas
kW, kWh	Kilowatt, kilowatt-hour
MCE	Marin Clean Energy
mgd	Million gallons per day
MSS	Marin Sanitary Service
PG&E	Pacific Gas & Electric
PPA	Power purchase agreement
ReMAT Tariff	Renewable Market Adjusting Tariff (CA)
tpd	Tons per day
WRRFs	Water resource recovery facilities

ACKNOWLEDGMENTS

This report was prepared by the Environmental Law Institute (ELI), a non-partisan research and education center working to strengthen environmental protection by improving law and governance worldwide. It is an updated version (January 2021) of the profile of Central Marin Sanitation Agency (CMSA) in Chapter 8 of:

> Jones, C.A.; Coker, C.; Kirk, K.; and Reynolds, L. 2019. **Food Waste Co-Digestion at Water Resource Recovery Facilities: Business Case Analysis.** Project ENER19C17/4792. The Water Research Foundation: Alexandria VA and Denver CO. Copyright © 2019 The Water Research Foundation.

The Environmental Law Institute gratefully acknowledges The Water Research Foundation's financial and administrative assistance in funding the project through which this information was discovered, developed, and presented. The project team would like to thank Jason Dow, General Manager, CMSA and Kim Scheibly, former Director of Compliance & Customer Relations, and Justin Wilcock, Director of Operations, Marin Sanitary Service, for their generous contribution of time to the development of this case study.

Cover photo is an aerial view of CMSA facilities, courtesy of CMSA. Cover design by Evan Odoms.

Central Marin Sanitation Agency Treatment Plant, Central Marin Sanitation Agency (CMSA), California

About the Agency

- Service area: several municipalities and unincorporated areas, and San Quentin State Prison, in the San Rafael and Ross Valley areas of central Marin County
- Operating since: 1979
- Wastewater customers served: 104,500
- Employees: 44
- Governance: Joint Powers Authority with four member agencies, with a six-member Board of Commissioners representing the four member agencies

About the WRRF

- Location: San Rafael, California
- WRRF operating since 1985
- Size: 7.5 mgd average dry weather plant flow (permitted dry weather flow: 10 mgd)
- Anaerobic digesters: two 130,700-cubic feet mesophilic digesters
- Food waste feedstocks: fats, oil and grease (FOG) and pre-consumer commercial food scraps
- Food waste as share of total anaerobic digestion (AD) feedstocks: 11% by volume
- Feedstock preprocessing: food scraps: Marin Sanitary Service (MSS), removes contaminants manually and with a magnet, and grinds to 1" pieces, CMSA does additional preprocessing with chopper pumps, a rock-trap grinder, and paddle finisher; FOG: CMSA does preprocessing
- Electricity provider: Marin Clean Energy (MCE)
- Biogas end use: 750-kW engine generates heat and power for internal use and CMSA sells excess electricity to MCE for $.105/kWh; by the end of 2021, CMSA will install a new 995-kW cogeneration system to increase power deliver to MCE at a blended rate of $0.83/kWh
- Biosolids management: Class B applied to farmland in Sonoma County (only in dry season, June-October), 43%; alternative daily cover at landfills, 27%; and Class A quality bio-fertilizer (produced at the Lystek facility in Fairfield, CA), 30%

Drivers and Goals

- Drivers: PG&E grant for feasibility study (motivated by California Greenhouse Gas Solutions Law, AB 32 (2006); Marin County's Zero Waste Goal by 2025 plus new state requirements on food scrap recycling; new state reduction goals on short-lived climate pollutants and a mandated 50% organic waste diversion from landfills
- Goals: food scrap diversion from landfills, natural gas and energy savings and energy self-sufficiency, using underutilized digester and energy generation equipment, providing a service to local solid waste hauler

Summary

The Central Marin Sanitation Agency (CMSA) manages the wastewater treatment for several municipalities and unincorporated areas, as well as San Quentin State Prison, in the San Rafael and Ross Valley areas of Central Marin County. It operates a wastewater treatment plant with average daily dry weather flow of 7.5 mgd and a peak wet-weather capacity flow of 125 mgd (daily flows have a wide range).

CMSA's road to co-digestion began in 2008 when the City Manager of San Rafael convened a meeting with Jason Dow, the CMSA general manager; Patty Garbarino, president of the nearby private solid waste hauling company Marin Sanitary Service (MSS); and Pacific Gas & Electric representatives to pursue a greenhouse gas (GHG) emissions reduction grant from Pacific Gas and Electric (PG&E) for a feasibility study to reduce GHG emissions. San Rafael obtained the grant. With a green corporate culture and seven franchise agreements covering a service area closely aligned with CMSA's service area, MSS seemed like a good partner for sustainability-oriented CMSA. Further, the opportunity seemed fortuitous for both parties. Garbarino was looking for food waste diversion opportunities to reach Marin County's goal of zero food waste by 2025, and Dow was looking for opportunities to put to beneficial use its extra digester and cogeneration engine capacity.

Dow and Garbarino developed the concept of a Food2Energy (F2E) program that would deliver food scraps collected by MSS to a CMSA organic waste receiving facility for processing and then anaerobic digestion. In order to get the support of the community-elected bodies that approve projects and associated rate increases, and ultimately the CMSA and MSS Boards, Dow and Garbarino dedicated a lot of time to explaining the program to stakeholders in their service areas.

With a positive conclusion from the methane capture feasibility study, the two organizations – the public wastewater utility and the private solid waste company – launched a close and successful F2E partnership. CMSA invested in a new receiving station for food waste and fats, oils, and grease (FOG), as part of a $7.65 million project to upgrade the digesters and related equipment. CMSA financed the project with extra funds in its capital investment accounts, due to leftover monies from a prior bond issue for a wet water flow management project (and substantial investment returns on the leftover monies). The communities supported rate increases spread out over five years to pay back the bonds.

CMSA modeled its onsite treatment system on concepts from nearby co-digestion pioneer, East Bay Municipal Utility District (EBMUD). However, the partners were determined to avoid EBMUD's problems with feedstock contamination. As a result, MSS limited F2E feedstocks to pre-consumer commercial food waste, and built many features into its outreach, collection and preprocessing to produce a clean feedstock. CMSA conducts additional preprocessing onsite.

For a variety of reasons – including limited enforcement to date of the California organics recycling mandate – the quantity of food scraps has not grown to the expected scale. As a result, FOG currently represents about 85% of CMSA's co-digestion feedstocks.

After conditioning the biogas, CMSA uses it to run its cogen engine to produce electricity. The biogas displaces purchases that CMSA would otherwise make of non-renewable natural gas. Valued in terms of natural gas displacement, the energy savings are relatively low because natural gas prices are low.

With the current co-digestion program, CMSA has achieved near energy self-sufficiency. Because it still has excess digester capacity, it is planning to expand co-digestion and energy production. It has a power purchase agreement to sell renewable energy to Marin Clean Energy (MCE), Marin County's clean-energy community-choice aggregation program, and an interconnection agreement with its local utility to enable the transmission. The next step of the project is to build a second cogen engine to produce additional heat and power and to increase sales, which will require a new MCE power purchase agreement and new interconnection agreement for the additional power generation and delivery.

Project 1: Food2Energy Co-Digestion Partnership with MSS

Managing Feedstock Risks

A 2008 Methane Capture Feasibility Study, supported by a PG&E grant, concluded that an MSS and CMSA Food2Energy partnership could create a cost-effective co-digestion program to increase biogas production and facilitate its beneficial use. In 2009, CMSA and MSS developed a Food2Energy (F2E) Work Plan, which included a project outreach and education strategy, and a predesign for the F2E facilities at MSS and CMSA. Jason Dow of CMSA and Patty Garbarino of MSS held extensive meetings with stakeholders in their service areas to explain the program. As a result, they gained the support of the community-elected bodies that approve projects and associated rate increases, and ultimately the support of their respective Boards.

At CMSA, a digester rehabilitation and upgrade project was expanded to include an organic waste receiving station. By enabling co-digestion of FOG and food scraps, the receiving station would allow the utility to leverage underutilized digester and cogeneration capacity. A further critical factor was the availability of extra funds in the capital investment accounts, due to leftover funds from a prior bond issue for a wet water flow management project (and associated investment returns). In May 2013, MSS and CMSA entered into a formal agreement to begin the F2E partnership to support co-digestion at CMSA. As part of the agreement, MSS delivers food scrap slurry solely to CMSA.

Strategies to Reduce Contamination

The partners identified approaches at each step of the feedstock supply chain to minimize contamination (Figure 1). In addition to extensive screening to remove contaminants, a key element was to restrict the

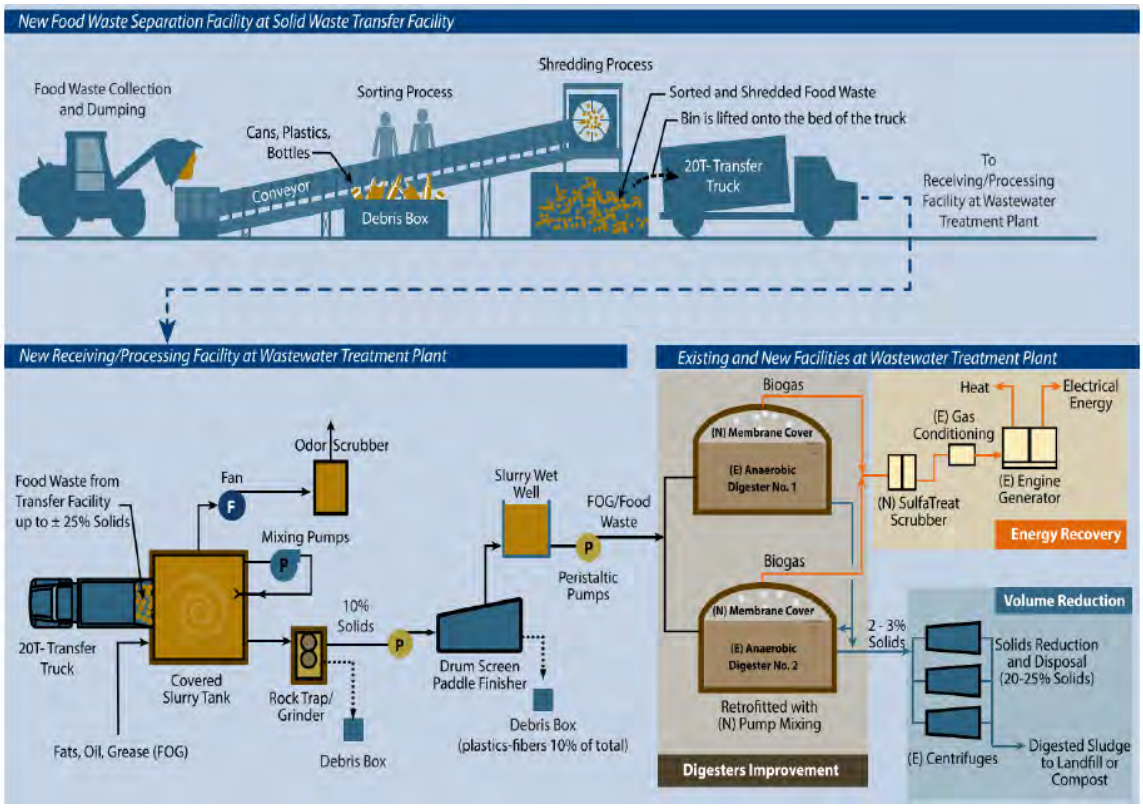

Figure 1. Marin Sanitary Service/Central Marin Sanitation Agency food scrap treatment train.
Source: Presentation. Central Marin Sanitation Agency. NACWA Energy Working Group. January 26, 2017.

F2E feedstocks to commercial back-of-the-house food scraps only, excluding post-consumer commercial and residential sources of food scraps to avoid their higher contamination levels.

MSS Strategies

MSS focuses on generators' establishments as the first line in quality control. It offers two organics recycling options. The standard one accepts comingled organics, including plant materials, food-soiled paper, and food scraps, and sends them to composting. The Food2Energy option is more restrictive: it targets large food waste generators (restaurants, delis, grocery stores), and restricts collections to back-of-the house commercial food scraps. For commercial customers who choose to participate in F2E, MSS supplies an F2E bin, which is separate from a comingled organics bin.

A dedicated MSS outreach coordinator works closely with generators, starting with an assessment as to which organics option is right for each generator. The coordinator organizes the official enrollment in the F2E program, provides staff training and monitoring, and provides re-training over time as needed. Another element promoting the quality of generators' participation is a dedicated rear-loader garbage truck. Though the rear-loaders are more expensive, MSS chose this model so that the driver can inspect loads as he empties the bins into the truck hopper; the driver notes any contaminants and communicates this back to the outreach coordinator, who follows up with the responsible generator. MSS has dropped a few participants due to repeated quality problems, but its focus is on retraining any customers with repeated contamination episodes, so that all provide clean materials. As a result of this first line in quality control, the MSS material delivered to the transfer station has a low level of contamination.

Figure 2. After an initial screening for contaminants on the MSS tipping floor, food scraps are loaded onto a conveyor belt for additional removal of contaminants. Source: MSS.

The second line in quality control is the processing onsite at the MSS transfer station. Staff first pick out contaminants on the tipping floor, and then send the material on a conveyor belt past a manual picking station line with two sorters who remove plastics, metals, etc. and past a magnet that removes any remaining ferrous metal. In the final stage, the scraps go into a grinder that produces pieces no bigger than 1" square. The processed scraps then are put into an airtight 20 cu. yd. container and hauled to CMSA, about a mile away.

CMSA Strategies

The third line of quality control is at CMSA, where the food scraps are mixed with FOG to create a slurry, and then further processed with a rock trap/grinder, followed by a drum screen paddle finisher. The resulting slurry (with up to 10% solids) is pumped into the digester.

The paddle finisher is able to remove small contaminants like twist-ties and food stickers; nearly all reject material is organic and fibrous and is composted. When the paddle finisher was first installed, CMSA planned to mix digested sludge with the slurry to warm it to prevent coagulation, which would have made the material unsuitable for composting. CMSA decided not to use this practice so MSS can take the rejected fibrous material to the composting facility they use for their comingled organics collection, WM Earth Care.

Strategies to Generate a Consistent Quantity of Supply

CMSA and MSS are also concerned with generating a consistent supply of quality feedstock. One key element is the level of services provided by the F2E coordinator, who actively recruits participants and provides guidance for enrollees. Another element is pricing. CMSA charges MSS a tip fee that is lower than the tip fee MSS pays for landfilling waste, a saving that MSS passes on to its customers. F2E collection is also partially subsidized by garbage collection fees. (Traditional recycling is fully subsidized by garbage collection fees.)

As a result, the fees MSS charges for F2E commercial collections, which vary by container size and service frequency, average less than 50% of the garbage rates. Over 90% of enrolled customers are able to realize cost-savings by removing their food waste from their landfill containers. Small customers who already have the minimum level of landfill service do not see cost savings but support the program because they recognize the positive environmental impacts outweigh the program cost.

The MSS Outreach Coordinator works closely with the customers the first few weeks on program implementation to determine the best container size and frequency of pickup; during this time, the fee for the program is waived. When the program started, MSS offered F2E pickup service three days per week, but quickly ramped up to offer up to 6 days per week of service. However, five years into the program MSS supplies 8 tons per day (tpd) of food scraps, about half the feasibility study estimate that 15 tpd was available. Part of the difference is because the feasibility study estimate included both pre- and post-consumer food, whereas MSS subsequently decided to exclude post-consumer waste to avoid its higher contamination levels. MSS also cites the currently limited enforcement of the current organics diversion mandate as another reason. It estimates that as of June 2019, approximately half of its commercial customers met the total municipal solid waste (MSW) generation threshold of 4 cu. yd. for coverage under the recycling mandate and about 25% were compliant with AB 1826. Contrary to expectations, MSS finds that the non-compliant organizations include some of the largest sources.

As a result, CMSA also accepts FOG, which now represents about 85% of food waste feedstocks based on volume, and about 65% based on tipping fee revenues. While FOG greatly increases biogas production, CMSA acknowledges a concern that the FOG supply is not guaranteed because haulers have a number of

options in the area, and are unwilling to make contractual commitments in order to be able to respond quickly if their economic opportunities change.

Project Impacts and Risk Management

Operational Impacts

Operational Upsets

CMSA has not experienced operational upsets with its co-digestion.

Biosolids

Production of biosolids may have increased, but any effect is hard to quantify due to the many factors causing variability. CMSA sends its Class B biosolids to a diversified set of uses, in accordance with restrictions set by California regulations, and anticipates maintaining a comparable allocation across the uses if the quantity increases. In the face of tightening California restrictions on biosolids uses, CMSA recently has begun sending a portion of its biosolids to the Lystek facility in Fairfield, CA, where it is turned into a liquid agricultural fertilizer. The remainder is applied to nearby farmlands in the dry season or sent to landfills as alternative daily cover in the wet season. For 2019, the projected allocations are 27%, 43%, and 30%, respectively.

Biogas and Electricity Generation

The co-digestion project increased annual biogas production up to 230% of prior production levels. Daily biogas production varies, depending on delivered organic waste volumes, and can exceed 350,000 cu. ft./day. Biogas is sent through the Biorem SulfaTreat scrubber to remove H_2S, a dryer to remove moisture, and then another media scrubber to remove siloxane, before going to a 750kW internal combustion engine generator to produce electricity and heat. The cogeneration system is very reliable and well maintained, with its equipment receiving regular preventive maintenance per the manufacturers' recommendation.

Downtime for unplanned corrective maintenance is normally low. For example, in 2020 the system was offline for five individual days during the year to troubleshoot various issues and make repairs. When the cogen engine is down, the biogas goes directly to heat CMSA's two hot water boilers and additional electricity is purchased from MCE to meet the facility's needs. Otherwise, waste heat from the cogen system heats the digesters. Before co-digestion, biogas powered the facility up to 8 hours per day when the cogen system was operating. Now biogas powers the facility 23 hours per day on average when the cogeneration system is running.

Regulatory Compliance

CMSA has not experienced any issues with compliance with its water permits. CMSA conducted an analysis on the environmental impacts of running a biogas-fueled combined heat and power (CHP) engine and found no significant impact that would compromise compliance with California air emissions standards.

Financial Impacts

MSS

MSS spent $530,000 on upgrades to their facilities and purchased two rear-loader trucks (at a total cost of around $275,000). Yearly operational costs (excluding loan repayment costs) are $499,000. Currently, three FTEs work in the program: one driver, one outreach coordinator, and one FTE sorter/processor.

On a per ton basis, commercial food waste is more expensive to collect relative to commercial garbage by about 30% and relative to mixed organics (for composting) by about 10%; only commercial recycling has higher per ton collection costs, primarily due to the lower density of the collections. When disposal/processing costs and recycling material sales revenues are factored in, food waste collection is the most expensive per ton waste stream, and commercial recycling becomes the least expensive.

The capital costs of the F2E program were covered by a 0.22% increase in base fees for all customers. About 65% of the operating costs are covered by subscription fees for the F2E program, which vary with container size and service frequency. The remaining costs are subsidized by garbage rates. (As noted above, no fee is charged for traditional recycling in the MSS service areas; program costs are entirely subsidized by the garbage rates.)

CMSA

Investment Costs

CMSA incurred $2 million in costs for the organic waste receiving station, which includes a 30,000-gallon tank, mixing pumps, rock trap grinder, paddle finisher, and odor control system. This investment was bundled within a $7.65 million investment package of digester upgrades, including new flexible membrane covers, pump mixing systems, and hydrogen sulfide scrubbers. CMSA covered the investment costs for the whole package from its capital investment accounts, including funds left over from a prior bond issue for a wet water management project, and the investment returns from those funds.

Figure 3. Truck offloading FOG at CMSA Organic Waste Receiving Facility. Source: CMSA.

Operating Revenues and Costs

CMSA charges MSS a fee of $24.27 per ton for food waste (as of 2020), which is lower than the fee that MSS pays for landfill disposal. CMSA calculates that this is equivalent to $.101/gallon, based on its lab measurements indicating that one gallon of food slurry weighs 8.34 lbs. (The fee is adjusted each year using the San Francisco Bay Consumer Price Index.) The CMSA ordinance fee schedule for FOG (effective as of November 2019) charges a sliding scale tipping fee for daily delivery volumes, which declines from $.06/gallon for the first 1500 gallons to no charge above 15,000 gallons.

In 2020, the water resource recovery facility (WRRF) earned an average of around $156,000 in tip fees, and accrued around $162,000 in savings of avoided natural gas purchases as a result of co-digestion.

The plant has experienced increased equipment maintenance, but has not needed to hire additional staff to implement the program. The plant does weekly preventive maintenance for pomace bins, the equipment area and the rock trap grinder; monthly maintenance for the pumps and paddle finisher; and

quarterly cleaning of the receiving station tank. It has also experienced unplanned maintenance of the feed pump hoses, averaging 6 hose replacements per year for a total of $12,000 in repairs.

As of 2020, increased annual operating revenue and avoided natural gas expenses ($318,000) exceed increased annual operating costs ($183,000).

Project 2: Expanding Co-Digestion and Generating Energy Sales

By 2020, CMSA had achieved near energy self-sufficiency with its current scale of co-digestion. Noting that they still had excess digester capacity to take advantage of, the WRRF staff began to explore new ways to create value from biogas that could be produced with additional co-digestion. However, because its air permit does not allow it to flare biogas except in emergency circumstances, CMSA's first priority was to establish its ability to export to the grid. In 2019, CMSA completed on-site electrical system improvements required in its PG&E interconnection agreement, and then received Permission to Operate allowing CMSA to delivery power to the PG&E utility grid. CMSA interconnection improvements cost around $100,000 for design and installation, and were completed in March 2019.

A related priority was to establish a long-term contract with a favorable feed-in tariff for the sales to the grid. In negotiating tariff options, CMSA confronted various challenges. Because its engine had been installed in 2005, CMSA was not eligible for the highest-value option, the 12.7c/kWh Bioenergy Market Adjusting Tariff ("BioMAT Tariff"), set up under CA Senate Bill 1122, which added an additional 250 MW of capacity for investor-owned utilities (IOUs) to offer feed-in tariff Power Purchase Agreements (PPAs).

The remaining options were the 8.923c/kWh Renewable Market Adjusting Tariff ("ReMAT Tariff") offered by PG&E, and a 10.5c/kWh tariff offered by MCE, its local Community Choice Aggregation program. (California AB 117 created the non-profit Community Choice Aggregation programs, allowing groups of communities to purchase power on behalf of their residents and businesses, with automatic enrollment and an opt out option.) Completely supported by revenues rather than taxpayer subsidies, MCE has structured the feed-in tariff program to allow renewable energy generators to enter into 20-year contracts with a fixed price per kWh generated. MCE's allocation was 15 MW of projects. Eligible projects are sized at 1 MW or smaller. CMSA qualified under the base load-energy price schedule, which is lower than the peak-energy supply schedule, and higher than the intermittent one. Further, the only constraint on the MCE tariff was a self-specified maximum for annual sales. In contrast, the PG&E ReMAT tariff came with requirements for specified quantities of energy supply, with penalties for under-delivery and non-payment for over-delivery (as did the BioMAT tariff).

As a result, CMSA inked a PPA to sell electricity to MCE at $.105/kWh, and began selling MCE renewable energy in May 2019 through the approved PG&E interconnection agreement.

CMSA is looking to maximize its power output by procuring new sources of organic waste in order to take advantage of the MCE tariff agreement. Before embarking on a feedstock marketing program, its first priority is to understand how much additional capacity the digester has to accept volatile suspended solids (VSS) without triggering digester upsets. In fall 2019, they installed and began operating two 600-gallon pilot digesters to conduct digester testing through March 2021. Results of the testing are so far very promising, showing a food waste/FOG slurry can be fed at a 60% VSS loading rate without digester upsets.

For preventive maintenance, CMSA has completed an overhaul of its existing engine. In addition, it has completed the design and awarded a construction contract for a new, higher efficiency 995 kW cogeneration system that will be operating by the end of 2021. The new cogen facility will increase the potential for power production. In the near term, the new engine would be the primary engine and the existing engine would be the backup. A Clean Water State Revolving Fund loan with 75% loan forgiveness

funded the planning and pre-design of the new cogeneration system. Design and construction will require a $6 million investment, which will be funded by capital reserves.

Figure 4. New Jenbacher Cogeneration Engine awaiting installation, with existing engine in background.
Source: CMSA.

Lessons Learned

Creating Value and Managing Risks

Central Marin Sanitation Agency has embraced an expanded vision as "an industry leader … providing innovative, efficient, and sustainable wastewater services, capturing and utilizing renewable resources, and delivering renewable power." Co-digestion is an important element of its efforts to recover renewable resources and deliver renewable power. To support food scrap generators facing new organics recycling mandates, CMSA partners with MSS, a local sustainability-oriented solid waste firm supplying preprocessed food scraps.

To date, CMSA has been able to achieve close to energy self-sufficiency with co-digestion. As CMSA focuses on expanding its capacity for co-digestion and energy production, it will be able to increase operating revenues by selling excess electricity production.

Stakeholder Risks

CMSA and MSS worked in partnership from the beginning to develop and promote the program, recognizing that the project would involve a big commitment of time and money. Together, they

conducted extensive outreach to stakeholders in their service areas in order to get the support of the community-elected bodies that approve projects and associated rate increases. With their support, both Boards approved the project. Staff from both organizations were involved with the project as it developed. Neither facility experienced any concerns from neighbors.

Operational Risks

The F2E partnership was very focused on avoiding issues that EBMUD has faced with contaminated food waste feedstocks. The partnership instituted multiple levels of quality control, starting with limiting feedstocks to pre-consumer commercial food scraps, followed by preprocessing at MSS, the option for testing by CMSA prior to acceptance, and further preprocessing at CMSA. Because the supply of food scraps from MSS service areas has not achieved anticipated levels to date, FOG is currently the dominant food waste. CMSA is able to do FOG preprocessing onsite, because it designed the receiving station it built in 2012 to enable co-digestion to accommodate both FOG and food scrap slurries. To reduce supply risks with FOG feedstock, for which haulers are unwilling to sign long-term contracts, CMSA instituted a tiered fee structure that reduces tipping fees for higher volumes delivered.

CMSA has tailored its operations and maintenance routines to manage co-digestion. Redundancy in equipment, such as spare feed pump hoses, helps to keep the program running smoothly in the case of equipment failure.

Financial Risks

CMSA was able to finance the initial investment from internal funds previously raised in a bond issue, and pay it back through rate increases approved to fund the repayment. MSS has mitigated its financial risks by relying on fees paid by its subscribers.

As it moves into sales of electricity to the grid, CMSA is mitigating energy price risk with a long-term feed-in tariff contract.

Replicability

Key conditions that enabled CMSA's success with co-digestion include California's environmental policy landscape and the presence of a nearby solid waste partner committed to sustainability to develop the food scrap recycling component (F2E) of CMSA's co-digestion program. Also important has been the availability of funds. The initial stage of the project used capital account funds that were left over from a prior bond issue, substantially augmented by high interest returns on the leftover monies; the Boards of the communities in its service area had previously agreed to raise rates to cover repaying the bonds. CMSA will finance the new cogen engine by issuing revenue bonds.

MSS considers its model to be replicable. Critical to its success are its focus on providing service to F2E generators, keeping costs down, and coordinating closely with CMSA. Efficient routing is the key to keeping costs down: the MSS Route Manager works with the MSS Outreach Coordinator to provide a level of customer service that benefits the generators and results in efficient routing. MSS also highlights the contribution of the weekly communication between CMSA and MSS.

Underlying factors important to its success include the California recycling mandate, which creates the customer base (though it could be strengthened with enforcement) and MSS's exclusive franchises for commercial service, which result in more efficient collection routes relative to open hauling. Another valuable factor is the highly coincident service areas, which means that any program's financial benefits from lower wastewater fees affect their shared customers.

Sources

Dow, Jason, General Manager, CMSA. Interviews with Carol Jones. December 28, 2017, August 27 and 30, 2018, December 20, 2018, and February 12, 2021.

Scheibly, Kim, former Director of Compliance & Customer Relations, MSS. Interviews with Carol Jones. October 4, 2018, and July 16 and July 30, 2019.

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CMSA (Central Marin Sanitation Agency). 2019. "An Ordinance Relating to Fee Schedules for Capacity Charges, Waste Haulers and Industrial Monitoring." Ordinance No. 2019-1. https://www.cmsa.us/assets/documents/ordinances/CMSA%202019-01%20Fee%20Ordinance%20signed%2010-08-2019.pdf.

CMSA (Central Marin Sanitation Agency). 2018. *CMSA Business Plan FY 2020 – 2021*. https://cmsa.us/assets/documents/administrative/CMSA%20FY21%20Business%20Plan.pdf.

Kennedy/Jenks Consultants. 2011. *2009 F2E Work Plan Food-Waste to Energy Facility Predesign*. San Rafael, CA: Central Marin Sanitation Agency.

Figure 5. CMSA anaerobic digesters, and hydrogen sulfide media filters that remove hydrogen sulfide from the biogas before it is sent to the cogeneration engine. Source CMSA.

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B

SIDE AGREEMENT REGARDING EMPLOYEE ASSISTANCE

This side agreement ("Side Agreement") is hereby made and entered into as of the date last executed below by and between the Central Marin Sanitation Agency ("CMSA"), on the one hand, and the Sewerage Agency of Southern Marin ("SASM"), on the other hand. CMSA and SASM are each referred to herein as a "party" and together as the "parties."

1. Incorporation of Mutual Aid and Assistance Agreement. That certain Mutual Aid and Assistance Agreement Between Marin County Wastewater Agencies, last executed on or about May 24, 2011, as amended through Amendment #1 to that agreement, last executed on or about September 24, 2014 ("Mutual Aid Agreement") is hereby incorporated by reference. Except as explicitly amended or augmented through this Agreement, the terms of that Mutual Aid Agreement remain in full force and effect and apply to the terms of the employee assistance contemplated by this Agreement, by CMSA as the Responding Agency to SASM as the Requesting Agency, including but not limited to the terms that require the Requesting Agency to assume the defense of, fully indemnify, and hold harmless the Responding Agency from any and all claims directly or indirectly arising from assistance provided hereunder, as fully set forth therein.

2. Employee Assistance. SASM has requested assistance from CMSA in the form of the temporary use of the services of a single employee, lead operator Ryan Word ("Employee"). CMSA understands that Employee is willing to provide such temporary services to CMSA, and CMSA agrees to make such Employee available to SASM for such temporary services, subject to the following terms:

    a. Reimbursement. SASM shall fully reimburse CMSA for Employee's fully-weighted hourly rate of $107.67, plus an additional 10% of that fully-weighted hourly rate to reflect overhead expenses, for all Employee's time spent in the service of SASM, including but not limited to time spent donning/doffing Employee's uniform, time spent commuting to and from CMSA to SASM for each shift that Employee works at SASM, and time spent training Employee to provide services at SASM. CMSA shall invoice SASM for all amounts needing reimbursement, and SASM shall pay each invoice within 30 days of receipt.

    b. Equipment. SASM shall fully reimburse CMSA for the use of any CMSA equipment as provided in the Mutual Aid Agreement, and SASM acknowledges that Employee will use CMSA equipment for purposes including but not limited to traveling to and from CMSA for each shift that Employee works at SASM. Reimbursement for Employee traveling to and from SASM will be at the current IRS mllage rate.

    c. Terms of Employment. The parties acknowledge that the terms and conditions of Employee's employment with CMSA are governed by a certain Memorandum of Understanding ("MOU") between CMSA and the labor organization that represents Employee. The parties further acknowledge that the MOU will remain in effect at all times while Employee provides any services to SASM, and that SASM will be responsible for ensuring that the terms and conditions of Employee's work at SASM are consistent with the requirements of such MOU.

d. Schedule. SASM shall notify CMSA the shifts that SASM desires Employee to cover at least one week in advance. The parties shall meet and confer in good faith to resolve any conflicts regarding scheduling Employee's work. However, CMSA does not guarantee that Employee will be available to cover any specific individual shift at any time.

e. Duration. This Agreement is terminable by either party at any time for any reason, effective upon written notice (electronic or hard-copy mail). Upon notice of termination, Employee shall cease providing any services to SASM immediately. In the event of termination, SASM shall remain liable to CMSA for any outstanding reimbursements owed, and shall also remain liable for any and all liability or indemnity provided for under this Agreement or the Mutual Aid Agreement.

3. Signatures. The following signatures attest the parties' Agreement.

CENTRAL MARIN SANITATION AGENCY

By: _____ Date: 3/19/21

Jason Dow, General Manager

SEWERAGE AGENCY OF SOUTHERN MARIN

By: _____ Date: 3/22/21

Mark Grushayev, Manager

C

CENTRAL MARIN SANITATION AGENCY

Jason R. Dow P.E.
General Manager

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March 25, 2021

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Monthly Self-Monitoring Report (SMR) – February 2021

Dear Ms. Gallagher,

The February 2021 monthly self-monitoring report for the Central Marin Sanitation Agency (CMSA) treatment plant has been submitted using the eSMR /California Integrated Water Quality System (CIWQS). This SMR conforms to CMSA's NPDES Permit Order #R2-2018-003, Alternate Monitoring and Reporting Requirements Permit Order #R2-2016-0008, the Nutrient Watershed Permit Order #R2-2019-0017 and the Mercury and PCBs Permit Order #R2-2017-0041.

Violations
There are no reportable NPDES Permit violation(s) for this reporting period.

Blending Events
The CMSA treatment facility did not exceed the maximum secondary capacity of 30 MGD. No blending events occurred during this monitoring period.

Data Validation
All regulatory daily, weekly, and monthly quality control calibrations/checks conducted during the month of February met established quality assurance acceptance criteria, except those data results indicated within the attached Quality Assurance report.

Summary
If there are any questions please contact me at (415) 459-1455, extension 101. Quality assurance data are available for all test results cited in this report. Values reported are measured values and each are subject to analytical variability. CMSA reserves the right to question data in an enforcement proceeding.

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations (40 CFR 122.22(d)).

Sincerely,

Loren C. Finton
Treatment Plant Manager

D

Lystek Organic Materials Recovery Center
1014 Chadbourne Road
Fairfield, Ca 94534-9700
Phone: 707-419-0084

March 26, 2021

Jason Dow
General Manager
Central Marin Sanitation Agency
1301 Andersen Drive
San Rafael CA 94901

Subject: **PRODUCT SALES of LYSTEGRO in 2020**
REVENUE SHARING COMPONENT

The Central Marin Sanitary Agency (CMSA) and Lystek International Ltd are working under a multi-year agreement for the management of biosolids into renewable end-products. An important component of this partnership is the sharing of revenues from our product sales.

For the past year of operations in 2020, we have continued and improved our land application program for LysteGro (our biofertilizer product) to regional farmers and ranchers in Solano and Yolo Counties. Our agreement allows that a percentage of revenues (above our costs) will be shared with CMSA on an annual basis. While our costs for land application are currently greater than our sales revenue, we are pleased with the ever-increasing interest and favorable demand of our agriculture biofertilizer.

With that background, Lystek is pleased to present a check to CMSA as recognition of our partnership and the revenues from our product sales.

As we continue to grow our business and attract more customers, we plan to continue this annual sharing between partners.

LYSTEK INTERNATIONAL LIMTED:

James Dunbar, P.E.
General Manager
California Operations

LYSTEK INTERNATIONAL LTD.
1014 Chadbourne Road
Fairfield, California 94534-9700
United States of America
1-888-501-6508

JPMorgan Chase Bank, N.A.
Detroit, MI

001001750
9-32/720
03 18 2021

PAY
TO THE ORDER OF

*** Two Hundred Fifty United State Dollar and 00 Cents ***

CENTRAL MARIN SANITATION AGENCY
1301 ANDERSEN DRIVE
SAN RAFAEL, CA 94901

$ **********250.00*

Per: _____

Per: _____

⑈001001750⑈ ⑆072000326⑆ 115502178⑈

REMOVE CHEQUE ALONG THIS PERFORATION
DÉTACHER LE CHÈQUE LE LONG DE CETTE PERFORATION

Lystek International Ltd.

Cheque No.: 001001750

CENMAR **CENTRAL MARIN SANITATION AGENCY**

Cheque Date: Mar 18/21

Invoice	Date	Description	Adjustments	Gross
031821	Mar 18/21	REVENUE SHARING FERTILIZER SALE	.00	250.00

CENTRAL MARIN SANITATION AGENCY
MAR 29 2021
1301 ANDERSEN DRIVE
SAN RAFAEL, CA 94901

CENMAR: CENTRAL MARIN SANITATION AGENCY Cheque: 001001750 Mar 18/21 Total: 25

emittance Info: Inv #CMSA-MCE-01-2021

Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, CA 94901
888-632-3674

JPMorgan Chase Bank, N.A.
Verify: 888-237-9615
90-7162/3222

E 0051978343

3/26/2021

AY TO THE RDER OF CENTRAL MARIN SANITATION AGENCY

$ 1456.03

ne Thousand Four Hundred Fifty-Six and 03/100 DOLLARS

0024864 01 AB 0.425 **AUTO T6 1 5061 94901-533901 -C11-P24888-I

CENTRAL MARIN SANITATION AGENCY
ATTN: JASON DOW
1301 ANDERSEN DRIVE
SAN RAFAEL, CA 94901-5339

VOID AFTER 90 DAYS

⑈0051978343⑈ ⑆322271627⑆ 215376176⑈

From: Marin Clean Energy
Pay To: CENTRAL MARIN SANITATION AGENCY

Date: 3/26/2021
Check #: 51978343

Invoice #	Bill Amount	Payment Amount
CMSA-MCE-01-2021	$1,456.03	$1,456.03
Total		**$1,456.03**

Dawn Weisz
Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, CA 94901

Invoice Date: March 5, 2021
Invoice Period: January 2021
Invoice #: CMSA-MCE-01-2021

Re: Central Marin Sanitation Agency - Feed-in Tariff

In accordance with that certain Amended Small Renewable Generator Power Purchase Agreement between Central Marin Sanitation Agency ("Seller") and Marin Clean Energy ("Buyer"), dated March 23, 2018, Seller hereby invoices Buyer for metered renewable electricity generation produced by the CMSA Renewable Energy Expansion Project during the month of January 2021 (interval beginning 0:15 on January 1, 2021 and ending 23:59 on January 31, 2021), a record of which is attached hereto:

FIT Generation Facility	Volume (MWh)	Rate ($/MWh)	Amount
CMSA Biogas Fueled Gas Engine Generation - January 2021	13.867	$ 105.00	$ 1,456.03
Total this Invoice			$ 1,456.03

Terms: Payable within 30 days of invoice receipt (FIT PPA, Section 2.6)

Should you have any questions, please contact me at your convenience.

Sincerely,
Jason Dow, General Manager
Central Marin Sanitation Agency

Remit payment by check to:
Central Marin Sanitation Agency
ATTN: Jason Dow
1301 Andersen Drive
San Rafael, CA 94901

CENTRAL MARIN SANITATION AGENCY
MAR 29 2021
1301 ANDERSEN DRIVE
SAN RAFAEL, CA 94901

This payment was sent to you by bill

5061-11-00-0024864-0001-0024923

F

From: Jason Dow
To: Kate Brouillet
Subject: FW: Ryan Word
Date: Monday, April 5, 2021 9:27:08 AM

Hi Kate,

Please include this email in the April Board information packet.

Thanks,
Jason

From: Roger Paskett <rpaskett@cityofmillvalley.org>
Date: April 2, 2021 at 4:21:18 PM PDT
To: Mark Grushayev <mgrushayev@cityofmillvalley.org>
Subject: Ryan Word

Hi Mark,

I don't seem to have Jason Dow's email address so could you pass this message on to him?

I wanted to tell Jason that I am very impressed with Ryan's work ethic and cheerful, go-get 'em attitude. He has been a pleasure to work with these last four days and he does excellent quality work. Our operators enjoy working with him as well. He is a great asset to have on anyone's team. You are fortunate to have him in your employ and we are grateful that we have gotten to work with him, even if only for a short time.

Thanks again for your help during this lean period.

Sincerely,

Roger Paskett
Chief Treatment Plant Operator
SASM Wastewater Treatment Plant
450 Sycamore Ave.
City of Mill Valley, CA 94941

(415) 388-2402 x 4840