



Central Marin Sanitation Agency

COMMISSION REGULAR MEETING AGENDA

Tuesday, October 9, 2018

at the Agency Office

7:00 p.m.

Members of the public may directly address the Board on any item appearing on the Agenda. They may address the Board when the item is called by the Board Chair and he/she indicates it is the time for the public to speak to the agenda item. Audio and video recordings will be made of this meeting and will be posted to the Agency website.

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

2. Roll Call

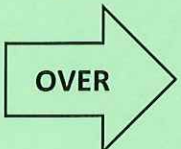
3. Open Period for Public Participation

*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.*

4. Consent Calendar

*Matters listed under this item are considered routine and will be enacted by one motion. The consent calendar may include resolutions; therefore, the motion, second, and vote will also be applicable to the resolution and recorded accordingly. There will be no separate discussion of these items unless requested by a member of the Board or the public prior to the time the Board votes on the motion to adopt.*

- a) Minutes—Special Board Meeting—August 21, 2018
- b) Treasurer's Report—Operating Account—August 2018
- c) Treasurer's Report—Operating Account—September 2018
- d) Schedule of Investments—August 2018
- e) Schedule of Investments and its Capital Reserve Summary—September 2018
- f) NPDES, Process, and Maintenance Report—August 2018
- g) NPDES, Process, and Maintenance Report—September 2018
- h) Performance Metric Report—August and September 2018
- i) General Manager Employment Agreement Amendment #1
- j) Lead Mechanical Technician Job Description
- k) Asset Management Program Evaluation Project – Consultant Selection



5. **Public Hearing for the Proposed Compensation Ordinance 2018-1, Entitled "An Ordinance of the Central Marin Sanitation Agency Board of Commissioners Adjusting Commissioner Compensation"**  
*Recommendation: Conduct the public hearing for the proposed Compensation Ordinance 2018-1, pass the Ordinance, and authorize publication of a summary of the passed Ordinance in the Marin Independent Journal newspaper.*
6. **Revised Board Policy #2 – Compensation for Agency Officials**  
*Recommendation: Approve the revised Board Policy #2 – Compensation for Agency Officials.*
7. **Cogeneration System Maintenance Project Agreement**  
*Recommendation: Approve the 2018 Cogeneration System Maintenance Project Agreement with Peterson Power Systems, and authorize the General Manager to sign it.*
8. **Cogeneration System Predesign Evaluation Agreement**  
*Recommendation: Approve the Professional Services Agreement with Carollo Engineers for the Cogeneration System Predesign Evaluation, and authorize the General Manager to sign the Agreement.*
9. **Debt Issuance Planning**  
*Recommendation: Consider directing staff and the Board Finance Committee to develop a plan for the Agency's next debt issuance.*
10. **North Bay Watershed Association (NBWA) Report\***
11. **Oral Reports by Commissioners/General Manager\***
12. **Adjourn to Closed Session**  
**PUBLIC EMPLOYEE PERFORMANCE EVALUATION**  
**California Government Code Section 54957**  
**Title: General Manager**
13. **Reconvene in Open Session**  
*Report on any action taken in Closed Session.*
14. **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.*
15. **Next Scheduled Meeting**  
*Tuesday, November 13, 2018 at 7:00 p.m. at the Agency office.*

\*Information not furnished with Agenda

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Central Marin Sanitation Agency at 415-459-1455. For auxiliary aids or services or other reasonable accommodations to be provided by the Agency at or before the meeting, please notify the Agency at least 3 business days in advance of the meeting date (meeting is the second Tuesday of each month). If the Agency does not receive timely notification of your reasonable request, the Agency may not be able to make the necessary arrangements by the time of the meeting.



Central Marin Sanitation Agency

COMMISSION SPECIAL MEETING MINUTES

Tuesday, August 21, 2018

at the Agency Office

**Note:** 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](http://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 Furst called the meeting to order at 7:03 p.m. A quorum was present.

**2. Roll Call**

**00:00:28**

Present: Chair Diane Furst; Vice Chair Michael Boorstein; Secretary Dean DiGiovanni; Commissioners Maribeth Bushey, Dan Hillmer, and Doug Kelly

*Note: Maribeth Bushey arrived after the Consent Calendar.*

Absent: None

Staff present: Jason Dow, General Manager; Jack Govi, Agency Legal Counsel; Kate Brouillet, Recording Secretary; Rick Chan and Elizabeth Charbonnet, Carollo Engineers

Public present: Felicia Newhouse, Ross Valley Sanitary District

**3. Comments from the Public**

**00:00:45**

There were no comments from the public.

**4. Consent Calendar**

**00:01:00**

- a) Minutes—Regular Board Meeting—July 10, 2018
- b) Treasurer's Report—Operating Account—July 2018
- c) Schedule of Investments—July 2018
- d) NPDES, Process, and Maintenance Report—July 2018
- e) Performance Metric Report—July 2018
- f) Resolution of Appreciation for Al Boro
- g) Revised Leaves of Absence Policy
- h) Fiscal Year 2018 Green Business Report

Comments from the Public:

There were no comments from the public.

Michael Boorstein introduced the newly appointed commissioner representing Ross Valley Sanitary District, Doug Kelly. He said Mr. Kelly was formerly an alternate, and replaces Mr. Tom Gaffney on the CMSA board, who is now an alternate. Mr. Kelly stated he is very happy to join the CMSA Board, and is looking forward to serving.

Chair Furst and the Board welcomed Mr. Kelly.

Chair Furst asked if there were any Consent Calendar items that needed to be removed for discussion. As there were none, Chair Furst asked for a motion.

ACTION: Commissioner Kelly moved to approve the Consent Calendar items 4a-4h; second, Commissioner DiGiovanni.

Ayes: BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, HILLMER, KELLY

Nos: NONE

Abstentions: NONE

**5. Agency Facilities Master Plan Presentation**

**00:02:50**

GM Dow stated that Carollo Engineers has nearly completed the 2017 Facilities Masterplan (Plan) work, and Carollo staff is in attendance to give a presentation. GM Dow stated that the Plan was initiated in September of 2016 and is composed of ten individual tasks.

GM Dow said that over the past year he has provided the Board with status reports on several of the Plan's tasks, and that tonight's presentation will focus on the Nutrient Removal, Biosolids Management, Organic Receiving Facility Expansion, and Biogas Utilization tasks. He introduced Rick Chan and Elizabeth Charbonnet from Carollo Engineers, who gave a detailed PowerPoint presentation.

The Board received the presentation, and asked various questions regarding potential effects of sea-level rise, types of biological secondary treatment for nutrient removal, expansion of the organic waste receiving facility, biosolids disposal options, digester capacity, and biogas storage. Mr. Chan, Ms. Charbonnet, and GM Dow answered the Board's questions.

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

**6. Board of Commissioners' Compensation Policy**

**01:01:50**

GM Dow stated that Board members occasionally ask about the Board's compensation amount (stipend) and the types of service that are eligible for a stipend. He stated that at the July meeting, a Board member asked about possible compensation for Board members serving on a Board committee, as committee members can spend considerable time preparing for and attending meetings. He said

that after a brief discussion, the Board directed staff to include on an upcoming meeting agenda a discussion on the Compensation Policy.

GM Dow summarized the history of the CMSA Board stipend increases, with the last being in 1987, and how the stipend could be increased per the Health and Safety Code.

GM Dow referred to the table on page two of the staff memo, and said that he had contacted several local wastewater agencies to determine their stipend amount and if they included committee meetings.

The Board discussed the stipends provided by other local agencies, the most comparable agencies on the table in the staff memo, the allowable increase amount, the time period since the last CMSA Board stipend increase, and the level of responsibility held by the CMSA Board.

GM Dow stated that the most comparable agency to CMSA in the table would be Novato Sanitary District.

The Board agreed that the current stipend amount of \$100 per day was low, and discussed various amounts and types of meetings that could be included. The Board agreed that \$225 would be an appropriate stipend amount, and that Standing and Ad Hoc Committee meetings should be eligible for the stipend.

GM Dow said the stipend increase must be made by passing an ordinance, and expanding the stipend eligibility can be done by revising the Board policy.

The Board agreed that these items should be placed on the next Board meeting agenda.

Comments from the Public:

There were no comments from the public.

**ACTION:** Commissioner Bushey moved that the Board stipend amount be increased to \$225, to also apply to Ad Hoc and Standing Committee meetings, and that the item be placed on the next Board meeting agenda for consideration of approval; second, Commissioner Kelly.

**Ayes:** BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, GAFFNEY, HILLMER

**Nos:** NONE

**Abstentions:** NONE

**DIRECTION:** Staff to publicly notice a summary of the ordinance prior to the October meeting, and within 15 days after with the vote.

Staff to be prepared to respond to potential public inquiries.

**7. CMSA Response to the Marin County Civil Grand Jury Report – 01:23:29  
Consolidation of Sanitation Districts**

GM Dow stated that at the May Board meeting, the Board discussed the Grand Jury's Consolidation of Sanitary Districts Report, considered options to respond to the Report, and decided to discuss the Report and the Agency's response after the JPA member agencies adopted their respective responses. He said that San Rafael Sanitation District and Ross Valley Sanitary District have approved their responses, while Sanitary District #2 and CMSA requested and received approval for a 90-day response extension from the Grand Jury Foreperson. He stated that CMSA must submit its response by October 13, 2018, four days after the October Board meeting.

GM Dow said that staff and Chair Furst prepared a draft response that appears on page two of the staff report which aligns with the SRSD and RVSD responses. He said that this draft could be accepted as presented or modified, or the Board could form an ad hoc committee to formulate the response.

The Board briefly discussed the proposed draft response and noted one typo to be corrected.

Comments from the Public

There were no comments from the public.

**ACTION:** Commissioner Kelly moved to accept the response as drafted on page two of the staff report, with the correction of the typo; second, Commissioner Bushey.

**Ayes:** BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, HILLMER, KELLY

**Nos:** NONE

**Abstentions:** NONE

**8. Closed Session was convened at 8:30 p.m.**  
PUBLIC EMPLOYEE PERFORMANCE EVALUATION  
California Government Code Section 54957  
Title: General Manager

**9. Open Session was reconvened at 9:08 p.m.**

**10. Compensation and/or Benefit Adjustment to General Manager**  
The Board briefly discussed the GM performance over the past year.

Comments from the Public

There were no comments from the public.

**ACTION:** Commissioner Bushey moved to extend the General Manager's employment agreement for one year and provide a 5% performance bonus; second, Commissioner DiGiovanni.

**Ayes:** BOORSTEIN, BUSHEY, DIGIOVANNI, FURST, HILLMER, KELLY

**Nos:** NONE

**Abstentions:** NONE

GM Dow said an amendment to his employment agreement will be brought to the October meeting.

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

Chair Furst stated that the August NBWA Board meeting was cancelled.

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

GM Dow referred to his handout with several items and reported:

- The cogeneration engine has been offline since 8/4 due to a generator stator winding failure; repairs are underway for an estimated cost of \$30,000, and should be completed by Thursday.
- FEMA/Cal OES has authorized bidding for the Andersen Hillside Repair Project; bid advertisement will be presented to the Board in December.

**13. Next Scheduled Meeting**

*Tuesday, October 9, 2018 at 7:00 p.m. at the Agency office.*

Chair Furst adjourned the meeting at 9:15 p.m.

Respectfully submitted,

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Kate Brouillet, Recording Secretary

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Dean DiGiovanni, Secretary

**Central Marin Sanitation Agency  
Treasurer's Report - Operating Account  
For the Month of August 2018**

**I. Accounts Summary: Bank & Investment Accounts**

Summary of Bank & Money Market Accounts

Westamerica Bank - Account Activity shown below	\$ 358,655.29
Local Agency Investment Fund (LAIF) - Refer to Schedule of Investments	15,902,084.95
California Asset Management Program (CAMP) - Refer to Schedule of Investments	366,752.36
Total Bank & Investment Accounts: Ending Balance on August 31, 2018	<u>\$ 16,627,492.60</u>

**II. Account Activity for Westamerica Bank**

Beginning Balance on August 1, 2018 490,808.93


Cash Receipts (Deposits into Westamerica):

Transfers from LAIF	3,150,000.00
JPA Service Charges (FY19 Q1: SD#2)	247,252.36
Debt Service Charges (FY19 Q1: SD#2)	463,542.53
Capacity Charges: RVSD - FY18: 3 Residential Connection	17,798.55
Permit and Inspection Fees	1,861.60
LGVSD - pollution prevention & FOG (FY18 4Q: April-June)	3,810.53
RVSD - FOG Program (FY18 4Q: April-June)	3,238.44
SRSD - FOG Program (FY18 4Q: April-June)	2,776.01
TCSD - FOG Program (FY18 4Q: April-June)	27.06
SD#2 FOG Program (FY18 4Q: April-June)	1,944.45
Mercury Reduction Program (NSD: FY18 2Q & 3Q)	2,848.58
Revenue from Haulers & RVs	20,194.74
Revenue from Organic Waste Programs	17,735.86
County-wide Public Education Program (FY19 Annual prepayment: LGVSD, NSD, SASM, SD#5)	29,151.94
SD 2 Operations & Maintenance Contract (FY18: June)	47,319.27
SQ Village Operations & Maintenance Contract (FY18: May)	1,562.37
Misc Revenue: CSRMA Program Dividend	292.44
COBRA Health Benefit Payments from separated employees/retirees	325.09
Expense reimbursements: SRSD cathodic protection, refund from Grainger	2,291.34
Total Cash Receipts	<u>\$ 4,013,973.16</u>

Cash Disbursements (Withdrawals from WestAmerica):

August 2018 Operating account disbursements register (see attached)	\$511,921.53
Regular Payroll paid 08/03/18	131,264.81
Regular Payroll paid 08/17/18	130,660.81
Regular Payroll paid 08/31/18	133,808.52
Transfers to EFTPS Federal Payroll Taxes (08/08, 08/22, 08/27)	59,793.29
Performance Bonus (1)	9,602.23
Wire to US Bank 2015 Refunding Revenue Bonds principal and interest payment due September 1st	3,168,981.93
Bank Fee	93.68
Total Cash Disbursements	<u>\$4,146,126.80</u>
Ending Balance on August 31, 2018	<u>\$ 358,655.29</u>

Prepared by:   
Kenneth Spray, Administrative Services Manager

Reviewed by:   
Jason Dow, General Manager



Central Marin Sanitation Agency  
 Operating Account Disbursements Register  
 For the Month of August 2018

Check Number	Date	Vendor/Payee	Amount	Description
17180				Last check # from prior month's register
17181	08/02/18	Phillip Frye	212.97	Reimbursement for retiree health benefits by check
17182	08/02/18	James L. Johnson	183.34	Reimbursement for retiree health benefits by check
17183	08/02/18	Byron Jones	237.34	Reimbursement for retiree health benefits by check
17184	08/03/18	California Public Employee	1,657.00	Contribution to Retiree Health Benefits Trust Fund, PPE 07/28/2018 (Note C)
17185	08/03/18	California State Disbursement	250.50	EE Garnishment, PPE 07/28/2018 (Note A)
17186	08/03/18	ICMA Retirement Trust-457	4,123.00	Deferred compensation contributions, PPE 07/28/2018 (Note A)
17187	08/03/18	Navia Benefit Solutions	607.68	Flexible spending account, PPE 07/28/2018
17188	08/03/18	SEIU Local 1021	1,007.57	Union dues, PPE 07/28/2018
17189	08/03/18	Katherine Brouillet	61.65	Employee expense reimb: Office/meeting supplies
17190	08/03/18	BWS Distributors, Inc.	404.95	Hydrogen sulfide sensor
17191	08/03/18	Cole-Parmer Instrument Co.	117.68	Solution for TSS meter
17192	08/03/18	Jason Dow	202.00	Employee per diem advance: CASA Annual Conference
17193	08/03/18	Environmental Express Inc.	141.36	Filters for TSS testing
17194	08/03/18	ERA, A Waters Company	4,128.60	Proficiency testing required for ELAP certification ( 1 invoice); Enterococci testing (1 invoice)
17195	08/03/18	Evoqua Water Tech LLC	9,721.34	Hydrogen peroxide (1 delivery)
17196	08/03/18	Chris Finton	200.00	Commuter Reimbursement Program, July 2018
17197	08/03/18	Larry Gould	1,000.00	Employee expenses eligible for Agency dental reimbursement
17198	08/03/18	Kone Inc	136.70	Elevator monthly maintenance, July 2018
17199	08/03/18	OCCUMETRIC	345.00	Safety Officer recruitment: Pre-employment physical
17200	08/03/18	P.G.& E.	17,799.78	Electricity service, 06/14-07/15/2018 (2 invoices)
17201	08/03/18	Rock Steady Juggling	500.00	Pub Ed Program: Outreach at one school (Note B)
17202	08/03/18	Rockwell Solutions	3,595.15	RV site sump pump rebuild
17203	08/03/18	Anthony Smith	1,230.00	Employee expenses eligible for Agency dental reimbursement; Employee expense reimb: Safety shoes
17204	08/03/18	SPURR	4,112.73	Natural gas supply, June 2018
17205	08/03/18	Thatcher Company of	10,522.16	Ferric chloride (2 deliveries)
17206	08/03/18	Univar USA Inc	5,560.89	Sodium bisulfate (1 delivery)
17207	08/03/18	Underground Service Alert	702.58	Annual fee for CMSA and SD2 (Note B)
17208	08/03/18	Wells Fargo Vendor	438.88	Maintenance copier lease; tax (2 invoices)
17209	08/06/18	Bartley Pump Inc	16,703.00	SQPS FY 18 CIP: Motor Relocation Project, July 2018 (Note B)
17210	08/15/18	AireSpring	773.95	Telephone service, July 2018
17211	08/15/18	Amazing Solutions, Inc.	525.00	Prof Svcs: Administrative software support, July 2018
17212	08/15/18	American Sentry Systems, Inc.	210.00	Alarm services, July-September 2018
17213	08/15/18	Aramark Uniform Services	1,120.90	Uniform service, July 2018
17214	08/15/18	AT&T Dataplan	405.71	Wireless service, 07/02-08/01/2018
17215	08/15/18	Carollo Engineers, Inc.	6,241.38	Prof Svcs: PG&E Interconnection Design Project, July 2018; 2017 Facilities Master Plan Project, July 2018 (2 invoices)
17216	08/15/18	Cole-Parmer	432.29	Pressure switch and gauge (2 invoices)
17217	08/15/18	Comcast	191.20	Internet service, 08/04-09/03/2018
17218	08/15/18	The Eidam Corporation Inc	3,298.75	Prof. Svcs: Agency Facebook page, July 2018
17219	08/15/18	Dee Consultants LLC	6,000.00	Prof Svcs: Construction Management Support, July 2018
17220	08/15/18	Hagel Supply Co.	846.89	Utility cleaning solutions and supplies, July 2018
17221	08/15/18	IEDA, Inc.	809.00	Labor relations consulting, August 2018
17222	08/15/18	Koff & Associates, Inc.	9,750.00	Prof Svcs: Technical Services Manager recruitment, Phases II and III
17223	08/15/18	Kone Inc	136.70	Elevator monthly maintenance, August 2018
17224	08/15/18	Lystek International LTD	9,909.33	Biosolids beneficial reuse fee, July 2018
17225	08/15/18	Marin Color Service	132.26	Paint and painting supplies, July 2018
17226	08/15/18	Marin Office Supply	656.95	Office and breakroom supplies, July 2018
17227	08/15/18	Marin Resource Recovery Center	209.00	Yard waste disposal, July 2018
17228	08/15/18	Medical Center of Marin	120.00	Vaccination (1 employee)
17229	08/15/18	MurCal Inc	419.07	Vacuum/pressure transmitter, July 2018

Central Marin Sanitation Agency  
 Operating Account Disbursements Register  
 For the Month of August 2018

Check Number	Date	Vendor/Payee	Amount	Description
17230	08/15/18	Petaluma Mechanical Inc	406.19	Disposal of used sampler and refrigerant
17231	08/15/18	Ricoh USA Inc	317.99	Admin copier lease, 07/23-08/22/2018
17232	08/15/18	S&S Trucking	10,176.93	Biosolids hauling, 07/10-08/07/2018
17233	08/15/18	Synagro West, Inc.	4,908.75	Biosolids land application fee, June 2018
17234	08/15/18	Univar USA Inc	6,887.66	Sodium hypochlorite (2 deliveries)
17235	08/15/18	USA BlueBook	431.67	Bioassay pump PSI gauges (2)
17236	08/15/18	Waste Management	2,440.62	Redwood Landfill biosolids reuse fee, July 2018
17237	08/15/18	Wiley Price & Radulovich	770.00	Prof Svcs: Employment law services, July 2018
17238	08/15/18	Water Components & Bldg. Supp	332.33	Sand bags, grout (3 invoices)
17239	08/17/18	California Public Employee	1,657.00	Contribution to Retiree Health Benefits Trust Fund, PPE 08/11/2018 (Note C)
17240	08/17/18	California State Disbursement	250.50	EE Garnishment, PPE 08/11/2018 (Note A)
17241	08/17/18	ICMA Retirement Trust-457	4,123.00	Deferred compensation contributions, PPE 08/11/2018 (Note A)
17242	08/17/18	Navia Benefit Solutions	607.68	Flexible spending account, PPE 08/11/2018
17243	08/17/18	SEIU Local 1021	1,007.57	Union dues, PPE 08/11/2018
17244	08/17/18	Alliant Insurance Services	875.00	Public official bond renewal
17245	08/17/18	Bay City Boiler & Engineering	1,051.95	Spare parts for boilers
17246	08/17/18	BWS Distributors, Inc.	418.19	Sensor parts and supplies
17247	08/17/18	CAL-CARD	13,863.30	State of California Purchase Card, June-July 2018
17248	08/17/18	City Electric Supply	531.01	Photo cell, wire, cable, electrical plates (3 invoices)
17249	08/17/18	Cropper Accountancy Corp.	5,000.00	Prof Svcs: FY 17-18 Financial Audit, progress payment #1
17250	08/17/18	Evoqua Water Tech LLC	9,355.63	Calcium nitrate (1 delivery)
17251	08/17/18	Fastenal Company	742.79	Miscellaneous parts & supplies for vending machine, July 2018
17252	08/17/18	Ford Hall Company Inc	1,693.56	Secondary process tank algae weir brushes
17253	08/17/18	Frank A. Olsen Co	487.33	Parts for Rotork actuator repair
17254	08/17/18	Grainger	1,144.51	Pump, electrical panel, relay, LED tubes, oxygen, strut channel, label tape, and meter, July 2018 (9 invoices)
17255	08/17/18	Harrington Industrial Plastics	579.91	PVC and valve supplies (2 invoices)
17256	08/17/18	Home Depot Credit Services	1,558.99	Pipes, conduit, LED dimmers, PLC's, flex connectors, and misc. electrical supplies, 06/28-07/24/2018
17257	08/17/18	Jackson's Hardware	545.04	Safety shoes and misc. hardware, July 2018 (2 invoices)
17258	08/17/18	Marin Sanitary Service	4,938.37	Disposal services, July 2018 (4 invoices)
17259	08/17/18	Marin Resource Recovery Center	325.00	Yard waste disposal for Annex clean up; (1 invoice)
17260	08/17/18	Meyers, Nave, Riback	2,960.00	Legal Svcs: Agency NPDES permit renewal
17261	08/17/18	Navia Benefit Solutions	50.00	Flexible Spending Account, monthly fee
17262	08/17/18	Orchard Business/SYNCB	249.11	Tools and electrical supplies, July 2018
17263	08/17/18	Rockwell Solutions	2,327.46	Digester re-circulation pump mechanical seal replacement
17264	08/17/18	Tri-Power Trading Co Inc	4,080.00	Spark plugs for cogeneration engine
17265	08/17/18	Univar USA Inc	5,618.96	Sodium bisulfite (1 delivery)
17266	08/17/18	Western Exterminator Co. Inc.	357.00	Pest control service, April-May 2018
17267	08/17/18	Woodland Center Auto Supply	222.02	Filters, oil, solenoid, and battery
17268	08/22/18	Amazon	7,547.68	LEDs for CIP lighting retrofit project, and computer and electrical supplies, July 2018
17269	08/22/18	AT&T	415.38	Fax and emergency phone service, 08/07-09/06/2018
17270	08/22/18	Automation Direct Co., Inc.	321.00	Electrical mounting rail, line reactor, and transmitter (2 invoices)
17271	08/22/18	Katherine Brouillet	600.00	Empl Recognition Program: CAFR, PAFR, and Budget awards
17272	08/22/18	CWEA TCP	92.00	E/S certificate renewal (1 employee)
17273	08/22/18	Environmental Express Inc.	282.73	TSS filters
17274	08/22/18	FactoryMation	138.80	Circuit breakers
17275	08/22/18	Fisher Scientific	633.74	Pipets, filters, and buffer solutions (4 invoices)
17276	08/22/18	Galco Industrial Electronics	315.29	Electrical supplies
17277	08/22/18	Harrington Industrial Plastics	3,141.63	PVC nuts and bolts for Outfall diffusers; replacement filters for air handlers (2 invoices)
17278	08/22/18	Holt of California	190.97	Parts for forklift repair

Central Marin Sanitation Agency  
 Operating Account Disbursements Register  
 For the Month of August 2018

Check Number	Date	Vendor/Payee	Amount	Description
17279	08/22/18	Horizon Dist. Inc	81.01	Irrigation supplies
17280	08/22/18	Kaman Industrial Technologies	781.78	Bearings, sheaves, and bushings (3 invoices)
17281	08/22/18	Heidi Lang	600.00	Empl Recognition Program: CAFR, PAFR, and Budget awards
17282	08/22/18	Marin Resource Recovery Center	114.00	Yard waste disposal (2 invoices)
17283	08/22/18	McMaster-Carr Supply Co.	3,509.33	Compressed air drain valve, compact caster, pump, pipe fittings, belts, spacers, and couplings (21 invoices)
17284	08/22/18	Metal Service Center	1,133.02	Safe access gates installation materials
17285	08/22/18	Miller Pacific	6,886.00	Prof Svcs: Andersen Hillside Repair Project design services, 01/08-06/24/2018
17286	08/22/18	Marin Municipal Water District	1,569.59	Water service, 06/09-08/09/2018 (4 invoices)
17287	08/22/18	Platt	728.15	Overload relay and conduit fitting (2 invoices)
17288	08/22/18	Production Specialties Corp	5,358.00	Safe access gates for Secondary Clarifiers, CCTs, and grit tanks
17289	08/22/18	Ryan Herco Flow Solutions	551.63	Carbon filters (2 invoices)
17290	08/22/18	Rock Steady Juggling	1,000.00	Pub Ed Program: Outreach at two schools (Note B)
17291	08/22/18	Rockwell Solutions	8,587.24	Organic Waste Receiving Facility mixing pump impeller/cutter bar
17292	08/22/18	Safety-kleen Systems, Inc	1,599.80	Disposal of polymer flocculant (2 invoices)
17293	08/22/18	Calmat Co./Shamrock Materials	159.50	Propane (2 invoices)
17294	08/22/18	Kenneth R Spray	100.00	Empl Recognition Program: Budget award
17295	08/22/18	State Water Resources Ctrl Br	150.00	Operator certificate renewal (1 employee)
17296	08/22/18	Ahn Ta	600.00	Empl Recognition Program: CAFR, PAFR, and Budget awards
17297	08/22/18	Thomas Fish Company	138.50	Rainbow trout for monthly bioassay
17298	08/22/18	VWR International	1,457.76	Autoclave supplies, aluminum dishes, phosphorus, and pipet (9 invoices)
17299	08/23/18	TPC Training	2,200.00	Safety training: ARC Flash (2 employees)
17300	08/27/18	Alan Burleigh	400.00	Employee expense reimb: Safety glasses
17301	08/27/18	Caltest Analytical Laboratory	5,076.13	Lab analyses, June and July 2018
17302	08/27/18	Dealers Industrial Equipment	1,938.06	Motor and variable frequency drives for Ross Valley Peroxide Station pumps
17303	08/27/18	Evoqua Water Tech LLC	9,958.65	Calcium nitrate (1 delivery)
17304	08/27/18	Fisher Scientific	3,175.42	Solids desiccating cabinet for lab
17305	08/27/18	Grainger	1,542.48	Cords for PG&E relays, couplers, piping, cables, and hoses, (7 invoices)
17306	08/27/18	Hach Company	292.91	Nitrate and buffer solutions (2 invoices)
17307	08/27/18	Kevin Lewis	78.00	Employee expense reimb: ARC flash training
17308	08/27/18	Miller Pacific	4,456.00	Prof Svcs: Andersen Hillside Repair Project design services, 06/25-08/05/2018
17309	08/27/18	Marin Municipal Water District	46.57	SQSP PS: Water service, 06/08-08/08/2018 (Note B)
17310	08/27/18	Power Industries Co.	604.75	Air cylinder for centrifuge diverter gates
17311	08/27/18	Noel Rafalo	267.93	Employee expense reimb: Supervisor training
17312	08/27/18	SPURR	5,482.94	Natural gas supply, July 2018
17313	08/27/18	Dale Thrasher	29.55	Reimbursement for training materials
17314	08/27/18	Univar USA Inc	8,512.56	Sodium bisulfite (1 delivery); sodium hypochlorite (1 delivery)
17315	08/27/18	Wells Fargo Vendor	374.13	Maintenance copier lease, 07/13-08/12/2018
<u>Payments by Automatic Clearing House:</u>				
	8/3/2018	Payments to 25 retirees	7,614.27	Reimbursement for retiree health benefits
	8/3/2018	CalPERS Medical ins	61,362.67	Medical insurance, July 2018
	8/3/2018	Delta Dental	7,524.40	Dental insurance, July 2018
	8/3/2018	Lincoln Life Ins	1,299.80	Life insurance, July 2018
	8/3/2018	Vision Service Plan -(CA)	858.34	Vision insurance, July 2018
	8/6/2018	PG&E	4,939.51	PG&E renewable energy expansion, June 2018

Central Marin Sanitation Agency  
 Operating Account Disbursements Register  
 For the Month of August 2018

Check Number	Date	Vendor/Payee	Amount	Description
	8/6/2018	CalPERS	34,449.14	Retirement pension contribution: Agency and employees, PPE 07/28/2018 (Note C)
	8/20/2018	CalPERS	34,449.14	Retirement pension contribution: Agency and employees, PPE 08/11/2018 (Note C)
	8/21/2018	CalPERS	700.00	FY 18-19 GASB
	8/6/2018	EDD	11,258.50	State & SDI Taxes, PPE 07/28/2018
	8/20/2018	EDD	11,628.84	State & SDI Taxes, PPE 08/20/2018
	8/23/2018	EDD	1,101.08	State & SDI Taxes, one employee
	8/6/2018	NRS/PEHP-3 and Z	9,872.69	Deferred compensation and MARA contribution, PPE 07/28/2018
	8/20/2018	NRS/PEHP-3 and Z	9,657.29	Deferred compensation and MARA contribution, PPE 08/20/2018
	8/24/2018	Michael Owen Boorstein	100.00	Stipend for 08/20/2018 Board meeting
	8/24/2018	Maribeth Bushey	100.00	Stipend for 08/20/2018 Board meeting
	8/24/2018	Dean DiGiovanni	100.00	Stipend for 08/20/2018 Board meeting
	8/24/2018	Diane L. Furst	100.00	Stipend for 08/20/2018 Board meeting
	8/24/2018	Doug Kelly	100.00	Stipend for 08/20/2018 Board meeting
	8/24/2018	Dan Hillmer	100.00	Stipend for 08/20/2018 Board meeting
		<b>Grand Total</b>	<b>511,921.53</b>	

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  
Treasurer's Report - Operating Account  
For the Month of September 2018**

**I. Accounts Summary: Bank & Investment Accounts**

Summary of Bank & Money Market Accounts

Westamerica Bank - Account Activity shown below	\$ 384,306.58
Local Agency Investment Fund (LAIF) - Refer to Schedule of Investments	15,202,084.95
California Asset Management Program (CAMP) - Refer to Schedule of Investments	367,397.95
<b>Total Bank &amp; Investment Accounts: Ending Balance on September 30, 2018</b>	<b>\$ 15,953,789.48</b>

**II. Account Activity for Westamerica Bank**

Beginning Balance on September 1, 2018 358,655.29


Cash Receipts (Deposits into Westamerica):

Transfers from LAIF	700,000.00
Permit and Inspection Fees	4,430.96
Almonte FOG Program (FY18 4Q: April-June)	135.31
Revenue from Haulers & RVs	10,890.33
Revenue from Organic Waste Programs	6,801.71
Health & Safety Program Revenue (NSD: FY19 1Q Salary/Benefits)	4,696.53
SD 2 Operations & Maintenance Contract (FY19: July)	27,625.96
SQSP Wastewater Services Contract (FY19: July)	84,680.67
SQ Village Operations & Maintenance Contract (FY19: July)	998.69
Misc Revenue: Clean Water State Revolving Fund Disbursement #1	182,779.00
COBRA Health Benefit Payments from separated employees/retirees	89.44
Void check	46.24
<b>Total Cash Receipts</b>	<b>\$ 1,023,174.84</b>

Cash Disbursements (Withdrawals from WestAmerica):

September 2018 Operating account disbursements register (see attached)	\$663,903.90
Regular Payroll paid 09/14/18	138,418.69
Regular Payroll paid 09/28/18	135,050.10
Transfers to EFTPS Federal Payroll Taxes (09/05, 09/19)	60,014.18
Bank Fee	136.68
<b>Total Cash Disbursements</b>	<b>\$997,523.55</b>
<b>Ending Balance on September 30, 2018</b>	<b>\$ 384,306.58</b>

Prepared by:   
Kenneth Spray, Administrative Services Manager

Reviewed by:   
Jason Dow, General Manager

Central Marin Sanitation Agency  
 Operating Account Disbursements Register  
 For the Month of September 2018

Check Number	Date	Vendor/Payee	Amount	Description
17315				Last check # from prior month's register
17316-17351	09/05/18	All employees	1,800.00	Empl Recognition Program: NACWA Award
17352	09/04/18	Phillip Frye	212.97	Reimbursement for retiree health benefits by check
17353	09/04/18	James L. Johnson	183.34	Reimbursement for retiree health benefits by check
17354	09/04/18	Byron Jones	237.34	Reimbursement for retiree health benefits by check
17355	09/04/18	California Public Employee	1,657.00	Contribution to Retiree Health Benefits Trust Fund, PPE 08/25/2018 (Note C)
17356	09/04/18	California State Disbursement	250.50	EE Garnishment, PPE 08/25/2018 (Note A)
17357	09/04/18	ICMA Retirement Trust-457	4,123.00	Deferred compensation contributions, PPE 08/25/2018 (Note A)
17358	09/04/18	Navia Benefit Solutions	607.68	Flexible spending account, PPE 08/25/2018
17359	09/04/18	SEIU Local 1021	1,046.59	Union dues, PPE 08/25/2018
17360	09/11/18	AireSpring	773.88	Telephone service, August 2018
17361	09/11/18	Amazing Solutions, Inc.	2,460.97	Finance software program annual maintenance renewal
17362	09/11/18	Bartley Pump Inc	35,761.00	SQSP PS Maint: Motor Relocation project, final invoice (Note B)
17363	09/11/18	Christopher J Wilson	610.84	Business cards and mailing labels (2 invoices)
17364	09/11/18	CWEA TCP	188.00	Membership renewal (1 employee)
17365	09/11/18	Dahl-Beck Electric	31,670.63	Cogeneration system generator repair
17366	09/11/18	Jason Dow	532.48	Reimbursement for life insurance premium
17367	09/11/18	D.S.Baxley, Inc	1,880.00	OPS Control Room carpet installation
17368	09/11/18	Evoqua Water Tech LLC	20,446.90	Hydrogen peroxide (2 deliveries); lab supplies (1 invoice)
17369	09/11/18	FactoryMation	171.50	Fuses
17370	09/11/18	Grainger	2,058.57	Torque wrench, back-flow repair kit, contact cleaner, electronic oil, belts, hose bib, and misc. parts and supplies (7 invoices)
17371	09/11/18	Hach Company	411.89	Nitrate and buffer solutions (2 invoices)
17372	09/11/18	Harrington Industrial Plastics	776.77	Reclaimed water piping repair materials
17373	09/11/18	Home Depot Credit Services	156.31	Storage shelf and misc. electrical supplies, August 2018
17374	09/11/18	Horizon Dist. Inc	48.66	Irrigation supplies
17375	09/11/18	Institute of Business	265.00	Safety Alert for Supervisors annual renewal
17376	09/11/18	Jackson's Hardware	256.85	Welding and hardware supplies, August 2018
17377	09/11/18	Lab-Pro Inc	10,301.36	Centrifuge parts and related equipment
17378	09/11/18	Lighting Resources LLC	125.00	Exit sign recycling fee
17379	09/11/18	Lystek International LTD	13,080.11	Biosolids beneficial reuse fee, August 2018
17380	09/11/18	Marin Office Supply	918.86	Office supplies, August 2018
17381	09/11/18	McMaster-Carr Supply Co.	1,505.20	Hoses, tubing, clamps, fittings, filters (9 invoices)
17382	09/11/18	Moore Industries	1,488.60	CCT level transmitters upgrade equipment
17383	09/11/18	National Safety Council	395.00	Annual membership renewal
17384	09/11/18	Navia Benefit Solutions	50.00	Flexible spending account, monthly fee
17385	09/11/18	Nickell Fire Protection Inc	5,591.48	Prof Svcs: Agency Fire Protection System Improvements, August 2018
17386	09/11/18	OCCUMETRIC	345.00	Technical Services Manager recruitment: Pre-employment physical
17387	09/11/18	Pacific EcoRisk	4,025.00	NPDES Chronic Toxicity Testing
17388	09/11/18	P.G. & E.	43,139.23	Electricity service, 07/16-08/14/2018 (2 invoices)
17389	09/11/18	Platt	425.56	Condulets
17390	09/11/18	Ricoh USA Inc	513.56	Lab copier lease, 08/09-09/08/2018
17391	09/11/18	Roy's Sewer Service, Inc.	2,500.00	Organic Waste Receiving Facility quarterly cleaning
17392	09/11/18	S and S	8,620.99	Biosolids hauling fee, 08/09-08/29/2018
17393	09/11/18	Safety-kleen Systems, Inc	257.20	Hazardous waste disposal
17394	09/11/18	Jeremy Schwarm	1,000.00	Employee expenses eligible for Agency dental reimbursement
17395	09/11/18	SHAPE Incorporated	129.00	SD2 PS Maint: Motor oil for Heron Court (Note B)
17396	09/11/18	Synagro West, Inc.	3,753.75	Biosolids land application fee, July 2018
17397	09/11/18	Ahn Ta	1,000.00	Employee expenses eligible for Agency dental reimbursement
17398	09/11/18	Teledyne Instruments Inc	16,807.26	Refrigerated sampler and associated equipment
17399	09/11/18	Univar USA Inc	12,550.58	Sodium hypochlorite (2 deliveries); Sodium bisulfite (1 delivery)
17400	09/11/18	VWR International	1,306.50	Tubing and syringes

Central Marin Sanitation Agency  
 Operating Account Disbursements Register  
 For the Month of September 2018

17401	09/11/18	Water Components & Bldg. Supp.	811.86	Test plugs for spill vault isolation
17402	09/11/18	CAL-CARD	9,714.37	State of California Purchase Card, July-August 2018
17403	09/13/18	Downtown SR Farmer's Market	50.00	Pub Ed Program: SR Farmer's Market booth, 09/20/2018 (Note B)
17404	09/17/18	California Public Employee	4,142.48	Contribution to Retiree Health Benefits Trust Fund, PPE 09/08/2018 (Note C)
17405	09/17/18	California State Disbursement	250.50	EE Garnishment, PPE 09/08/2018 (Note A)
17406	09/17/18	ICMA Retirement Trust-457	4,373.00	Deferred compensation contributions, PPE 09/08/2018 (Note A)
17407	09/17/18	Navia Benefit Solutions	607.66	Flexible spending account, PPE 09/08/2018
17408	09/17/18	SEIU Local 1021	1,046.59	Union dues, PPE 09/08/2018
17409	09/17/18	Amazing Solutions, Inc.	75.00	Finance software support, August 2018
17410	09/17/18	Aramark Uniform Services	1,417.26	Uniform service, August 2018
17411	09/17/18	Aramark Uniform Services	176.81	Uniform items for two employees
17412	09/17/18	BWS Distributors, Inc.	692.47	Arc Flash self-retracting life-line
17413	09/17/18	Comcast	191.20	Internet service, 09/04-10/03/2018
17414	09/17/18	County of Marin	14,000.00	Pub Ed Program: FY19 RxSafe Marin contribution (Note B)
17415	09/17/18	Dee Consultants LLC	5,760.00	Prof Svcs: Construction Management Support, August 2018
17416	09/17/18	East Bay Muni Utility District	41,052.00	FY19 BACWA membership and special program fees
17417	09/17/18	Evoqua Water Tech LLC	19,183.50	Calcium nitrate (1 delivery); Hydrogen peroxide (1 delivery)
17418	09/17/18	Fast Ward	4,000.00	Pub Ed Program: FastForward sponsorship (Note B)
17419	09/17/18	Graphic Products Inc	585.98	Labeling supplies
17420	09/17/18	IEDA, Inc.	809.00	Labor relations consulting, September 2018
17421	09/17/18	Koff & Associates, Inc.	7,875.00	Prof Svcs: Technical Services Manager recruitment , final billing; E/S Analyst recruitment, Phase I (2 invoices)
17422	09/17/18	Kone Inc	136.70	Elevator maintenance, September 2018
17423	09/17/18	Marin Sanitary Service	3,857.26	Rag bin service (2 invoices)
17424	09/17/18	Nicola Franceschine	1,200.00	GASB 68 Disclosure preparation
17425	09/17/18	Ongaro & Sons	743.00	Annual back-flow device testing
17426	09/17/18	Orchard Business/SYNCB	306.26	Groundskeeping tools, tubing, and misc. supplies
17427	09/17/18	Ricoh USA Inc	317.99	Admin copier lease, 08/23-09/22/2018
17428	09/17/18	Seco Controls LLC	3,150.49	Digester laser level transmitter
17429	09/17/18	Thomas Fish Company	138.50	Rainbow trout for monthly bioassay
17430	09/17/18	Waste Management	2,342.12	Redwood Landfill biosolids reuse fee, August 2018
17431	09/17/18	Woodland Center Auto Supply	34.88	Vehicle supplies, August 2018
17432	09/17/18	Paul Bruemmer	523.00	Employee per diem advance: WEFTEC Annual Conference
17433	09/17/18	Chris Finton	432.00	Employee per diem advance: WEFTEC Annual Conference
17434	09/25/18	Amazon	829.53	Computer monitors and accessories, log books, August 2018
17435	09/25/18	AT&T	395.30	Fax and emergency phone service, 09/07-10/06/2018
17436	09/25/18	AT&T Dataplan	399.60	Wireless service, 08/02-09/01/2018
17437	09/25/18	Automation Direct Co., Inc.	232.00	Electrical components
17438	09/25/18	Carollo Engineers, Inc.	21,246.56	Prof Svcs: PG&E Interconnection Design Project, August 2018; 2017 Facilities Master Plan Project, August 2018 (2 invoices)
17439	09/25/18	CWEA TCP	188.00	Membership renewal (1 employee)
17440	09/25/18	DELL Marketing L.P.	27,519.66	Staff computer upgrades (45 workstations)
17441	09/25/18	Evoqua Water Tech LLC	9,946.03	Hydrogen peroxide (1 delivery)
17442	09/25/18	FactoryMation	656.00	Transformer and fuses (2 invoices)
17443	09/25/18	Fastenal Company	1,083.44	Maintenance vending machine replenishment (2 invoices)
17444	09/25/18	Chris Finton	1,084.00	Commuter Reimbursement Program, August 2018
17445	09/25/18	Fisher Scientific	549.91	Vials, tubes, and membrane kit
17446	09/25/18	Flyers Energy LLC	1,439.19	Engine motor oil
17447	09/25/18	Grainger	232.42	Flange, piping, gauge, coupling, and lighting equipment
17448	09/25/18	McInerney & Dillon, P.C.	70.00	Legal services, construction/contract law, August 2018
17449	09/25/18	Nexgen Utility Management	2,000.00	On-site staff training for CMMS software upgrade
17450	09/25/18	Nickell Fire Protection Inc	855.00	Prof Svcs: Agency Fire Protection System Improvements (final invoice)
17451	09/25/18	Anthony Smith	236.00	Commuter Reimbursement Program, September 2018
17452	09/25/18	Thatcher Company of	11,558.85	Ferric chloride (2 deliveries)

Central Marin Sanitation Agency  
 Operating Account Disbursements Register  
 For the Month of September 2018

17453	09/25/18	Univar USA Inc	6,946.03	Sodium hypochlorite (2 deliveries)
17454-17468	09/25/18	All employees	3,300.00	Empl Safety Incentive Program: Safety awards (15 employees)
17469	09/28/18	California State Disbursement	250.50	EE Garnishment, PPE 09/22/2018 (Note A)
17470	09/28/18	ICMA Retirement Trust-457	3,450.00	Deferred compensation contributions, PPE 09/22/2018 (Note A)
17471	09/28/18	Navia Benefit Solutions	607.68	Flexible spending account, PPE 09/22/2018
17472	09/28/18	SEIU Local 1021	1,046.59	Union dues, PPE 09/22/18
17473	09/27/18	Jason Dow	90.00	Employee per diem reimbursement: CASA Board planning retreat
17474	09/27/18	Downtown SR Farmer's Market	40.00	Pub Ed Program: SR Farmer's Market booth, 09/27/2018 (Note B)
17475	09/27/18	Ben Northcroft	456.00	Employee expenses eligible for Agency dental reimbursement

Payments by Automatic Clearing House:

9/4/2018	Payments to 25 retirees	8,907.99	Reimbursement for retiree health benefits
9/5/2018	CalPERS Medical ins	61,666.44	Medical insurance, August 2018
9/5/2018	Delta Dental	7,467.83	Dental insurance, August 2018
9/5/2018	Lincoln Life Ins	1,988.93	Life insurance, August 2018
9/5/2018	Vision Service Plan -(CA)	858.34	Vision insurance, August 2018
9/4/2018	CalPERS	34,994.81	Retirement pension contribution: Agency and employees, PPE 08/25/2018 (Note C)
9/19/2018	CalPERS	34,994.81	Retirement pension contribution: Agency and employees, PPE 09/08/2018 (Note C)
9/4/2018	EDD	11,475.42	State & SDI Taxes, PPE 08/25/2018
9/18/2018	EDD	12,855.48	State & SDI Taxes, PPE 09/08/2018
9/4/2018	NRS/PEHP-3 and Z	9,719.70	Deferred compensation and MARA contribution, PPE 08/25/2018
9/18/2018	NRS/PEHP-3 and Z	6,719.70	Deferred compensation and MARA contribution, PPE 09/08/2018
9/12/2018	Give Something Back Furniture	7,131.37	OPS control room furniture and fixtures, final invoice
	<b>Grand Total</b>	<b>663,903.90</b>	

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 of Investments  
As of Month Ending August 31, 2018

Description	Book Value	Market Value	Agency Reserve Target for August 31, 2018
<b>I. Investments managed by California Asset Management Program (CAMP)</b>			
<u>Money Market Funds (&lt; 1 year in maturity)</u>			
CAMP Cash Reserve Pool: 2.12% at 08/31/18			
b1. Agency Unrestricted Reserve: Operating	\$ 16,752.36	\$ 16,752.36	See LAIF
b2. Agency Unrestricted Reserve: Emergency	\$ 250,000.00	\$ 250,000.00	\$ 250,000
b3. Agency Unrestricted Reserve: Insurance	\$ 100,000.00	\$ 100,000.00	\$ 100,000
<b>Total with CAMP</b>	<b>\$ 366,752.36</b>	<b>\$ 366,752.36</b>	
<b>II. Investments managed by Local Agency Investment Fund (LAIF)</b>			
<u>Money Market Funds (&lt; 1 year in maturity)</u>			
Local Agency Investment Fund (LAIF): 1.944% at 07/31/18			
a. Current Year Operating	\$ 5,209,092.31	\$ 5,209,092.31	
b1. Agency Unrestricted Reserve: Operating	\$ 2,938,747.64	\$ 2,938,747.64	\$ 2,955,500
c1. Capital Reserves (Restricted)	\$ 993,301.00	\$ 993,301.00	\$ 993,301
c1. Capital Reserves (Restricted-Capacity/Connection Fees)	\$ -	\$ -	
c2. Capital Reserves (Unrestricted)	\$ 6,760,944.00	\$ 6,760,944.00	\$ 5,434,896
<b>Total with LAIF</b>	<b>\$ 15,902,084.95</b>	<b>\$ 15,902,084.95</b>	
<b>TOTAL INVESTMENTS</b>	<b>\$ 16,268,837.31</b>	<b>\$ 16,268,837.31</b>	
<u>Amount designated for Capital Reserves</u>			
1. CAMP	\$ -	\$ -	
2. LAIF	\$ 7,754,245.00	\$ 7,754,245.00	\$ 6,428,197
<b>Total</b>	<b>\$ 7,754,245.00</b>	<b>\$ 7,754,245.00</b>	<b>\$ 6,428,197</b>

DEFINITIONS:

Description - the issuer, type of security and interest rate

Book Value - Original cost net of accumulated amortization

Market Value - Market values are per the fiscal agent's respective monthly statements

Statement of Compliance

The above of investments are in compliance with the Agency's investment policy adopted annually by the Board of Commissioners in accordance with 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.

CENTRAL MARIN SANITATION AGENCY  
SCHEDULE OF INVESTMENTS  
As of the Month Ended September 30, 2018

Description	Book Value	Market Value (1)	% Port	Projected Year End
<b>I. Pooled Investments with California Asset Management Program (CAMP)</b>				
Money Market Funds (< 1 year in maturity)				
CAMP Cash Reserve Pool: 2.14% at 09/30/18				
b1. Agency Unrestricted Reserve: Operating	\$ 17,397.95	\$ 17,397.95		
b2. Agency Unrestricted Reserve: Emergency	250,000.00	250,000.00		\$ 250,000
b3. Agency Unrestricted Reserve: Insurance	100,000.00	100,000.00		\$ 100,000
<b>Total with CAMP</b>	<b>\$ 367,397.95</b>	<b>\$ 367,397.95</b>	<b>2.4%</b>	
<b>II. Pooled Investments with Local Agency Investment Fund (LAIF)</b>				
Money Market Funds (< 1 year in maturity)				
Local Agency Investment Fund (LAIF): 1.998% at 08/31/18				
a1. Operating Reserves (Unrestricted General)	\$ 2,604,219.95	\$ 2,604,219.95		
b1. Operating Reserves (Unrestricted) (2)	\$ 2,955,500.00	\$ 2,955,500.00		\$ 2,955,500
c1. Capital Reserves (Restricted) (3)	\$ 1,573,305.00	\$ 1,573,305.00		\$ 993,301
c2. Capital Reserves (Unrestricted) (4)	\$ 8,069,060.00	\$ 8,069,060.00		\$ 5,434,896
<b>Total with LAIF</b>	<b>\$ 15,202,084.95</b>	<b>\$ 15,202,084.95</b>	<b>97.6%</b>	
<b>TOTAL INVESTMENTS</b>	<b>\$ 15,569,482.90</b>	<b>\$ 15,569,482.90</b>	<b>100.0%</b>	

NOTES:

- (1) Market values are per the fiscal agent's respective monthly statements  
(2) Operating reserves calculated at 25% operating budget

- (3) Includes capacity charges and debt service coverage  
(4) 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  
CAPITAL RESERVES SUMMARY FOR THE SCHEDULE OF INVESTMENTS

Year-to-Date as of the Month Ended Setpember 30, 2018

<b>Restricted Capital Reserves Sources and Uses</b>	Month	YTD
Balance - beg	\$ 1,624,118	\$ 990,477
Capacity charges revenue	-	21,037
Debt coverage collection revenue	-	792,269
YTD restricted capital reserve funding sources	-	813,306
Capacity charges usage for capital (1st)	-	(21,037)
Debt coverage usage for capital (2nd)	(50,813)	(209,441)
YTD restricted capital reserve uses	(50,813)	(230,478)
Balance - end	\$ 1,573,305	\$ 1,573,305
 <b>Unrestricted Capital Reserves Sources and Uses</b>		
Balance - beg	\$ 8,069,060	\$ 7,866,245
Capital fee revenue	-	202,815
Unrestricted operating-reserve-transfer-in	-	-
YTD unrestricted capital reserve funding sources	-	202,815
Capital fee usage to fund CIP (3rd)	-	-
Unrestricted capital reserve draw (4th)	-	-
YTD unrestricted capital reserve uses	-	-
Balance - end	\$ 8,069,060	\$ 8,069,060
 <b>Total capital reserve balances</b>	 <b>\$ 9,642,365</b>	 <b>\$ 9,642,365</b>
 <b>Total approved CIP budget</b>	 \$ 2,862,500	 \$ 2,862,500
<b>Total CIP funded from capital reserve sources</b>	230,478	230,478
<b>Total approved capital budget remaining</b>	<b>\$ 2,632,022</b>	<b>\$ 2,632,022</b>




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**BOARD MEMORANDUM**

September 12, 2018

To: CMSA Commissioners and Alternates

From: Chris Finton, Treatment Plant Manager 

Approved: Jason Dow, General Manager

Subject: **August 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report**

**Recommendation:** Accept the August 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report.

**I. NPDES Permit Compliance**

Our NPDES permit testing for August 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 August 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. No blend events were recorded in August allowing CMSA to forgo enterococcus sampling. The next quarterly sampling is tentatively scheduled for September.

**II. Influent Flow**

August in central Marin County was marked by periods of fog, high winds, and for a few days this past month, periods of high heat. It remained very dry with no precipitation recorded by the Headwork's rain gauge. The plant's average daily influent flow was 8.7 MGD.

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

August Monthly Influent Flows	San Rafael (SRSD)	Ross Valley (SD#1)	San Quentin (SQSP)	Corte Madera (SD#2)	CMSA Plant Total
Average Daily (MGD)	3.6 MGD	3.8 MGD	0.46 MGD	0.84 MGD	8.7 MGD
Total for Month (MG)	111.2 MG	117.8 MG	14.4 MG	26.1 MG	269.5 MG
Percent of Flow	41.0 %	44.0 %	5.0 %	10.0 %	100 %

### **III. Treatment Process**

Annual dry weather preventative maintenance continued through August with Operations staff transitioning process equipment in and out of service. Specifically, Primary Clarifiers 2 and 4 were rotated out of service for annual maintenance and reclaimed water piping replacement work. Staff also executed a flow diversion to allow for the removal of a temporary isolation "coffer" dam in the primary influent channel and to remove and replace the secondary effluent drain sump's isolation gate. Both process areas required the extensive use of Lockout-Tagout (LOTO) devices to ensure worker safety prior to being turned over to the Maintenance Department. The Mixed Liquor Suspended Solids (MLSS) inventory averaged 1,037 mg/l in August, a 2.0% decrease from last month. The biomass inventory is at an optimal level based on present process conditions, and aligns with the process control decision to carry between 1,000 and 1,200 mg/L to manage our biomass and effectively meet our permit limits.

Graph No.3 shows the coliform most probable number (MPN), which represents the effectiveness of the disinfection process. One of the thirteen coliform samples collected in August, (8/7 = 79 MPN) was higher than our monthly KPI of 15 mg/L, but remained well below our daily permit's limit of 10,000 MPN. The higher than normal August 7 sample value was attributed to rotating secondary clarifiers in/out of service for annual maintenance. The total coliform monthly geometric mean for August was 2.4 MPN, well below our permit's monthly limit of 240 MPN.

Graph No.4 shows the Total Suspended Solids (TSS), which is a good indicator of the effluent quality. The TSS monthly average in August was 3.9 mg/l, which is 26.0% of our Key Performance Indicator (KPI) of 15 mg/l, and is 13.0% of our permit's monthly average limit of 30 mg/l.

### **IV. Maintenance Activities**

The cogeneration system produced 37.7% of the Agency's power in August, and MCE supplied the balance. The cogenerator, as indicated on Graph No.8, was removed from service on August 5 after an inspection from Dahl-Beck Electric indicated that the generator's stator winding (wire coil) had failed. In order to verify their diagnosis and inspect the generator for further damage, the unit was uncoupled from the Waukesha engine on August 8 by CMSA staff and transported to Dahl-Beck's service facility. On August 14, it was verified that the stator winding was the single source of the failure and CMSA authorized Dahl-Beck to make the necessary repairs. The generator was returned to CMSA on August 23 and Agency staff reconnected it to the Waukesha engine. The cogeneration system was started on August 24 and immediately began producing green power for the Agency and is currently operating as normal.

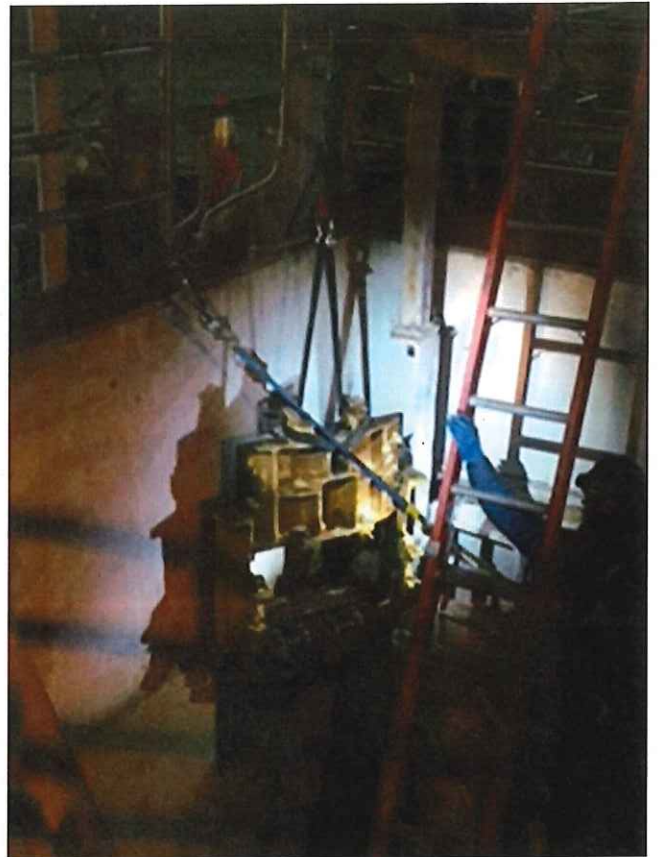
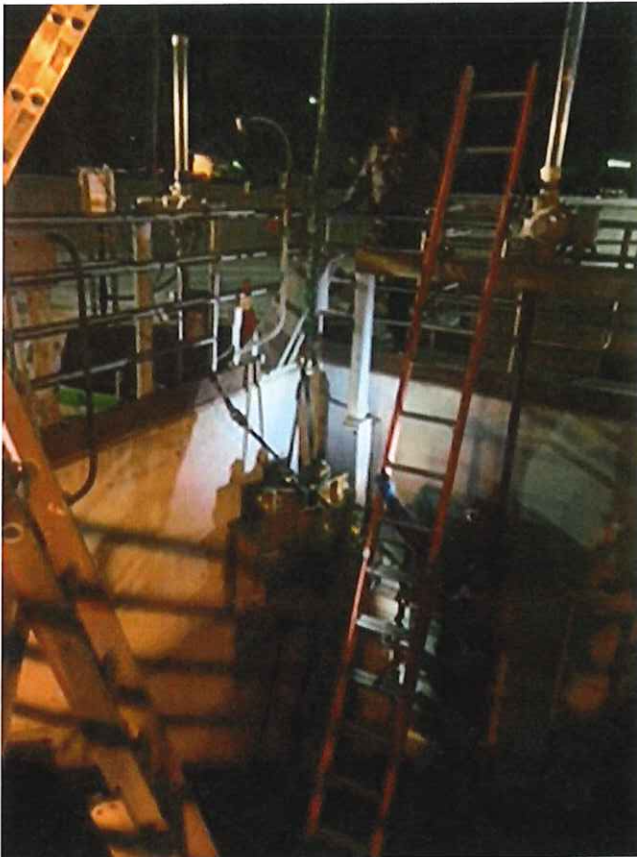
The majority of August's work activities were spent performing annual process equipment preventative maintenance. In addition, project work included the replacement and automation of the isolation gate between the secondary effluent channel and facility effluent storage pond; replacement of a failed primary clarifier sludge pump in the facility's gallery system; replacement of a 36" expansion joint in the biotower basement; replacement of the drive chain, leveling of the weirs, and rehabilitation of the reclaimed water piping in Primary Clarifier 3; replacement of one secondary effluent composite sampler; and assisting Technical Services with a coatings repair project in areas around the bulk chemical storage building.

#### **Attachment:**

- August 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

# NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

August 2018



Afterhours flow diversion to remove the manually controlled secondary effluent drain sump isolation gate.



Newly installed automatic and SCADA controlled secondary effluent drain sump isolation gate.

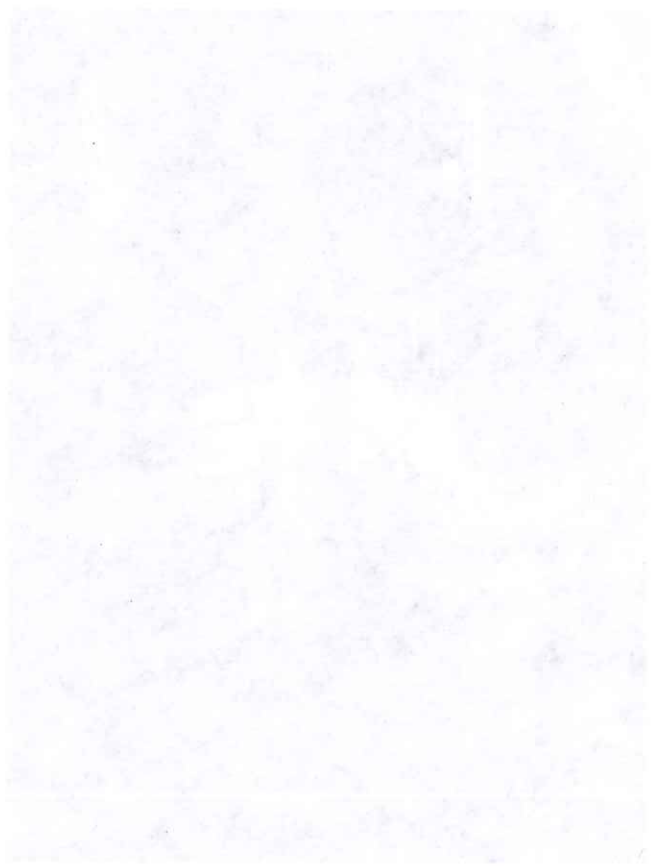


Table with 2 columns and 3 rows of content.	

### Monthly Compliance Summary Table

Central Marin Sanitation Agency

August, 2018

#### Final Effluent Monitoring

Parameter	Frequency	Units	Results	Limit
Carbonaceous BOD Highest Weekly Average	Weekly	mg/L	5.1	Maximum 40
Carbonaceous BOD Monthly Average	Monthly	mg/L	4.9	Maximum 25
Carbonaceous BOD Monthly Removal Rate	Monthly	%	98.9	Minimum 85
Total Suspended Solids Highest Weekly Average	Weekly	mg/L	3.9	Maximum 45
Total Suspended Solids Monthly Average	Monthly	mg/L	3.9	Maximum 30
Total Suspended Solids Monthly Removal Rate	Monthly	%	99.3	Minimum 85
Chlorine Residual Instant Limit	Instant	mg/L	ND	Maximum 0.0
Ammonia Monthly Average	Monthly	mg/L	33.4	Maximum 60
Ammonia Maximum Daily	Daily	mg/L	38.1	Maximum 120
pH Lower Limit	Continuous	SU	6.9	Minimum 6
pH Upper Limit	Continuous	SU	7.7	Maximum 9
<b>Bacteriological Analysis</b>				
Total Coliform Monthly Geometric Mean	3 X Week	MPN/100mL	2.4	Maximum 240
Total Coliform Daily Maximum	3 X Week	MPN/100mL	79.0	Maximum 10,000
Enterococcus Monthly Geometric Mean	Monthly	MPN/100mL	*	Maximum 35
<b>Flow Through Bioassay</b>				
Acute Toxicity 11 Sample 90th Percentile	Monthly	% survival	100	Minimum 70
Acute Toxicity 11 Sample Median	Monthly	% survival	100	Minimum 90
<b>Metals Analysis</b>				
Copper Daily Limit	Monthly	ug/L	5.10	Maximum 85
Copper Monthly Average	Monthly	ug/L	5.10	Maximum 49
Cyanide Daily Limit	Monthly	ug/L	J2.30	Maximum 41
Cyanide Monthly Average	Monthly	ug/L	J2.30	Maximum 21
Mercury Weekly Average	Weekly	ug/L	0.0030	Maximum 0.072
Mercury Monthly Average	Monthly	ug/L	0.0030	Maximum 0.066
Mercury Monthly Loading	Monthly	kg/mo	0.00225	
Mercury Annual Loading (watershed permit)	Jan-Dec	kg/yr	0.03811	Maximum 0.11
<b>Permit Analysis</b>				
Dioxin - Total Equivalent (TEQ) Daily Maximum	1/Permit Cycle	ug/L	*	Maximum 2.8E-08
Dioxin - Total Equivalent (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
<b>Quarterly Analysis</b>				
Oil and Grease Daily Limit	Quarterly	mg/L	ND	Maximum 20
Oil and Grease Monthly Average	Quarterly	mg/L	ND	Maximum 10
Chronic Bioassay Toxicity	Quarterly	Tuc	*	Maximum 20
Chronic Bioassay Toxicity (3 sample median)	Quarterly	Tuc	ND	Maximum 10
<b>Flow Analysis</b>				
	Daily Max	Hourly Max	5 minute Max	Monthly Average
Effluent Flow	7.5	14.1	17.8	6.5
Influent Flow	10.7	16.7	22.6	8.7
# Days Blended				0

\* Monitoring Not Required This Month ND = None Detected X = Data not available at report time J = Detected by not Quantified  
 Monthly and Weekly Average values may not align as weekly average values are based on NPDES criteria (Sunday to Saturday), which may not include values for the entire month.



## 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<sup>th</sup> 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**  
**August 2018**

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

**Dewatering**

Average Centrifuge Feed concentration was:	<u>2.9</u>	%
Average Biosolids concentration was:	<u>26.7</u>	%
Average TSS of the Centrate was:	<u>223</u>	mg/l
Solids capture of the Centrifuge was:	<u>99.3</u>	%
Polymer use per Dry ton of biosolids was:	<u>14.91</u>	#/dry ton
Average polymer feed rate per run was:	<u>3.45</u>	gpm
Average concentration of the polymer batches was:	<u>0.328</u>	%
Average sludge feed rate per run was:	<u>51.3</u>	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 flow; and the black graph line depicts the CMSA rain gauge recordings for the month.

**Graph #2:**

Depicts individual collection member agency flows. The Y-axis is in the dry weather flow range of 0-20 MGD. The unseasonally high flow spike from RVSD on August 8 was a result of scheduled pump station maintenance and a return to normal service.

**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 2.4 MPN through August, which is less than our KPI median of 30 MPN and permit limit of 240 MPN.

**Graph #4:**

Depicts the total suspended solids in the effluent. Our monthly average was 3.9 mg/l versus our KPI of 15 mg/l and permit monthly average limit of 30 mg/l.

**Graph #5:**

Depicts the effluent CBOD which is measuring the oxygen demand of the wastewater. The August effluent CBOD average was 4.9 mg/l, well below our NPDES limits of 40 mg/l weekly and 25 mg/l for the month.

**Graph #6:**

Depicts the degree to which the biosolids have been dewatered. Our biosolids % concentration exceeded our KPI of 25% for the entire month of August. Dewatering operations did not occur on August 5.

**Graph #7:**

Depicts the amount of Biogas that is produced in the digesters, and then used to produce electricity. Biogas production in August averaged 236,286 cubic feet per day, which exceeded our monthly KPI of 200,000 cubic feet per day.

**Graph #8:**

This graph depicts the amount of energy produced through cogeneration versus the energy purchased from MCE for Agency operations. The cogeneration engine was offline for over half of the month of August producing 37.7% of the facility's power needs. The engine was offline to conduct emergency repairs to the generator.

## Executive Summary Process Performance Data

August 2018

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

### Primary Clarifier Performance

Average Total Suspended Solids (TSS) in:	<u>629.2</u>	mg/l	Expected removal efficiencies as outlined in Metcalf & Eddy Wastewater Engineering Manual
Average TSS out:	<u>154.0</u>	mg/l	
Average Percent Removal Achieved:	<u>75.7</u>	%	Design 50-70% Removal
Average Total Carbonaceous Biochemical Oxygen Demand (CBOD) in:	<u>464.2</u>	mg/l	Design 25-40% Removal
Average CBOD out:	<u>206.6</u>	mg/l	
Average Percent Removal Achieved:	<u>55.1</u>	%	
Average Plant Influent Flows:	<u>8.7</u>	MGD	

### Biower Performance

Average TSS out:	<u>88.8</u>	mg/l	Design 25-30% Removal
Average CBOD out:	<u>54.7</u>	mg/l	
Average Percent CBOD Removal Achieved:	<u>72.4</u>	%	

### Aeration Tanks/Activated sludge

Dissolved Oxygen set point:	<u>1.9</u>	mg/l
Average MLSS:	<u>1,034</u>	mg/l
Average MCRT:	<u>3.02</u>	Days
Average SVI:	<u>160</u>	

### Secondary Clarifiers

Average WAS concentration:	<u>6,851</u>	mg/l
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### Final Effluent

Average Effluent TSS for the month was:	<u>3.9</u>	mg/l	(Maximum Limit: 30mg/l)
Week #1 weekly average	<u>3.5</u>		(Maximum Limit: 45mg/l)
Week #2 weekly average	<u>3.9</u>		"
Week #3 weekly average	<u>3.8</u>		"
Week #4 weekly average	<u>3.9</u>		"
Week #5 weekly average	<u>N/A</u>		"
Monthly average TSS removal efficiency through the plant was:	<u>99.3</u>	%	(Minimum Limit: 85%)

Average Effluent CBOD was:	<u>4.9</u>	mg/l	(Maximum Limit: 25mg/l)
Week #1 weekly average	<u>4.6</u>		(Maximum Limit: 40mg/l)
Week #2 weekly average	<u>4.6</u>		"
Week #3 weekly average	<u>4.6</u>		"
Week #4 weekly average	<u>5.1</u>		"
Week #5 weekly average	<u>N/A</u>		"
Monthly average CBOD removal efficiency through the plant was:	<u>98.9</u>	%	(Minimum Limit: 85%)

Disinfection Dosing Rate:	<u>3.2</u>	mg/l	monthly average
Total Coliform Monthly Geometric Mean:	<u>2.4</u>	MPN	(Maximum 240)
The Daily Maximum Total Coliform Count for the month was:	<u>79.0</u>	MPN	(Maximum 10,000)
Enterococcus Monthly Geometric Mean:	<u>N/A</u>	MPN	(Maximum 35 MPN)
Effluent pH for the month was:	Min	<u>6.9</u>	(Min 6.0)
	Max	<u>7.7</u>	(Max 9.0)

### Digester Treatment

Average Thickened Waste Concentration from the RDT was:	<u>7.0</u>	%	
Average percent of Volatile Solids destroyed was:	<u>84.5</u>	%	
Cubic feet of biogas produced was:	<u>7,324,870</u>	(Total)	<u>236,286</u> (Daily Average)
Average temperature of the digester was:	<u>102.1</u>	degrees Fahrenheit	

## Glossary of Terms Process Performance Data Sheet

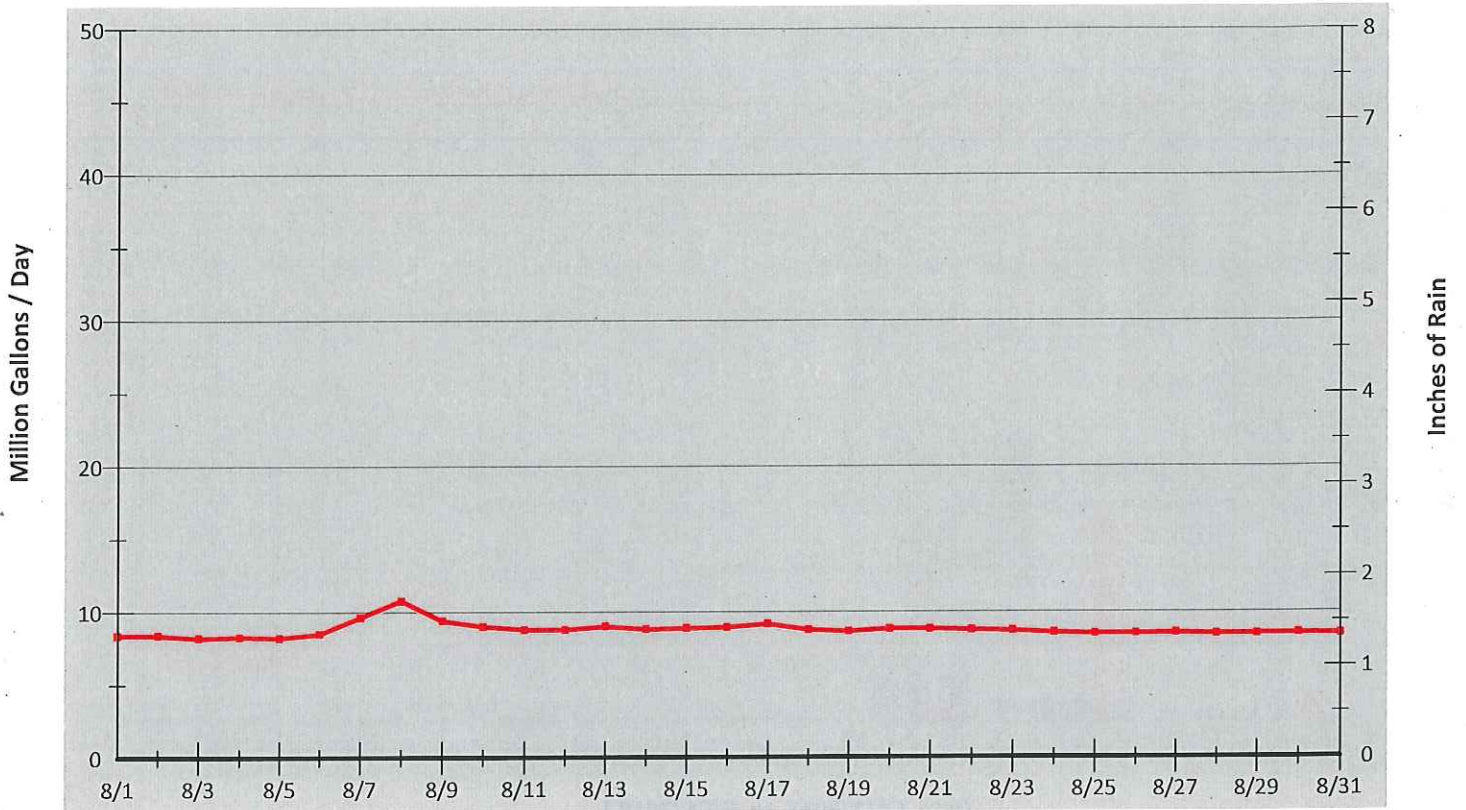
- **Aeration Tanks:** A biological process that takes place after the biotowers, where biomass (microorganisms) is mixed with the wastewater to feed on dissolved and suspended organic material. High speed blowers are used to provide compressed air to mix the tank contents.
- **Anaerobic Digesters:**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

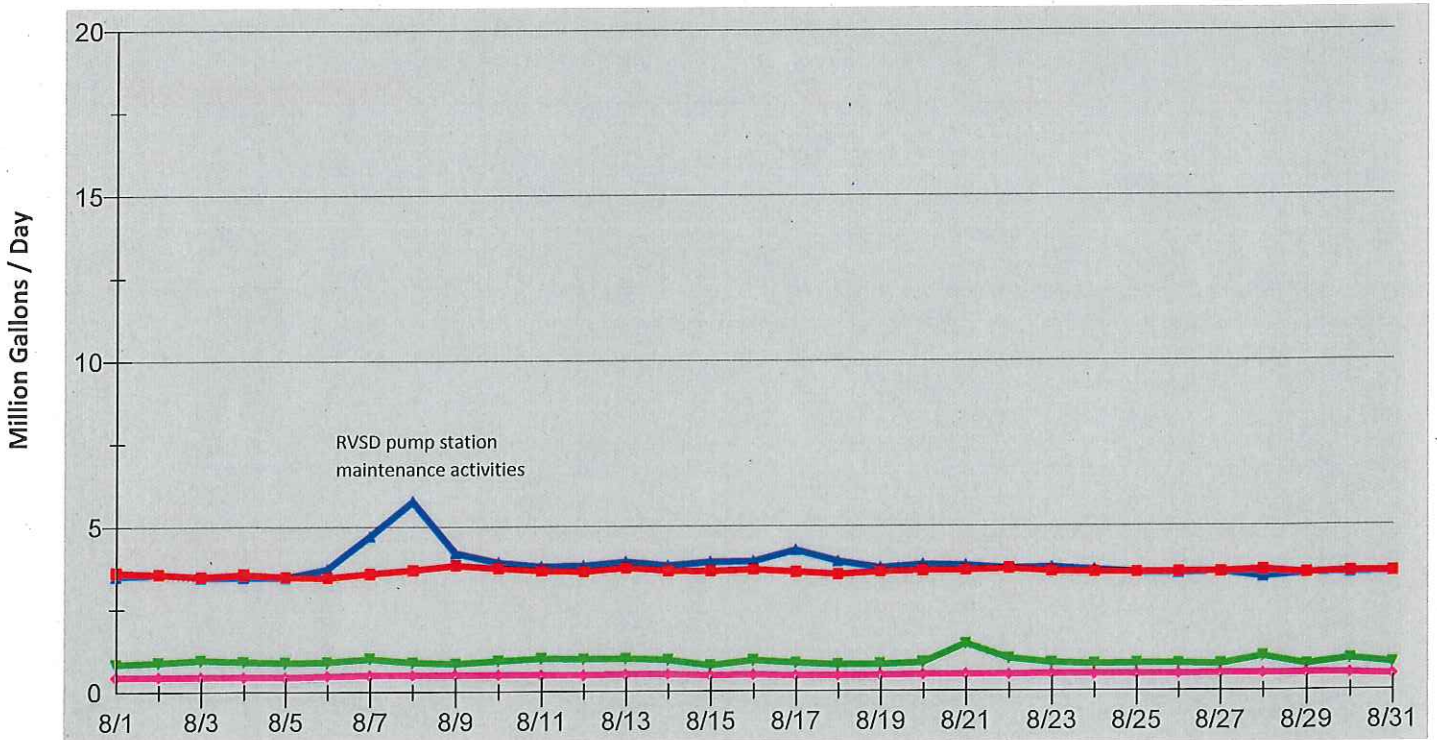


Date ( 8/1/2018 to 8/31/2018 )

■ Flow (Daily Average) ◆ Rainfall

(#1) CMSA Influent Flow

**Graph #2: Collection System Influent Flows**

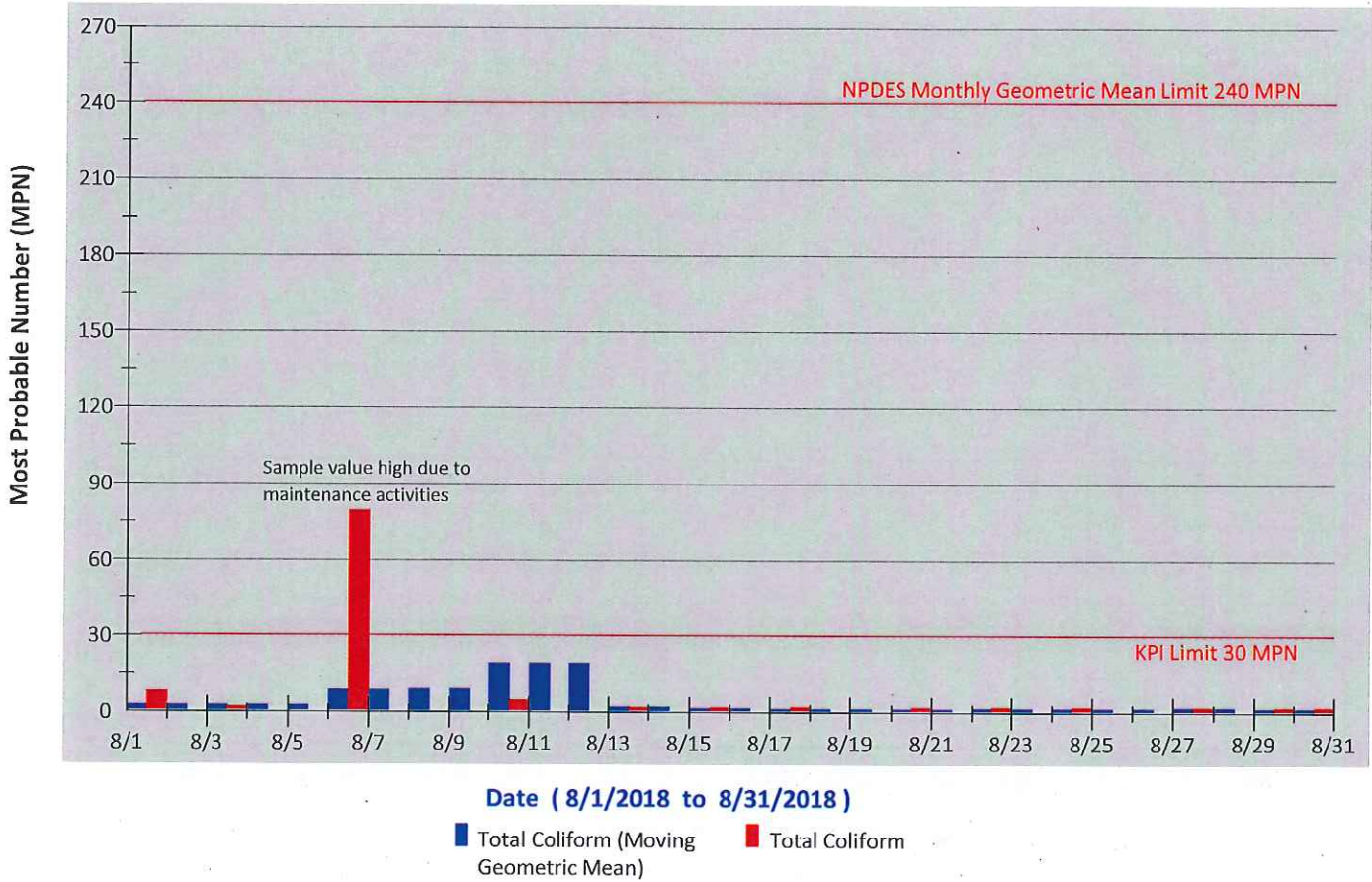


Date ( 8/1/2018 to 8/31/2018 )

▲ RV Flow (Daily Average) ■ SR Flow (Daily Average) ▼ SD#2 Flow (Daily Average) ◆ SQ Flow (Daily Average)

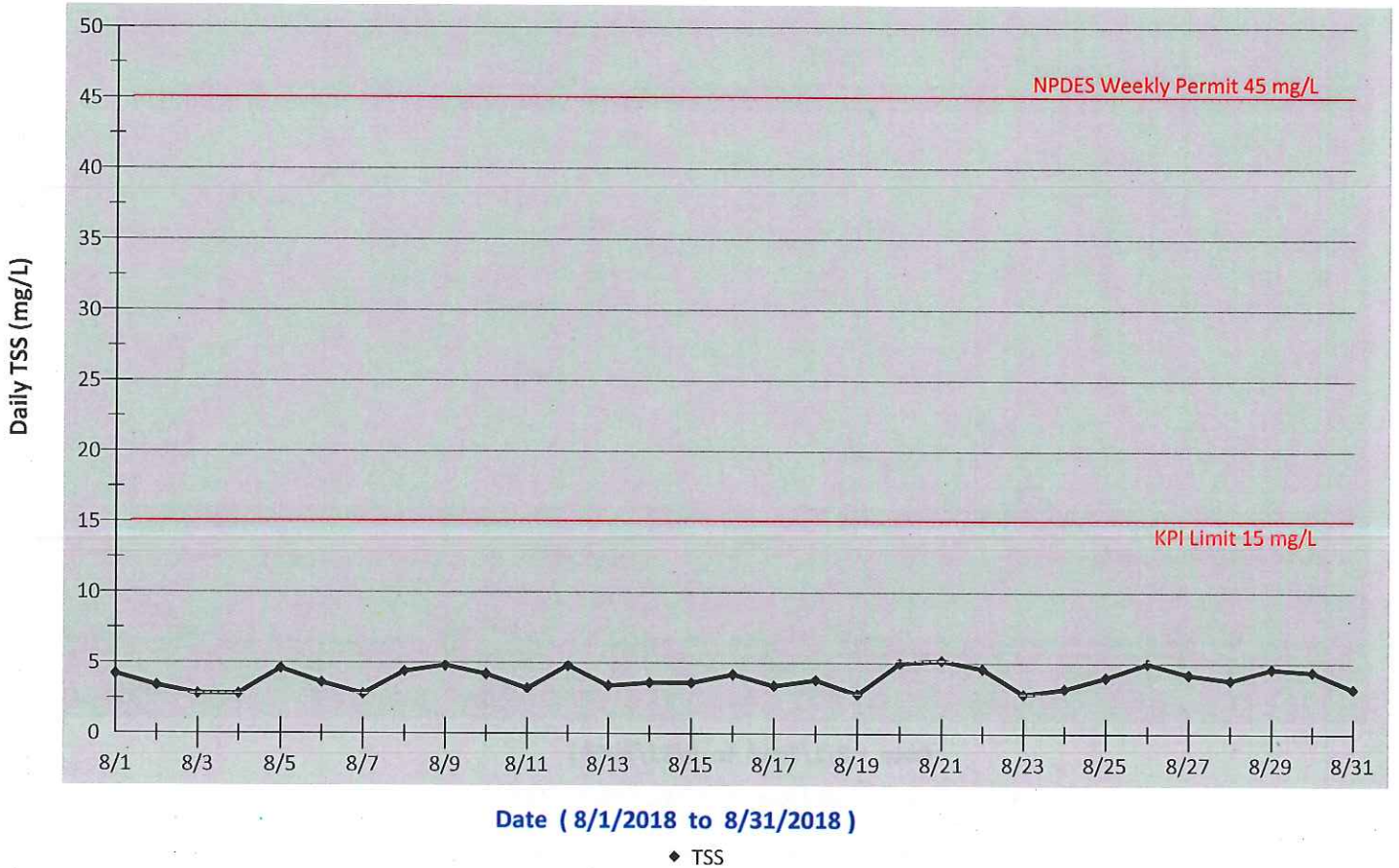
(#2) Collection System Influent Flows

**Graph #3: Total Coliform & Monthly Geometric Mean**



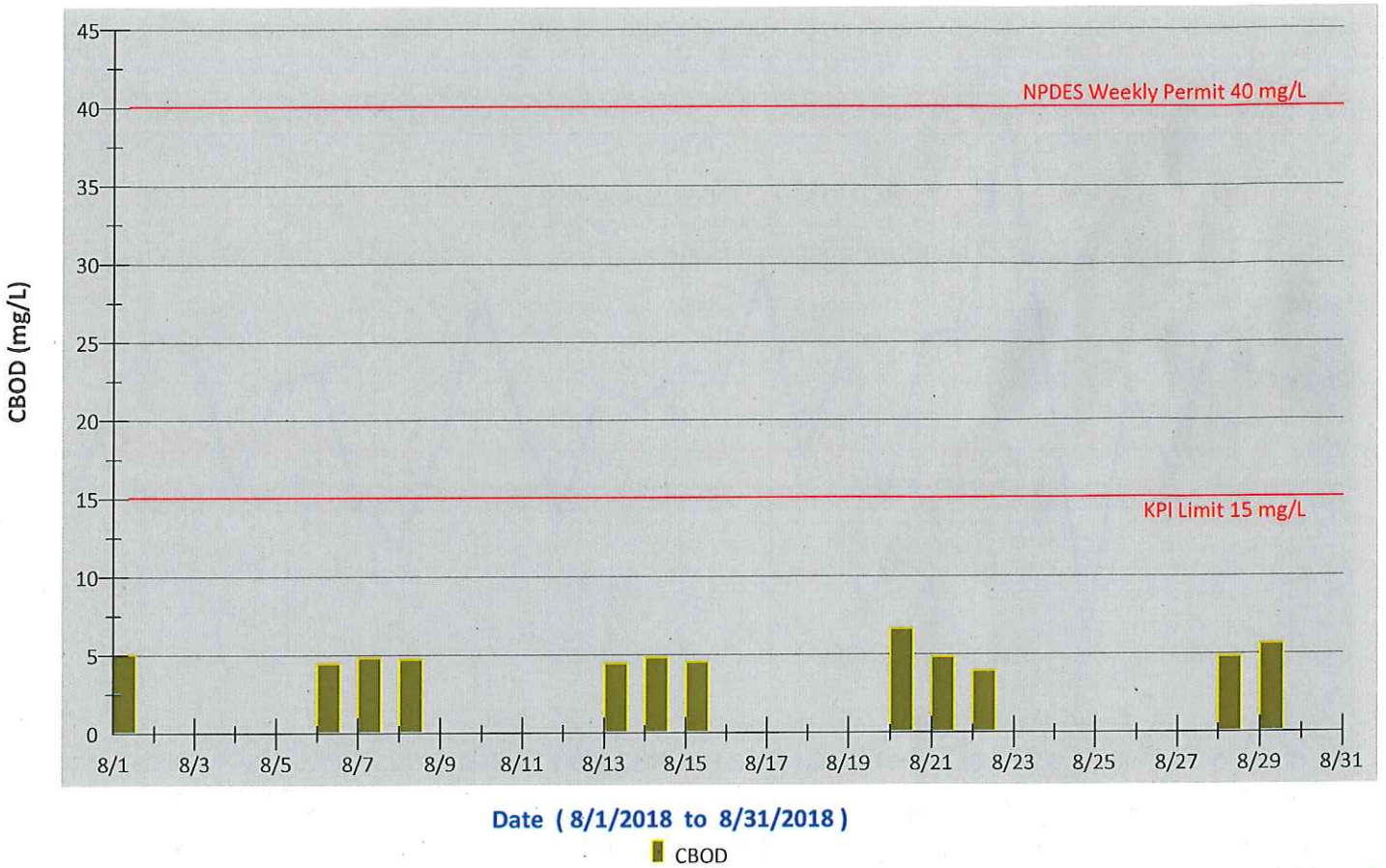
(#3) Total Coliform & Monthly Geometric Mean

**Graph #4: Effluent Total Suspended Solids (TSS)**



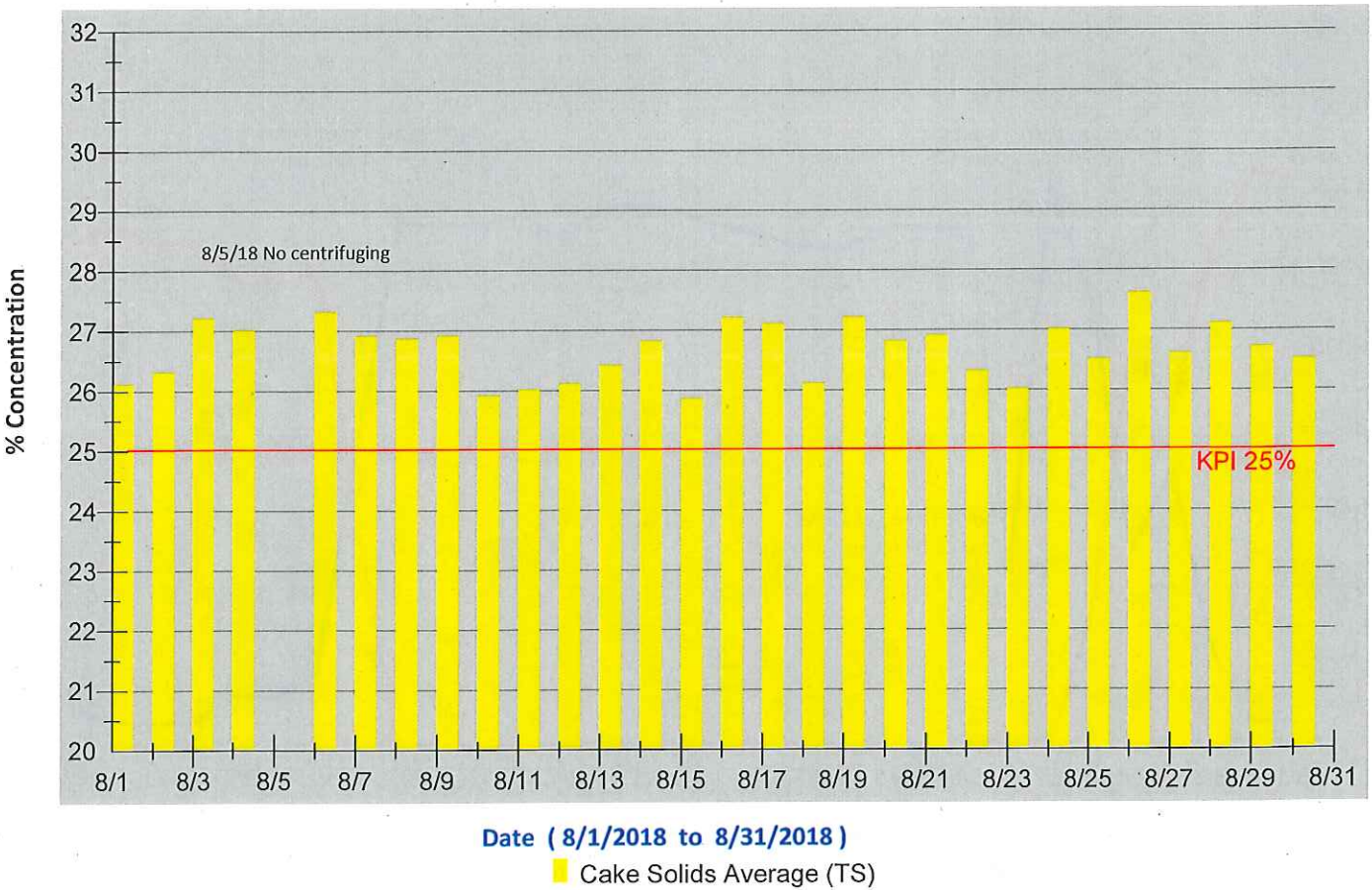
(#4) Effluent Total Suspended Solids (TSS)

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



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

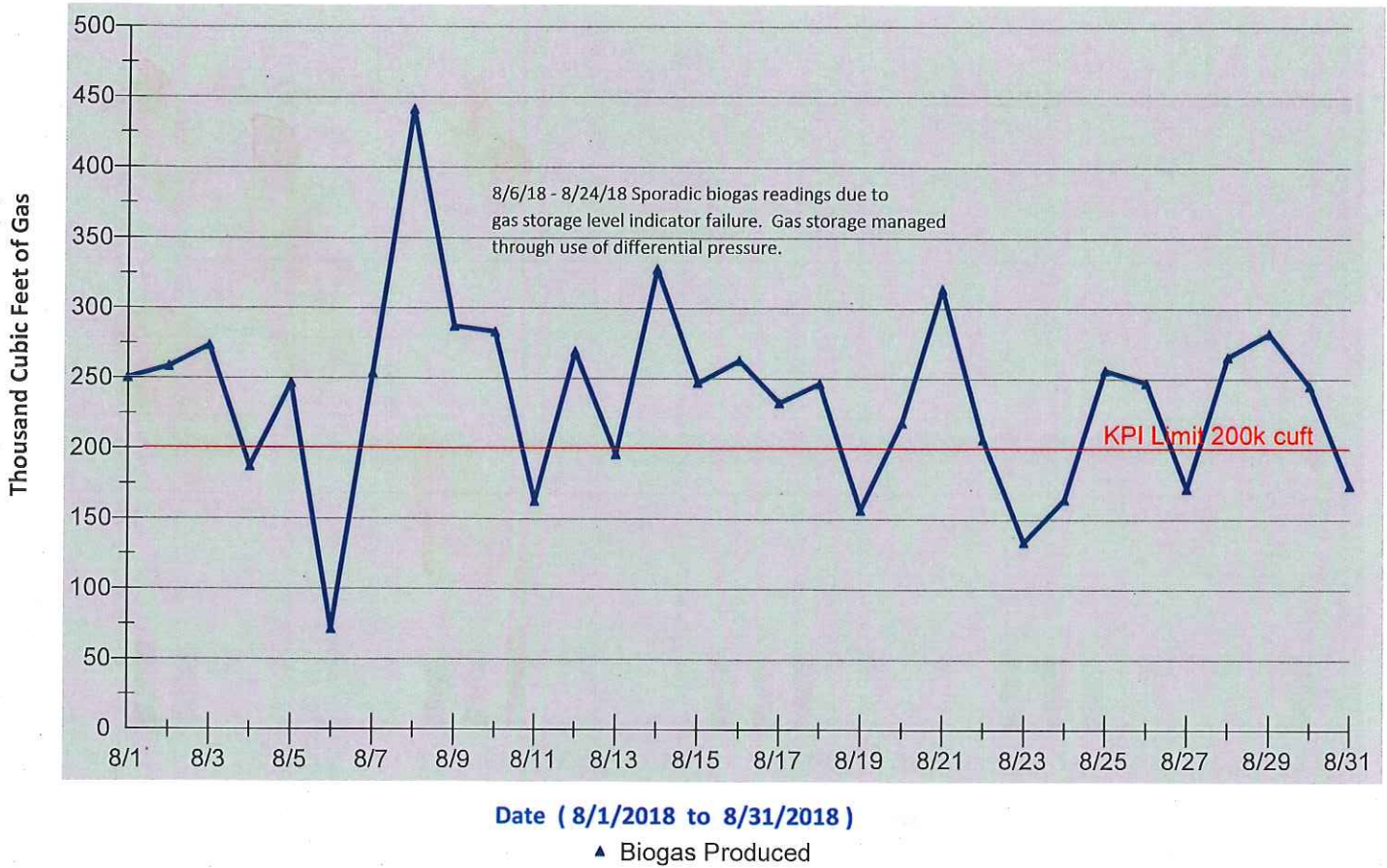
**Graph #6: Biosolids Concentration**



(#6) Biosolids Concentration

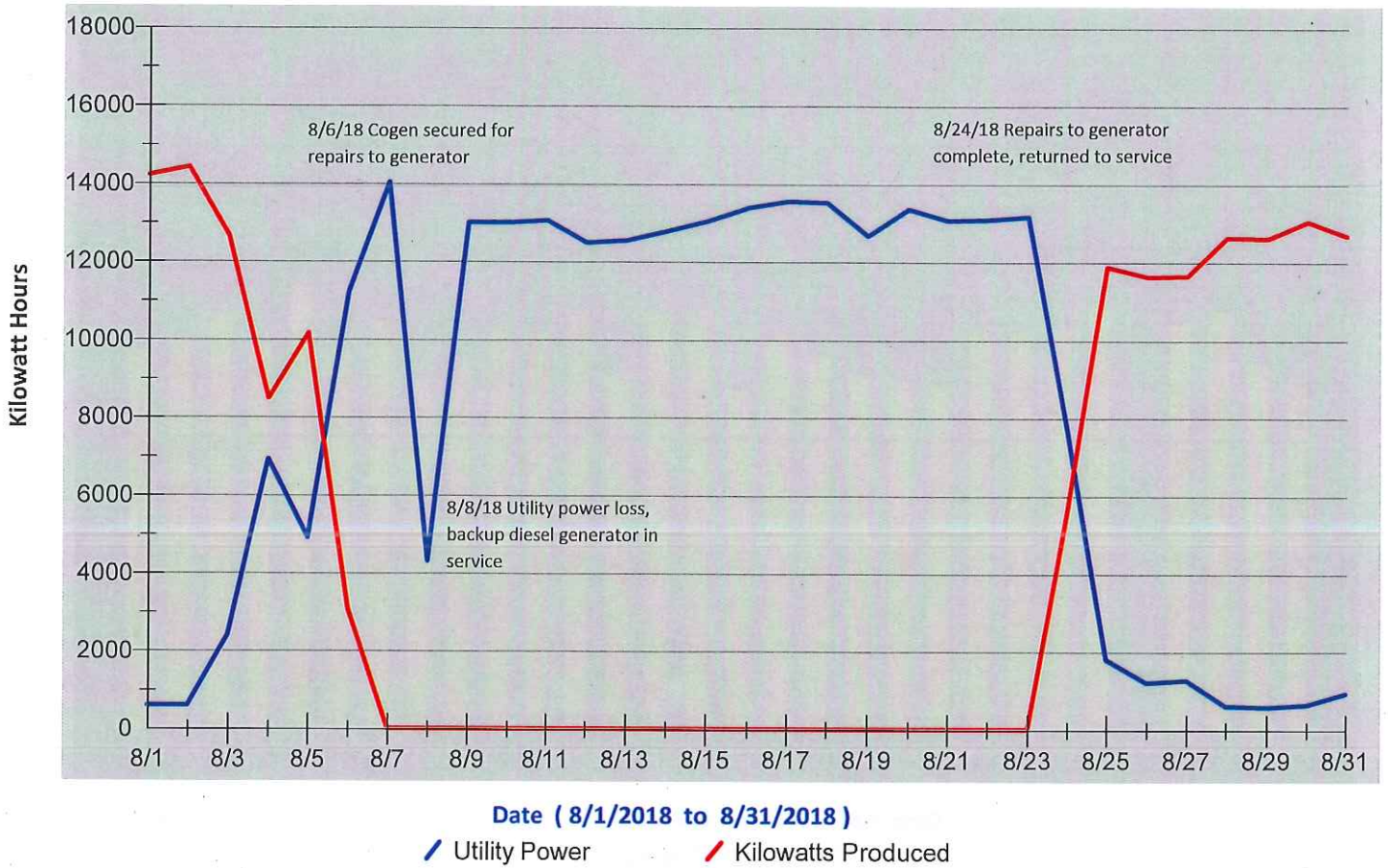


**Graph #7: Biogas Production**



(#7) Biogas Production

**Graph #8: Kilowatt Hours Purchased vs. Kilowatts Produced**



(#8) Kilowatt Hours Purchased vs. Kilowatts Produced



BOARD MEMORANDUM

October 5, 2018

To: CMSA Commissioners and Alternates

From: Chris Finton, Treatment Plant Manager *CF*

Approved: Jason Dow, General Manager *JD*

**Subject: September 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report**

**Recommendation:** Accept the September 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report.

**I. NPDES Permit Compliance**

Our NPDES permit testing for September 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 September 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. No blend events were recorded in September allowing CMSA to forego enterococcus sampling.

**II. Influent Flow**

In September, the daytime temperatures in central Marin County averaged 80°F. It remained very dry with no precipitation recorded by the Agency's rain gauge. The plant's average daily influent flow was 8.4 MGD.

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

September Monthly Influent Flows	San Rafael (SRSD)	Ross Valley (SD#1)	San Quentin (SQSP)	Corte Madera (SD#2)	CMSA Plant Total
Average Daily (MGD)	3.5 MGD	3.7 MGD	0.46 MGD	0.82 MGD	8.4 MGD
Total for Month (MG)	103.8 MG	109.7 MG	13.7 MG	24.7 MG	251.9 MG
Percent of Flow	41.0 %	44.0 %	5.0 %	10.0 %	100 %

### **III. Treatment Process**

Annual dry weather preventative maintenance continued through September with Operations staff transitioning process equipment in and out of service. Specifically, Primary Clarifiers 1 and 4 were rotated out of service to correct a broken scum skimmer in Clarifier No. 1, and to continue work installing new reclaimed water piping in Clarifier No. 4. Staff also executed a flow diversion on September 19 to allow for the installation of four new cogeneration system relay switches, improvements required by PG&E as part of the interconnection agreement (IA). The Mixed Liquor Suspended Solids (MLSS) inventory averaged 983 mg/l in September, a 5.0% decrease in inventory from last month. This was slightly below our target biomass concentration range of 1,000 to 1,200 mg/L range. A process control decision was made to increase our biomass inventory nearer to 1,200 mg/L, in preparation for the wet weather season.

Graph No.3 shows the coliform most probable number (MPN), which represents the effectiveness of the disinfection process. One of the seventeen coliform samples collected in September, (9/25 = 130 MPN) was higher than our monthly KPI of 30 mg/L, but remained well below our daily permit limit of 10,000 MPN. The September 25 sample value was attributed to a higher than normal organic load on the secondary system, a circumstance of several concurrent maintenance projects. The total coliform monthly geometric mean for September was 2.0 MPN, well below our permit's monthly limit of 240 MPN.

Graph No.4 shows the Total Suspended Solids (TSS), which is a good indicator of the effluent quality. The TSS monthly average in September was 3.3 mg/l, which is 22.0% of our Key Performance Indicator (KPI) of 15 mg/l, and is 11.0% of our permit's monthly average limit of 30 mg/l.

### **IV. Maintenance Activities**

The cogeneration system was in service the entire month of September and produced 95.0% of the Agency's power needs, and MCE supplied the balance. The cogenerator, as indicated on Graph No.8, was temporarily removed from service to assess a high temperature alarm in one of the turbo-chargers. There were no power demand fluctuations shown on Graph No. 8 as the facility was completely off line on September 19 for the above mentioned flow diversion.

The majority of September's work activities were spent performing annual process equipment preventative maintenance. In addition, project work included the replacement of an imbedded leaking diesel fuel line; replacement of several feet of floor drain piping in the gallery below the solids handling building; replacement of two sample refrigerators in the CMSA laboratory; replacement of the brakes and master cylinder on the facility's forklift; replacement of a primary sludge pump; and assisting Technical Services with a coatings repair project in areas around the chemical storage building.

#### **Attachment:**

- September 2018 NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report

**NPDES Permit Compliance, Treatment Process, and Maintenance Activities Report**  
**September 2018**



Maintenance Technician A. Villarreal performs annual preventative maintenance on a Grit Classifier.



Maintenance Technician J. Clark inspects Effluent Pump Station pumps to confirm that they are ready for wet weather operation



**Monthly Compliance Summary Table**  
 Central Marin Sanitation Agency  
 September, 2018  
 Final Effluent Monitoring

Parameter	Frequency	Units	Results	Limit
Carbonaceous BOD Highest Weekly Average	Weekly	mg/L	6.0	Maximum 40
Carbonaceous BOD Monthly Average	Monthly	mg/L	5.1	Maximum 25
Carbonaceous BOD Monthly Removal Rate	Monthly	%	98.4	Minimum 85
Total Suspended Solids Highest Weekly Average	Weekly	mg/L	4.6	Maximum 45
Total Suspended Solids Monthly Average	Monthly	mg/L	3.8	Maximum 30
Total Suspended Solids Monthly Removal Rate	Monthly	%	99.1	Minimum 85
Chlorine Residual Instant Limit	Instant	mg/L	ND	Maximum 0.0
Ammonia Monthly Average	Monthly	mg/L	31.5	Maximum 60
Ammonia Maximum Daily	Daily	mg/L	31.6	Maximum 120
pH Lower Limit	Continuous	SU	7.1	Minimum 6
pH Upper Limit	Continuous	SU	7.8	Maximum 9
<b>Bacteriological Analysis</b>				
Total Coliform Monthly Geometric Mean	3 X Week	MPN/100mL	2.0	Maximum 240
Total Coliform Daily Maximum	3 X Week	MPN/100ml	130	Maximum 10,000
Enterococcus Monthly Geometric Mean	Monthly	MPN/100mL	*	Maximum 35
<b>Flow Through Bioassay</b>				
Acute Toxicity 11 Sample 90th Percentile	Monthly	% survival	100	Minimum 70
Acute Toxicity 11 Sample Median	Monthly	% survival	100	Minimum 90
<b>Metals Analysis</b>				
Copper Daily Limit	Monthly	ug/L	4.70	Maximum 85
Copper Monthly Average	Monthly	ug/L	4.70	Maximum 49
Cyanide Daily Limit	Monthly	ug/L	2.00	Maximum 41
Cyanide Monthly Average	Monthly	ug/L	2.00	Maximum 21
Mercury Weekly Average	Weekly	ug/L	0.0032	Maximum 0.072
Mercury Monthly Average	Monthly	ug/L	0.0032	Maximum 0.066
Mercury Monthly Loading	Monthly	kg/mo	0.00245	
Mercury Annual Loading (watershed permit)	Jan-Dec	kg/yr	0.04056	Maximum 0.11
<b>Permit Analysis</b>				
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
<b>Quarterly Analysis</b>				
Oil and Grease Daily Limit	Quarterly	mg/L	*	Maximum 20
Oil and Grease Monthly Average	Quarterly	mg/L	*	Maximum 10
Chronic Bioassay Toxicity	Quarterly	Tuc	*	Maximum 20
Chronic Bioassay Toxicity (3 sample median)	Quarterly	Tuc	ND	Maximum 10
<b>Flow Analysis</b>				
	Daily Max	Hourly Max	5 minute Max	Monthly Average
Effluent Flow	7.2	13.2	16	6.6
Influent Flow	8.8	13.2	18	8.4
# Days Blended				0

\* Monitoring Not Required This Month ND = None Detected X = Data not available at report time J = Detected by 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<sup>th</sup> 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**  
**September 2018**

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

**Primary Clarifier Performance**

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

Average Total Suspended Solids (TSS) in:	<u>432.3</u>	mg/l
Average TSS out:	<u>134.2</u>	mg/l
Average Percent Removal Achieved:	<u>67.7</u>	%
Average Total Carbonaceous Biochemical Oxygen Demand (CBOD) in:	<u>334.6</u>	mg/l
Average CBOD out:	<u>179.8</u>	mg/l
Average Percent Removal Achieved:	<u>45.6</u>	%
Average Plant Influent Flows:	<u>8.4</u>	MGD

Design 50-70% Removal

Design 25-40% Removal

**Biotower Performance**

Average TSS out:	<u>132.0</u>	mg/l
Average CBOD out:	<u>103.8</u>	mg/l
Average Percent CBOD Removal Achieved:	<u>34.4</u>	%

Design 25-30% Removal

**Aeration Tanks/Activated sludge**

Dissolved Oxygen set point:	<u>2.0</u>	mg/l
Average MLSS:	<u>983</u>	mg/l
Average MCRT:	<u>3.50</u>	Days
Average SVI:	<u>170</u>	

**Secondary Clarifiers**

Average WAS concentration:	<u>6,373</u>	mg/l
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**Final Effluent**

Average Effluent TSS for the month was:	<u>3.8</u>	mg/l	(Maximum Limit: 30mg/l)
Week #1 weekly average	<u>4.3</u>		(Maximum Limit: 45mg/l)
Week #2 weekly average	<u>3.6</u>		"
Week #3 weekly average	<u>2.8</u>		"
Week #4 weekly average	<u>4.6</u>		"
Week #5 weekly average	<u>4.2</u>		"
Monthly average TSS removal efficiency through the plant was:	<u>99.1</u>	%	(Minimum Limit: 85%)

Average Effluent CBOD was:	<u>5.1</u>	mg/l	(Maximum Limit: 25mg/l)
Week #1 weekly average	<u>5.2</u>		(Maximum Limit: 40mg/l)
Week #2 weekly average	<u>5.0</u>		"
Week #3 weekly average	<u>6.0</u>		"
Week #4 weekly average	<u>4.8</u>		"
Week #5 weekly average	<u>4.7</u>		"
Monthly average CBOD removal efficiency through the plant was:	<u>98.4</u>	%	(Minimum Limit: 85%)

Disinfection Dosing Rate:	<u>3.3</u>	mg/l	monthly average
Total Coliform Monthly Geometric Mean:	<u>2.0</u>	MPN	(Maximum 240)
The Daily Maximum Total Coliform Count for the month was:	<u>130.0</u>	MPN	(Maximum 10,000)
Enterococcus Monthly Geometric Mean:	<u>N/A</u>	MPN	(Maximum 35 MPN)
Effluent pH for the month was:			
Min	<u>7.1</u>		(Min 6.0)
Max	<u>7.8</u>		(Max 9.0)

**Digester Treatment**

Average Thickened Waste Concentration from the RDT was:	<u>6.3</u>	%	
Average percent of Volatile Solids destroyed was:	<u>84.1</u>	%	
Cubic feet of biogas produced was:	<u>7,242,220</u>	(Total)	<u>241,407</u> (Daily Average)
Average temperature of the digester was:	<u>102.0</u>	degrees Fahrenheit	



**Executive Summary Process Performance Data**  
**September 2018**

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

**Dewatering**

Average Centrifuge Feed concentration was:	<u>2.9</u>	%
Average Biosolids concentration was:	<u>26.8</u>	%
Average TSS of the Centrate was:	<u>277</u>	mg/l
Solids capture of the Centrifuge was:	<u>99.1</u>	%
Polymer use per Dry ton of biosolids was:	<u>11.18</u>	#/dry ton
Average polymer feed rate per run was:	<u>3.59</u>	gpm
Average concentration of the polymer batches was:	<u>0.328</u>	%
Average sludge feed rate per run was:	<u>54.7</u>	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 black graph line depicts the CMSA rain gauge recordings for the month.

**Graph #2:**

Depicts individual collection member agency flows.

The Y-axis is in the dry weather flow range of 0-20 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 2.0 MPN through September, which is less than our KPI median of 30 MPN and permit limit of 240 MPN. The Higher than normal September 24 value was due to elevated organic loading, a circumstance of several concurrent maintenance projects.

**Graph #4:**

Depicts the total suspended solids in the effluent.

Our monthly average was 3.8 mg/l versus our KPI of 15 mg/l and permit monthly average limit of 30 mg/l.

**Graph #5:**

Depicts the effluent CBOD which is measuring the oxygen demand of the wastewater.

The September effluent CBOD average was 5.1 mg/l, well below our NPDES limits of 40 mg/l weekly and 25 mg/l for the month.

**Graph #6:**

Depicts the degree to which the biosolids have been dewatered.

Our biosolids % concentration exceeded our KPI of 25% for the entire month of September. Dewatering operations did not occur on September 2, September 9, or September 29.

**Graph #7:**

Depicts the amount of biogas that is produced in the digesters, and then used to produce electricity.

Biogas production in September averaged 241,407 cubic feet per day, which exceeded our monthly KPI of 200,000 cubic feet per day. The lower than normal KPI value as depicted on Graph 7 was the result of fewer organic waste loads deliveries. Dome level sensor erratic readings were repaired on September 4.

**Graph #8:**

This graph depicts the amount of energy produced through cogeneration versus the energy purchased from MCE for Agency operations.

The cogeneration engine was online the entire month of September producing 95.0% of the facility's power needs. The engine was momentarily removed from service on September 1 to assess a high temperature alarm on a turbo-charger.

## Glossary of Terms Process Performance Data Sheet

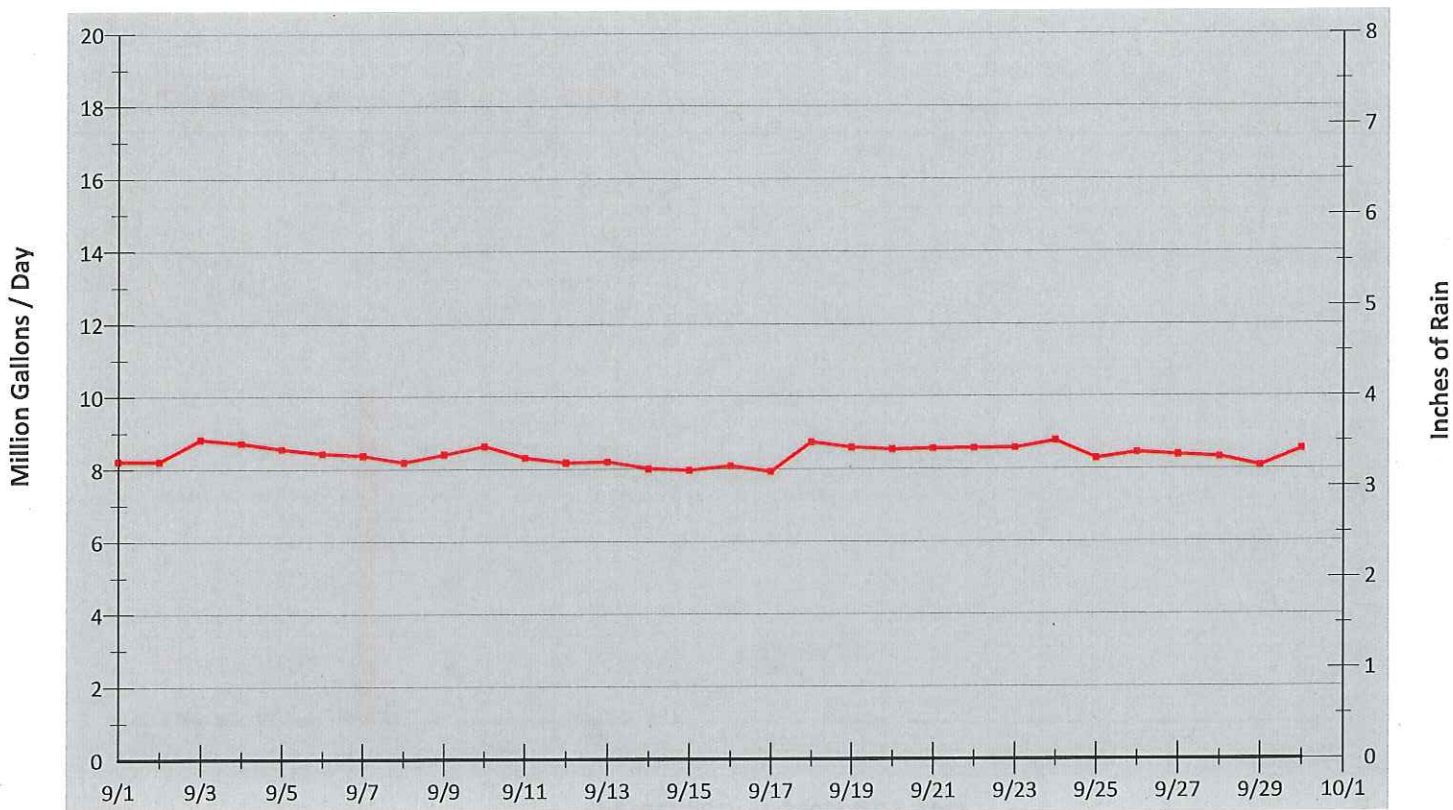
- **Aeration Tanks:** A biological process that takes place after the biotowers, where biomass (microorganisms) is mixed with the wastewater to feed on dissolved and suspended organic material. High speed blowers are used to provide compressed air to mix the tank contents.
- **Anaerobic Digesters:**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

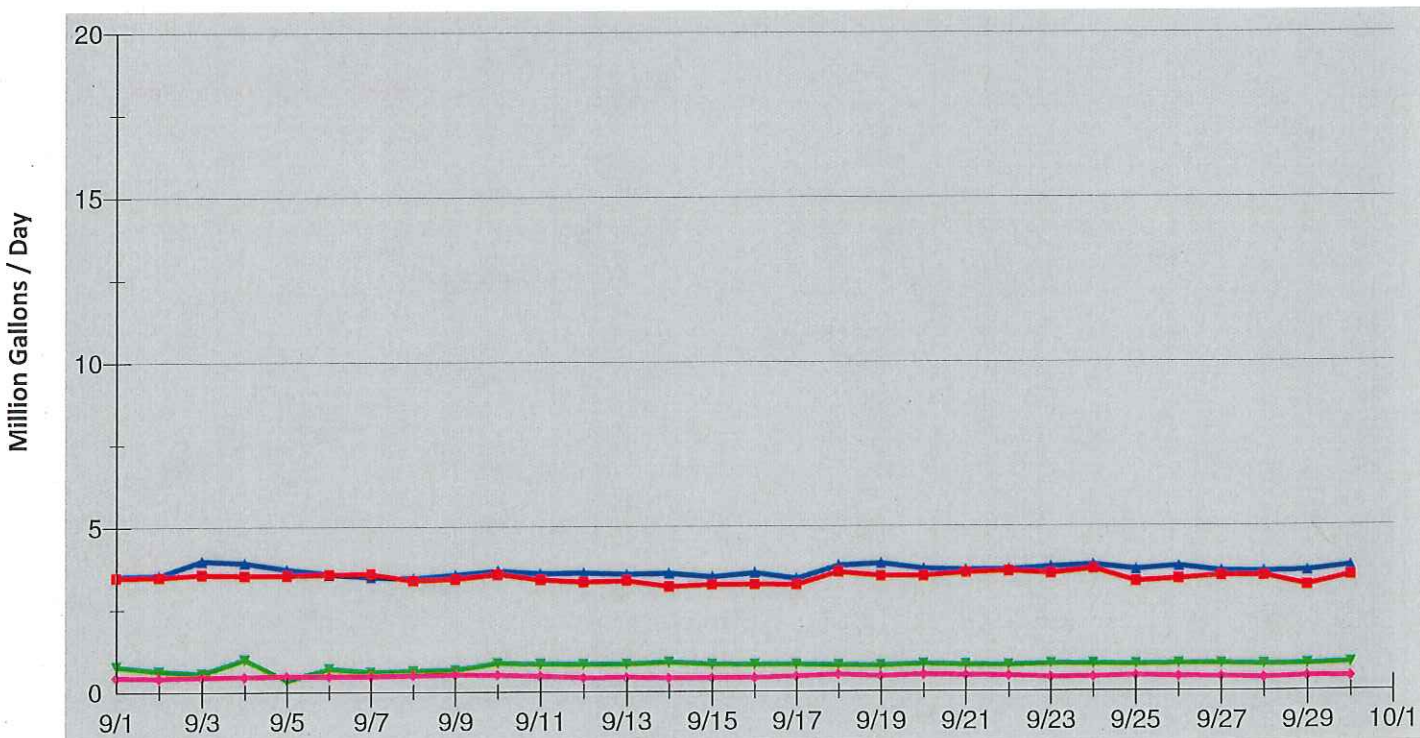


Date (9/1/2018 to 9/30/2018)

■ Flow (Daily Average) ◆ Rainfall

(#1) CMSA Influent Flow

Graph #2: Collection System Influent Flows

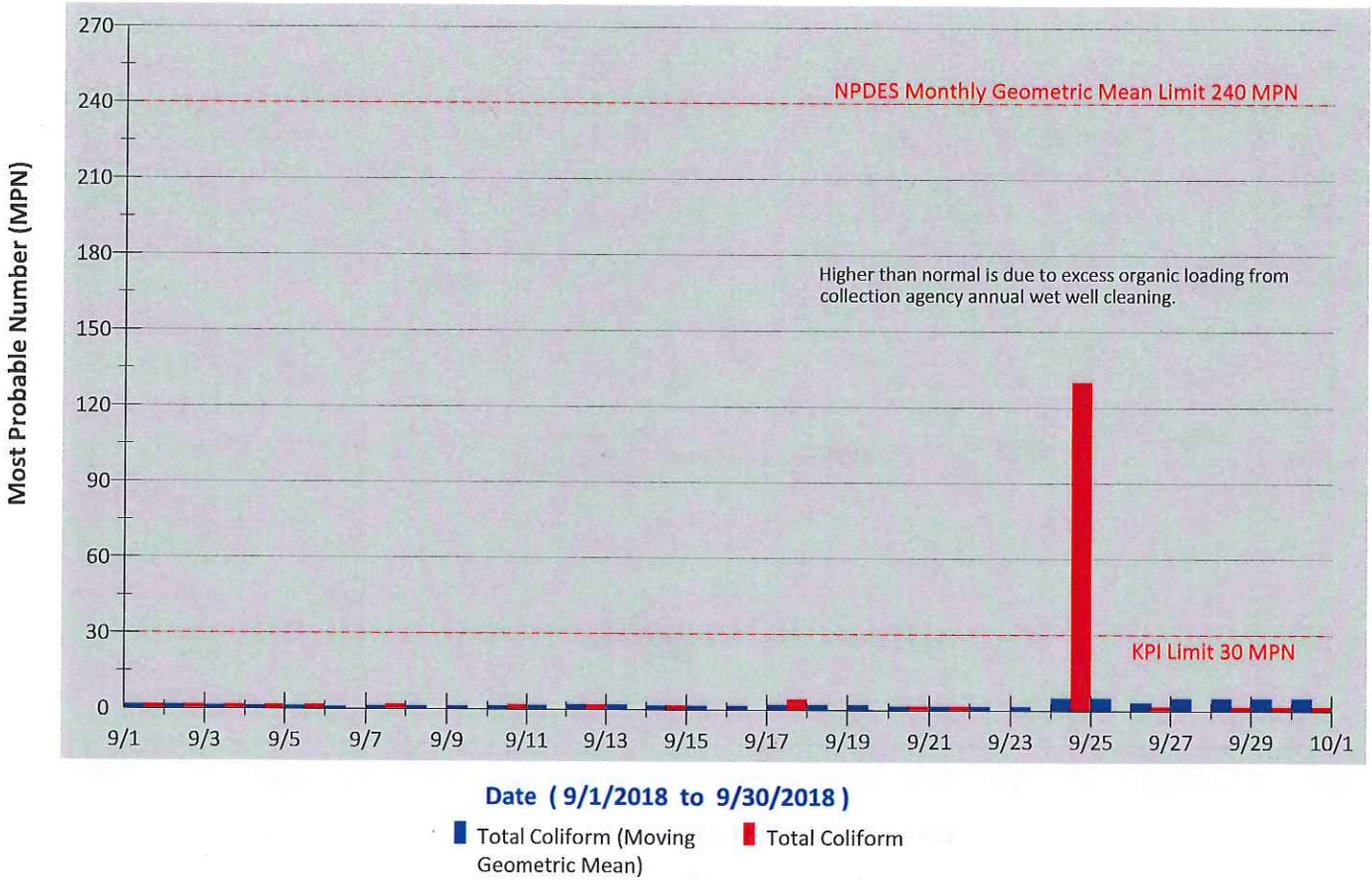


Date (9/1/2018 to 9/30/2018)

▲ RV Flow (Daily Average) ■ SR Flow (Daily Average) ▼ SD#2 Flow (Daily Average) ◆ SQ Flow (Daily Average)

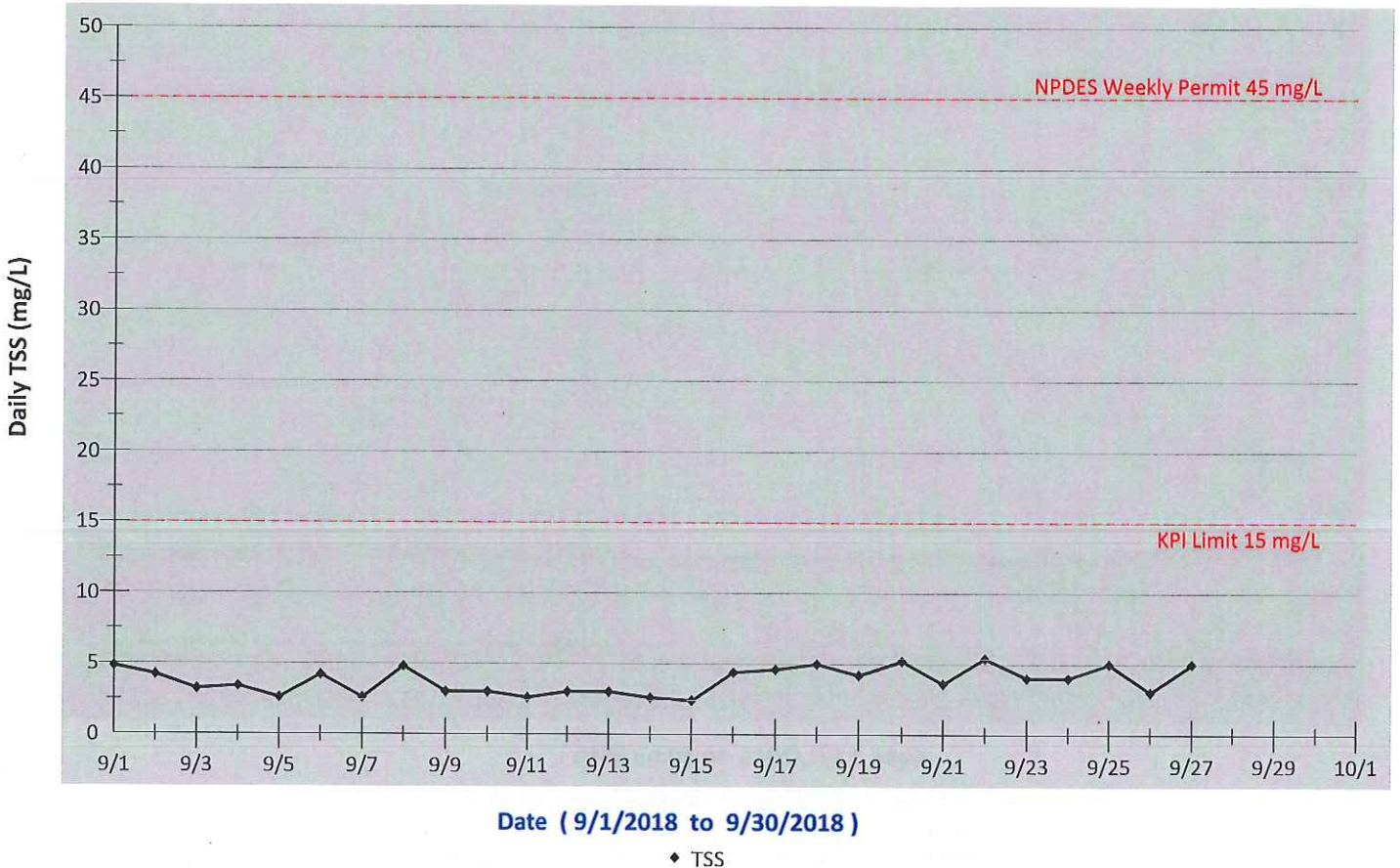
(#2) Collection System Influent Flows

**Graph #3: Total Coliform & Monthly Geometric Mean**



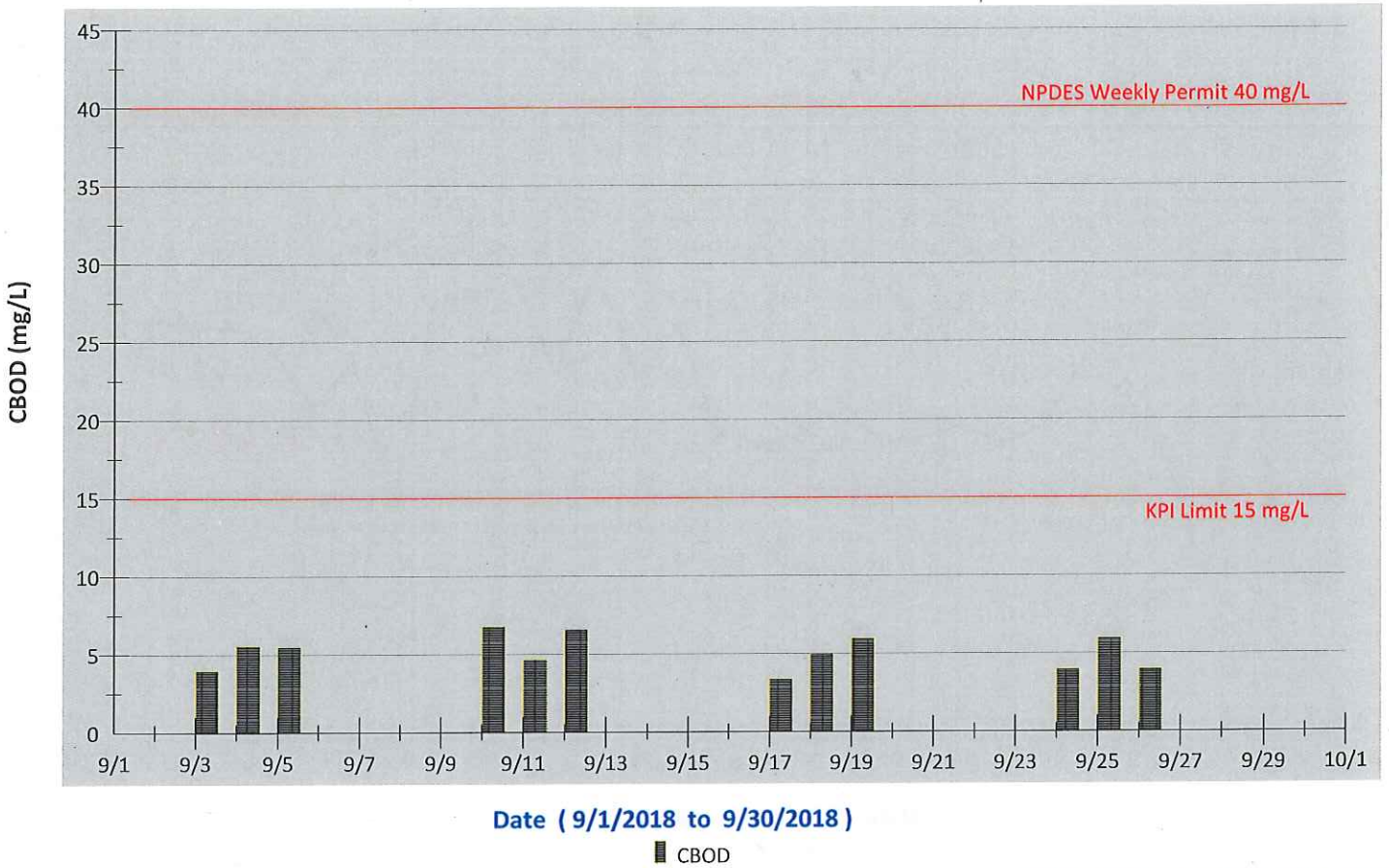
*(#3) Total Coliform & Monthly Geometric Mean*

**Graph #4: Effluent Total Suspended Solids (TSS)**



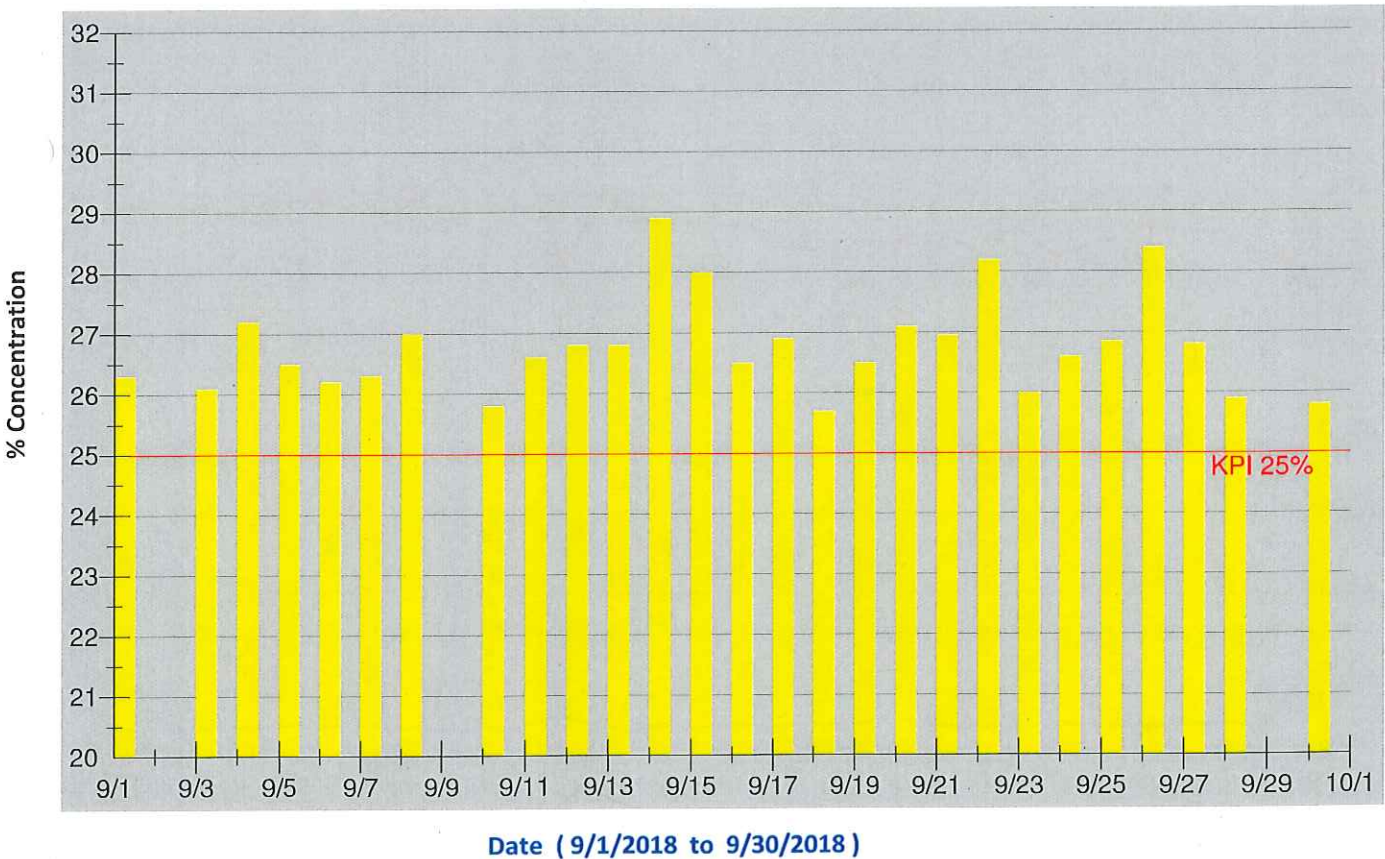
*(#4) Effluent Total Suspended Solids (TSS)*

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



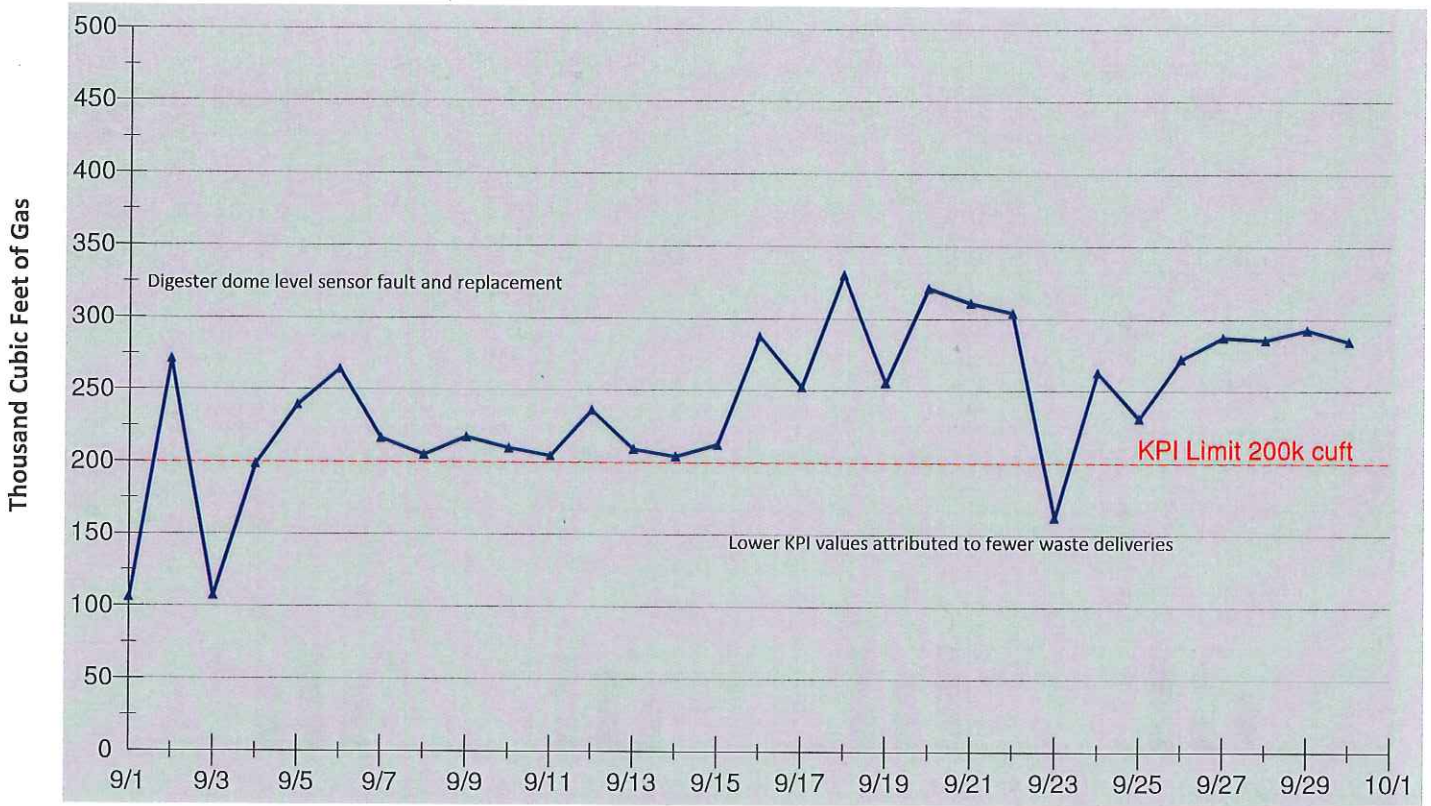
(#5) Effluent Carbonaceous Biological Oxygen Demand (CBOD)

**Graph #6: Biosolids Concentration**



(#6) Biosolids Concentration

**Graph #7: Biogas Production**

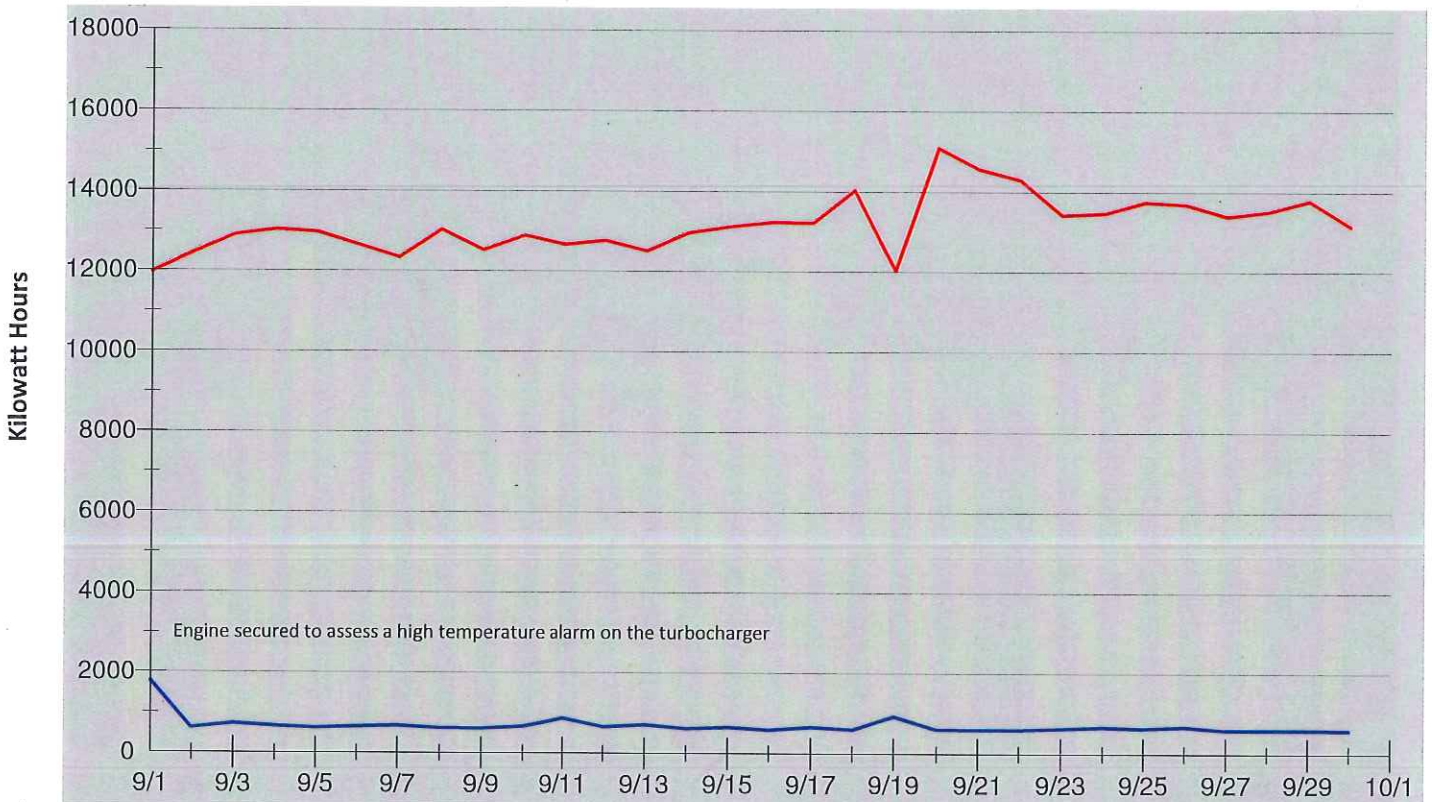


Date (9/1/2018 to 9/30/2018)

▲ Biogas Produced

(#7) Biogas Production

**Graph #8: Kilowatt Hours Purchased vs. Kilowatts Produced**



Date (9/1/2018 to 9/30/2018)

Utility Power

Kilowatts Produced

(#8) Kilowatt Hours Purchased vs. Kilowatts Produced



**BOARD MEMORANDUM**

October 5, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager

**Subject: Performance Metric Reports – August and September 2018**

**Recommendation:** Accept the August and September 2018 Performance Metric reports.

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

Table I – Treatment/Process Metrics

Maintenance staff has nearly completed the annual preventative maintenance for the Agency’s process tanks and systems this summer, and while rotating of equipment and tanks in and out of service over the past few months, the final effluent quality has remained very good. In August, due to the cogeneration system’s unplanned generator repair, the system was offline for over two weeks and only produced 37.7% of the Agency’s power for the month. September’s power generation was back to the normal output range.

Table II – Employee Metrics

Over the past two months, training highlights included Hot Work, Fall Protection, Lock-out Tag-out (LOTO), and Confined Space Awareness safety training for field staff; several staff attendance at a sanitary sewer overflow workshop at the RVSD office; Underground Line Locating training for selected staff; and classification specific internal development training for several staff.

In September, the General Manager attended a CASA Board planning retreat and the Lab Director and Lab Administrator attended Environmental Accreditation Program (ELAP) TNI training.

Table III - Environmental and Regulatory Compliance Metrics

There weren’t any NPDES permit exceedances in August or September, and all regulatory reports were submitted on schedule. FOG and source control inspections continue to be fewer than planned due to limited staff resources. Recruitment for an Environmental Services Analyst closed on October 1 and the position should be filled in early November, providing the staff resources to perform the normal number of source control inspections going forward.



Table IV - Public Outreach

There were four odor alerts posted to the website in August and five in September, and the Agency did not receive any public odor complaints. Alerts were posted for the monthly chlorine contact tanks maintenance, cleaning the organic waste receiving facility, rotating primary clarifiers in/out of service for preventative maintenance, a flow diversion to the effluent pond to accommodate a power shutdown to install PG&E interconnection relays, and to drain the pond after the diversion.

Monthly public education events may include staff attendance at public outreach events, school classroom and/or juggler show presentations, and Agency tours. Events over the past two months are presented below with the event date and number of attendees.

Public Outreach Events

<u>Date</u>	<u>Event</u>	<u>Attendees</u>
8/1	STRAW's Watershed Week	25
9/20	San Rafael Farmers' Market	35

School Events – Juggler Show Presentation

<u>Date</u>	<u>School</u>	<u>Attendees</u>
9/13	Rancho Elementary in Novato	320
9/21	Laurell Dell in San Rafael	218

CMSA Tours

<u>Date</u>	<u>Group</u>	<u>Attendees</u>
8/21	Public and members of the Jewish Community Center	13

**Attachment:**

- August and September 2018 Performance Metric Reports

## CMSA CY18 PERFORMANCE METRICS – August 2018

**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)	269.5 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)	61.9 wt 210 wt 178.9 wt	360 – 665 wt
3) Conventional Pollutant Removal	Removal of the conventional NPDES pollutants - Total Suspended Solids (TSS) and Carbonaceous Biological Oxygen Demand (cBOD) a. tons of TSS removed; % TSS removal b. tons of organics removed (cBOD); % cBOD removal	708.5 tons; 99.3% 523.4 tons; 98.9%	> 85% > 85%
4) Priority Pollutants Removal	Diversion of priority NPDES metals from discharge to the S.F. Bay: a. % Mercury b. % Copper	98.8% 97.0%	88 – 99% 84 – 98%
5) Biogas Production	Biogas generated in our anaerobic digesters, in million cubic feet (Mft <sup>3</sup> ) Natural gas (methane) equivalent of the biogas, in million cubic feet (Mft <sup>3</sup> )	7.32 Mft <sup>3</sup> 4.68 Mft <sup>3</sup>	6.0 to 9.5 Mft <sup>3</sup> 3.8 to 6.1 Mft <sup>3</sup>
6) Energy Produced	Energy produced from cogeneration of generated biogas and purchased natural gas - in kilowatt hours Cogeneration system runtime on biogas, <i>in hours (hrs.); % time during month</i> Biogas value (natural gas cost equivalent)	156,649 kWh 299.2 hrs; 40.0% \$22,679	380 to 480,000 kWh 540 hrs.; 75% \$15,000 to \$30,000
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	\$1,335 /Mg  1,522 kWh/Mg	\$451-\$1,830/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 = 254 External = 20	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);	586 hrs 1,043.5 hrs (78.0%) 299 hrs (18.0%) 0.44	300 – 500 hrs ≥ 70% total CM hrs ≤ 30% total hours ≥ 0.45
3) Overtime Worked	Monthly hours of OT worked; <i>Year to date hours of OT (YTD)</i> % of regular hours worked; % <i>Year to date (YTD)</i>	68.5 hrs; (1,020 hrs) 1.1%; (1.8%)	< 5%

## CMSA CY18 PERFORMANCE METRICS – August 2018

**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	601	150-750
3) Process Control Analyses	# of analyses by the CMSA laboratory for process control monitoring	731	400-1,250
4) Contract Laboratory Analyses	# of analyses by contract laboratories for regulatory compliance reporting	27	0-50
5) Quality Control Testing	# of CMSA performed laboratory analyses for QA/QC purposes	217	100-300
6) Water Quality Sample Analyses	# of ammonia, coliform (total and fecal), enterococcus, and/or sulfide analyses performed for the CMSA member agencies (SSOs, etc.)	30	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 – 255 businesses regulated	7	variable
8) FOG Program Inspections	Inspections of food service establishments (FSEs) in the Almonte, TCSD, SD2, RVSD, SRSD, and LGVSD service areas – approx. 316 FSEs are regulated and 63 FSEs have waivers.	20	20 – 50
9) Permits Issued/Renewed	Permits issued for the pretreatment, pollution prevention, and FOG source control programs, and for groundwater discharge	1	variable

**Table IV- PUBLIC OUTREACH**

Metric	Definition	Measurement	Target/Goal
1) Public Education Events	Attendance at public education outreach events; # of booth visitors; (YTD)	25; (2,087)	3,500/year
2) School Events	Participation or sponsorship in school outreach events; attendees; (YTD)	0; (1,246)	variable
3) Agency Tours	Tours given to students and the public; # of people, (YTD)	13; (199)	variable
4) Odor Notifications	Number of odor alerts posted to the Agency website	4	1-10
5) Odor Complaints	Number of odor complaints received from the public	0	0

## CMSA CY18 PERFORMANCE METRICS – September 2018

**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)	251.9 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)	140 wt 192.5 wt 140 wt	360 – 665 wt
3) Conventional Pollutant Removal	Removal of the conventional NPDES pollutants - Total Suspended Solids (TSS) and Carbonaceous Biological Oxygen Demand (cBOD) a. tons of TSS removed; % TSS removal b. tons of organics removed (cBOD); % cBOD removal	467.3 tons; 99.1% 358.8 tons; 98.4%	> 85% > 85%
4) Priority Pollutants Removal	Diversion of priority NPDES metals from discharge to the S.F. Bay: a. % Mercury b. % Copper	99.1% 92.0%	88 – 99% 84 – 98%
5) Biogas Production	Biogas generated in our anaerobic digesters, in million cubic feet (Mft <sup>3</sup> ) Natural gas (methane) equivalent of the biogas, in million cubic feet (Mft <sup>3</sup> )	7.24 Mft <sup>3</sup> 4.63 Mft <sup>3</sup>	6.0 to 9.5 Mft <sup>3</sup> 3.8 to 6.1 Mft <sup>3</sup>
6) Energy Produced	Energy produced from cogeneration of generated biogas and purchased natural gas - in kilowatt hours Cogeneration system runtime on biogas, in hours (hrs.); % time during month Biogas value (natural gas cost equivalent)	395,593 kWh 587.5 hrs; 82.0% \$24,777	380 to 480,000 kWh 540 hrs.; 75% \$15,000 to \$30,000
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	\$1,428 /Mg  1,653 kWh/Mg	\$451-\$1,830/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 = 185.5 External = 60	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);	311 hrs 396 hrs (54.0%) 339 hrs (52.0%) 0.42	300 – 500 hrs ≥ 70% total CM hrs ≤ 30% total hours ≥ 0.45
3) Overtime Worked	Monthly hours of OT worked; <i>Year to date hours of OT (YTD)</i> % of regular hours worked; % <i>Year to date (YTD)</i>	130.5 hrs; (1,151 hrs) 1.1%; (1.8%)	< 5%

## CMSA CY18 PERFORMANCE METRICS – September 2018

**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	551	150-750
3) Process Control Analyses	# of analyses by the CMSA laboratory for process control monitoring	595	400-1,250
4) Contract Laboratory Analyses	# of analyses by contract laboratories for regulatory compliance reporting	26	0-50
5) Quality Control Testing	# of CMSA performed laboratory analyses for QA/QC purposes	185	100-300
6) Water Quality Sample Analyses	# of ammonia, coliform (total and fecal), enterococcus, and/or sulfide analyses performed for the CMSA member agencies (SSOs, etc.)	30	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 – 255 businesses regulated	4	variable
8) FOG Program Inspections	Inspections of food service establishments (FSEs) in the Almonte, TCSD, SD2, RVSD, SRSD, and LGVSD service areas – approx. 316 FSEs are regulated and 63 FSEs have waivers.	4	20 – 50
9) Permits Issued/Renewed	Permits issued for the pretreatment, pollution prevention, and FOG source control programs, and for groundwater discharge	2	variable

**Table IV- PUBLIC OUTREACH**

Metric	Definition	Measurement	Target/Goal
1) Public Education Events	Attendance at public education outreach events; # of booth visitors; (YTD)	35; (2,122)	3,500/year
2) School Events	Participation or sponsorship in school outreach events; attendees; (YTD)	545; (1,791)	variable
3) Agency Tours	Tours given to students and the public; # of people, (YTD)	0; (199)	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**

October 5, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager <sup>JJD</sup>  
Jack Govi, General Legal Counsel

Subject: **General Manager Employment Agreement Amendment #1**

**Recommendation:** Approve Amendment #1 to the General Manager's Employment Agreement.

**Summary:** The Board held the General Manager's (GM) annual performance evaluation at the August 21, 2018 Board meeting in closed session. In open session, after the closed session evaluation, the Board summarized the GM's performance, awarded a 5% performance bonus, and extended the employment term by one additional year. Legal Counsel Govi said he would prepare an amendment to the GM's Employment Agreement to reflect the Board's actions, for approval at the October 9 Board meeting. Revisions to the Agreement's Section 1 and Section 2 are shown in red line and strikeout below. Additionally, the monthly compensation was adjusted based on the July 1, 2018 COLA.

**SECTION I - Employment and Term of Office**

CMSA agrees to employ Dow as General Manager to perform the functions and duties of said office. The Manager shall serve for a five year term. ~~This term commences on October 11, 2017. This term expires on October 11, 2023.~~ CMSA shall have the option of extending the five year term at any time. Upon expiration of this Agreement or any Addendum hereto, the terms and conditions of this Agreement shall remain in effect until it is either terminated or renegotiated.

**SECTION II - Compensation**

Effective July 1, 2018, Manager shall receive a monthly salary of \$22,518, and for each successive year on July 1, shall receive a COLA. The COLA shall be the same percentage that is given to Agency staff. Commission may provide Manager with a bonus of up to 5% annually based upon Manager's performance. ~~This additional benefit is the same benefit that Agency staff may receive. Manager shall receive a 5% bonus for his past year's performance, effective immediately.~~

**Attachment:** General Manager Employment Agreement - Amendment #1

# CENTRAL MARIN SANITATION AGENCY (CMSA)

## GENERAL MANAGER EMPLOYMENT AGREEMENT

### Amendment #1

This Amendment is made and entered into on October 9, 2018, by and between the Central Marin Sanitation Agency ("CMSA" or "Commission") and Jason Dow ("Manager"). The provisions in this Amendment supersede the same provisions in the Manager's October 2017 Employment Agreement.

#### **SECTION I - Employment and Term of Office**

CMSA agrees to employ Dow as General Manager to perform the functions and duties of said office. The Manager shall serve for a five year term. This term shall expire on October 11, 2023. CMSA shall have the option of extending the five year term at any time. Upon expiration of this Agreement or any Addendum hereto, the terms and conditions of this Agreement shall remain in effect until it is either terminated or renegotiated.

#### **SECTION II - Compensation**

Effective July 1, 2018, Manager shall receive a monthly salary of \$22,518, and for each successive year on July 1, shall receive a COLA. The COLA shall be the same percentage that is given to Agency staff. Commission may provide Manager with a bonus of up to 5% annually based upon Manager's performance.

Dated: \_\_\_\_\_

\_\_\_\_\_  
Diane Furst, Commission Chair

Dated: \_\_\_\_\_

\_\_\_\_\_  
Dean DiGiovanni, Commission Secretary

Dated: \_\_\_\_\_

\_\_\_\_\_  
Jason Dow, General Manager

**Approved to as Form:**

Dated: \_\_\_\_\_

\_\_\_\_\_  
Jack F. Govi, Assistant County Counsel



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**BOARD MEMORANDUM**

October 5, 2018

To: CMSA Commissioners and Alternates

From: Chris Finton, Treatment Plant Manager

Approved: Jason Dow, General Manager 

**Subject: Lead Mechanical Technician Job Description**

**Recommendation:** Approve the Lead Mechanical Technician Job Description and its compensation range.

**Discussion:** With the recent retirement of the Electrical/Instrumentation Assistant Maintenance Supervisor (E/I Supervisor), a new classification of Lead Mechanical Technician has been prepared to share the supervisory level duties and responsibilities within the Maintenance Department. If the job description is approved by the Board, staff will propose a minor reorganization of the supervisory structure of the Maintenance Department to better define roles and responsibilities for future Board consideration. The new position's job description is attached and was provided to SEIU Local 1021 for review, with no comments being received.

The lead position is an advanced technician position that requires at least a California Water Environment Association (CWEA) Grade III Mechanical Technologist Certificate and three years of relevant maintenance and repair experience at a water/wastewater utility or industrial facility. The compensation range is the same as the Lead Maintenance Repair Worker's classification, \$9,523 - \$9,999 per month. Essential job functions include directing the work of subordinate staff, troubleshooting complex equipment problems, monitoring operational details and overseeing maintenance work, regularly utilizing the Agency's computerized maintenance management system to review and report on equipment records and their condition, and leading training and safety sessions. Additionally, the Lead Mechanical Technician provides input into employee performance appraisals and acts as the Maintenance Supervisor on an assigned basis.

Funding for this position was included in the Agency's adopted FY 19 budget.

**Attachment:**

- Lead Mechanical Technician Job Description





**CENTRAL MARIN SANITATION AGENCY**

1301 Andersen Drive | San Rafael, CA 94901 | 415.459.1455 | FAX: 415.459.3971

**JOB DESCRIPTION: LEAD MECHANICAL TECHNICIAN**

**SUMMARY**

Under general supervision, performs advanced, complex, and critical corrective and preventive maintenance on mechanical equipment, processing facilities and pump stations, vehicles, tools, buildings and grounds, and integrates special project work with regular work schedules. This is an advanced journey-level maintenance and repair classification that provides direction and monitors the work progress of the Agency's maintenance department technicians.

**ESSENTIAL DUTIES AND RESPONSIBILITIES**

Duties include, but are not limited to, the following.

- Directs the work of subordinate staff on a project or day-to-day basis.
- Troubleshoots complex equipment problems, and recommends time, equipment, and materials required to effect repairs; makes emergency repairs as required.
- Inspects, evaluates, and repairs a variety of complex and critical stationary and mobile mechanical equipment, electrical and electro-mechanical equipment, and facilities.
- Monitors operational details and performs or oversees maintenance work in conformance with OEM recommendations and technical requirements, and to department standard.
- Provides input on supervised staff performance evaluations including matters of discipline and/or commendation.
- Regularly uses the Computerized Maintenance Management System (CMMS) to create, assign, complete, and enter work done on work orders; requisitions materials as required.
- Runs and reviews CMMS reports regularly to ensure service records are input correctly, and parts and equipment inventories are accurate and in the proper warehouse.
- Develops, reviews, and archives maintenance and repair operating procedures.
- Maintains accurate records and files electronically and/or in hard copy as required of job plans, work performed, and materials and supplies used.
- Regularly reviews critical equipment records to ensure asset condition updates and repair planning.
- Repairs, overhauls or replaces malfunctioning, damaged equipment or worn parts.
- Cleans, services, and paints equipment, machinery, vehicles, structures, buildings, pipelines, storage tanks, and any other assets.
- Services, adjusts, and tunes a variety of equipment such as engines, motors, pumps, valves, control systems, boilers, heat exchangers, and chemical feed systems.
- Uses GMAW, GTAW, SMAW welding and Plasma cutting equipment to cut, heat, fabricate, and weld or braze various metals and/or metal alloy combinations.
- Uses and performs maintenance on a variety of hand and power tools and safety equipment.

- Reads and interprets specifications, diagrams, manuals and other documentation.
- Designs equipment installations and modifications; makes required mathematical calculations; prepares schematics and diagrams for documenting installations; determines supplies and materials required.
- Confers with staff to determine equipment problems; suggests methods of minimizing such problems in an operational setting.
- Observes appropriate safety procedures and works to applicable codes and guidelines.
- Performs and oversees confined space entry (CSE) and self-rescue work as required.
- Performs and oversees Lockout Tag-out (LOTO) work.
- Attends and leads training and safety sessions as assigned.
- Provides technical assistance and trains staff in job specific and safe work procedures.
- Functions as the Maintenance Supervisor as assigned by the Treatment Plant Manager...

## **QUALIFICATIONS**

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

### **Interpersonal Skills**

Ability to interact with others (co-workers, supervisors, subordinates, vendors, member agencies, and the general public) in a professional manner; to accept constructive criticism from supervisors, equals, and subordinates; to work as a team member or independently as needed; to prioritize assignments and meet deadlines; to prevent personal problems from adversely affecting impacting your work or that of others around you; to arrive at work as scheduled and to work the shift hours as scheduled.

### **Education and/or Experience**

Equivalent to graduation from high school and three years of experience in the maintenance and repair of a variety of equipment, structures, and facilities such as found in Water and/or Wastewater treatment facilities, or similar industrial settings,

### **Language Skills**

Ability to read and interpret documents such as safety rules, operating and maintenance instructions, and procedure manuals. Ability to write reports, correspondence and procedures. Ability to effectively present information and respond to questions from staff, other departments' managers, customers, the public, and technical representatives.

### **Mathematical Skills**

Ability to work with mathematical concepts such as probability and statistical inference, and fundamentals of plane and solid geometry and trigonometry. Ability to apply concepts such as fractions, percentages, ratios, and proportions to practical situations.

### **Reasoning Ability**

Ability to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Ability to interpret a variety of instructions furnished in written, oral, diagram or schedule form. Ability to define problems, collect data, establish facts, and draw valid conclusions. Ability to recognize, mitigate, and correct unsafe conditions.

### **CERTIFICATES, LICENSES, REGISTRATIONS**

Either possession of a Grade III Maintenance Mechanical Technologist (MMT) certificate, or higher, as issued by the California Water Environment Association (CWEA), or must be able to obtain a Grade III MMT certificate within 18 months of appointment. Must possess and maintain a valid California Class C driver's license, have a satisfactory driving record, and continue to meet CSRMA driving standards. Failure to maintain these standards may result in loss of employment.

### **PHYSICAL DEMANDS**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. While performing the duties of this job, the employee is regularly required to use hands to finger, handle or feel, reach with hands and arms, and talk or hear in person or on the telephone or radio. Hearing is frequently required for equipment operation analysis. The employee frequently is required to stand, walk, sit, and climb or balance and stoop, kneel, crouch, or crawl. The employee is occasionally required to smell, using odors to determine process or equipment problems. The employee must regularly lift and/or move up to 10 pounds, frequently lift and/or move up to 25 pounds, and occasionally be required to lift and/or move up to 50 pounds.

Specific vision ability required by this job includes close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus.

Examples of the physical demands for this position, including their activity and duration, are available from Administration.

### **WORK ENVIRONMENT**

The work environment characteristics described here are representative of those that an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee is frequently exposed to wet and/or humid conditions; to moving mechanical parts; fumes or airborne particles; and outdoor weather conditions. The employee is occasionally exposed to high, precarious places; toxic or caustic chemicals; construction project site conditions; extreme heat; risk of electric shock; and vibration.

The noise level in the work environment is usually moderate with occasional exposure to loud equipment.

May be required to work "Stand-by" duty on a rotating basis. May be required to be available to work overtime and off-shift hours, including weekends, on a project or emergency basis.

### **RIGHT TO WORK DOCUMENTATION**

Before being hired, all new employees will be required to show documentation as proof of authorization to work in the United States.

**Job Title:** Lead Mechanical Technician  
**Department:** Maintenance  
**Reports to:** Maintenance Supervisor  
**FLSA Status:** Non-exempt  
**Revised Date:** October 2018



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**BOARD MEMORANDUM**

October 5, 2018

**To:** CMSA Commissioners and Alternates

**From:** Chris Finton, Treatment Plant Manager  
Amy Hwang, Associate Engineer

**Approved:** Jason Dow, General Manager *JD*

**Subject:** **Asset Management Program Evaluation Project – Consultant Selection**

**Recommendation:** Approve the Professional Services Agreement with GHD to provide consulting services for the Asset Management Program Evaluation Project, and authorize the General Manager to sign the Agreement.

**Discussion:** The Agency's FY 19 Business Plan includes a project to select and hire a consultant to assess the status of the Agency's asset management (AM) program compared to industry best practices, and recommend improvements.

Engineering staff prepared a Request for Proposals in June for the Asset Management Program Evaluation Project (Project), and sent it to qualified consulting firms for their review, evaluation, and submittal of a scope of work and cost estimate. Two proposals were received, and the Project team selected GHD as the most qualified firm to perform the project work. Staff and GHD's project manager prepared the attached Professional Services Agreement, which includes a scope of work, project schedule, and fee estimate. GHD's scope of work is to: (1) Provide AM training to staff; (2) conduct a gap analysis to ascertain where the Agency stands with its current AM practices in comparison to industry-leading AM standards for wastewater utilities; and to (3) create an AM roadmap for future projects and improvements.

If approved, the Project will commence in early November and is scheduled to be completed by May 2019. Staff will present the Project findings to the Board at a subsequent meeting, and may include Project recommendations in the FY 20 Business Plan.

**Fiscal Impact:** The Project will be funded from the Professional Services - Special Studies account in the Technical Services Department's Operating Budget. The account has a placeholder amount of \$45,000 for the Project and any other special studies that may be needed throughout the fiscal year. The Project fee estimate is \$79,896.

In order to fund the Project, staff transferred \$40,000 from the Technical Services Department's Salaries, Wages & Compensation account. This account had unanticipated additional funds due to the vacancy of the Technical Services Manager position for approximately four months.

**Background:** The Agency developed and implemented its first AM program following adoption of its first Strategic Business Plan in December 2004. With the startup of the that AM program, various Agency staff received training on AM principles and practices. CMSA also purchased and implemented its first AM and computerized maintenance management system (CMMS) software platform and developed a series of tactical action plans to implement the AM program. Since 2004, the Agency has been using a second generation of AM and CMMS software, and CMSA's staff makeup has changed considerably with very few incoming employees having had formal AM training or a sound understanding of the benefits of a formal AM program.

This Project is intended to provide staff with the necessary training and tools to effectively maintain and expand the Agency's AM Program, review the current state of AM practices at CMSA, and ultimately create an AM Implementation Plan (roadmap) to guide subsequent phases of AM program implementation. Future phases could include development and pilot testing of AM practices, and ultimately full-scale implementation including technology and other AM support considerations.

**Alignment with Strategic Plan:** This project is a strategic action to support Goal One – Objective 1.3 in the Agency's FY 19 Business Plan 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 1.3: Manage the Agency's assets*

*Action: Hire a consultant to evaluate the Asset Management Program and recommend improvements*

**Attachments:**

- Asset Management Program Evaluation Project Professional Services Agreement with GHD

**CENTRAL MARIN SANITATION AGENCY  
Asset Management Program Evaluation**

**PROFESSIONAL SERVICES AGREEMENT**

This Professional Services Agreement (hereinafter "Agreement") is made and entered into this \_\_\_\_\_ day of October 2018 by and between the Central Marin Sanitation Agency (hereinafter referred to as "Agency") and GHD, Inc. (hereinafter referred to as "Consultant").

**RECITALS:**

WHEREAS, the Agency desires to retain Consultant to perform the services (hereinafter referred to as "Services"), which include, but are not limited to, conduct asset management training, prepare a gap analysis for current CMSA asset management practices compared to industry practices, and prepare an implementation plan; and

WHEREAS, Consultant represents and warrants that it is qualified, competent, and ready to perform such Services;

NOW, THEREFORE, for and in consideration of the promises contained herein, and the payments to be made by Agency, the parties agree to the following:

**1. CONSULTANT'S SCOPE OF SERVICES:**

Consultant shall provide the Services described in **Exhibit A** attached hereto and by this reference made a part of this Agreement. If the Agency desires to engage Consultant to perform optional or additional services, the Agency and Consultant will prepare and execute an amendment to this Agreement for the performance of the optional or additional services.

**2. AGENCY'S OBLIGATIONS:**

The Agency shall:

- (A) Provide access to and make provisions for the Consultant to enter the Agency's facilities as needed by Consultant in order for it to perform the Services, subject only to Consultant providing the Agency with reasonable advance notice of its need for access to one or more of the Agency's facilities.
- (B) Make available to Consultant all pertinent data, contract documents, record drawings, reports, studies, and other records (hereinafter collectively "Information") requested by Consultant for its review and use, and reliance in its performance of the Services.
- (C) Provide review comments on project deliverables per the agreed upon activity and project schedules.

**3. FEES:**

The fees for furnishing the Services to be performed under this Agreement are set forth in the fee and task proposal which is attached hereto as **Exhibit B** and by this reference incorporated herein and made a part of this Agreement. Said fees shall remain in effect for the entire term of the Agreement.

If during the performance of the Services, Consultant makes a good faith determination that there will be a balance remaining in a task upon its completion, the Consultant, with the Agency's prior agreement, which shall not be unreasonably withheld, may reallocate that amount among other tasks that have not been completed but have exceeded or are estimated to exceed the amount originally allocated for those tasks.

**4. PAYMENT:**

The Agency shall pay Consultant for proper performance of the Services according to the fee schedule set forth in **Exhibit B**. On a monthly basis, Consultant will provide the Agency with a written invoice setting forth the hours spent by Consultant's assigned personnel along with any reimbursable expenses incurred during that month together with supporting documentation as requested by the Agency. The fees for services under this Agreement shall be due within thirty (30) calendar days after approval by the Agency of the invoice covering the services and reimbursable expenses.

**5. AGREEMENT TIME:**

This Agreement shall commence on **October 15, 2018** and shall terminate on **April 30, 2019**. Time is of the essence with respect to this Agreement. This Agreement's Time may be extended by mutual agreement of the parties. Consultant's Services shall be performed and the deliverables provided in accordance with the Schedule set forth in **Exhibit A**.

**6. INSURANCE:**

Consultant shall procure and maintain at all times during the performance of the Agreement at its expense the following insurances:

(A)(i) **Workers' Compensation and Employer's Liability Insurance** for protection of Consultant's employees as required by the State of California and as will protect Consultant from loss or damage because of personal injuries, including death to any of its employees. Employers Liability insurance shall be provided in amounts not less than:

- \$1,000,000 each accident for bodily injury
- \$1,000,000 each employee for bodily injury by disease
- \$1,000,000 policy limit for bodily injury by disease

- (A)(ii) **Comprehensive Automobile Liability Insurance** shall provide coverage for bodily injury and property damage liability. This policy shall protect Consultant against all liability arising out of the use of owned or leased automobiles both passenger and commercial. Automobiles, trucks, and other vehicles and equipment (owned, not owned, or hired, licensed or unlicensed for road use) shall be covered under this policy. Limits of liability for Comprehensive Automobile Liability Insurance shall not be less than \$1,000,000 per accident for bodily injury and property damage.
- (A)(iii) **Comprehensive General Liability Insurance** as will protect Consultant and the Agency from any and all claims for damages or personal injuries, including death, which may be suffered by persons, or for damages to or destruction to the property of others, which may arise from the Consultant's Services under this Agreement. Said insurance shall provide a minimum of \$1,000,000 Combined Single Limit coverage for personal injury, bodily injury, and property damage for each occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately for this Agreement or the general aggregate limit shall be twice the required occurrence limit. Such insurance will insure Consultant and the Agency from any and all claims arising from the following:
1. Personal injury;
  2. Bodily injury;
  3. Property damage;
  4. Broad form property damage;
  5. Independent contractors;
  6. Blanket contractual liability.
- (A)(iv) **Professional Liability Insurance** shall protect Consultant from claims arising out of negligent acts, errors or omissions of Consultant in the performance of the Service in an amount of not less than \$1,000,000. The policy shall cover the indemnity provisions under this Agreement. Consultant shall maintain this insurance for twelve (12) months after the Services required under this Agreement have been completed.
- (B) Consultant agrees to procure and maintain such insurances at Consultant's expense in full force and effect in a company or companies satisfactory to the Agency. All coverage shall remain in effect until completion of the Services.
- (C) Consultant will furnish the Agency with certificates of insurance issued by Consultant's insurance carrier(s) and countersigned by an authorized agent or representative of the insurance company. The certificates shall show that the insurance will not be cancelled, altered, or reduced without at least ten (10) days' prior written notice to the Agency. The certificates for liability insurance will show that liability assumed under this Agreement is included.
- (D) Consultant hereby grants to CMSA a waiver of any right to subrogation which any insurer of said Consultant may acquire against CMSA by virtue of the payment of any loss under such insurance. Consultant agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the CMSA has received a waiver of subrogation endorsement from the



insurer.

- (E) The general liability and automobile liability insurance policies shall contain or be endorsed to contain the following provisions:
- (i) The Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, their respective commissioners, directors, councilmembers, officers, officials, employees and volunteers are to be covered as additional insured as respects: liability arising out of activities performed by or on behalf of the Consultant; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; or automobiles owned, leased, hired or borrowed by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, their respective commissioners, directors, councilmembers officers, officials, employees and volunteers.
  - (ii) For any claims related to this Agreement, the Consultant's insurance coverage shall be primary insurance as respects the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, their respective commissioners, directors, councilmembers, officers, officials, employees and volunteers. Any insurance or self-insurance maintained by the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, their respective commissioners, directors, councilmembers, officers, officials, employees and volunteers shall be excess of the Consultant's insurance and shall not contribute to it.
  - (iii) The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
  - (iv) Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party except after ten (10) days' prior written notice by mail, has been given to the Agency. Consultant agrees to provide notification to the Agency in the event the insurance policies are suspended, voided, or reduced in coverage or limits.
- (F) Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to CMSA.

Failure to provide and maintain the insurance required by this Agreement will constitute a material breach of this Agreement. In addition to any other available remedies, Agency may

suspend payment to the Consultant for any services provided during any time that insurance was not in effect and until such time as the Consultant provides adequate evidence that Consultant has obtained the required insurance coverage.

CMSA, at its discretion, may waive insurance requirements or reduce the above stated coverage limits based on the Consultant's scope of work and complexity of the associated tasks.

**7. NONDISCRIMINATORY EMPLOYMENT:**

Consultant and/or any permitted sub-consultant, shall not unlawfully discriminate against any individual based on race, color, religion, nationality, sex, sexual orientation, age, condition of disability, or other protected category. Consultant and/or any permitted sub-consultant understands and agrees that Consultant and/or any permitted sub-consultant is bound by and will comply with the nondiscrimination mandates of all federal, state and local statutes, regulations and ordinances.

**8. LICENSING AND PERMITS:**

The Consultant shall procure and maintain as required the appropriate licenses and permits required to perform the Services throughout the life of this Agreement.

**9. BOOKS OF RECORD AND AUDIT PROVISION:**

Consultant shall maintain on a current basis complete books and records relating to this Agreement and the Services performed. Such records shall include, but not be limited to, documents supporting all billings to the Agency for the Services performed. The books and records shall be original entry books with a general ledger itemizing all debits and credits for the work on this Agreement. In addition, Consultant shall maintain detailed payroll records including all subsistence, travel and field expenses, and canceled checks, receipts and invoices for all items. These documents and records shall be retained for at least five years from the completion of this Agreement. Consultant will permit Agency to audit all books, accounts or records relating to this Agreement or all books, accounts or records of any business entities controlled by Consultant who participated in this Agreement in any way. Any audit may be conducted on Consultant's premises or, at Agency's option, Consultant shall provide all books and records within a maximum of fifteen (15) days upon receipt of written notice from Agency. Consultant shall refund any moneys erroneously charged.

**10. TITLE TO INFORMATION & DOCUMENTS:**

It is understood that any and all documents, including but not limited to Information, documents, and reports concerning this Agreement's Services prepared by and/or submitted to the Consultant, shall be the property of the Agency. The Agency may provide the Consultant's work product(s) to another person or entity in the future for a separate specific assignment. However, Consultant retains all intellectual property rights, including copyrights, applicable to

its work. The Consultant may retain reproducible copies of the documents that it prepares as part of the Services. In the event of the termination of this Agreement, for any reason whatever, Consultant shall promptly deliver all Information, including but not limited to writings, plans, reports and other documents to Agency without exception or reservation.

**11. TERMINATION:**

(A) **Notice to Cure.** If Consultant at any time fails to properly and diligently perform the Services covered by the Agreement, or has committed a material breach of a provision of this Agreement, the Agency shall give Consultant written notice that within two (2) working days of its receipt of said notice, Consultant shall commence and continue satisfactory correction of such default or breach with diligence and promptness.

(B) **Consultant Default.** If Consultant fails to commence, within two (2) working days after receipt from the Agency of the notice issued under the above paragraph (A) and diligently thereafter, to correct the default or breach, then the Agency may pursue any remedies available by common law, statute, or this Agreement, including, but not limited to, one or more of the following:

- (i) withhold any sums due or thereafter to become due to Consultant under the Agreement and during such period such withheld amounts shall not accrue interest; or
- (ii) terminate the Agreement.

Within seven (7) business days of Consultant's correction of the default or breach, the Agency shall release to the Consultant any monies withheld.

(C) **Termination for Convenience.** The Agency may for its convenience and at any time and for any reason terminate Consultant's Services and this Agreement. Termination shall be by service of written notice to Consultant at its address for notice set forth below. Upon receipt of such notice, Consultant shall, unless the notice directs otherwise, immediately discontinue performing the Services.

Upon such termination, sub-consultants shall be entitled to payment only for the Services completed as of the date of termination pursuant to the Agreement. Consultant shall not be entitled to any claim or claim for any additional compensation, lost profit, or other damages in the event of such termination.

**12. RELATIONSHIP BETWEEN THE PARTIES:**

It is expressly understood that in the performances of the Services herein, the Consultant, and the agents and employees thereof, shall act as an independent contractor and not as officers, employees or agents of the Agency. Consultant shall be solely responsible to pay all required taxes, including but not limited to, all withholding social security, and worker's compensation for its employees.

**13. AMENDMENT:**

This Agreement may be amended or modified only by written agreement of all parties.

**14. ASSIGNMENT OF SERVICES AND PERSONNEL:**

The Consultant shall not subcontract or assign any portion of the Services required to be performed pursuant to this Agreement without the prior written approval of the Agency. Further, Consultant shall not substitute any personnel for those specifically named in its proposal unless personnel with substantially equal or better qualifications and experience are provided and are acceptable to Agency, as is evidenced in writing.

**15. JURISDICTION AND VENUE:**

This Agreement shall be construed in accordance with the laws of the State of California and the parties hereto agree that venue shall be in Marin County, California.

**16. INDEMNIFICATION:**

Consultant shall indemnify, defend, and hold harmless the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, and their respective commissioners, directors, councilmembers, officers, officials, and employees (collectively "Indemnitees") from any and all claims for damages including, but not limited to money, expenses, and/or losses (collectively "Claim") to the extent Claim arises from Consultant's negligence, recklessness, and/or willful misconduct in the performance of the Services under this Agreement.

Notwithstanding the foregoing, for any Claim alleging Consultant's negligence, recklessness, and/or willful misconduct, Consultant's obligations and liability for costs of the Indemnitees' defense shall not exceed the Consultant's proportionate percentage of fault for the Claim.

**17. STANDARD OF CARE:**

Consultant shall complete the services required hereunder in accordance with the prevailing standard of care by exercising the skill and ability ordinarily required to perform the same or similar services, under the same or similar circumstances, in the State of California. Consultant shall, at no cost to the Agency, re-perform any part of the services which fail to satisfy the foregoing standard of care.

**18. ESTIMATES AND PROJECTIONS:**

Consultant has no control over the cost of labor, materials, equipment or services furnished by others, over the incoming water quality and/or quantity, or over the way the Agency's facilities

and/or associated processes are operated and/or maintained. Data projections and estimates are based on Consultant's opinion based on experience and judgment. Consultant cannot and does not guarantee that actual costs and/or quantities realized will not vary from the data projections and estimates prepared by Consultant and Consultant does not and will be not liable to and/or indemnify the Agency and/or any third party related to any inconsistencies between Consultant's data projections and estimates and actual costs and/or quantities realized by the Agency and/or any third party in the future.

**19. THIRD PARTIES:**

The services to be performed by Consultant are intended solely for the benefit of Agency and its members. No person or entity not a signatory to this Agreement shall be entitled to rely on Consultant's performance of its services hereunder, and no right to assert a claim against Consultant by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Agreement or the performance of Consultant's services hereunder.

**20. FORCE MAJUERE:**

Neither Consultant nor Agency shall be considered to be in default of this Agreement if delays in or failure of performance shall be due to uncontrollable forces, the effect of which, by the exercise of reasonable diligence, the nonperforming party could not avoid. The term "uncontrollable forces" shall mean any event which results in the prevention or delay of performance by a party of its obligations under this Agreement and which is beyond the control of the nonperforming party. It includes, but is not limited to, fire, flood, earthquake, storms, lightning, epidemic, war, riot, civil disturbance, sabotage, inability to procure permits, licenses, or authorizations from any state, local, or federal agency or person for any of the supplies, materials, accesses, or services required to be provided by either Consultant or Agency under this Agreement, strikes, work slowdowns or other labor disturbances, and judicial restraint.

**21. COMPLIANCE WITH APPLICABLE LAWS:**

In performance of the services, Consultant will comply with applicable regulatory requirements including federal, state, and local laws, rules, regulations, orders, codes, criteria, and standards.

**22. WAIVER:**

A waiver by either the Agency or Consultant of any breach of this Agreement shall not be binding upon the waiving party unless such waiver is in writing and executed by the waiving party. In the event of a written waiver, such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

**23. SEVERABILITY:**

The invalidity, illegality, or unenforceability of any provision of this Agreement, or the occurrence of any event rendering any portion or provision of this Agreement void, shall in no way affect the validity or enforceability of any other portion or provision of the Agreement. Any void provision shall be deemed severed from the Agreement and the balance of the Agreement shall be construed and enforced as if the Agreement did not contain the particular portion or provision held to be void.

**24. INTEGRATION:**

This Agreement supersedes all prior agreements, contracts, proposals, representations, negotiations, letters, or other communications between the Consultant and Agency pertaining to this Agreement and the Services to be performed, whether written or oral.

**25. NOTICES AND DESIGNATED REPRESENTATIVES:**

Amy Hwang is the designated representative for CMSA and will administer this Agreement for CMSA. Matt Winkelman is the designated representative for Consultant. Changes in designated representatives shall occur only by advance written notice to the other party.

All invoices shall be submitted and approved by the designated Agency representative and all notices shall be given to Agency at the following location:

1301 Andersen Drive  
San Rafael, CA 94901

Notices shall be given to Consultant at the following address:

GHD, Inc.  
2235 Mercury Way, Suite 150  
Santa Rosa, CA 95407

**IN WITNESS WHEREOF**, the parties hereunto have executed this Agreement on the date first above written.

APPROVED BY:

**CENTRAL MARIN SANITATION AGENCY:**

\_\_\_\_\_  
Jason R. Dow, General Manager

**CONSULTANT:**

\_\_\_\_\_  
Alex Culick, Principal

Federal Tax ID #: \_\_\_\_\_



# Exhibit A

October 3, 2018

GHD Ref: 11177643

## **Engineering Services – Asset Management Program Evaluation Project, Central Marin Sanitation Agency, San Rafael, CA**

### **Background and Approach**

Central Marin Sanitation Agency (CMSA; Agency) developed and implemented its first Asset Management Program (AM Program) following adoption of its first strategic business plan in December 2004. With the startup of the AM Program at that time, various Agency staff received training on AM principles and practices and CMSA purchased and implemented its first AM and computerized maintenance management system (CMMS) software platform. Since the AM Program was started, CMSA has experienced turnover in staff and has hired new staff that now use NexGen for CMMS needs, but without a sound understanding of the benefits of the AM Program.

Effective AM through appropriate short- and long-term planning and sustainable practices is a core Value included in CMSA's Strategic Business Plan. To recognize the benefits of this Value statement, the Strategic Business Plan includes an objective to evaluate the Agency's AM program and recommend improvements. This objective forms the basis for the scope of services provided herein.

The AM Program Evaluation Project is intended to evaluate the current state of AM practices at CMSA that results in an AM Implementation Plan (roadmap) to guide subsequent phases of AM Program implementation. Future phases could include development and pilot testing of AM practices, and ultimately full-scale implementation including technology and other AM support considerations.

Overall, evaluating the AM Program serves to achieve several primary objectives:

1. Prepare a guiding document ("roadmap" or "checklist") for implementing AM framework;
2. Build upon AM work already being done in the organization and be scalable so that it can be used to identify and prioritize capital and O&M needs for CMSA's different operating divisions;
3. Create an AM Implementation Plan that serves to support a business case for an AM Program;
4. Develop a roadmap that assists in aligning CMSA staff in the same direction, such that asset management is identified as a sound business practice and not simply the use of software applications to manage data and O&M activities;
5. Create an approach to the AM framework and roadmap development that considers staff availability with sensitivity to already full workloads; and
6. Create an Implementation Plan and roadmap that emphasize and support CMSA staff leading the implementation with appropriate coaching, guidance, and technical support from the GHD team.

### **Scope of Services**

The scope of services is divided into three key tasks, as follows:

1. Conduct asset management training
2. Prepare a gap analysis for current CMSA AM practices compared to industry practices
3. Prepare the Implementation Plan

#### **Task 1 – Project Management**

##### *Task 1.1 Kick-Off Meeting*





## Exhibit A

GHD will conduct a 2-hour kick-off meeting with CMSA. The primary purpose of the kick-off meeting is to introduce the project team members and review the project Work Plan. GHD will prepare a Work Plan in advance of the kick-off meeting that charts the work to be performed, and identifies the project purpose and objectives, key stakeholders (internal and external), workshops and deliverables, and schedule requirements. The plan will also provide contact information and communication protocols between CMSA and the GHD team. Prior to the kick-off meeting, GHD will request CMSA provide GHD with the Agency's AM-related documents and asset data in preparation for the AM gap analysis task.

### *Task 1.2 Project QA/QC, Invoicing, Schedule Tracking and Communication (6 months)*

Quality assurance will occur through discussion and refinement of our approach to task-level activities and workshop agendas and materials. Quality control reviews will be performed on project deliverables prior to submission to CMSA. GHD will work closely with the CMSA to manage the project schedule as work progresses, particularly with coordinating workshops and meetings with CMSA staff. GHD's Project Manager will monitor the team's activities against the Work Plan to monitor that schedule and budget are adhered to and project deliverables meet the objectives agreed to in the kick-off meeting. GHD will provide a progress report with each monthly invoice that summarizes work completed over the past period and project to date, and the work scheduled for the coming period. Outstanding issues requiring review and decisions with CMSA will also be noted.

### *Task 1 Deliverables:*

- *Kick-off meeting agenda and summary output (including Work Plan)*
- *Monthly invoices (based on a six month project schedule)*

### **Task 2 – Asset Management Training**

Prior to the preparing the AM practices gap analysis, GHD will conduct AM training sessions for various groups within the Agency on the principles of AM, particularly for the wastewater industry. This begins to align the organization on asset management definitions and key principles and helps provide focus during the planned workshops for evaluating AM current practices. GHD will draw upon its extensive library of training materials. Training will include two (2) full days covering a variety of AM topics tailored to build upon existing AM work to date, to transfer knowledge to CMSA staff, and increase staff awareness of the key asset management terminology and practices. GHD will also work with CMSA to include the appropriate content for the training including identifying opportunities to improve the use of NexGen and other information technology tools. Gage Muckleroy will facilitate the AM training to CMSA staff.

### *Task 2 Deliverables:*

- *Two (2) 8-hour AM Training Sessions, including preparation of materials*

### **Task 3 – Gap Analysis**

#### *Task 3.1 Conduct Gap Analysis*

This task is the core of the overall gap analysis. GHD will facilitate two - eight (8) hour workshops to ascertain where the CMSA stands with its current AM practices in comparison to industry leading AM practices for wastewater utilities. As part of the gap analysis workshops, GHD will ask a series of questions about the current state of the CMSA's AM practices, providing specific examples where appropriate. The workshop is interactive in order to support the development of consensus opinion among the attendees on the current state of practice within the organization. The questions and results are projected on a screen in real time, so that staff may confirm the evaluation made. GHD will maintain a record of the comments made in support of the scoring so that staff may readily recall the reasoning behind a score when discussing



## Exhibit A

identified gaps and how to close them. GHD will assess the degree to which CMSA staff, practices and tools support CMSA's business goals and strategic objectives. GHD will supplement the Gap Analysis workshops with up to eight (8) hours of staff interviews. We will identify those areas that continue to work effectively building on what has already been developed and achieved, and those areas that can be improved to better support strategic asset management. GHD will also focus on reviewing the asset data used in NexGen as part of the Gap Analysis (for costing purposes GHD will budget up to 16 hours of review of data in NexGen by GHD's Sr. Technology Consultant). The Gap Analysis and staff interviews will be conducted over 3 to 4 consecutive days and coordinated with the Task 1.1 Kick-off Meeting.

### *Task 3.2 Develop Gap Analysis Summary Results*

After the gap analysis workshops, GHD will summarize the information, compare the current CMSA practices against leading AM practices for wastewater agencies, develop a set of preliminary findings, and identify a list of potential enhancement recommendations. The gap analysis involves providing a score against each topic's area and commenting on the state of the practice at CMSA.

For each gap analysis category, including asset data from NexGen, GHD will state the general requirements, provide the key aspects of our observations, and list the recommended priority areas for improvement. The gap assessment results are used to develop a set of goals and objectives for the program and identify the appropriate next steps. The results will be documented in a technical memorandum.

GHD indicated that as part of our "Fit-for-Purpose" approach, each agency we work with is different in how they implement AM. Not all leading practices in a gap analysis may be appropriate at this time for CMSA. The results of the gap analysis will indicate which areas are highest priority and highest value for CMSA's situation and objectives.

### *Task 3 Deliverables:*

- *Two (2) eight (8) hour facilitated on-site gap analysis workshops (including preparation and workshop materials)*
- *Up to eight (8) hours of staff interviews*
- *16 hours of NexGen review*
- *Draft and Final Gap Assessment Technical Memo, including a two-hour WebEx to review the Draft and address CMSA comments*

### **Task 4 – Implementation Plan (AM Roadmap)**

GHD understands that CMSA recognizes the importance of aligning its organization, processes and people to support the requirements of leading asset management practices. Part of a robust AM strategy and implementation program is the understanding of organizational capacity, roles, responsibilities and business processes to achieve a high performing organization in the area of AM. GHD will work with CMSA to develop an Implementation Plan roadmap for the future Tactical Asset Management Plans (TAMPs), business improvement projects, and information system and data management improvements.

Implementation tasks included in the AM roadmap will be aligned to the organization and structured around four primary core process areas of Planning, Delivery, Performance Management and Support Services. For each core process, implementation tasks will be identified and include:

- Implementation task description
- Benefits
- Internal costs (e.g., general staff requirements expressed as FTEs)
- External costs (e.g., consulting, software, condition assessment contracting)



# Exhibit A

- Priority level recommendations
- Task schedule/timeline

GHD will summarize cost and benefit information into a Business Case Evaluation allowing CMSA to evaluate the business case for proceeding with future phases of AM program implementation.

GHD will also identify appropriate strategies (scale, priority), and leading practices to determine/assess asset failure modes, condition, life expectancy/ residual life and replacement costs. GHD will include in the strategy development organizational considerations such as operating division, process ownership, staffing, personnel requirements, and training requirements.

GHD will attend an on-site meeting to present the draft plan. This meeting may be combined with a presentation to the CMSA Board. The Draft Asset Management Program Implementation Plan (Roadmap) will be submitted in technical memorandum (TM) format.

### Task 4 Deliverables:

- *Draft Asset Management Program Implementation Plan (Roadmap) including two (2) hour on-site meeting to present draft plan and two (2) hour WebEx meeting to address comments*

### Schedule

CMSA anticipates contract execution and notice to proceed for the project in October 2018, and requests that the work be completed within six months. A preliminary schedule is provided below that reflects anticipated timeframes for the project. The schedule provided below considers the following factors: the kick-off meeting will be held via web conference and scheduling of the AM Gap Analysis workshops and staff interviews on consecutive days within the same week is preferred.

NTP +	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
NTP anticipated to be October 16, 2018	Nov	Dec	Jan	Feb	Mar	Apr
Task 1 - Project Management						
Task 1.1 - Kick-off Meeting						
Task 1.2 - Project QA/QC, Invoicing, Schedule Tracking and Communication (6 months)	Ongoing monthly task based on a six month project schedule					
Task 2 - Asset Management Training						
Task 2 - Asset Management Training						
Task 3 - Gap Analysis						
Task 3.1 - Conduct Gap Analysis Workshops						
Task 3.2 - Develop Gap Analysis Summary Results						
Task 4 - Implementation Roadmap						
Task 4 - Implementation Plan and Roadmap						

### Engineering Fee

Compensation for the basic scope of services provided herein shall be on a time and materials basis, for an estimated not-to-exceed fee of \$79,896. See the attached Exhibit B for a detailed fee estimate.

**Central Marin Sanitation Agency  
Asset Management Program Evaluation  
Cost Summary**

**Exhibit B**

Central Marin Sanitation Agency														
Asset Management Program Evaluation Level of Effort	GHD Inc. (October 3, 2018)	Principal / QA/QC	Project Manager	Assistant Project Manager and AM Consultant	AM Technical Lead	Sr AM Consultant	Sr Maintenance Consultant	Sr Technology Consultant	AM Consultant / Analyst	Total Hours	Labor Subtotal	Expense Subtotal	Labor + Expenses Total	
Task Name and Description	Deliverables	Seth Yoskowitz	Matt Winkelman	Joyce Cheung	Gage Muckleroy	Mert Muftugil and Charles Card	Bob Munro	Kathleen Zynda	Jill Kjellsson					
		\$265	\$235	\$165	\$265	\$195	\$235	\$195	\$145					
<b>Task 1 Project Management</b>		4	10	22	10	0	0	0	0	46	\$9,690.00	\$166	\$9,856	
Task 1.1 - Kick-off Meeting	2 hr - Kickoff meeting and associated prep (including development of Work Plan and review of requested AM documents)		4	10	10					24				
Task 1.2 - Project QA/QC, Invoicing, Schedule Tracking and Communication (6 months)	Monthly invoices (based on a six month project schedule for this task)	4	6	12						22				
<b>Task 2 Asset Management Training</b>		0	4	24	24	0	0	0	16	68	\$13,580.00	\$2,334	\$15,914	
Task 2 Asset Management Training	Two 3-hour AM Training Sessions for CMSA staff		4	24	24				16	68				
<b>Task 3 Gap Analysis</b>		2	6	42	44	8	4	22	16	144	\$29,640.00	\$2,932	\$32,572	
Task 3.1 - Conduct Gap Analysis Workshops	Two (2) eight (8) hour facilitated on-site Gap Analysis Workshops (including preparation and workshop materials) Up to Eight (8) hours of staff interviews 16 hours of NexGen review		4	32	34	2	2	16	12	102				
Task 3.2 - Develop Gap Analysis Summary Results	Draft and Final Gap Analysis Technical Memo, including a 2 hr Webex to review the Draft and address CMSA comments	2	2	10	10	6	2	6	4	42				
<b>Task 4 Implementation Roadmap</b>		2	8	28	32	4	4	4	12	94	\$19,750.00	\$1,804	\$21,554	
Task 4 - Implementation Plan and Roadmap	Draft and Final Asset Management Program Implementation Plan (Roadmap) One (1) meeting for Draft Roadmap 2-hour WebEx meeting to address comments	2	8	28	32	4	4	4	12	94				
	<b>Total Hours</b>	8	28	116	110	12	8	26	44	352	\$72,660.00	\$7,236	\$79,896	
	<b>Staff % Allocation of Project Total Hours</b>	2.3%	8.0%	33.0%	31.3%	3.4%	2.3%	7.4%	12.5%	100.00%				
	<b>Total Cost</b>	\$2,120	\$6,580	\$19,140	\$29,150	\$2,340	\$1,880	\$5,070	\$6,380					
Rates shown are specific for this project and will not be revised during the project.	Subconsultant are billed at cost plus 5%. Expenses are billed at cost plus 10%.													

Assumptions:  
 Kickoff meeting will be held via WebEx  
 Scheduling of the AM Gap Analysis workshops and staff interviews on consecutive days in the same week is preferred



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**BOARD MEMORANDUM**

October 5, 2018

**To:** CMSA Commissioners and Alternates

**From:** Jason Dow, General Manager

**Subject:** **Public Hearing for the Proposed Compensation Ordinance 2018-1, Entitled  
“An Ordinance of the Central Marin Sanitation Agency Board of Commissioners  
Adjusting Commissioner Compensation”**

**Recommendation:** Conduct the public hearing for the proposed Compensation Ordinance 2018-1, pass the Ordinance, and authorize publication of a summary of the passed Ordinance in the Marin Independent Journal newspaper.

**Summary:** Staff and Legal Counsel Jack Govi prepared the attached Compensation Ordinance (Ordinance) to increase the Commissioners’ daily stipend amount to \$225 per day of service and to include Board committee meetings as events that are eligible for the daily stipend. Pursuant to Board direction, a public hearing for the proposed Ordinance is scheduled at the October 9 Board meeting. A Notice for the public hearing on the proposed Ordinance was published in the Marin IJ Newspaper on October 3-5.

The Ordinance is attached and has been posted on the Agency’s website. If the Board passes the proposed Ordinance, it will become effective 30 days after its date of passage, on November 8, 2018.

**Background:** In December 2009, the Board adopted a Compensation for Agency Officials Policy (Policy), and in April 2010 it was incorporated into a new Board of Commissioners’ Policy Manual. The Policy set the Board stipend amount at \$100 per day of service, and lists the types of events that are eligible for a daily stipend, specifically excluding Board committee meetings. At the July 10, 2018 meeting, a Board member asked about possible compensation for Commissioners serving on a Board committee, as committee members can spend considerable time preparing for and attending meetings. After a brief discussion, the Board directed staff to include the Policy on an upcoming meeting agenda for discussion.

At the August 21 Board meeting, staff reviewed the Policy provisions, summarized the history of prior Board stipend adjustment discussions and decisions, and presented stipend information for eight wastewater agencies in Marin County. After a substantive and thoughtful discussion, the Board decided to add standing and ad hoc committee meetings as events eligible for a daily stipend, and to increase the stipend amount to \$225.

During the stipend deliberation, Board members noted that the stipend amount has been \$100 since 1987, and stated it's reasonable to compensate Commissioners an amount similar to the stipend provided to Board members at wastewater agencies of comparable size and function in the county.

**Attachments**

- 1) Proposed Compensation Ordinance 2018-1
- 2) Summary of Passed Ordinance 2018-1

**ORDINANCE NO. 2018-1****AN ORDINANCE OF THE CENTRAL MARIN SANITATION AGENCY BOARD OF COMMISSIONERS  
ADJUSTING COMMISSIONER COMPENSATION**

**WHEREAS**, in 2000, the California Legislature amended Section 6489 of the California Health and Safety Code authorizing Sanitary District Boards to, by ordinance, increase Board member compensation in an amount greater than the then current maximum of one hundred dollars (\$100) per day by an additional five percent (5%) for each calendar year following the operative date of the last adjustment pursuant to California Water Code Sections 20200 et seq;

**WHEREAS**, in 1987, the Board of Commissioners of the Central Marin Sanitation Agency (CMSA) followed existing law and set the compensation for Board members at \$100 per day of service and this level of compensation is the current level of compensation;

**WHEREAS**, the CMSA Board of Commissioners believes that the current compensation should be increased to \$225 per day of service pursuant to the above-referenced authority; and

**WHEREAS**, the Board of Commissioners, by this Ordinance, is amending Board Policy #2 to reflect the meeting stipend of \$225 per day of service for attendance at Board meetings, attendance at Standing and ad hoc Board Committee meetings, attendance at a conference or organized educational activity conducted in compliance with Government Code Section 54952,2(c), including ethics training required by state law, attendance at a meeting of any multi-jurisdictional government body on which the Board member serves as CMSA's designated representative, and attendance at any meeting attended or service provided on a given day at the request of the Board and for which the Board approves payment of a daily meeting;

**NOW, THEREFORE**, the Board of Commissioners of the Central Marin Sanitation Agency does hereby ordain as follows:

**SECTION I: DIRECTOR COMPENSATION**

- A. Commencing on the effective date of this Ordinance, and continuing until the Ordinance is modified, repealed or amended, the compensation for the Board of Commissioners of the Agency is \$225 per day of service.

B. The amount of a Commissioner compensation (\$225) is for each day's service rendered as a Commissioner, not to exceed six days in any calendar month for the following types of service:

1. Attendance at a regular or special meeting of the Board;
2. Attendance at Standing and ad hoc Board Committee meetings;
3. Attendance at a conference or organized educational activity conducted in compliance with Government Code Section 54952,2(c), including ethics training required by state law;
4. Attendance at a meeting of any multi-jurisdictional government body on which the Board member serves as CMSA's designated representative;
5. Attendance at any meeting attended or service provided on a given day at the request of the Board and for which the Board approves payment of a daily meeting.

**SECTION II.**

This ordinance shall be and is hereby declared to be in full force and effect as of thirty (30) days from and after the date of its passage, and shall be published once before the expiration of fifteen (15) days after its passage, with the names of the Commissioners voting for and against the same in the *Marin Independent Journal*, a newspaper of general circulation published in the County of Marin.

**PASSED AND ADOPTED** at a regular meeting of the Board of Commissioners of the Central Marin Sanitation Agency held on this 9<sup>th</sup> day of October 2018 by the following vote:

AYES:

NOES:

ABSENT:

\_\_\_\_\_  
Diane Furst, Chair, Board of Commissioners

ATTEST:

\_\_\_\_\_  
Dean DiGiovanni, Secretary



**SUMMARY OF PASSED ORDINANCE**

**ORDINANCE OF THE CENTRA MARIN SANITATION AGENCY BOARD OF  
COMMISSIONERS ADJUSTING COMMISSIONER COMPENSATION**

**PLEASE TAKE NOTICE THAT on Tuesday, October 9, 2018, the CENTRAL MARIN SANITATION AGENCY BOARD OF COMMISSIONERS CONDUCTED A PUBLIC HEARING and adopted an ordinance adjusting the compensation of Agency Commissioners from \$100 per day of service to \$225 and authorized such compensation for attendance at specific Board functions including the addition of attendance at Standing and ad hoc Committee meetings. The Ordinance will take effect on November 8, 2018.**

The full text of the adopted Ordinance is available at the Central Marin Sanitation Agency, 1301 Andersen Drive, San Rafael, CA 94901 or can be viewed or downloaded from the Agency's website: [www.cmsa.us](http://www.cmsa.us).

The Ordinance was passed by the following vote:

AYES:

NOES:

ABSENT:


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Jason R. Dow, P.E.  
General Manager

**BOARD MEMORANDUM**

October 5, 2018

**To:** CMSA Commissioners and Alternates

**From:** Jason Dow, General Manager 

**Subject:** Revised Board Policy #2 - Compensation for Agency Officials

**Recommendation:** Approve the revised Board Policy #2 – Compensation for Agency Officials.

**Summary:** At the August 21, 2018 meeting, the Board decided to increase its stipend from \$100 to \$225 per day of service, and to include Board ad hoc and standing committee meetings as events that are eligible for the daily stipend. These decisions have been incorporated into a revised Board Policy #2, and are contingent upon the Board passing Compensation Ordinance 2018-1 at the October 9, 2018 meeting. If the revised Policy is approved, staff will include it in the Board's Policy Manual on the Agency website.

**Attachment:**

- Board Policy #2 – Compensation for Agency Officials

COMPENSATION POLICY FOR AGENCY OFFICIALS

MEETING STIPENDS

1. General

Consistent with California Health and Safety Code Section 6489, Commissioners receive a daily meeting stipend for each day's attendance at meetings, as defined in this policy. Such compensation is in addition to any reimbursement for meals, lodging, travel, and expenses consistent with this policy.

2. Stipend Amount

Commissioners or alternates in the place of Commissioners who attend meetings/events as defined in Section 3 shall receive ~~\$100.00~~ 225.00 as their daily stipend. Should the Commission raise the ~~\$100~~ stipend amount in the future, ~~this amount~~ it shall be adjusted ~~per the adjustment made by Board Resolution by passing an ordinance pursuant to the Health and Safety Code Section 6489 (b)~~ without the need to amend this policy.

3. Meetings and Service Subject to the Daily Stipend

~~a. Committee meetings of the Board are not subject to a daily meeting stipend.~~

~~b.~~ For a commissioner or alternate to be entitled to a daily stipend under this policy, the event in question must constitute one of the following:

(1) A meeting of the Agency board within the meaning of Government Code Section 54952.2(a).

(2) Standing and ad hoc Board Committee meetings.

~~(2)~~(3) A conference or organized educational activity conducted in compliance with Government Code Section 54952.2(c), including ethics training required by Government Code Sections 53234 and following.

~~(3)~~(4) A meeting of any multi-jurisdictional governmental body on which the Board member serves as the Agency's designated representative.

(4)(5) Any meeting attended or service provided on a given day at the formal request of the Board and for which the Board approves payment of a daily meeting.

4. Aggregate Limits

The number of days for which a Commissioner receives a daily stipend will not exceed six days in a calendar month or state law, whatever is less.

- a. The stipend amount is for all meetings in a given day. Multiple meetings in one day do not justify multiple stipend payments.



**BOARD MEMORANDUM**

October 5, 2018

To: CMSA Commissioners and Alternates

From: Jacky Wong, Assistant Engineer

Approved: Jason Dow, General Manger 

**Subject: Cogeneration System Maintenance Project Agreement**

**Recommendations:** Approve the 2018 Cogeneration System Maintenance Project Agreement with Peterson Power Systems, and authorize the General Manager to sign it.

**Summary:** The Agency’s cogeneration engine is scheduled for major preventative maintenance work this fiscal year. Peterson Power Systems submitted the lowest cost proposal of \$81,361, and staff confirmed they meet the qualifications in the project specifications. If the Agreement is approved, this work will be completed within 90 days of the Agency executing the agreement.

**Project Budget:** The Agency’s FY19 Capital Improvement Program has \$145,000 allocated for Cogeneration System Maintenance. With approval of the 2018 Cogeneration System Maintenance Project Agreement, the CIP project account will have \$63,639 for the cogeneration system technology survey that is also planned for this fiscal year.

**Discussion:** CMSA operates a cogeneration system consisting of a 1,049 horsepower Waukesha VGF internal combustion engine coupled to a 750kW Kato electrical generator. It’s engine is fueled by either biogas or natural gas, and has been in full-time operation since 2005. The cogeneration system provides renewable and regular electricity to power the Agency’s buildings, treatment plant, and other facilities. In addition, captured waste heat from the engine is utilized to heat the treatment plant’s two anaerobic digesters and provide the Agency facilities with hot water service. Using the cogeneration system provides significant financial savings for the Agency, over \$1,000,000 per year, as compared to purchasing Deep Green Program electricity from MCE.

Staff prepared a detailed scope of work for the preventative maintenance work, and issued a request for maintenance service proposals to several engine maintenance contractors in August 2018. CMSA received two proposals for the maintenance work, from Peterson Power Systems and Valley Power Systems. The preventative maintenance scope of work includes performing a Waukesha recommended 15,000 operating hour “top-end” overhaul, and replacing the engine’s intercooler assembly and rear crankshaft seal.

The last cogeneration rehabilitation project was completed in April 2017 for an “in-frame” major overhaul, which included an upper- and lower-end engine rebuild, replacing cylinder heads, and rebuilding the engine’s turbochargers and the wastegate assembly. Staff recommends performing the proposed top-end engine overhaul as it would increase the reliability and extend the service life of the cogeneration system, which will need to be relied upon to generate power for the next few years.

**Alignment with Strategic Plan:** This activity is a strategic action to support Goal 1 – Objective 1.4 in the Agency’s FY19 Business Plan as shown below.

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

*Objective 1.3: Manage the Agency’s assets.*

*Action: Perform a major overhaul of the cogeneration engine.*

**Attachment:**

- 2018 Cogeneration System Maintenance Project Agreement with Peterson Power Systems



**2018 Cogeneration System Maintenance Project (Contract No. 19-06)**

This Agreement dated \_\_\_\_\_, 2018, is between Peterson Power Systems (Contractor) and Central Marin Sanitation Agency (CMSA or Agency).

**Scope of Work:** Contractor shall provide the services to perform a “top end” engine overhaul of CMSA’s cogeneration engine, and replace the Waukesha enginator intercooler assembly. Refer to Exhibit A for a complete description of the scope of work.

**Changes:** CMSA, without invalidating this Agreement, may order changes in the Scope of Work, consisting of additions, deletions, or other revisions, the Contract Price and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Work Directive signed by the Agency representative with payment by Contract Change Order.

**Insurance Requirements:** Prior to commencement of work, contractor shall have in place and maintain the following insurance coverages from insurance companies with at least an AVII (or better) financial rating satisfactory to CMSA. All insurance coverage shall provide for 30 days advanced written notice to the Agency of any modifications, change, or cancellation of any of the insurance coverage.

**I. Worker’s Compensation and Employers Liability Insurance:**

- a. Worker’s Compensation coverage shall be provided as required by applicable law, regulation or statute. Employers Liability insurance shall be provided in amount not less than \$1,000,000 each accident for bodily injury; \$1,000,000 each employee for bodily injury by disease; \$1,000,000 policy limit for bodily injury by disease;
- b. Waiver of Subrogation: The Worker’s Compensation policy shall be endorsed with a waiver of subrogation in the favor of the Agency for all work performed by the Contractor, its employees, agents, and subcontractors.

**II. General Liability Insurance:**

- a. General Liability Insurance shall be provided with the following limits:
  - i. \$1,000,000 each occurrence Bodily Injury and Property Damage combined;
  - ii. \$2,000,000 aggregate for Personal Injury Liability;
- b. **Additional Insured Endorsement:** Contractor’s insurance policy must name CMSA, San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District #2 of Marin County, City of San Rafael, the Town of Corte Madera, and the commissioners, officers, directors, and employees of each listed entity as additional insured on the General Liability Insurance policy.



- c. **Primary Wording:** The policy shall be endorsed to stipulate that the insurance afforded the additional insureds shall apply as primary and non-contributory insurance, and that any other insurance maintained by the additional insureds shall not be called upon to contribute with, or shall be excess of, this insurance.

**III. Automobile Liability Insurance:**

- a. Automobile Liability Insurance shall be provided with limits of liability not less than \$1,000,000 Combined Single Limit, and shall apply to "any automobile" or "all automobiles," as appropriate.

**Price:** CMSA will pay Contractor for the full and timely performance of the above scope of work the lump sum amount of \$ 81,361 (eight one thousand three hundred and sixty one dollars). This price shall include all labor, tools, equipment, transportation, administrative costs, permit fees, and all other applicable costs to fully perform the scope of work.

Payment, in full, will be made within 30 calendar days after acceptance of the completed work by CMSA and presentation of the invoice for it.

**Responsibility:** Contractor will protect and preserve all CMSA facilities and operations that may be adjacent to or impacted by the work encompassed by this Agreement.

**Labor Requirements:** The Project is a "public work" as defined in California Labor Code and shall be performed by Contractor as such. Contractor shall insure that it and the subcontractors at all tiers comply with the Labor Code, including but not limited to those sections listed in this Agreement. Contractor agrees that the prevailing rate of per diem wages for the day, legal holiday, and overtime work shall be those wage rates set forth within the appropriate General Prevailing Wage Determinations made by the Director of Industrial Relations, State of California, in accordance with Section 1770 of the Labor Code of the State of California. Said wage determinations are on the file with the CMSA which copies will be made available to any interested party on request and can also be found at: [www.dir.ca.gov/DLSR/PWD](http://www.dir.ca.gov/DLSR/PWD). Further, in accordance with Labor Code Sections 1771 and 1774, Contractor and subcontractors at all tiers shall not pay less than the general prevailing rate of per diem wages for work of a similar character within the locality where the work is being performed and not less than the general prevailing rate of per diem wages for holiday and overtime work set forth in the Labor Code and by Director of Industrial Relations.

Labor Code sections 1775, 1776, and 1777.5, which apply the work performed on this Project, set forth (1) the penalties to be assessed Contractor and/or the subcontractors at any tier for failing to pay the correct prevailing wage rates; (2) the responsibilities of Contractor and the subcontractors at any tier to maintain accurate payroll records for every person employed to work on the Project, which shall be made available for inspection at all reasonable hours at the principal office of the Contractor; and (3) the employment of apprentices on the Project. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4. Labor Code Sections 1810–1815, which apply to the work performed on this Project, govern working hours, including but not limited to (1) eight hours labor constitutes a legal day's work; (2) work on the Project is limited to 8 hours during any one calendar day and 40 hours during any one calendar week,





except as provided in Labor Code section 1815; (3) payment of not less than 1 ½ times the basic rate of pay for every hour in excess of 8 hours per day; (4) the payment twenty-five dollars (\$25.00) each calendar day to the CMSA for each worker employed in the execution of the work by Contractor or by any subcontractor where such worker or workers are required or permitted to work more than eight hours in any one calendar day and forty hours in any one calendar week in violation of these sections; and (5) the violation of these sections is a misdemeanor.

Labor Code section 1861 provides that Contractor, by its execution of this Agreement, certifies the following:

**“I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for worker’s compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.”**

Contractor shall post all job site notices prescribed by the regulations, including but not limited to the applicable IWC Orders, Minimum Wage Order, Pay Day Notice, Cal/OSHA Form 200, Harassment or Discrimination in Employment is Prohibit form (DFEH – 162).

**Contractor's License & DIR Registration:** Contractor covenants that it and each of its subcontractors at every tier who will be performing any work on this Project currently possesses and will maintain for the duration of the Project a current active contractor's license in accordance with the provisions of California's Business & Professions Code. Contractor further covenants that it and each of its subcontractors at every tier who will be performing any work on this Project is registered with the Department of Industrial Relations ("DIR") in accordance with California's Labor Code and will remain registered with DIR for the duration of the Project.

**Schedule and Kickoff Meeting:** All work under this Agreement will be completed within 90 calendar days from the date of the Agreement. At least 3 business days before beginning work under this Agreement, the Contractor shall meet with the Agency representative to coordinate the work and at that time will provide CMSA with a written schedule of activities required to complete the work. CMSA may, at its sole discretion, waive the kickoff meeting and/or written schedule requirements without waiving the completion date requirement.

**Liquidated Damages:** CMSA and the Contractor recognize that time is of the essence and that CMSA will suffer financial loss if the Work is not completed within the time specified, plus any CMSA approved extensions. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage which the CMSA will sustain in the event of and by reason of the Contractor’s failure to fully perform the Work or to fully perform all of its contract obligations that have accrued by the time for completion. It is, therefore agreed that the Contractor will forfeit and pay to the CMSA liquidated damages in the amount of \$500 per day for each and every calendar day that expires after the time for completion, or for each day the engine is online beyond 25 calendar days. It is further understood and that the liquidated damages sum specified in this provision is not manifestly unreasonable under the circumstances existing at the time this Contract was made, and that the CMSA may deduct liquidated damages sums in accordance with this provision from any payments due or that may become due the Contractor.



**Coordination:** Contractor will coordinate with CMSA for performance of the work.

**Indemnity:** Contractor shall indemnify, defend, and hold harmless the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, and their respective commissioners, directors, councilmembers, officers, officials, and employees (collectively "Indemnitees") from any and all claims for damages including, but not limited to money, expenses, and/or losses (collectively "Claim") to the extent Claim arises from Contractor's negligence, recklessness, and/or willful misconduct in the performance of the Services under this Agreement.

Notwithstanding the foregoing, for any Claim alleging Contractor's negligence, recklessness, and/or willful misconduct, Contractor's obligations and liability for costs of the Indemnitees' defense shall not exceed the Contractor's proportionate percentage of fault for the Claim.

**Warranty:** The Contractor hereby agrees to make, at its own expense, all repairs or replacements necessitated by defects in materials or workmanship, supplied under terms of this Agreement, and pay for any damage to other works resulting from such defects, which becomes evident within one (1) year after the date of acceptance of the project. The Contractor further assumes responsibility for a similar guarantee for all work and materials provided by subcontractors or manufacturers of packaged equipment components. The Contractor also agrees to indemnify, defend, and hold the Central Marin Sanitation Agency harmless from liability of any kind arising from damage due to said defects.

\_\_\_\_\_  
Contractor Name and Title

\_\_\_\_\_  
Jason R. Dow, CMSA General Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

Attachments:  
Exhibit A – 2018 Cogeneration System Maintenance Project Specifications

**Exhibit A**

**2018 Cogeneration System Maintenance Project Specifications**

**2018 Cogeneration System Maintenance Project  
SPECIFICATIONS**

1. General Considerations

Contractor shall furnish all labor, materials, parts, equipment, tools, supervision, services, transportation, waste disposal, facilities and other required items necessary to complete the tasks described herein on the cogeneration unit in strict accordance with all applicable manufacturer's published specifications and procedures.

1.1. It is the intent of these specifications to have the Contractor to perform a "top end" engine overhaul, replace the Waukesha Enginator Intercooler assembly, and replace the rear crankshaft seal. The system is a continuous duty cogeneration application consisting of a Waukesha engine (model P48 GLD), fueled by digester or natural gas, spinning at 1800 RPM, and driving a Kato 750 kW generator (model MTG 61), through an Encorp utility paralleling switchboard.

1.2. Any deviation from these specifications shall be noted as a written exception and attached to the price proposal.

1.3. This specification requires the Contractor to furnish all parts and materials, with the exception of the parts listed below that will to be provided by CMSA at the beginning of on-site work:

- new intercooler assembly
- rebuilt Waukesha cylinder heads
- rebuilt turbochargers
- rebuilt Wastegate assembly
- new governor actuator and governor linkage
- 150 gallons of coolant
- 100 gallons of lube oil

1.4. CMSA will drain and dispose of coolant, lube oil, and filters.

1.5. Only contractors with extensive experience in the maintenance and overhaul of Waukesha Engines shall perform this work.

1.5.1. The technicians provided by the contractor must have Waukesha VGF Engine factory training.

1.5.2. Contractor shall have performed overhauls similar in scope to the services specified herein on Waukesha cogeneration systems in the last year and at least one VGF Series Waukesha in the last 4 years.

1.5.3. Contractor shall provide references from previous overhauls demonstrating compliance with BAAQMD emissions rules for at least one year after the completion of the overhaul without requiring subsequent top-end overhaul.

## 2. Job Requirements

2.1. All parts shall be the latest design and configuration Waukesha or Kato OEM type unless otherwise specified.

2.2. During the rebuild process, engine components shall be modified or updated to the latest configuration per Waukesha Engine Service Bulletins and Repair & Overhaul Manual guidelines.

2.3. Waukesha VGF L36/P48 GL/GLD/GSID Repair & Overhaul Manual shall be used as the guide for this rebuild.

3. Not Used.

4. Not Used.

## 5. Remove Cylinder Heads

5.1. Measure crossbar internal diameter and cross bar seat thickness.

5.2. Inspect and measure all rocker assemblies, to include:

5.2.1 Rocker arm shaft outside diameter (record measurements on data sheets provided in Attachment 1).

5.2.2. Rocker arm bearing inside diameter (record measurements on data sheets provided in Attachment 1).

6. Remove intercooler and place on pallet for storage.

## 7. Install Rebuilt Cylinder Heads, Rebuilt Turbos and Rebuild Wastegate Assembly

7.1. Verify the new water jets in cylinder heads installed per Waukesha VGF Repair & Overhaul Manual.

7.2. Verify the valve heads are at the specified 0.059" to 0.079" below the head deck for use with high temperature head gasket p/n 300000D; reference Waukesha VGF Repair & Overhaul Manual; record the measurements on data sheets provided in Attachment 1.

7.3. Measure the installed valve stem height above the valve cover deck and record measurements on data sheets provided in Attachment 1 for future monitoring of valve recession.

7.4. Install rebuilt Waukesha cylinder heads provided by CMSA on "short block" then install rocker arm assemblies. Set valve lash to factory specifications.

7.5. Install rebuilt turbochargers provided by CMSA after filling with oil.

7.6. Install new intercooler assembly provided by CMSA.

## Exhibit A – 2018 Cogeneration System Maintenance Project Specifications

7.7. Rebuild the wastegate with a new valve and seat; grind as with cylinder head seats and valves referencing the Waukesha VGF Repair & Overhaul Manual.

7.8. Rebuild the wastegate actuator assembly, replacing any worn parts and set opening pressure to original specifications.

7.9. Rebuild manual shutoff butterfly assemblies and linkages using new shafts, seals, screws, bushings, and rod ends.

7.10. Install CMSA provided Governor Actuator and governor linkage.

7.11. Replace all filters including air, oil and crankcase breather.

7.12. Once reassembled, clean and paint the engine Waukesha Gray.

### 8. Installation, Final Assembly and Testing

8.1. Not Used.

8.2. Not Used.

8.3. Not Used.

8.4. Not Used.

8.5. Replace 16 spark plugs with Denso Iridium Performer Spark Plug p/n G13-5.

8.6. Replace the 16 ignition secondaries with Motortech VGF extended lead assembly p/n 06.85.429-14. Properly use suitable dielectric grease on plug insulators.

8.7. Replace all temperature sensors on the engine. 19 Thermocouples and 5 RTDs.

8.8. Rebuild Jacket and Auxiliary water pumps.

8.9. Replace all engine thermostats; 7 jacket water (1-170, 2-180, 4-190), 1 auxiliary water and 1 oil thermostat.

8.10. Start-up unit following procedure for new equipment and carburetor adjustment per Waukesha Service Bulletin 9-2708C. Once unit starts and accelerates to rated speed readily on natural or digester gas with good governor stability, continue with AFM set-up per Waukesha manual. This start-up testing must be completed in both fuel gasses.

8.11. Verify no-load governor stability and smooth cold synchronization following set-up in both gasses.

### 9. Testing

9.1. Confirm set-up conforming to Waukesha SAA 2002-401A achieves BAAQMD emissions compliance on digester and natural gas.

9.2. Provide, coordinate and schedule an independent certified source testing to confirm:

Digester gas emissions not to exceed the following values or current BAAQMD permit values in effect at time of commissioning:

- 2.65 grams CO per hp-hr
- 1.25 grams NOx per hp-hr, nor >70 ppmv, corrected to 15% O<sub>2</sub>
- 1 gram NMOC per hp-hr
- 0.3 gram Sulfur Dioxide per hp-hr, nor >300 ppmv

Natural gas emissions not to exceed the following values or current BAAQMD permit values in effect at time of commissioning:

- 2.75 grams CO per hp-hr
- 1.0 gram NOx per hp-hr, nor >65 ppmv, corrected to 15% O<sub>2</sub>
- 1.0 gram NMOC per hp-hr
- 0.3 gram Sulfur Dioxide per hp-hr, nor >300 ppmv

9.3. Contractor shall successfully demonstrate a final test consisting of running the engine under normal plant generating load and making the fuel transfer sequencing without the engine shutdown for seventy-two (72) continuous hours. This test must be run between 8:00 a.m. on Monday and 1:00 p.m. on Friday.

9.4. The engine start-up shall be completed within **25 calendar days**, and the final test shall be completed within **35 calendar days** from the commencement of the established onsite engine shutdown work activities.

Exhibit A – CMSA FY 19 Cogeneration System Maintenance Project Specifications

Attachment 1 – Quality Control Reports

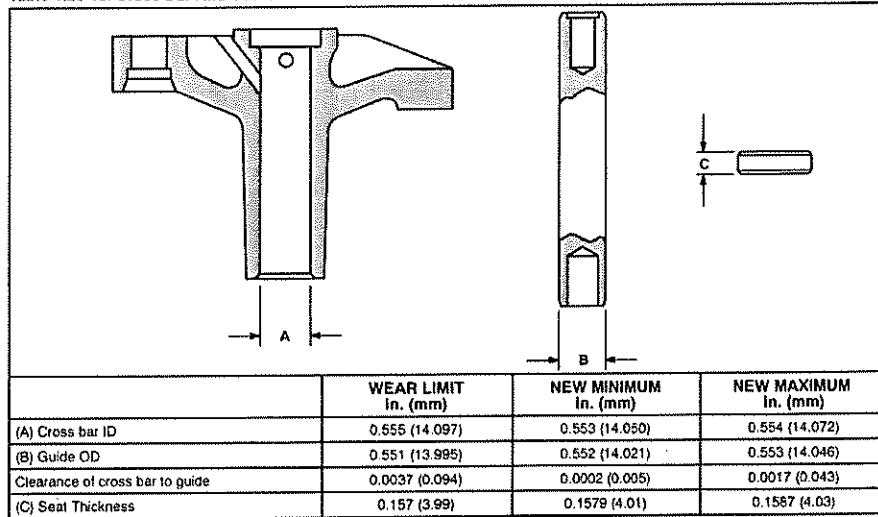
Following sheets to be used for recording critical engine assembly data



Exhibit A – CMSA FY 19 Cogeneration System Maintenance Project Specifications

Overhaul #:		Manufacturer:	
Serial #:		Model #:	
<b>CROSS BAR</b>			

Table 1.20-15. Cross Bar And Guide



		Intake			Exhaust		
		A	B	C	A	B	C
R	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
L	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						





READING TAKEN BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Exhibit A – CMSA FY 19 Cogeneration System Maintenance Project Specifications

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Overhaul #:		Manufacturer:	
Serial #:		Model #:	

**FLYWHEEL RUNOUT**

<p><b>FLYWHEEL TO HOUSING FACE</b></p> <p><b>.000</b></p> 	<p><b>FLYWHEEL TO HOUSING BORE</b></p> <p><b>.000</b></p> 
<p><b>HOUSING TO FLYWHEEL FACE</b></p> <p><b>.000</b></p> 	<p><b>HOUSING TO PILOT BEARING BORE</b></p> <p><b>.000</b></p> 

HOUSING FACE RUNOUT	T.I.R.
HOUSING BORE RUNOUT	T.I.R.
FLYWHEEL FACE RUNOUT	T.I.R.
PILOT BEARING BORE RUNOUT	T.I.R.

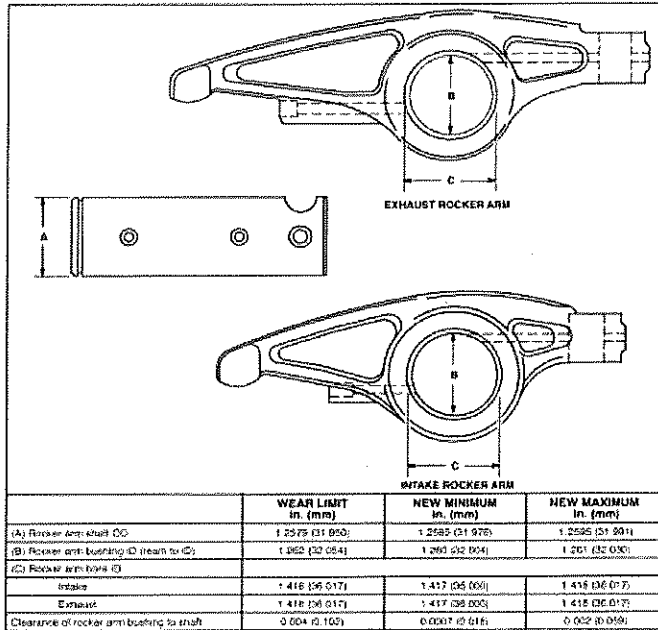
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Exhibit A – CMSA FY 19 Cogeneration System Maintenance Project Specifications

Overhaul #:		Manufacturer:	
Serial #:		Model #:	
<b>ROCKER ARM BORES</b>			

Table 1.20-14. Rocker Arm Assemblies



	Intake Rocker Arm "B"				Exhaust Rocker Arm "B"			
	Front		Rear		Front		Rear	
	#1	#2	#1	#2	#1	#2	#1	#2
RB	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
LB	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							

READING TAKEN BY: \_\_\_\_\_ DATE: \_\_\_\_\_

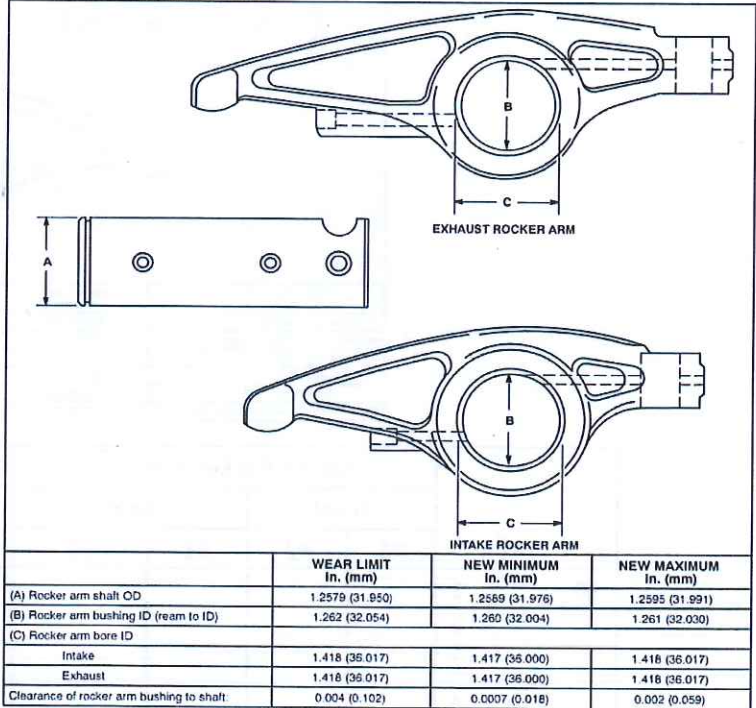
Exhibit A – CMSA FY 19 Cogeneration System Maintenance Project Specifications

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Overhaul #:		Manufacturer:	
Serial #:		Model #:	
<b>ROCKER ARM SHAFT</b>			

	Rocker Arm Shaft			
	Intake		Exhaust	
	#1	#2	#1	#2
RB	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
LB	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			

Table 1.20-14. Rocker Arm Assemblies



READING TAKEN BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



**BOARD MEMORANDUM**

October 5, 2018

To: CMSA Commissioners and Alternates

From: Jason Dow, General Manager 

**Subject: Cogeneration System Predesign Evaluation Agreement**

**Recommendation:** Approve the Professional Services Agreement with Carollo Engineers for the Cogeneration System Predesign Evaluation, and authorize the General Manager to sign the Agreement.

**Summary:** Staff has worked with Carollo Engineers to prepare a scope of work, budget estimate, and project schedule for a Cogeneration System Predesign Evaluation (Project). The Project is comprised of activities from three separate Agency projects - uninitiated tasks from the Agency's Renewable Energy Expansion Program, a cogeneration system technology assessment from the FY 19 Capital Improvement Program (CIP), and predesign level work on a selected cogeneration system that was planned for next fiscal year. Funding for the original project's activities was from various sources, and now most of the funding will be from the Agency's Clean Water State Revolving Fund (CWSRF) Agreement. If the staff recommendation is approved, Carollo will begin the Project work in mid-October and complete it during the spring of 2019 to align with task completion dates in the CWSRF Agreement.

**Project Budget:** In the Agency's 10-year CIP, there is a multi-year project for regular preventative maintenance of the existing cogeneration engine, and the design and installation a new cogeneration system. For this fiscal year, the CIP allocates \$145,000 for the existing cogeneration system maintenance work and a technology survey for a new cogeneration system. On the October 9 Board agenda, there is an \$81,361 contract with Peterson Power systems for the maintenance work, leaving approximately \$63,639 for the technology survey.

The Project budget is \$214,309 and its scope is significantly broader, as summarized above and detailed in the Discussion section below, than planned when the FY19 CIP was developed earlier this year. This expanded scope is the result of approximately \$275,000 in available funds in the Agency's CWSRF Agreement that can be used to fund approximately 75% of the Project costs. State Water Board (SWB) staff has approved budget transfers for several of the Renewable Energy Expansion Program tasks and have prepared an amendment to the CWSRF Agreement to include some of the Project tasks, which is being circulated at the SWB for its various levels of approval. SWB staff said the amendment should be approved and ready for CMSA signature in mid-November.

**Discussion:** In November 2017, the SWB approved a CWSRF Agreement for the Renewable Energy Expansion Program (Program) with \$666,859 in funding, where up to \$500,000 is principal forgiveness, a grant. The Program has 13 tasks with several being from the 2017 Agency Facilities Masterplan and the PG&E Interconnection Agreement Project. To date, the Agency has received approximately \$350,441 in disbursements from the SWB for seven of the program tasks, most of them being completed. During preparation of a recent quarterly report for submittal to the SWB, staff began to discuss how best to initiate the other Program tasks and complete them before expiration of the Agreement's term.

CMSA's 2017 Masterplan included a task to evaluate alternatives to utilize additional biogas generated in the Agency's two anaerobic digesters. The preferred alternative is a cogeneration system using an engine-generator. As mentioned above, the 10-year CIP includes a three-year project to perform a cogeneration system technology assessment, and then design and construct the selected technology that would be installed in an open bay in the Agency's Solids Handling Building. The assessment is scheduled for FY 19, design for FY20, and construction to begin in FY 21.

Given the CIP cogeneration system project's schedule, the Masterplan's recommended cogeneration system technology, and the uninitiated tasks in the Program with their available grant funding, staff prepared the scope of work for a Cogeneration System Predesign Evaluation Project. To assist with funding the Project's scope, staff proposed and the SWB approved Program task budget transfers. Additionally, the SWB has prepared an amendment to the CWSRF Agreement that incorporates the Project's cogeneration system alternative technology analysis and its predesign evaluation task into the Program scope of work. A brief description of the Project's tasks is presented below.

1. Cogeneration System Technology Alternative Analysis – The consultant will evaluate different cogeneration system and biogas treatment technologies using project and life cycle costs, space requirements, performance, electrical efficiency, ability to meet air emissions requirements, and staff familiarity among other factors. Cogeneration system technologies include engine-generators, fuel cells, and microturbines. The selected technology will be carried forward to predesign. Funding for this task is included in the Program amendment.
2. Predesign Evaluation – This task includes a series of cogeneration system component evaluations, assessments, and analyses, with the decisions being used in the Project's subsequent design phase of work. The consultant will determine the electrical, instrumentation, and mechanical equipment needed for the new system and how each interconnects to existing systems. Preliminary site layouts, design drawings, process flow diagrams, cost estimates, and project schedules will be developed. Funding for this task is included in the Program amendment.
3. Air Permitting Assessment – A new cogeneration system and the potential expansion of the biogas treatment system will require a permit from the Bay Area Air Quality Management District. For this task, the consultant team will meet with the Air Board staff to learn what the permit requirements will likely be for the selected systems and

identify the system design requirements to comply with the emissions limits. Funding for this task is included in the CWSRF Agreement.

4. Environmental Documentation Assessment – A new cogeneration system will be fully enclosed within the Solids Handling Building, and our preliminary thought is the system will be categorically exempt from CEQA. An environmental sub-consultant will review CEQA documents from prior Agency projects, and determine the appropriate CEQA documentation for the Project, prepare it, and submit it to the Agency. Funding for this task is included in the CWSRF Agreement.
5. Financial Analysis – There are a few state grant funding programs that the consultant will review and determine if the Project complies with their eligibility requirements. A likely program is the CWSRF Construction Program. CMSA's CWSRF Agreement is for planning/design, and if the Project moves forward, it may be eligible for the construction loan/grant. In addition to determining grant eligibility, the consultant will work with staff to evaluate Project funding alternatives that utilize CIP Pay-go, debt issuance, and grants/loans. Funding for this task is included in the CWSRF Agreement.
6. Action Plan – This task culminates with submittal of a technical memorandum that summarizes the prior tasks' key findings and recommendations, and will include the Project's implementation work plan, budget estimates, and design and construction schedule. Funding for this task is included in the CWSRF Agreement.
7. Predesign Evaluation Report – Consultant will prepare a report for submittal to the SWB that includes an executive summary of the project and each task's technical memoranda. Funding for this task is included in the CWSRF Agreement.

**Alignment with Strategic Plan:** This activity supports Goal 1 – Objective 1.4 in the Agency's FY19 Business Plan as shown below.

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

*Objective 1.4: Deliver projects from the Agency Facilities Master Plan.*

**Attachment:**

- Cogeneration System Predesign Evaluation Professional Services Agreement with Carollo Engineers

**CENTRAL MARIN SANITATION AGENCY  
PROFESSIONAL SERVICES AGREEMENT  
COGENERATION SYSTEM PREDESIGN EVALUATION  
CMSA CONTRACT NO. 19-14**

This Professional Services Agreement (hereinafter "Agreement") is made and entered into this \_\_\_ day of October, 2018 by and between the **Central Marin Sanitation Agency** (hereinafter referred to as "Agency") and **Carollo Engineers** (hereinafter referred to as "Consultant").

RECITALS:

WHEREAS, the Agency desires to retain Consultant to prepare the **Cogeneration System Predesign Evaluation** (hereinafter referred to as "Services"), which include, but are not limited to, evaluating cogeneration system alternatives, performing predesign level work on the selecting cogeneration system, preparing the appropriate CEQA documentation on the selected system, assessing the air permitting requirements of the selected system, assisting the Agency staff with evaluating financing mechanisms and alternatives for a new system, developing an action plan to implement a cogeneration system installation project, and summarizing the services in a report; and

WHEREAS, Consultant represents and warrants that it is qualified, competent, and ready to perform such Services;

NOW, THEREFORE, for and in consideration of the promises contained herein, and the payments to be made by Agency, the parties agree to the following:

**1. CONSULTANT'S SCOPE OF SERVICES:**

Consultant shall provide the Services described in **Exhibit "A"** attached hereto and by this reference made a part of this Agreement. If the Agency desires to engage Consultant to perform optional or additional services, the Agency and Consultant will prepare and execute an amendment to this Agreement for the performance of the optional or additional services.

**2. AGENCY'S OBLIGATIONS:**

The Agency shall:

- A. Provide access to and make provisions for the Consultant to enter the Agency's facilities as needed by Consultant in order for it to perform the Services, subject only to Consultant providing the Agency with reasonable advance notice of its need for access to one or more of the Agency's facilities.
- B. Make available to Consultant all pertinent data, contract documents, record drawings, reports, studies, and other records (hereinafter collectively



"Information") requested by Consultant for its review and use, and reliance in its performance of the Services.

- C. Provide review comments on project deliverables per the agreed upon activity and project schedules.

### 3. FEES:

The fees for furnishing the Services to be performed under this Agreement are set forth in the fee and task schedule which is attached hereto as **Exhibit "B"** and by this reference incorporated herein and made a part of this Agreement. Said fees shall remain in effect for the entire term of the Agreement.

If during the performance of the Services, Consultant makes a good faith determination that there will be a balance remaining in a task upon its completion, the Consultant, with the Agency's prior agreement, which shall not be unreasonably withheld, may reallocate that amount among other tasks that have not been completed but have exceeded or are estimated to exceed the amount originally allocated for those tasks.

### 4. PAYMENT:

The Agency shall pay Consultant for proper performance of the Services according to the fee schedule set forth in **Exhibit B**. On a monthly basis, Consultant will provide the Agency with a written invoice setting forth the hours spent by Consultant's assigned personnel along with any reimbursable expenses incurred during that month, together with supporting documentation as requested by the Agency. The fees for services under this Agreement shall be due within thirty (30) calendar days after approval by the Agency of the invoice covering the services and reimbursable expenses.

### 5. AGREEMENT TIME:

This Agreement shall commence when executed by the Agency and Consultant, and shall terminate on **June 30, 2019**. Time is of the essence with respect to this Agreement. This Agreement's Time may be extended by mutual agreement of the parties. Consultant's Services shall be performed and the deliverables provided in accordance with the Schedule that is attached hereto as **Exhibit C** and by this reference made a part of this Agreement.

### 6. INSURANCE:

Consultant shall procure and maintain at all times during the performance of the Agreement at its expense the following insurances:

- (A)(i) Workers' Compensation and Employer's Liability Insurance for protection of Consultant's employees as required by the State of California and as will protect

Consultant from loss or damage because of personal injuries, including death to any of its employees. Employers Liability insurance shall be provided in amounts not less than:

- \$1,000,000 each accident for bodily injury
- \$1,000,000 each employee for bodily injury by disease
- \$1,000,000 policy limit for bodily injury by disease

- (A)(ii) **Comprehensive Automobile Liability Insurance**. Said policy shall provide coverage for bodily injury and property damage liability. This policy shall protect Consultant against all liability arising out of the use of owned or leased automobiles both passenger and commercial. Automobiles, trucks, and other vehicles and equipment (owned, not owned, or hired, licensed or unlicensed for road use) shall be covered under this policy. Limits of liability for Comprehensive Automobile Liability Insurance shall not be less than \$1,000,000 per accident for bodily injury and property damage.
- (A)(iii) **Comprehensive General Liability Insurance** as will protect Consultant and the Agency from any and all claims for damages or personal injuries, including death, which may be suffered by persons, or for damages to or destruction to the property of others, which may arise from the Consultant's Services under this Agreement. Said insurance shall provide a minimum of \$1,000,000 Combined Single Limit coverage for personal injury, bodily injury, and property damage for each occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately for this Agreement or the general aggregate limit shall be twice the required occurrence limit. Such insurance will insure Consultant and the Agency from any and all claims arising from the following:
1. Personal injury;
  2. Bodily injury;
  3. Property damage;
  4. Broad form property damage;
  5. Independent contractors;
  6. Blanket contractual liability.
- (A)(iv) **Professional Liability Insurance** shall protect Consultant from claims arising out of negligent acts, errors or omissions of Consultant in the performance of the Service in an amount of not less than \$1,000,000. The policy shall cover the indemnity provisions under this Agreement. Consultant shall maintain this insurance for twelve (12) months after the Services required under this Agreement have been completed.
- (B) Consultant agrees to procure and maintain such insurances at Consultant's expense in full force and effect in a company or companies satisfactory to the Agency. All coverage shall remain in effect until completion of the Services.

- (C) Consultant will furnish the Agency with certificates of insurance issued by Consultant's insurance carrier(s) and countersigned by an authorized agent or representative of the insurance company. The certificates shall show that the insurance will not be cancelled, altered, or reduced without at least ten (10) days' prior written notice to the Agency. The certificates for liability insurance will show that liability assumed under this Agreement is included.
- (D) Consultant hereby grants to CMSA a waiver of any right to subrogation which any insurer of said Consultant may acquire against CMSA by virtue of the payment of any loss under such insurance. Consultant agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the CMSA has received a waiver of subrogation endorsement from the insurer.
- (E) The general liability and automobile liability insurance policies shall contain or be endorsed to contain the following provisions:
- (i) The Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, their respective commissioners, directors, councilmembers, officers, officials, employees and volunteers are to be covered as additional insured as respects: liability arising out of activities performed by or on behalf of the Consultant; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; or automobiles owned, leased, hired or borrowed by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, their respective commissioners, directors, councilmembers officers, officials, employees and volunteers.
  - (ii) For any claims related to this Agreement, the Consultant's insurance coverage shall be primary insurance as respects the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, their respective commissioners, directors, councilmembers, officers, officials, employees and volunteers. Any insurance or self-insurance maintained by the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, their respective commissioners, directors, councilmembers, officers, officials, employees and volunteers shall be excess of the Consultant's insurance and shall not contribute to it.

- (iii) The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
  - (iv) Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party except after ten (10) days' prior written notice by mail, has been given to the Agency. Consultant agrees to provide notification to the Agency in the event the insurance policies are suspended, voided, or reduced in coverage or limits.
- (F) Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to CMSA.

Failure to provide and maintain the insurance required by this Agreement will constitute a material breach of this Agreement. In addition to any other available remedies, Agency may suspend payment to the Consultant for any services provided during any time that insurance was not in effect and until such time as the Consultant provides adequate evidence that Consultant has obtained the required insurance coverage.

CMSA, at its discretion, may waive insurance requirements or reduce the above stated coverage limits based on the Consultant's scope of work and complexity of the associated tasks.

#### **7. NONDISCRIMINATORY EMPLOYMENT:**

Consultant and/or any permitted sub-consultant, shall not unlawfully discriminate against any individual based on race, color, religion, nationality, sex, sexual orientation, age, condition of disability, or other protected category. Consultant and/or any permitted sub-consultant understands and agrees that Consultant and/or any permitted sub-consultant is bound by and will comply with the nondiscrimination mandates of all federal, state and local statutes, regulations and ordinances.

#### **8. LICENSING AND PERMITS:**

The Consultant shall procure and maintain as required the appropriate licenses and permits required to perform the Services throughout the life of this Agreement.

#### **9. BOOKS OF RECORD AND AUDIT PROVISION:**

Consultant shall maintain on a current basis complete books and records relating to this Agreement and the Services performed. Such records shall include, but not be limited to, documents supporting all billings to the Agency for the Services performed. The books and records shall be original entry books with a general ledger itemizing all debits and credits for the work on this Agreement. In addition, Consultant shall maintain detailed payroll records including all subsistence, travel and field expenses, and canceled checks, receipts and invoices for all items. These documents and records shall be retained for at least five years from the

completion of this Agreement. Consultant will permit Agency to audit all books, accounts or records relating to this Agreement or all books, accounts or records of any business entities controlled by Consultant who participated in this Agreement in any way. Any audit may be conducted on Consultant's premises or, at Agency's option, Consultant shall provide all books and records within a maximum of fifteen (15) days upon receipt of written notice from Agency. Consultant shall refund any moneys erroneously charged.

**10. TITLE TO INFORMATION & DOCUMENTS:**

It is understood that any and all documents, including but not limited to Information, documents, and reports concerning this Agreement's Services prepared by and/or submitted to the Consultant, shall be the property of the Agency. The Agency may provide the Consultant's work product(s) to another person or entity in the future for a separate specific assignment. However, Consultant retains all intellectual property rights, including copyrights, applicable to its work. The Consultant may retain reproducible copies of the documents that it prepares as part of the Services. In the event of the termination of this Agreement, for any reason whatever, Consultant shall promptly deliver all Information, including but not limited to writings, plans, reports and other documents to Agency without exception or reservation.

**11. TERMINATION:**

**(A) Notice to Cure.** If Consultant at any time fails to properly and diligently perform the Services covered by the Agreement, or has committed a material breach of a provision of this Agreement, the Agency shall give Consultant written notice that within two (2) working days of its receipt of said notice, Consultant shall commence and continue satisfactory correction of such default or breach with diligence and promptness.

**(B) Consultant Default.** If Consultant fails to commence, within two (2) working days after receipt from the Agency of the notice issued under the above paragraph (1) and diligently thereafter, to correct the default or breach, then the Agency may pursue any remedies available by common law, statute, or this Agreement, including, but not limited to, one or more of the following:

(i) withhold any sums due or thereafter to become due to Consultant under the Agreement and during such period such withheld amounts shall not accrue interest; or (ii) terminate the Agreement;

Within seven (7) business days of Consultant's correction of the default or breach, the Agency shall release to the Consultant any monies withheld.

**(C) Termination for Convenience.** The Agency may for its convenience and at any time and for any reason terminate Consultant's Services and this Agreement. Termination shall be by service of written notice to Consultant at its address for notice set forth below. Upon receipt of such notice, Consultant shall, unless the notice directs otherwise, immediately discontinue performing the Services.

Upon such termination, sub-consultants shall be entitled to payment only for the Services completed as of the date of termination pursuant to the Agreement. Consultant shall not be entitled to any claim or claim for any additional compensation, lost profit, or other damages in the event of such termination.

**12. RELATIONSHIP BETWEEN THE PARTIES:**

It is expressly understood that in the performances of the Services herein, the Consultant, and the agents and employees thereof, shall act as an independent contractor and not as officers, employees or agents of the Agency. Consultant shall be solely responsible to pay all required taxes, including but not limited to, all withholding social security, and worker's compensation for its employees.

**13. AMENDMENT:**

This Agreement may be amended or modified only by written agreement of all parties.

**14. ASSIGNMENT OF SERVICES AND PERSONNEL:**

The Consultant shall not subcontract or assign any portion of the Services required to be performed pursuant to this Agreement without the prior written approval of the Agency. Further, Consultant shall not substitute any personnel for those specifically named in its proposal unless personnel with substantially equal or better qualifications and experience are provided and are acceptable to Agency, as is evidenced in writing.

**15. JURISDICTION AND VENUE:**

This Agreement shall be construed in accordance with the laws of the State of California and the parties hereto agree that venue shall be in Marin County, California.

**16. INDEMNIFICATION:**

Consultant shall indemnify, defend, and hold harmless the Agency, its members including San Rafael Sanitation District, City of Larkspur, Ross Valley Sanitary District, Sanitary District No. 2 of Marin County, the City of San Rafael, the Town of Corte Madera, and their respective commissioners, directors, councilmembers, officers, officials, and employees (collectively "Indemnitees") from any and all claims for damages including, but not limited to money, expenses, and/or losses (collectively "Claim") to the extent Claim arises from Consultant's negligence, recklessness, and/or willful misconduct in the performance of the Services under this Agreement.

Notwithstanding the foregoing, for any Claim alleging Consultant's negligence, recklessness, and/or willful misconduct, Consultant's obligations and liability for costs of the Indemnitees' defense shall not exceed the Consultant's proportionate percentage of fault for the Claim.

**17. STANDARD OF CARE:**

Consultant shall complete the services required hereunder in accordance with the prevailing standard of care by exercising the skill and ability ordinarily required to perform the same or

similar services, under the same or similar circumstances, in the State of California. Consultant shall, at no cost to the Agency, re-perform any part of the services which fail to satisfy the foregoing standard of care.

**18 ESTIMATES AND PROJECTIONS:**

Consultant has no control over the cost of labor, materials, equipment or services furnished by others, over the incoming water quality and/or quantity, or over the way the Agency's facilities and/or associated processes are operated and/or maintained. Data projections and estimates are based on Consultant's opinion based on experience and judgment. Consultant cannot and does not guarantee that actual costs and/or quantities realized will not vary from the data projections and estimates prepared by Consultant and Consultant does not and will be not liable to and/or indemnify the Agency and/or any third party related to any inconsistencies between Consultant's data projections and estimates and actual costs and/or quantities realized by the Agency and/or any third party in the future.

**19. THIRD PARTIES:**

The services to be performed by Consultant are intended solely for the benefit of Agency and its members. No person or entity not a signatory to this Agreement shall be entitled to rely on Consultant's performance of its services hereunder, and no right to assert a claim against Consultant by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Agreement or the performance of Consultant's services hereunder.

**20. FORCE MAJUERE**

Neither Consultant nor Agency shall be considered to be in default of this Agreement if delays in or failure of performance shall be due to uncontrollable forces, the effect of which, by the exercise of reasonable diligence, the nonperforming party could not avoid. The term "uncontrollable forces" shall mean any event which results in the prevention or delay of performance by a party of its obligations under this Agreement and which is beyond the control of the nonperforming party. It includes, but is not limited to, fire, flood, earthquake, storms, lightening, epidemic, war, riot, civil disturbance, sabotage, inability to procure permits, licenses, or authorizations from any state, local, or federal agency or person for any of the supplies, materials, accesses, or services required to be provided by either Consultant or Agency under this Agreement, strikes, work slowdowns or other labor disturbances, and judicial restraint.

**21. COMPLIANCE WITH APPLICABLE LAWS:**

In performance of the services, Consultant will comply with applicable regulatory requirements including federal, state, and local laws, rules, regulations, orders, codes, criteria, and standards.

**22. WAIVER**

A waiver by either the Agency or Consultant of any breach of this Agreement shall not be binding upon the waiving party unless such waiver is in writing and executed by the waiving

party. In the event of a written waiver, such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

**23. SEVERABILITY**

The invalidity, illegality, or unenforceability of any provision of this Agreement, or the occurrence of any event rendering any portion or provision of this Agreement void, shall in no way affect the validity or enforceability of any other portion or provision of the Agreement. Any void provision shall be deemed severed from the Agreement and the balance of the Agreement shall be construed and enforced as if the Agreement did not contain the particular portion or provision held to be void.

**24. INTEGRATION**

This Agreement supersedes all prior agreements, contracts, proposals, representations, negotiations, letters, or other communications between the Consultant and Agency pertaining to this Agreement and the Services to be performed, whether written or oral.

**25. NOTICES AND DESIGNATED REPRESENTATIVES:**

Jason Dow is the designated representative for CMSA and will administer this Agreement for CMSA. Rick Chan is the designated representative for Consultant. Changes in designated representatives shall occur only by advance written notice to the other party.

All invoices shall be submitted and approved by the designated Agency representative and all notices shall be given to Agency at the following location:

1301 Andersen Drive  
San Rafael, CA 94901

Notices shall be given to Consultant at the following address:

Carollo Engineers  
2700 Ignacio Valley Road, Suite 300  
Walnut Creek, CA 94598

**IN WITNESS WHEREOF**, the parties hereunto have executed this Agreement on the date first above written.

APPROVED BY:

**CENTRAL MARIN SANITATION AGENCY:**

**CONSULTANT:**

\_\_\_\_\_  
Jason R. Dow, General Manager

\_\_\_\_\_  
Rick Chan, Principal

Federal Tax Id #: \_\_\_\_\_



## EXHIBIT "A"

### CENTRAL MARIN SANITATION AGENCY COGENERATION SYSTEM PREDESIGN EVALUATION SCOPE OF SERVICES OCTOBER 1, 2018

#### INTRODUCTION

The Central Marin Sanitation Agency (Agency) is a regional wastewater agency located in San Rafael, California that provides wastewater treatment, biosolids management, resource recovery, and other environmental services to the residents, businesses, and institutions in central Marin County. In September 2018, a Biogas Utilization Study was completed for the Agency's wastewater treatment plant (WWTP) and one of the alternatives evaluated to utilize biogas produced from digestion of additional imported high-strength waste was to provide a second cogeneration engine adjacent to the Agency's existing cogeneration engine. The purpose of this scope of services is to outline the tasks involved to perform a predesign evaluation of both technical and non-technical issues associated with installation of a second cogeneration system.

#### SCOPE OF SERVICES

This section presents the Scope of Services for the Cogeneration System Pre-design Evaluation Project. Consultant shall prepare an Initial Draft Technical Memoranda (TM) that summarizes the results of each task (Tasks 2 through 7). Applicable Agency review comments received for each Draft TM will be incorporated into a Final Draft TM. Minor comments received for the Final Draft TM before the Final Report is completed will be incorporated into the Final TM that will be included in the Final Report (Task 8).

#### Task 1 – Project Management

Consultant shall provide project management and administration during the course of the project. This includes preparation and submission of monthly invoices with a progress report that includes budget status and key activities performed for the billing period. Consultant shall also prepare a project schedule and provide monthly updates to the schedule as necessary.

#### Information Provided by Agency:

- Comments on project schedule and updates.

#### Consultant Deliverables:

- Project schedule and updates.
- Project reports with the monthly invoices, and any approved schedule updates.

## **Task 2 – Cogeneration System Technology Alternative Analysis (TM 1)**

Consultant shall review the performance history and maintenance records of the existing cogeneration engine and biogas treatment system. Consultant shall then perform a cogeneration system technology alternatives analysis to evaluate whether the new cogeneration system should use the same technology as the existing lean-burn, reciprocating engine or switch to use a different cogeneration technology like microturbines or fuel cells. Factors to consider when comparing the cogeneration technologies include performance, reliability, biogas quantity and quality, space requirements, electric efficiency, ability to meet current and possible future air emission levels, compatibility with existing cogeneration system operations, staff familiarity, electrical requirements, capital cost, O&M requirements and cost, and life-cycle costs.

Consultant shall also perform a biogas treatment technology alternative analysis to evaluate whether the new biogas treatment system should use the same technology as the existing H<sub>2</sub>S and siloxane removal vessels or switch to use a different biogas treatment technology like a refrigeration and adsorption system or a self-contained packaged conditioning system. Factors to consider when comparing the biogas treatment technologies include performance, reliability, space requirements, ability to meet current and possible future air emission levels, compatibility with the existing biogas system operations, staff familiarity, electrical requirements, capital cost, O&M requirements and cost, and life-cycle costs.

### Information Provided by Agency:

- 2016-2018 O&M records of the existing cogeneration engine and biogas treatment system.
- 2016-2018 performance and operating costs of the existing cogeneration engine and biogas treatment system.
- Written comments on the Draft TM.

### Consultant Deliverables:

- Recommendation on cogeneration system technology to carry forward to complete Task 3.
- Draft and Final Draft TMs (to be delivered electronically via PDF file).

## **Task 3 – Predesign Evaluation of the Selected Cogeneration System (TM 2)**

Consultant shall perform a predesign evaluation of the selected cogeneration system technology and biogas treatment system based on the results of Task 2. For this task, Consultant shall work with the Agency to conduct the following:

- Confirm biogas production values to size the new cogeneration system.
- Evaluate alternatives for converting the excess heat to electricity or another beneficial use at the treatment facility. In addition, evaluate whether the existing excess heat cooling system has sufficient capacity for use with both the existing engine and the new

cogeneration system and assess whether additional excess heat exchangers are necessary.

- Evaluate operational strategy of the new cogeneration system and its impacts on the Agency's Interconnection Agreement with PG&E that allows the Agency to supply excess power to the PG&E's electrical grid.
- Evaluate equipment layout requirements for the new cogeneration system, including the distance and enclosures required by National Fire Protection Association (NFPA).
- Evaluate piping tie-in requirements for the new cogeneration system and biogas treatment system.
- Estimate the electrical loads and evaluate the electrical distribution system and SCADA network requirements and modifications that are needed to accommodate the new cogeneration system and biogas treatment system. This includes evaluation of using a common switchgear in the electrical distribution system to integrate power and controls for the emergency engine generator, existing reciprocating engine, and the new cogeneration system to perform interconnection, operating, and metering requirements to PG&E's distribution system.
- Prepare preliminary design drawings to show an equipment site layout plan and sections of the cogeneration system and biogas treatment system.
- Prepare preliminary process flow diagrams to show how the new cogeneration system and biogas treatment system will be tied into the overall cogeneration system and major control elements required for system operation.
- Prepare a predesign level construction cost estimate for the project.
- Prepare a preliminary implementation design and construction schedule.

Information Provided by Agency:

- Record drawings and design specifications for the existing cogeneration engine and biogas treatment system.
- Record drawings and design specifications for the emergency generator system.
- A copy of the Agency's Interconnection Agreement with PG&E.
- Written comments on the Draft TM.

Consultant Deliverables:

- Draft and Final Draft TMs (to be delivered electronically via PDF file).

**Task 4 – Air Permitting Assessment (TM 3)**

Consultant (and its subconsultant MEI) shall assess air emission and permitting issues associated with installation of a second cogeneration system and associated biogas treatment system at the Agency's WWTP. Consultant shall review existing and anticipated air emission rules and regulations that can impact the implementation of new cogeneration system and biogas treatment systems. This includes performing literature research and conducting two (2) meetings with the Agency's assigned air permitting engineer at the Bay Area Air Quality Management District (BAAQMD) to discuss these requirements. Consultant shall also investigate other stringent air emission regulations that have already been adopted by other

California Air Districts (specifically the South Coast Air Quality Management District and the San Joaquin Valley Air Pollution Control District) and work with the Agency to determine their potential impact on the cost and implementation of a new cogeneration system.

Information Provided by Agency:

- A copy of the Agency's current BAAQMD Authority to Construct (ATC) permit.
- Written comments on the Draft TM.

Consultant Deliverables:

- Meeting notes with BAAQMD.
- Draft and Final Draft TMs (to be delivered electronically via PDF file).

**Task 5 – Environmental Documentation Assessment (TM 4)**

Consultant (and its subconsultant ESA) shall meet with Agency staff to discuss the California Environmental Quality Act (CEQA) preparation process and receive CEQA compliance guidance from the Agency. Consultant shall review the project background information and the predesign concepts developed for the project with the Agency with the intent of determining whether a Categorical Exemption (CATEX) is the appropriate CEQA document for the project. Assuming it is, Consultant shall prepare supporting documentation for the submission of a CATEX by the Agency.

Information Provided by Agency:

- Previous or current CEQA documents.
- Written comments on the Draft TM.

Consultant Deliverables:

- CATEX Form.
- Draft and Final Draft TMs (to be delivered electronically via PDF file).

**Task 6 – Financial Analysis (TM 5)**

Consultant shall perform a predesign level financial analysis of the available grant funding programs that could be used to offset a portion of the capital costs of the new cogeneration system. Consultant shall also further evaluate whether the Agency can generate revenue through the sale of electricity produced by the new cogeneration system from another buyer other than Marin Clean Energy (MCE).

Once the Consultant identified the most appropriate funding program that is available, Consultant shall analyze the funding program assuming: 1) only Agency CIP funding; 2) Agency and grant/loan funding program.

Information Provided by Agency:

- Value of electricity sale to use in the analysis.

- A copy of Agency's Power Purchase Agreement with MCE.
- Written comments on the Draft TM.

Consultant Deliverables:

- Draft and Final Draft TMs (to be delivered electronically via PDF file).

**Task 7 – Action Plan (TM 6) and Meetings**

Consultant shall prepare an action plan that summarizes the key findings and recommendations from Tasks 2 through 6. The action plan will also identify remaining key steps and decisions required to implement the project, including but limited to:

- Preliminary work plan to implement the final design phase of the project.
- Preliminary final design and construction support budget estimates.
- Preliminary final design schedule and an estimate of construction duration.
- Preliminary assessment of availability and application requirements to obtain CWSRF design and construction financial assistance.

Consultant shall prepare for and conduct three (3) project meetings, with meeting materials provided approximately two working days before the meeting and meeting notes provided approximately five working days after the meeting. It is anticipated that the meetings will cover the following topics:

- Meeting No. 1 – Project kickoff meeting (October, 2018).
- Meeting No. 2 – Progress meeting to discuss results of Task 2 (December, 2018).
- Meeting No. 3 – Progress meeting to discuss results of Task 3 (January, 2019).

Consultant shall also attend one Board meeting in March 2019 to present the results of this project.

Information Provided by Agency:

- Comments on meeting agenda.
- Comments on board presentation materials.
- Written comments on the Draft TM.

Consultant Deliverables:

- Project meeting agenda, meeting materials, and meeting notes.
- Board presentation materials.
- Draft and Final Draft TMs (to be delivered electronically via PDF file).

**Task 8 – Predesign Evaluation Report**

Consultant shall prepare a predesign report that includes an Executive Summary of the TM recommendations and the Final TMs. The Draft Report and Executive Summary will be

submitted to the Agency for review, and applicable review comments received will be incorporated into the Final Report and Executive Summary.

Information Provided by Agency:

- Written comments on the Final Draft TMs.
- Written comments on the Draft Report and Executive Summary.

Consultant Deliverables:

- Draft Report with Executive Summary (end of February 2019)
- Final Report with Executive Summary and Final TMs (3 hard copies and 1 electronic copy via PDF file).

## Exhibit B

### LABOR AND COST ESTIMATE

#### CENTRAL MARIN SANITATION AGENCY COGENERATION SYSTEM PREDESIGN EVALUATION

Task Description	Wason, Chan	Dorfasha, Mossinger	Straub, Dadik	Chavan, Charbonnet	Graphics CAD	Document Processor	Total Hours	Labor Cost	Other Direct Costs (ODC)						Total Cost	
									Subconsultants		PECE <sup>(1)</sup>	Printing	Mileage <sup>(2)</sup>			ODC Cost
									MEI <sup>(3)</sup>	ESA <sup>(4)</sup>			Trips	Amount		
1 Project Management	14	0	0	0	0	0	14	\$4,116			\$164	\$0	0	\$0	\$164	\$4,280
2 Cogeneration System Technology Alternative Analysis (TM1)	18	32	16	24	16	6	112	\$26,454			\$1,310	\$0	0	\$0	\$1,310	\$27,764
3 Predesign Evaluation of the Selected Cogeneration System (TM2)	40	96	60	80	40	6	302	\$73,162			\$3,533	\$0	0	\$0	\$3,533	\$76,695
4 Air Permitting Assessment (TM3)	4	4	0	8	0	4	18	\$4,002	\$9,900		\$211	\$0	2	\$101	\$10,211	\$14,213
5 Environmental Documentation Assessment (TM4)	6	0	0	8	0	4	18	\$3,928	\$9,900	\$9,900	\$211	\$0	0	\$0	\$10,111	\$14,039
6 Financial Analysis (TM5)	6	25	0	25	4	4	64	\$14,977			\$749	\$0	0	\$0	\$749	\$15,726
7 Action Plan (TM6) and Meetings	44	48	0	56	0	4	152	\$38,380			\$1,778	\$0	4	\$202	\$1,980	\$40,360
8 Predesign Evaluation Report	12	12	0	36	24	12	96	\$19,608			\$1,123	\$500	0	\$0	\$1,623	\$21,231
Project Totals =	144	217	76	215	84	40	776	\$184,627	\$9,900	\$9,900	\$9,079	\$500	6	\$302	\$29,682	\$214,309

**Notes:**

- (1) Project Equipment and Communication Expense.
- (2) Based on 90 miles per round trip @ IRS mileage rate.
- (3) Mizutani Environmental Inc. (includes 10% markup).
- (4) Environmental Science Associates (includes 10% markup).

Exhibit C

Central Marin Sanitation Agency

Cogeneration System Predesign Evaluation

Task	Year						
	2018			2019			
	O	N	D	J	F	M	A
Task 1 - Project Management	█			█			
Task 2 - Cogeneration System Technology Alternative Analysis	█ D						
Task 3 - Predesign Evaluation of the Selected Cogeneration System			█	D			
Task 4 - Air Permitting Assessment	█			D			
Task 5 - Environmental Documentation Assessment	█			D			
Task 6 - Financial Analysis			█	D			
Task 7 - Action Plan and Meetings	M	█	M	D	M		
Task 8 - Predesign Evaluation Report					█	█	

Notes:

D = Deliverable (Draft TM, Final TM, and Predesign Report)

M = Meeting (Kickoff Meeting, 2 Progress Meetings, and 1 Board Meeting)





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**BOARD MEMORANDUM**

October 5, 2018

**To:** CMSA Commissioners and Alternates**From:** Jason Dow, General Manager **Subject:** Debt Issuance Planning

**Recommendation:** Consider directing staff and the Board Finance Committee to develop a plan for the Agency's next debt issuance.

**Summary:** Sarah Hollenbeck, the Agency's financial advisor with PFM, provided the attached market rate update presentation that shows tax-exempt municipal interest rates are projected to increase over the next year. In discussions with Ms. Hollenbeck and the Agency's bond counsel, Sean Tierney with Hawkins Delafield, staff believes the Board may want to consider beginning our next debt issuance process in the near future to take advantage of the lower projected interest rates.

**Discussion:** Staff and the Board's Finance Committee (Committee) developed a 5-year revenue plan last fiscal year that was approved by the Board, shared with the JPA member agencies, and integrated into the Agency's 10-year financial forecast. The revenue plan includes a 3.5% revenue increase each fiscal year, FY 19 – FY 23, and two debt issuances to partially fund the 10-year Capital Improvement Program. An issuance is currently planned for FY 20 with payment of debt service to begin in FY 21, and a second issuance is planned for FY 23 with payment of debt service to begin in FY 24. Funding for the second issuance is not included in the 5-year revenue plan, and will be considered during development of the subsequent revenue plan.

To initiate the first debt issuance process, staff planned to convene the Board's Finance Committee next spring to prepare a debt issuance plan for presentation to the Board towards the end of the fiscal year. It would include the issuance amount and terms, list of projects to be funded by the issuance proceeds, a schedule of key tasks and decisions, financial advisor and bond counsel service fee proposals, and bond counsel's recommendation for either a new JPA agency payment agreement or an amendment to the existing agreement.

Due to the projected increase interest rates, staff recommends that the Board authorize development of the debt issuance plan this fall for presentation, discussion, and consideration of approval in early 2019.

**Attachment:** Market Rate Update Presentation from PFM



# Central Marin Sanitation Agency

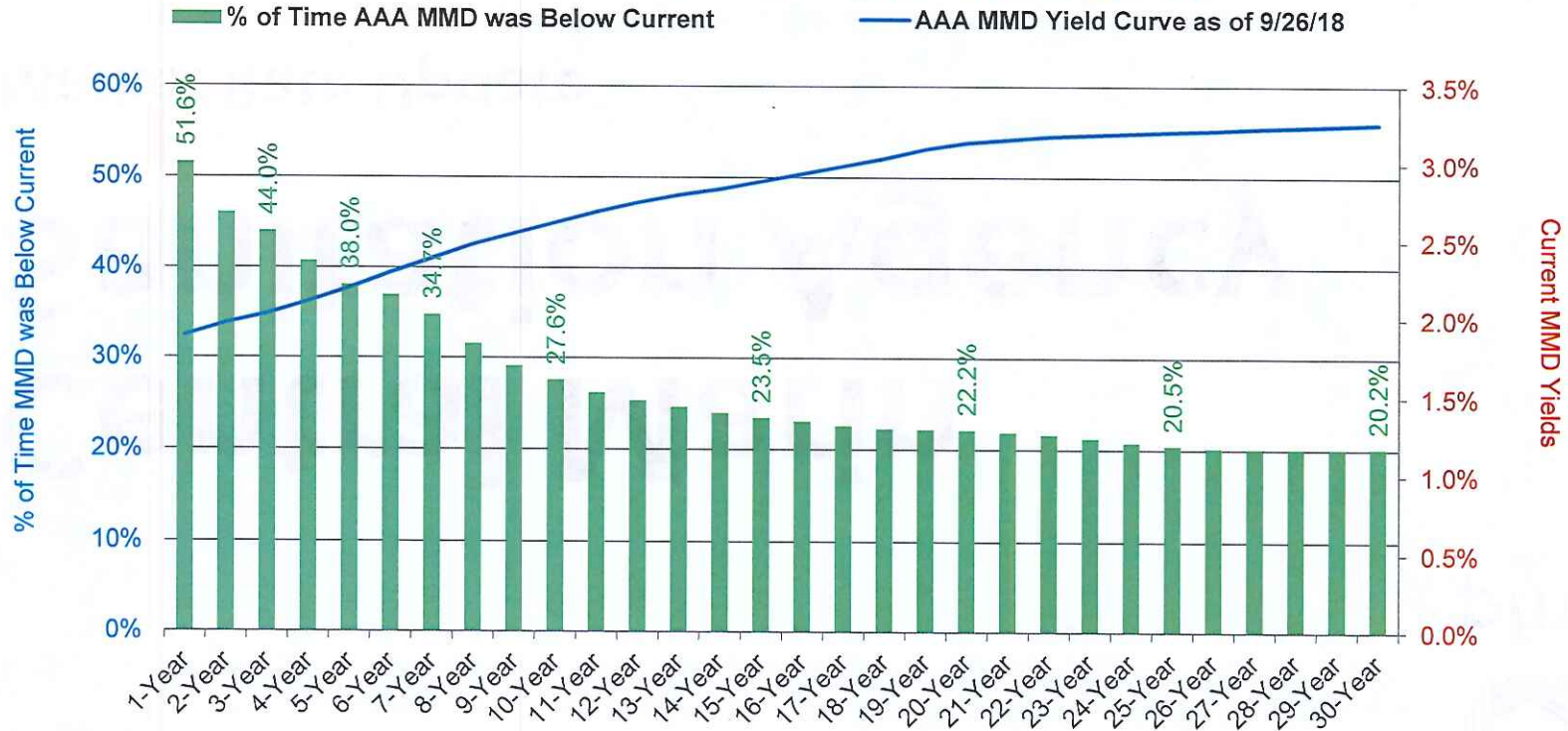
Market Rate Update



## Current Rates are Historically Attractive

- ◆ Although short-term rates have increased off all-time lows, long-term rates remain attractive
- The 30-Year AAA tax-exempt municipal interest rate index, known as MMD, has been lower only 20.2% of the time since 1993

### Percent of Time Rates Have Been Lower





## AAA Municipal Market Data (MMD) Rate

- Borrowing rates remain relatively low compared to historical averages
- The current 30-Year AAA MMD rate is 3.21%, 127 basis points below the 30-year average

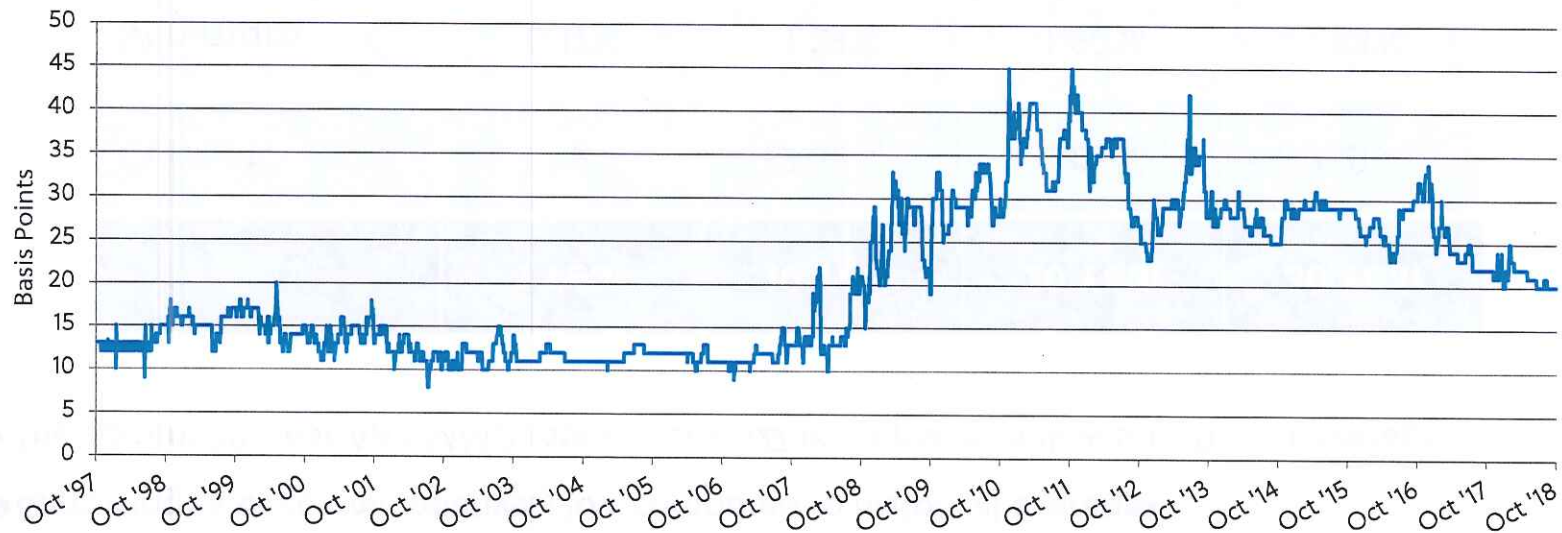
	1 Year	10 Year	20 Year	30 Year
Current	1.89%	2.58%	3.09%	3.21%
Minimum	0.11%	1.29%	1.80%	1.93%
Maximum	4.95%	6.15%	6.85%	6.95%
Average	1.98%	3.56%	4.30%	4.48%



## Long-Term AA Revenue Credit Spread

- The AA credit spread refers to the interest rate differential between AAA-rated and AA-rated bonds
- The long-term AA revenue credit spread has tightened since 2016, declining from 34 basis points to 20 basis points

### 30-yr Maturity AA Revenue Credit Spread





## Interest Rate Forecasts of Forty Analysts

- The 30-year Treasury rate is predicted to increase to 3.35% in the first quarter of 2019, and further increase to 3.51% in the third quarter of 2019

Wall Street Consensus Interest Rate Forecast							
Forecast	9/27/18	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4
Federal Funds Rate (Lower Bound)	2.00%	2.00%	2.23%	2.45%	2.65%	2.79%	2.82%
Federal Funds Rate (Upper Bound)	2.25%	2.25%	2.50%	2.70%	2.90%	3.05%	3.05%
3-Month LIBOR	2.39%	2.45%	2.64%	2.80%	2.98%	3.09%	3.14%
2-Yr UST	2.83%	2.71%	2.85%	2.97%	3.08%	3.15%	3.18%
10-Yr UST	3.05%	3.02%	3.06%	3.17%	3.23%	3.28%	3.32%
30-Yr UST	3.18%	3.13%	3.25%	3.35%	3.44%	3.51%	3.56%

Source: Bloomberg

# Thank You



pfm