Request for Quotations
Las Virgenes Municipal Water District: Laboratory Testing

Proposals due November 30, 2020 at 3:00 p.m.

Las Virgenes Municipal Water District
4232 Las Virgenes Road
Calabasas, CA 91302
danders@lvmwd.com

REQUEST FOR QUOTATIONS
Las Virgenes Municipal Water District

Las Virgenes Municipal Water District: Laboratory Testing

I. GENERAL AND BACKGROUND

Las Virgenes Municipal Water District (LVMWD or district) is a California special district established in 1958. The service area encompasses 122-square miles in western Los Angeles County and includes the cities of Hidden Hills, Calabasas, Agoura Hills and Westlake Village, as well as unincorporated areas of Los Angeles County. The district provides potable water, recycled water, wastewater treatment and composting services to a population of approximately 65,000. Triunfo Sanitation District (TSD), located within eastern Ventura County, is a joint powers authority partner (JPA) with LVMWD in wastewater, recycled water service and composting. The TSD service area is 50-square miles with a population of 30,000 for a portion of the City of Thousand Oaks, and surrounding unincorporated areas including the communities of Oak Park and North Ranch. The JPA operates the Tapia Water Reclamation Facility (Tapia WRF) and The Rancho Las Virgenes Composting Facility. The JPA also operates the Pure Water demonstration facility which is a small scale advanced water treatment plant.

LVMWD is seeking quotations from qualified laboratories to perform laboratory analysis of samples from potable water, recycled water, wastewater, biosolids and composting.

II. SCOPE OF WORK

A test count spreadsheet (Attachment 1), a lab sampling checklist (Attachment 2), a list of SWRCB minimum levels (Attachment 3), and a portion of our NPDES permit (Attachment 4) are provided for reference.

Laboratories must provide the following information:

1. Certification (ELAP/NELAC)
2. Pre-log available (COCs, labels, bottles)
3. Sample pick-up/ delivery
4. Turnaround time (days)
5. Rush analysis availability/ fees
6. Data flagging (before final report)
7. Web data reporting
8. Sub-contract costs (above testing costs)

Please note the following:

1. The reporting limits must meet the SWRCB minimum levels (attached)
2. Methods must conform to 40 CFR part 136
3. The number of tests in the attached test count is an estimate. Actual numbers may vary.
4. Solid matrices include compost, crop and sludge
5. The LVMWD NPDES permit limits are enclosed for reference

III. MINIMUM CONSULTANT QUALIFICATIONS

The laboratory must have State of California Environmental Laboratory Accreditation Program (ELAP) certification in the appropriate fields.

IV. INFORMATION TO BE SUBMITTED

Please submit by email your quotation no later than 3:00 p.m. on November 30, 2020. Include the following:

1) Legal name of your firm, address, telephone number and the name of the Laboratory Director.
2) Completed test cost spreadsheet (Attachment 1)*
3) Cost proposal for completing Pure Water Demonstration Project sampling (Attachment 2)
4) Schedule of rates.
5) A copy of the laboratories' State of California Environmental Laboratory Accreditation Program (ELAP) certification and a list of approved methods.

Submit Documents to: danders@lvmwd.com
*An Excel version of Attachment 1 is available upon request from danders@lvmwd.com

V. EVALUATION CRITERIA

Proposals will be evaluated based upon the following:

1. The ability to complete the work within stated turnaround times.
2. Cost in terms of overall value to the district.
3. The experience and qualifications of assigned personnel.
4. Qualifications and use of sub-contract laboratories.
5. Interviews may be performed at the District's discretion.

VI. ADDITIONAL CONDITIONS

1. The successful vendor will be required to enter into the District's standard services agreement (attached).

Any questions can be directed to Doug Anders, Administrative Services Coordinator, at (805) 758-9808 or danders@lvmwd.com.

Las Virgenes Municipal Water District/Agency
AGREEMENT FOR SERVICES

This Agreement for Services ("Agreement") is entered into this ____ day of _____, 20XX by and between Las Virgenes Municipal Water District ("District"), and Contractor ("Contractor"). District and Contractor are sometimes individually referred to as "Party" and collectively as "Parties." Parties do contract and agree as follows:

1. SCOPE.

1.1 Scope of Services.

This Agreement and its attachments set forth the terms under which Contractor shall, in good workmanlike and professional manner, perform the services described in the attached **Exhibit "A"** ("Scope of Services") for District.

1.2 Labor and Equipment. Contractor will furnish labor, equipment, and materials necessary to the work, except equipment and materials to be provided by District, as set forth in the attached **Exhibit "B"** ("Materials and Equipment").

Contractor may use the equipment or materials provided by District necessary for the performance of the work and should the equipment or materials be lost, damaged, or destroyed, Contractor will reimburse District with equipment and materials of equal value, and for costs and expenses incident to the replacement.

1.3 Time of Work. Contractor will perform Contractor's duties described in the Agreement during the hours of [range of hours] [daily or...]. In any event, Contractor will perform Contractor's duties in a manner to avoid inconvenience to the users of the District's premises and to avoid interference with District's operations.

2. TERM AND COMPENSATION.

2.1 Term. This Agreement shall commence on the date above written and shall continue until completion of the Services described above.

or

The term of this Agreement shall be for a period of approximately one (1) year, commencing on April ____, 2020 and concluding on March ____, 2021 and, if mutually agreed to. be renewable for four (4) additional one-year periods.

2.2 Termination.

2.2.1 The District may terminate or cancel this Agreement, in whole or in part, without liability to the District, if Contractor fails to perform in accordance with the

requirements of Section 1 – Scope, herein, or in the event of a substantial breach of any of the other terms or conditions hereof.

2.2.2 Either Party may terminate this Agreement on thirty (30) days' written notice for any reason. If Agreement is terminated by District without cause, District shall pay Contractor for work performed prior to the date the notice of termination is received by Contractor. If Agreement is terminated by Contractor without cause, Contractor shall reimburse District for additional costs to be incurred by District in obtaining the work from another Contractor.

2.3 Compensation and Reimbursement. District shall compensate and reimburse Contractor, including all reimbursable expenses, as provided in the attached **Exhibit "C"** ("Fee Schedule"). Contractor shall submit invoices no more frequently than monthly and no less than every quarter. Payment shall be made by the District within forty-five (45) days of District receipt of an accurate and approved invoice.

3. Responsibilities of Contractor.

3.1.1 Independent Contractor. At all times during the term of this Agreement, Contractor shall be an independent contractor and shall not be an employee of the District. District shall have the right to control Contractor only insofar as the results of Contractor's services rendered pursuant to this Agreement; however, District shall not have the right to control the means by which Contractor accomplishes such services. Except as District may specify in writing, Contractor shall have no authority, expressed or implied, to act on behalf of District in any capacity whatsoever as an agent. Contractor shall have no authority, expressed or implied, pursuant to this Agreement to bind District to any obligation whatsoever.

3.1.2 Conformance to Applicable Requirements. All work performed by Contractor shall be subject to the approval of District.

3.1.3 No Subcontracts. Contractor shall not subcontract any portion of the work required by this Agreement, except as expressly stated herein, without prior written approval of District. Subcontracts, if any, shall contain a provision making them subject to all provisions stipulated in this Agreement.

3.1.4 Maintenance of Records. Contractor shall maintain all books, documents, papers, employee time sheets, accounting records, and other evidence pertaining to fees and costs incurred for each assignment and shall make such materials available at its office at all reasonable times for three (3) years from the date of the close of each individual assignment under this Agreement, for inspection by District and copies thereof shall be furnished, if requested.

3.1.5 Ownership of Data, Reports, and Documents. Contractor shall deliver to District notes of surveys made, all reports of tests made, studies, reports, plans, a copy of electronic and digital files, and other materials and documents which shall be the property of

the District. Contractor is released from responsibility to third parties for the use by District of data, reports, and documents on other projects. Contractor may retain copies of such documents for its own use. The District may use or reuse the materials prepared by Contractor without additional compensation to Contractor.

4. Laws and Regulations.

4.1 Compliance with Applicable Law. Contractor agrees to comply with all federal, state, county, and local laws, ordinances, and regulations applicable to the work to be done under this Agreement. If Contractor performs any work knowing it to be contrary to such laws, rules, and regulations, Contractor shall be solely responsible for all costs arising therefrom.

3.2 Eligibility for Employment in the United States. Contractor shall complete and keep on file, as appropriate, the Immigration and Naturalization Service Employment Eligibility Form (I-9). This form shall be used by Contractor to verify that persons employed by Contractor are eligible to work in the United States.

4.3 Licenses, Permits, Etc. Contractor represents and declares to District that it has all licenses, permits, qualifications, and approvals of whatever nature that are legally required to practice its profession. Contractor represents and warrants to District that Contractor shall, at its sole cost and expense, keep in effect at all times during the term of this Agreement, any license, permit, or approval which is legally required for Contractor to practice its profession.

4.4 Equal Opportunity Employment. Contractor represents that it is an equal opportunity employer and it shall not discriminate against any subcontractor, employee or applicant for employment because of race, religion, color, national origin, handicap, ancestry, sex, or age. Such non-discrimination shall include, but not be limited to, all activities related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, or termination.

4.5 Labor Code Provisions.

4.5.1 Prevailing Wages. Contractor is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on "public works" and "maintenance" projects. If the Services are being performed as part of an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and if the total compensation is $1,000 or more, Contractor agrees to fully comply with such Prevailing Wage Laws. Contractor shall comply with all prevailing wage requirements under the California Labor Code and Contractor shall forfeit as penalty to the District a sum of not more than $200.00 for each calendar day, or portion thereof, for each worker paid less than the prevailing rates. This penalty shall be in addition to any shortfall in wages paid. The District has obtained the general prevailing rate of wages, as determined by the Director of the Department of Industrial Relations, a copy of which is on file in the District's office and shall be made available for

viewing to any interested party upon request. Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Services available to interested parties upon request and shall post copies at the Contractor's principal place of business and at the Project site.

4.5.2 Registration and Labor Compliance. If the Services are being performed as part of an applicable "public works" or "maintenance" project, then, in addition to the foregoing, pursuant to Labor Code sections 1725.5 and 1771.1, the Contractor and all subcontractors must be registered with the Department of Industrial Relations ("DIR"). Contractor shall maintain registration for the duration of the Project and require the same of any subcontractors. This Project may also be subject to compliance monitoring and enforcement by the Department of Industrial Relations. It shall be Contractor's sole responsibility to comply with all applicable registration and labor compliance requirements, including the submission of payroll records directly to the DIR.

4.5.3 Labor Certification. By its signature hereunder, Contractor certifies that it is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code and agrees to comply with such provisions before commencing the performance of the Services.

5. Indemnification.

To the fullest extent permitted by law, Contractor shall immediately indemnify and hold the District, its directors, officials, officers, employees, volunteers, and agents free and harmless from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage, or injury of any kind, in law or equity, to property or persons, including wrongful death, in any manner arising out of, pertaining to, or incident to any alleged acts, errors, or omissions of Contractor, its officials, officers, employees, subcontractors, Contractors, or agents in connection with the performance of the Contractor's services under this Agreement, including without limitation the payment of all consequential damages, attorneys' fees and costs, including expert witness fees.

6. Insurance.

6.1.1 Time for Compliance. Contractor shall not commence Work under this Agreement until it has provided evidence satisfactory to the District that it has secured all insurance required under this section. In addition, Contractor shall not allow any subcontractor to commence work on any subcontract until it has provided evidence satisfactory to the District that the subcontractor has secured all insurance required under this section. Failure to provide and maintain all required insurance shall be grounds for the District to terminate this Agreement for cause.

6.1.2 Minimum Requirements. Contractor shall obtain and maintain during the entire term of this Agreement the following insurance policies from companies authorized to issue insurance in the State of California:

(a) Commercial General Liability. Coverage for commercial general liability insurance shall be at least as broad as Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 0001). Contractor shall maintain limits no less than $1,000,000 per occurrence, or the full per occurrence limits of the policies available, whichever is greater, for bodily injury, personal injury, and property damage. If Commercial General Liability Insurance or other form with general aggregate limit or product-completed operations aggregate limit is used, including but not limited to form CG 2503, either the general aggregate limit shall apply separately to this Agreement/location or the general aggregate limit shall be twice the required occurrence limit.

(b) Automobile Liability. Coverage shall be at least as broad as the latest version of the Insurance Services Office Business Auto Coverage form number CA 0001, code 1 (any auto). Contractor shall maintain limits no less than $1,000,000 per accident for bodily injury and property damage. The automobile liability policy shall cover all owned, non-owned, and hired automobiles.

(c) Workers' Compensation Insurance. Contractor shall maintain Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance in an amount no less than $1,000,000 per accident for bodily injury or disease. The insurer shall agree to waive all rights of subrogation against the District, its directors, officials, officers, employees, agents, and volunteers for losses paid under the terms of the insurance policy which arise from work performed by the Contractor.

(d) Excess Liability (if necessary). The limits of Insurance required in this Agreement may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess coverage shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of the District (if agreed to in a written contract or agreement) before the District's own primary or self-Insurance shall be called upon to protect it as a named insured. The policy shall be endorsed to state that the District, its directors, officials, officers, employees, agents, and volunteers shall be covered as additional insured at least as broad a form as CG 20 10 11 85 or the latest versions of both CG 20 10 and CG 20 37. The coverage shall contain no special limitations on the scope of protection afforded to the District, its directors, officials, officers, employees, agents, and volunteers.

6.1.3 All Coverages. The general liability and automobile liability policy shall include or be endorsed to state that: (1) the District, its directors, officials, officers, employees, agents, and volunteers shall be covered as additional insured with respect to work by or on behalf of the Contractor, including materials, parts, or equipment furnished in connection with such work using as broad a form as CG 20 10 11 85 or the latest versions of both CG 20 10 and CG 20 37; and (2) the insurance coverage shall be primary insurance as respects the District, its

directors, officials, officers, employees, agents, and volunteers using as broad a form as CG 20 01 04 13, or if excess, shall stand in an unbroken chain of coverage excess of the Contractor's scheduled underlying coverage. Any insurance or self-insurance maintained by the District, its directors, officials, officers, employees, agents, and volunteers shall be excess of the Contractor's insurance and shall not be called upon to contribute with it in any way.

(a) The insurance policies required above shall contain or be endorsed to contain the following specific provisions:

(i) The policies shall contain a waiver of transfer rights of recovery ("waiver of subrogation") against District, its board members, officers, employees, agents, and volunteers, for any claims arising out of the work of Contractor.

(ii) Policies may provide coverage which contains deductible or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to District under such policies. Contractor shall be solely responsible for deductible and/or self-insured retention and District, at its option, may require Contractor to secure the payment of such deductible or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit. The insurance policies that contain deductibles or self-insured retentions in excess of $25,000 per occurrence shall not be acceptable without the prior approval of District.

(iii) Prior to start of work under this Agreement, Contractor shall file with District evidence of insurance as required above from an insurer or insurers certifying to the required coverage. The coverage shall be evidenced on a certificate of insurance signed by an authorized representative of the insurer(s).

(iv) Each policy required in this section shall contain a policy cancellation clause that provides the policy shall not be cancelled or otherwise terminated by the insurer or the Contractor or reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the District, Attention: Director of Finance & Administration.

(v) Insurance required by this Agreement shall be placed with insurers licensed by the State of California to transact insurance business of the types required herein. Each insurer shall have a current Best Insurance Guide rating of not less than A: VII unless prior approval is secured from the District as to the use of such insurer.

(vi) Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein. Contractor shall maintain evidence of compliance with the insurance requirements by the subcontractors at the job site and make them available for review by District.

6.1.4 Reporting of Claims. Contractor shall report to the District, in addition to Contractor's insurer, any and all insurance claims submitted by Contractor in connection with the Services under this Agreement.

7. General Provisions.

7.1.1 Notices. All notices permitted or required under this Agreement shall be given to the respective parties at the following address, or at such other address as the respective parties may provide in writing for this purpose:

District:	**Contractor:**
Las Virgenes Municipal Water District Attn: Click or tap here to enter 4232 Las Virgenes Road Calabasas, CA 91302	Click or tap here to enter text.

Such notice shall be deemed made when personally delivered or when mailed, upon deposit in the U.S. Mail, first class postage prepaid and registered or certified addressed to the Party at its applicable address. Actual notice shall be deemed adequate notice on the date actual notice occurred, regardless of the method of service.

7.1.2 Time of Essence. Time is of the essence for each and every provision of this Agreement. The acceptance of late performance shall not waive the right to claim damages for such breach nor constitute a waiver of the requirement of timely performance of any obligations remaining to be performed.

7.1.3 District's Right to Employ Other Contractors. District reserves the right to employ other Contractors in connection with this Project.

7.1.4 Successors and Assigns. This Agreement shall be binding on the successors and assigns of the Parties.

7.1.5 Assignment or Transfer. Contractor shall not assign, hypothecate, or transfer, either directly or by operation of law, this Agreement or any interest herein without the prior written consent of the District.

7.1.6 Amendment. This Agreement may not be altered or amended except in a writing signed by both Parties.

7.1.7 Waiver. No waiver of any default shall constitute a waiver of any other default or breach, whether of the same or other covenant or condition.

7.1.8 No Third Party Beneficiaries. There are no intended third party beneficiaries of any right or obligation assumed by the Parties.

7.1.9 Invalidity; Severability. If any portion of this Agreement is declared invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions shall continue in full force and effect.

7.1.10 Governing Law. This Agreement shall be governed by the laws of the State of California. Venue shall be in Los Angeles County.

7.1.11 Attorneys' Fees. If either Party commences an action against the other Party, either legal, administrative, or otherwise, arising out of or in connection with this Agreement, the prevailing party in such litigation shall be entitled to have and recover from the losing party reasonable attorneys' fees and all other costs of such action.

7.1.12 Authority to Enter Agreement. Contractor has all requisite power and authority to conduct its business and to execute, deliver, and perform the Agreement. Each Party warrants that the individuals who have signed this Agreement have the legal power, right, and authority to make this Agreement and bind each respective Party.

7.1.13 Counterparts. This Agreement may be signed in counterparts, each of which shall constitute an original.

7.1.14 Integration. This Agreement represents the entire understanding of District and Contractor as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder.

[*Signature Page following*]

IN WITNESS WHEREOF, the Parties hereby have caused this Agreement to be executed the date first written above:

APPROVED:	APPROVED:
Las Virgenes Municipal Water District	**[Contractor]**
_____	_____
David W. Pedersen	Name
General Manager	Title

EXHIBIT A
SCOPE OF SERVICES

EXHIBIT B
MATERIAL AND EQUIPMENT

District shall provide the following equipment and material to be stored on the premises described in Section 1.2, for the use of Contractor in performance of Contractor's duties under the Agreement:

EXHIBIT C
FEE SCHEDULE

I. Services

II. Reimbursable Expenses

III. Price Adjustment for Renewal Periods

For the optional renewal periods, on the month prior to the commencement of the renewal period, the fees and charges for the next twelve month period (renewal period) shall be adjusted by the change in the Consumer Price Index for the latest available previous twelve month period using the CPI formula as set out herein. The fees and charges for each such renewal period shall be the increase, if any, in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CIP-W); not seasonally adjusted; Los Angeles-Long Beach-Anaheim, CA.

The Consumer Price Index shall be defined as follows: On the month prior to the end of each contract year (12 month period) the tank service pricing for the next renewal term (one year term) shall be increased by the annual increase in the Consumer Price Index ("CPI") where "CPI" is the Consumer Price Index for the latest available month just preceding lease renewal, and the "Base CPI" is the Consumer Price Index for the first month of the twelve months preceding the latest available month. As used herein, Consumer Price Index shall mean and refer to that table in the Consumer Price Index published by the United States Department of Labor, Bureau of Labor Statistics, now known as the "Consumer Price Index" for all Urban Wage Earners and Clerical Workers (CIP-W); not seasonally adjusted; Los Angeles-Long Beach-Anaheim, CA (All items; 1982-84=100). If such Index referred to above shall be discontinued, then any successor Consumer Price Index of the United States Bureau of Labor Statistics, or successor agency thereto, shall be used, and if there is no successor Consumer Price Index, the parties hereto shall authorize Landlord's attorney to designate a substitute Index or formula. In no event shall the next lease year rental be less than the prior year.

Attachment 1

Test	Description	Test Notes	Test Count Matrix			total	price/test	in house	turnaround
			drinking water	wastewater	solid				
EPA 504.1	volatile organics	single compound	1	17	0	18			
EPA 505	pesticides/PCBs		15	0	0	15			
EPA 515.4	SOCs		7	0	0	7			
EPA 524.2	volatile organics		4	0	0	4			
EPA 525.2	semi-volatiles	thiobencarb	4	0	0	4			
EPA 525.2	semi-volatiles		1	0	0	1			
EPA 531.2	SOCs		1	0	0	1			
EPA 551	volatile organics	TTHM	34	0	0	34			
EPA 608	pesticides	mirex	0	24	0	24			
EPA 608	pesticides	TICH	0	4	0	4			
EPA 608	pesticides		0	24	0	24			
EPA 624	volatile organics	single compound	0	57	0	57			
EPA 624	volatile organics		0	24	0	24			
EPA 625	semi-volatiles	single compound	1	66	0	67			
EPA 625	semi-volatiles		0	24	0	24			
EPA 8082	PCBs		0	24	0	24			
EPA 8141	pesticides		0	24	0	24			
EPA 8151	pesticides	2,4,-D silvex	0	24	0	24			
EPA 8280A	dioxin	2,3,7,8 -TCDD	1	4	0	5			
EPA 8280A	dioxin	full list	0	8	0	8			
EPA 900.0	radiologicals		1	5	0	6			
SM 9020B	water suitability		1	0	0	1			
% total solids			0	0	9	9			
1,4-dioxane			0	18	0	18			
alkalinity			4	0	0	4			
Aluminum			4	0	0	4			
Antimony			4	56	0	60			
Arsenic			4	60	9	73			
Barium			4	56	0	60			
Beryllium			4	22	0	26			
Boron			0	73	0	73			
Cadmium			5	116	15	136			
Calcium			4	0	0	4			
carbon/nitrogen			0	0	8	8			
Chloride			4	0	0	4			
Chromium			5	110	7	122			
color			4	0	0	4			
Copper			5	115	7	127			

Attachment 1

Test	Description	Test Notes	Test Count Matrix			total	price/test	in house	turnaround
			drinking water	wastewater	solid				
CTAS			0	56	0	56			
cyanide			4	65	0	69			
diazinon			0	19	0	19			
diquat			1	0	0	1			
EC			4	0	0	4			
endothall			1	0	0	1			
fluoride			4	0	0	4			
glyphosate			1	0	0	1			
HAA5			32	0	0	32			
hardness			4	0	0	4			
Iron			4	61	0	65			
Lead			4	116	7	127			
Magnesium			4	0	0	4			
Manganese			4	24	0	28			
MBAS			4	60	0	64			
mercury			4	64	7	75			
Molybdenum			0	0	7	7			
Nickel			5	106	7	118			
Nitrate as (NO3)			4	0	0	4			
Nitrate as N			4	0	0	4			
Nitrite as N			4	0	0	4			
odor			4	0	0	4			
perchlorate			2	21	0	23			
pH			4	0	0	4			
phenols			0	4	0	4			
Selenium			4	64	7	75			
Silver			4	59	0	63			
Sodium			4	0	0	4			
strontium			1	0	0	1			
Sulfate			4	0	0	4			
sulfide			0	4	0	4			
TDS			4	0	0	4			
Thallium			4	22	0	26			
TOC			0	24	0	24			
tritium			1	0	0	1			
turbidity			4	0	0	4			
Zinc			5	110	16	131			

Attachment 1

Test	Description	Test Notes	Test Count Matrix						
			drinking water	wastewater	solid	total	price/test	in house	turnaround

Notes:

reporting limits must meet the SWRCB minimum levels
methods must conform to 40CFR part 136
The number of tests is an estimate - actual numbers will vary.
solid matrices incude compost, crop & sludge.

Please provide the following information:

rush analyses available/fees
pre-log available (COCs, labels & bottles)
sub contract cost (above test cost)
turn around time (days)
sample delivery/pick-up
web data reporting
certified/accredited lab
data flagging (before final report)

OFFSITE LAB SAMPLING CHECKLISTS

This document contains the weekly, monthly and quarterly checklists for sampling for offsite laboratory analysis during normal operation of the Pure Water Demonstration Plant. The schedule of tests was taken directly from the Test Plan and updated to correspond to plant sample points. Note that the test plan and testing frequency should be continually reviewed and adjusted in light of the analytical results.

Safety

- The pure water demonstration plant is a sophisticated facility that uses electrical potentials, pressurized gases and fluids, elevated equipment, motorized equipment and hazardous chemicals during the course of normal operations and maintenance that are capable of causing serious injury or death.
- The plant uses chemicals that can be corrosive and oxidizing to many materials.
- Always follow safety practices when working around potential hazards such as electricity, high-pressure gasses, high-pressure fluids, elevated equipment, machinery and corrosive chemicals.
- Always read the chemical safety data sheet (SDS) and use personal protective equipment when working with chemicals.
- Sample containers are often shipped by contract laboratories and they may contain preservative chemicals. Take care not to spill the preservative chemicals while sampling.

Checklists

The intention of the tests specified in the following checklists is to collect ongoing data to validate onsite sensors and monitor chemical and microbial contaminants important for process operation and water quality. The checklists are arranged by recommended test frequency and include checks to be performed:

- Weekly - Table 1
- Bi-monthly - Table 2
- Monthly - Table 3
- Quarterly - Table 4
- Quarterly (Limited Duration) - Table 5

Where more specialized analysis are suggested, candidate laboratories are listed adjacent specific tests (Tables 2 - 5). Laboratory contacts for candidate laboratories are included below.

Additional Information

- Startup SOP
- Operation SOP

Laboratory Contacts

Contacts for each of the laboratories in the following Tables are included below separated based on parameter type:

- **Chemicals**
  - **Weck Laboratories, Inc (WECK)**
    - Regina M. Giancola
      - Regina.Giancola@wecklabs.com
    - Leo Raab - Director of Business Development
      - (805) 760 4548
      - leo.raab@wecklabs.com
  - **Eurofins**
    - Debbie L Frank - Project Manager
      - (626) 386 1149
      - DebbieFrank@eurofinsus.com
- **Bioassays**
  - **UC Davis**
    - Michael S Denison
      - msdenison@ucdavis.edu
    - Guochun He
      - gchhe@ucdavis.edu
- **RO Concentrate Toxicity**
  - **T.B.D - WECK/Eurofins**
- **Microbiological**
  - **WECK or Eurofins (details above)** - May do Total coliforms
  - **Water ARC®** - PMMoV
    - Justin Sutherland - Principle Technologist
      - (512) 529-7602
      - JSutherland@carollo.com
  - **Analytical Services Incorporated (ASI)** - Total coliforms + more specialized pathogens
    - Paul Warden - Vice President & Director of Operations
      - (802) 876 1339
      - pwarden@analyticalservices.com
  - **Cel Analytical Inc. (Cel)** - Total coliforms + more specialized pathogens
    - Yeggie Dearborn - Lab Director
      - (415) 882-1690
      - yeggie@celanalytical.com
  - **GAP EnviroMicrobial Services Ltd. (GAP)** - *Aspergillus brasiliensis*
    - Shawn Verhoeven - Technical Manager
      - (519) 681-0571
      - shawn@gaplab.com

Table 1 - Weekly Grab Samples for **OFFSITE** analysis

Weekly Grab Samples for **OFFSITE** analysis					
Date & Time		**Operator:**			
Test	**Method**	**Sample Location**			
		UF Feed	**RO Feed**	**RO Permeate**	**UVAOP Outlet**
Alkalinity	SM 8221	X			X
TSS	SM 2540 D	X			
TOC	SM 5310 B		X	X	
Total Nitrogen	EPA 351.2	X	X	X	X
Silica	EPA 200.7	X	X	X	
Iron (tot.)	EPA 200.7	X	X		
Aluminum (tot.)	EPA 200.8	X	X		
Manganese (tot.)	EPA 200.8	X	X		
Bromide	EPA 300.1			X	X
Bromate	EPA 300.1			X	X

Notes:

Keep samples refrigerated and ship as soon as possible according to laboratory instructions.

Sample containers may contain preservative chemicals. Take care not to spill these while sampling.

All samples in this sheet should be able to be performed by conventional laboratories (e.g. WECK or Eurofins)

This table is already included in the set of normal operation checklists

Table 2 - Bi-monthly (2 weeks) Grab Samples for **OFFSITE** analysis

Bi-Monthly Grab Samples for **OFFSITE** analysis								
Operator:				**Date & Time:**				
				Sample Location				
Test Type	**Laboratory**	**Test**	**Method**	**UF Feed**	**RO Feed**	**RO Permeate**	**RO Concentrate**	**UVAOP Outlet**
Chemical	**WECK/Eurofins**	**Sulfate**	EPA 300.0		X	X		
		Strontium	EPA 200.8		X	X		
		Sucralose	SM 5310 B		X	X		
		BOD	SM 5210 B	X				
		COD	EPA 410.4	X				
		TOC	SM 5310C	X				
	WECK/Eurofins /Internal?	**COD**	EPA 410.4	X				
Microbiological	**WaterARC**	**PMMoV**	Water ARC® internal	X	UF1, UF2, UF3[1]	X		

Notes:

Keep samples refrigerated and ship as soon as possible according to laboratory instructions.

Sample containers may contain preservative chemicals. Take care not to spill these while sampling.

[1] Individual UF filtrate to be analyzed for PMMoV - RO Feed by flow weighted average.

Attachment 2

Table 3 - Monthly Grab Samples for **OFFSITE** analysis

Monthly Grab Samples for OFFSITE analysis									
Operator:				Date & Time:					
Test Type	Laboratory	Test	Method	Sample Location: Raw Water (pre-NH_2Cl)	UF Feed	RO Feed	RO Permeate	RO Concentrate	UVAOP Outlet
Chemical	WECK / Eurofins	Iron (tot.)	EPA 200.7				X		
		Aluminum (tot.)	EPA 200.8				X		
		Manganese (tot.)	EPA 200.8				X		
		Calcium	EPA 200.7			X	X		
		Magnesium	EPA 200.7			X	X		
		Sodium	EPA 200.7			X	X		
		Potassium	EPA 200.7			X	X		
		Barium	EPA 200.8			X	X		
		Chloride	EPA 300.0			X	X		
		Fluoride	EPA 300.0			X	X		
		Boron	EPA 200.7			X	X		
		NDMA	EPA 521	X		X	X		X
		NMOR	EPA 521	X		X	X		X
NPDES and WQO	WECK / Eurofins	Gross Beta	EPA 900					X	
		Tributyltin	Krone et al., 1989					X	
		Aldrin	EPA 608					X	
		Benzidine	EPA 625					X	
		Beryllium	EPA 200.8					X	

Attachment 2

Monthly Grab Samples for OFFSITE analysis										
Operator:				Date & Time:						
Test Type	Laboratory	Test	Method	Sample Location						
				Raw Water (pre-NH_2Cl)	UF Feed	RO Feed	RO Permeate	RO Concentrate	UVAOP Outlet
NPDES and WQO		Chlordane	EPA 608					X	
		DDT	EPA 608					X	
		3,3-Dichlorobenzidine	EPA 625					X	
		Dieldrin	EPA 608					X	
		Heptachlor expoxide	EPA 608					X	
		Hexachlorobenzene	EPA 625					X	
		PCBs	EPA 625					X	
		TCDD Equivalents	EPA 1613B					X	
		Toxaphene	EPA 608					X	
Microbiological	WECK/ Eurofins/ ASI/Cel/ Internal?	Total Coliforms	SM 9223B						X

Notes:

Keep samples refrigerated and ship as soon as possible according to laboratory instructions.

Sample containers may contain preservative chemicals. Take care not to spill these while sampling.

Attachment 2

Table 4 - Quarterly Grab Samples for **OFFSITE** analysis

Quarterly Grab Samples for OFFSITE analysis									
Operator:				**Date & Time:**					
Test Type	**Laboratory**	**Test**	**Method(s)**	**Sample Location**					
				Raw Water (pre-NH_2Cl)	**UF Feed**	**RO Feed**	**RO Permeate**	**RO Concentrate**	**UVAOP Outlet**
Chemical	**WECK / Eurofins**	**Primary MCLs**	EPA 200.8, 100.2, 218.6, 245.1, 300, 524.2, 504.1, 505, 515.4, 525.2, 531.2, 547, 548.1, 549.2, 1613B, SM4500CN-F, SRL 524M-TCPs	X					X
		Secondary MCLs	EPA 200.8, 524.2, 525.1, 300, SM5540C, SM2540C, SM210B	X					X
		NLs	EPA 200.8, 524.2, 525.2, 521, 300, 522m, 556, 524-SIM	X					X
		CECs and PPCPs	EPA 1694M-APCI, EPA 1694M-ESI-, EPA 1694M-ESI+	X			X		X
		DBPs	EPA 552.2, EPA 542.2, EPA 300.1	X			X		X

Notes:

Keep samples refrigerated and ship as soon as possible according to laboratory instructions.

Sample containers may contain preservative chemicals. Take care not to spill these while sampling.

Attachment 2

Table 5 - Limited Duration Quarterly Grab Samples for **OFFSITE** analysis

Quarterly Grab Samples for OFFSITE analysis									
Operator:				**Date & Time:**					
Test Type	**Laboratory**	**Test**	**Method(s)**	**Sample Location**					
				Raw Water (pre-NH_2Cl)	**UF Feed**	**RO Feed**	**RO Permeate**	**RO Concentrate**	**UVAOP Outlet**
Chemical (Q1 only)	**WECK / Eurofins**	**TOPA**	EPA 537M	X					X
		PFAS Suite (32 compounds)	EPA 537M	X					X
RO Concentrate Toxicity (Q1 only, most sensitive to be repeated in Q2, Q3 and Q4)	**T.B.D**	**Topsmelt (Atherinops affinis - survival and growth)**	EPA 600/R95/136 1995					X	
		Purple sea urchin (Strongylocentrotus purpuratus - growth and fertilization)	EPA 600/R95/136 1995					X	
		Sand dollar (Dendraster excentricus - growth and fertilization)	EPA 600/R95/136 1995					X	
		Red abalone (Haliotis rufescens - shell development)	EPA 600/R95/136 1995					X	
		Giant kelp (Macrocystis pyrifera - germination and growth)	EPA 600/R95/136 1995					X	
~~**Spiked Chemicals (Q1 only)**~~	~~**WECK / Eurofins**~~	~~**1,4-Dioxane**~~	~~EPA 522~~				~~X~~		~~X~~

Attachment 2

Quarterly Grab Samples for OFFSITE analysis									
Operator:				Date & Time:					
Test Type	Laboratory	Test	Method(s)	Sample Location					
				Raw Water (pre-NH_2Cl)	UF Feed	RO Feed	RO Permeate	RO Concentrate	UVAOP Outlet
Bioassays (Q1 Only)	UC Davis	Estrogen receptor-α	Escher et al. (2014) Environ. Sci. Tech. 48, 1940-1956			X	X		X
		Aryl hydrocarbon receptor	Escher et al. (2014) Environ. Sci. Tech. 48, 1940-1956			X	X		X
~~Microbiological Challenge Testing (Q1 Only)~~	~~GAP~~	~~*Aspergillus brasiliensis*~~	~~MF onto rose bengal chloramphenicol agar~~				~~X~~		~~X~~

Notes:

Keep samples refrigerated and ship as soon as possible according to laboratory instructions.

Sample containers may contain preservative chemicals. Take care not to spill these while sampling.

Attachment 2

APPENDIX 4

SWRCB Minimum Levels in ppb (μg/L)

The Minimum Levels (MLs) in this appendix are for use in reporting and compliance determination purposes in accordance with section 2.4 of this Policy. These MLs were derived from data for priority pollutants provided by State certified analytical laboratories in 1997 and 1998. These MLs shall be used until new values are adopted by the SWRCB and become effective. The following tables (Tables 2a - 2d) present MLs for four major chemical groupings: volatile substances, semi-volatile substances, inorganics, and pesticides & PCBs.

Table 2a - VOLATILE SUBSTANCES*	GC	GCMS
1,1 Dichloroethane	0.5	1
1,1 Dichloroethene	0.5	2
1,1,1 Trichloroethane	0.5	2
1,1,2 Trichloroethane	0.5	2
1,1,2,2 Tetrachloroethane	0.5	1
1,2 Dichlorobenzene (volatile)	0.5	2
1,2 Dichloroethane	0.5	2
1,2 Dichloropropane	0.5	1
1,3 Dichlorobenzene (volatile)	0.5	2
1,3 Dichloropropene (volatile)	0.5	2
1,4 Dichlorobenzene (volatile)	0.5	2
Acrolein	2.0	5
Acrylonitrile	2.0	2
Benzene	0.5	2
Bromoform	0.5	2
Bromomethane	1.0	2
Carbon Tetrachloride	0.5	2
Chlorobenzene	0.5	2
Chlorodibromo-methane	0.5	2
Chloroethane	0.5	2
Chloroform	0.5	2
Chloromethane	0.5	2
Dichlorobromo-methane	0.5	2
Dichloromethane	0.5	2
Ethylbenzene	0.5	2
Tetrachloroethene	0.5	2
Toluene	0.5	2
trans-1,2 Dichloroethylene	0.5	1
Trichloroethene	0.5	2
Vinyl Chloride	0.5	2

*The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

Table 2b - SEMI-VOLATILE SUBSTANCES*	GC	GCMS	LC	COLOR
1,2 Benzanthracene	10	5		
1,2 Dichlorobenzene (semivolatile)	2	2		
1,2 Diphenylhydrazine		1		
1,2,4 Trichlorobenzene	1	5		
1,3 Dichlorobenzene (semivolatile)	2	1		
1,4 Dichlorobenzene (semivolatile)	2	1		
2 Chlorophenol	2	5		
2,4 Dichlorophenol	1	5		
2,4 Dimethylphenol	1	2		
2,4 Dinitrophenol	5	5		
2,4 Dinitrotoluene	10	5		
2,4,6 Trichlorophenol	10	10		
2,6 Dinitrotoluene		5		
2- Nitrophenol		10		
2-Chloroethyl vinyl ether	1	1		
2-Chloronaphthalene		10		
3,3' Dichlorobenzidine		5		
3,4 Benzofluoranthene		10	10	
4 Chloro-3-methylphenol	5	1		
4,6 Dinitro-2-methylphenol	10	5		
4- Nitrophenol	5	10		
4-Bromophenyl phenyl ether	10	5		
4-Chlorophenyl phenyl ether		5		
Acenaphthene	1	1	0.5	
Acenaphthylene		10	0.2	
Anthracene		10	2	
Benzidine		5		
Benzo(a) pyrene(3,4 Benzopyrene)		10	2	
Benzo(g,h,i)perylene		5	0.1	
Benzo(k)fluoranthene		10	2	
bis 2-(1-Chloroethoxyl) methane		5		
bis(2-chloroethyl) ether	10	1		
bis(2-Chloroisopropyl) ether	10	2		
bis(2-Ethylhexyl) phthalate	10	5		
Butyl benzyl phthalate	10	10		
Chrysene		10	5	
di-n-Butyl phthalate		10		
di-n-Octyl phthalate		10		
Dibenzo(a,h)-anthracene		10	0.1	
Diethyl phthalate	10	2		

Table 2b - SEMI-VOLATILE SUBSTANCES*	GC	GCMS	LC	COLOR
Dimethyl phthalate	10	2		
Fluoranthene	10	1	0.05	
Fluorene		10	0.1	
Hexachloro-cyclopentadiene	5	5		
Hexachlorobenzene	5	1		
Hexachlorobutadiene	5	1		
Hexachloroethane	5	1		
Indeno(1,2,3,cd)-pyrene		10	0.05	
Isophorone	10	1		
N-Nitroso diphenyl amine	10	1		
N-Nitroso-dimethyl amine	10	5		
N-Nitroso -di n-propyl amine	10	5		
Naphthalene	10	1	0.2	
Nitrobenzene	10	1		
Pentachlorophenol	1	5		
Phenanthrene		5	0.05	
Phenol **	1	1		50
Pyrene		10	0.05	

* With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1000, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1000.

** Phenol by colorimetric technique has a factor of 1.

Table 2c – INORGANICS*	FAA	GFAA	ICP	ICPMS	SPGFAA	HYDRIDE	CVAA	COLOR	DCP
Antimony	10	5	50	0.5	5	0.5			1000
Arsenic		2	10	2	2	1		20	1000
Beryllium	20	0.5	2	0.5	1				1000
Cadmium	10	0.5	10	0.25	0.5				1000
Chromium (total)	50	2	10	0.5	1				1000
Chromium VI	5							10	
Copper	25	5	10	0.5	2				1000
Cyanide								5	
Lead	20	5	5	0.5	2				10,000
Mercury				0.5			0.2		
Nickel	50	5	20	1	5				1000
Selenium		5	10	2	5	1			1000
Silver	10	1	10	0.25	2				1000
Thallium	10	2	10	1	5				1000
Zinc	20		20	1	10				1000

* The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

Table 2d - PESTICIDES – PCBs*	GC
4,4'-DDD	0.05
4,4'-DDE	0.05
4,4'-DDT	0.01
a-Endosulfan	0.02
a-Hexachloro-cyclohexane	0.01
Aldrin	0.005
b-Endosulfan	0.01
b-Hexachloro-cyclohexane	0.005
Chlordane	0.1
d-Hexachloro-cyclohexane	0.005
Dieldrin	0.01
Endosulfan Sulfate	0.05
Endrin	0.01
Endrin Aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
Lindane(g-Hexachloro-cyclohexane)	0.02
PCB 1016	0.5
PCB 1221	0.5
PCB 1232	0.5
PCB 1242	0.5
PCB 1248	0.5
PCB 1254	0.5
PCB 1260	0.5
Toxaphene	0.5

* The normal method-specific factor for these substances is 100, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.

Techniques:

GC - Gas Chromatography
GCMS - Gas Chromatography/Mass Spectrometry
HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)
LC - High Pressure Liquid Chromatography
FAA - Flame Atomic Absorption
GFAA - Graphite Furnace Atomic Absorption
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
ICP - Inductively Coupled Plasma
ICPMS - Inductively Coupled Plasma/Mass Spectrometry
SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP - Direct Current Plasma
COLOR - Colorimetric

Table 4. Final Effluent Limitations Applicable to Discharge Points 001, 002, 003, and 005

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand ($BOD_5$20°C)	mg/L	10	--	20	--	--
	lbs/day[1]	1,000	--	2,000	--	--
Total Suspended Solids (TSS)	mg/L	5.0	--	10	--	--
	lbs/day[1]	500	--	1,000	--	--
Turbidity[2]	NTU	2[2]	--	5[2]	--	10[2]
pH	standard units	--	--	--	6.5	8.5
Temperature	°F	--	--	86[3]	--	--
Chronic Toxicity[4,5]	Pass or Fail, % Effect (TST)	Pass[6]	--	Pass or % Effect <50	--	--
Cyanide	µg/L	4.1	--	8.9	--	--
	lbs/day[1]	0.41	--	0.89	--	--
Mercury	µg/L	0.051	--	0.10	--	--
	lbs/day[1]	0.0051	--	0.01	--	--
Dichlorobromomethane	µg/L	46	--	69	--	--
	lbs/day[1]	4.6	--	6.9	--	--

1 The mass emission rates are based on the plant design flow rate of 12 mgd, and are calculated as follows: Flow (mgd) x Concentration (mg/L) x 8.34 (conversion factor) = lbs/day. The design capacity of the Tapia WRF was 16.1 mgd in the previous Order; however, the nutrient reduction facilities that were constructed in 2008/2009 that were designed to meet the nutrient limits in the 2005 Order were designed for an average daily flow of 12 mgd. During wet-weather storm events in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.

2 For the protection of the water contact recreation beneficial use, the wastes discharged to water courses shall have received adequate treatment, so that the turbidity of the treated wastewater does not exceed any of the following: (a) an average of 2 Nephelometric turbidity units (NTUs) within a 24-hour period; (b) 5 NTUs more than 5 percent of the time (72 minutes) within a 24-hour period; and (c) 10 NTU at any time.

3 The temperature of wastes discharged shall not exceed 86°F except as a result of external ambient temperature.

4 The Median Monthly Effluent Limitation (MMEL) shall be reported as "Pass" or "Fail." The Maximum Daily Effluent Limitation (MDEL) shall be reported as "Pass" or "Fail" and "% Effect." The MMEL for chronic toxicity shall only apply when there is a discharge on more than one day in a calendar month period. During such calendar months, up to three independent toxicity tests may be conducted when one toxicity test results in "Fail."

5 A numeric Water Quality Based Effluent Limitation (WQBEL) is established because effluent data showed that there was reasonable potential for the effluent to cause or contribute to an exceedance of the chronic toxicity water quality objective. The Chronic Toxicity final effluent limitation is protective of both the numeric acute toxicity and the narrative toxicity Basin Plan water quality objectives. This final effluent limitation will be implemented using *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (USEPA 2002, EPA-821-R-02-013), current USEPA guidance in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010) and *EPA Regions 8, 9, and 10, Toxicity Training Tool* (January 2010), (https://www.epa.gov/sites/production/files/documents/ToxTrainingTool10Jan2010.pdf).

6 This is a Median Monthly Effluent Limitation.

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Radioactivity[7]						
Combined Radium-226 and Radium 228	pCi/L	5[7]	--	--	--	--
Gross Alpha particle activity (excluding radon and uranium)	pCi/L	15[7]	--	--	--	--
Uranium	pCi/L	20[7]	--	--	--	--
Gross Beta/photon emitters	millirem/ year	4[7]	--	--	--	--
Strontium-90	pCi/L	8[7]	--	--	--	--
Tritium	pCi/L	20,000[7]	--	--	--	--
Removal Efficiency for BOD and TSS	%	85	--	--	--	--
Settleable Solids	mL/L	0.1	--	0.2	--	--
Oil and Grease	mg/L	5	--	10	--	--
	lbs/day[1]	500	--	1,000	--	--
Total coliform[8]	MPN or CFU/100 mL	23[8]	2.2[8]	240[8]	--	--
E. coli	MPN or CFU/100 mL	126[9]	--	235[9]	--	--
Total Residual Chlorine[10]	mg/L	--	--	0.1	--	--
	lbs/day[1]	--	--	10	--	--
Methylene Blue Activated Substances (MBAS) [11]	mg/L	0.5	--	--	--	--
	lbs/day[1]	50	--	--	--	--

7 The radioactivity of the wastes discharged shall not exceed the limits specified in Title 22, chapter 15, article 5, sections 64442 and 64443, of the California Code of Regulations (CCR), or subsequent revisions.

8 The wastes discharged to water courses shall at all times be adequately disinfected. For the purpose of this requirement, the wastes shall be considered adequately disinfected if: (1) the median number of total coliform bacteria in the disinfected effluent does not exceed a 7-day median of 2.2 Most Probable Number (MPN) or Colony Forming Unit (CFU) per 100 milliliters utilizing the bacteriological results of the last seven (7) days for which an analysis has been completed, (2) the number of total coliform bacteria does not exceed 23 MPN or CFU per 100 milliliters in more than one sample within any 30-day period, and (3) no sample shall exceed 240 MPN or CFU of total coliform bacteria per 100 milliliters. Samples shall be collected at a time when wastewater flow and characteristics are most demanding on treatment facilities and disinfection processes.

9 The *Malibu Creek Bacteria TMDL* and the *LA River Bacteria TMDL* both contain Waste Load Allocations (WLAs) for the Tapia WRF. WLAs are expressed as allowable exceedance days. The WLA for the Tapia WRF is set to zero days of exceedances of the bacteriological objectives and include a geometric mean limit of 126/100 mL, and a single sample limit not to exceed 235/100 mL, for *E. coli*.

10 Total residual chlorine concentration excursions of up to 0.3 mg/L, at the point in the treatment train immediately following dechlorination, shall not be considered violations of this requirement provided the total duration of such excursions do not exceed 15 minutes during any 24-hour period. Peaks in excess of 0.3 mg/L lasting less than one minute shall not be considered a violation of this requirement.

11 Based on the secondary drinking water standard (CDPH 1992).

b. To protect the underlying ground water basins, pollutants shall not be present in the wastes discharged at concentrations that pose a threat to ground water quality.

2. Effluent Limitations Applicable to Discharge Points 001, 002, and 003 – Malibu Creek

a. The Permittee shall maintain compliance with the effluent limitations in Table 5 at Discharge Points 001, 002, and 003 into Malibu Creek with compliance measured at the following locations as described in the attached MRP:

i. Monitoring Location EFF-001 for Discharge Points 001 and 003; and

ii. Monitoring Location EFF-002 for Discharge Point 002.

b. In no case shall the combined mass emission rate from Discharge Points 001, 002, and 003 exceed the mass emission rate, calculated by multiplying the concentration-based effluent limitation by the existing plant design flow rate, as specified in Table 5.

Table 5. Final Effluent Limitations Applicable to Discharge Points 001, 002, and 003

Parameter	Units	Effluent Limitations				
		Average Monthly	Seasonal Average[12]	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Dissolved Solids	mg/L	2,000	--	--	--	--
	lbs/day[1]	200,000	--	--	--	--
Chloride	mg/L	500	--	--	--	--
	lbs/day[1]	50,000	--	--	--	--
Sulfate	mg/L	500	--	--	--	--
	lbs/day[1]	50,000	--	--	--	--
Boron	mg/L	2	--	--	--	--
	lbs/day[1]	200	--	--	--	--
Total Ammonia as Nitrogen	mg/L	2.5	--	12	--	--
	lbs/day[1]	250	--	1,200	--	--
Nitrite as Nitrogen	mg/L	1	--	--	--	--
	lbs/day[1]	100	--	--	--	--

[12] Consistent with Regional Water Board Resolution No. R16-009, *Amendment to the Water Quality Control Plan - Los Angeles Region to Incorporate an Implementation Plan for the U.S. EPA-Established Malibu Creek Nutrients TMDL and the U.S. EPA-Established Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments* (Resolution R16-009), which modified the Basin Plan to establish an Implementation Plan for two Total Maximum Daily Loads (TMDLs) that were previously established by USEPA for Malibu Creek and Lagoon, seasonal averages are calculated as the sum of all samples collected during the season divided by the number of samples collected during that season.

Parameter	Units	Effluent Limitations				
		Average Monthly	Seasonal Average[12]	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Nitrate + Nitrite as Nitrogen	mg/L	8[13]	--	--	--	--
	lbs/day[1]	800	--	--	--	--
Total Nitrogen[14] (Summer: April 15th – November 15th)	mg/L	--	1.0[15]	--	--	--
Total Nitrogen[14] (Winter: November 16th – April 14th)	mg/L	--	4.0[16]	--	--	--
Total Phosphorous (Summer: April 15th - November 15th)	mg/L	--	0.10[15]	--	--	--

[13] The final effluent limitation for nitrate plus nitrite is based on the waste load allocation (WLA) in the *Malibu Creek Watershed Nutrients TMDL* developed by USEPA in 2003. This TMDL became effective on March 23, 2004. The WLA of 8 mg/L assigned to the Tapia WRF for nitrate plus nitrite as nitrogen was for the winter season (November 16 – April 14). Since the Tapia WRF has a Malibu Creek discharge prohibition during the summer season (April 15 – November 15), USEPA deemed any potential summer discharge from the Tapia WRF negligible in its nutrient loading, and therefore, did not establish a WLA for Tapia WRF for the summer season. For consistency, Order No. R4-2005-0074 assigned an effluent limitation of 8 mg/L for nitrate plus nitrite as nitrogen for the summer season. This Average Monthly Effluent Limitation (AMEL) for nitrate plus nitrite as nitrogen will be superseded by the seasonal total nitrogen limitation (during the summer season - April 15th to November 15th) on May 16, 2022.

[14] Consistent with the *Malibu Creek & Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments* developed by USEPA on July 2, 2013, total nitrogen shall be the sum of organic nitrogen and inorganic nitrogen.

[15] This TMDL WLA-based final effluent limitation shall become effective on May 16, 2022.

[16] This TMDL WLA-based final effluent limitation shall become effective on November 16, 2030. The concentration-based final effluent limitation applies unless, due to a rain event, the Tapia WRF discharges the excess of 11 mgd to Malibu Creek or its tributaries and all other discharge options have been exhausted. In that case, the concentration-based final effluent limitation does not apply and the mass-based final effluent limitation is:

$$\sum_{i=1}^{n} x_i \times 1.0 \frac{mg}{L} \times 0.35 \times 8.34$$

where x = average flow at gage F-130 during the period of discharge (mgd)
i = number of days when Tapia WRF's discharge is greater than 11 mgd

Compliance with the mass-based final effluent limitation shall be determined by:

$$\sum_{i=1}^{n} y_i \times z_i \times 8.34$$

where y = average effluent flow from Tapia WRF during the period of discharge (mgd)
z = total nitrogen concentration in Tapia WRF's discharge (mg/L)
i = number of days when Tapia's discharge is greater than 11 mgd

Parameter	Units	Effluent Limitations				
		Average Monthly	Seasonal Average[12]	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Phosphorous (Winter: November 16th - April 14th)	mg/L	--	0.20[17]	--	--	--
Bis(2-ethylhexyl) Phthalate	µg/L	5.9	--	15	--	--
	lbs/day[1]	0.59	--	1.5	--	--

3. Effluent Limitations Applicable to Discharge Point 005 – Los Angeles River

a. The Permittee shall maintain compliance with the following effluent limitations at Discharge Point 005 into the Los Angeles River with compliance measured at Monitoring Location EFF-005, as described in the attached MRP:

Table 6. Final Effluent Limitations Applicable to Discharge Point 005

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Dissolved Solids	mg/L	950	--	--	--	--
	lbs/day[1]	95,000	--	--	--	--
Chloride	mg/L	150[18]	--	--	--	--
	lbs/day[1]	15,000	--	--	--	--
Sulfate	mg/L	300	--	--	--	--
	lbs/day[1]	30,000	--	--	--	--
Bis(2-ethylhexyl) Phthalate	µg/L	4	--	--	--	--
	lbs/day[1]	0.4	--	--	--	--

[17] This TMDL WLA-based final effluent limitation shall become effective on November 16, 2030. The concentration-based final effluent limitation applies unless, due to a rain event, the Tapia WRF discharges the excess of 11 mgd to Malibu Creek or its tributaries and all other discharge options have been exhausted. In that case, the concentration-based final effluent limitation does not apply and the mass-based final effluent limitation is:

$$\sum_{i=1}^{n} x_i \times 0.2 \frac{mg}{L} \times 0.62 \times 8.34$$

where x = average flow at gage F-130 during the period of discharge (mgd)
i = number of days when Tapia WRF's discharge is greater than 11 mgd

Compliance with the mass-based WLA shall be determined by:

$$\sum_{i=1}^{n} y_i \times z_i \times 8.34$$

where y = average effluent flow from Tapia WRF during the period of discharge (mgd)
z = total phosphorus concentration in Tapia WRF's discharge (mg/L)
i = number of days when Tapia's discharge is greater than 11 mgd

[18] The water quality based effluent limitation (WQBEL) for chloride is consistent with the administrative update of Chapter 3 of the Basin Plan, which among other things, subdivided the Los Angeles River into additional reaches and assigned a 150 mg/L water quality objective (WQO) to the Los Angeles River and tributaries upstream of the Sepulveda Flood Control Basin.

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Ammonia as Nitrogen	µg/L	2.3[19]	--	10.1[19]	--	--
	lbs/day[1]	230	--	1000	--	--
Nitrate + Nitrite as Nitrogen	mg/L	8.0[19]	--	--	--	--
	lbs/day[1]	800	--	--	--	--
Nitrate as Nitrogen	mg/L	8.0[19]	--	--	--	--
	lbs/day[1]	800	--	--	--	--
Nitrite as Nitrogen	mg/L	1.0[19]	--	--	--	--
	lbs/day[1]	100	--	--	--	--
Total Phosphorous[20]	mg/L	3	--	4	--	--
	lbs/day[1]	300	--	400	--	--
Cadmium (wet weather) [21]	µg/L	2.6	--	4.8	--	--
	lbs/day[1]	0.3[22]	--	0.5	--	--
Copper (wet weather)[21]	µg/L	11	--	21	--	--
	lbs/day[1]	1.1[22]	--	2.1	--	--
Copper (dry weather)[23]	µg/L	25	--	49	--	--
	lbs/day[1]	2.5	--	4.9	--	--
Lead (wet weather)[21]	µg/L	24	--	62	--	--
	lbs/day[1]	2.4[22]	--	6.2	--	--
Lead (dry weather)[23]	µg/L	13	--	35	--	--
	lbs/day[1]	1.3	--	3.5	--	--
Zinc (wet weather)[21]	µg/L	139	--	232	--	--
	lbs/day[1]	14[22]	--	23	--	--
Selenium (dry weather)[23]	µg/L	4	--	8	--	--
	lbs/day[1]	0.4	--	0.8	--	--

19 This is a final effluent limitation consistent with the WLA set forth in the *Los Angeles River Nitrogen and Related Effects TMDL*, Resolution No. R12-010 that became effective on August 7, 2014.

20 A WLA for phosphorus was not established in the *Los Angeles River Nitrogen Compounds TMDL*; however, reaches of the Los Angeles River are impaired for nutrients. Since phosphorus is a biostimulatory substance, the Basin Plan narrative objectives for excess nutrients and Best Professional Judgement were used to develop WQBELs reflective of plant performance for phosphorus at Discharge Point 005. The MDEL and MMEL were calculated using MINITAB software and are based on the 99th and 95th percentile of phosphorus data from November 2010 to December 2015.

21 Wet-weather effluent limitations apply when the maximum daily flow measured at the Los Angeles River Wardlow station is equal to or greater than 500 cubic feet per second (cfs).

22 According to *Revised LA River Metals TMDL*, the mass-based effluent limitations for cadmium, copper, lead, and zinc do not apply during wet weather when the influent exceeds the plant design flow rate of 12 mgd.

23 Dry weather effluent limitations apply when the maximum daily flow measured at the Los Angeles River Wardlow station is less than 500 cubic feet per second (cfs).

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Trihalomethanes[24]	µg/L	80	--	--	--	--
	lbs/day[1]	8	--	--	--	--

4. Interim Effluent Limitations

Consistent with the *Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments* and the *Amendment to the Water Quality Control Plan – Los Angeles Region to Incorporate an Implementation Plan for the U.S. EPA-Established Malibu Creek Nutrients TMDL and the U.S. EPA-Established Malibu Creek Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments*, the interim WLAs for the Tapia WRF have been implemented in this Order through interim final effluent limitations based on the more stringent of either the Maximum Effluent Concentration (MEC) for total nitrogen and total phosphorus between 2013 and 2016, and the final effluent limitations in Order R4-2010-0165. For the effective life of this permit, the Discharger shall maintain compliance with the following interim effluent limitations in Table 7 of this Order at Discharge Point 001, 002, and 003, with compliance measured at monitoring locations EFF-001, EFF-002, and EFF-003, respectively. These interim effluent limitations shall apply in lieu of the final effluent limitations for total nitrogen and total phosphorus in Table 5, for the duration specified in the TMDL Implementation Plan Resolution R16-009.

Table 7. Interim Final Effluent Limitations Applicable to Discharge Points 001, 002, and 003

Parameter	Units	Effluent Limitations
		Seasonal Average[25]
Total Nitrogen (Summer: April 15th – November 15th)[26]	mg/L	10.3
Total Nitrogen (Winter: November 16th – April 14th)[27]	mg/L	10.3
Total Phosphorous (Summer: April 15th - November 15th)[26]	mg/L	3
Total Phosphorous[7] (Winter: November 16th - April 14th)[27]	mg/L	3

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

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[24] Total trihalomethanes is the sum of the four individual trihalomethane compounds: bromodichloromethane, bromoform, chloroform, and dibromochloromethane. This limitation is based on the Basin Plan WQO incorporation by reference of the Maximum Contaminant Levels of Title 22 of the California Code of Regulations for human health protection.

[25] Consistent with Resolution No. R16-009, seasonal averages are calculated as the sum of all nutrient concentration samples collected during the season divided by the number of samples collected during that season.

[26] This interim effluent limitation expires on May 16, 2022.

[27] This interim effluent limitation expires on November 16, 2030.

VII. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives (WQOs) contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Malibu Creek or the Los Angeles River:

1. For waters designated with a warm freshwater habitat (WARM) beneficial use, the temperature of the receiving water at any time or place and within any given 24-hour period shall not be altered by more than 5°F above the natural temperature and shall not be raised above 86°F due to the discharge of effluent at the receiving water station located downstream of the discharge. Natural conditions shall be determined on a case-by-case basis.

   If the receiving water temperature, downstream of the discharge, exceeds 86°F as a result of the following:

   a. High temperature in the ambient air; or,

   b. High temperature in the receiving water upstream of the discharge, then the exceedance shall not be considered a violation.

2. The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of wastes discharged. Ambient pH levels shall not be changed more than 0.5 units from natural conditions as a result of wastes discharged. Natural conditions shall be determined on a case-by-case basis.

3. The dissolved oxygen in the receiving water shall not be depressed below 5 mg/L as a result of the wastes discharged.

4. The total residual chlorine shall not exceed 0.1 mg/L in the receiving waters and shall not persist in the receiving water at any concentration that causes impairment of beneficial uses as a result of the wastes discharged.

5. The *Escherichia coli* (*E. coli*) concentration in the receiving water shall not exceed the following, as a result of wastes discharged:

   a. Geometric Mean Limits

      E. coli density shall not exceed 126/100 mL.

   b. Single Sample Limits

      E. coli density shall not exceed 235/100 mL.

6. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors shall not exceed the following limits, as a result of wastes discharged:

   a. Where natural turbidity is between 0 and 50 NTU, increases shall not exceed 20%.

   b. Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%.

7. The wastes discharged shall not produce concentrations of substances in the receiving water that are toxic to or cause detrimental physiological responses in human, animal, or aquatic life.

8. The wastes discharged shall not cause concentrations of contaminants to occur at levels that are harmful to human health in waters which are existing or potential sources of drinking water.