CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. R2-2017-0036

WATER RECLAMATION REQUIREMENTS for:

CITY AND COUNTY OF SAN FRANCISCO
CITY AND COUNTY OF SAN FRANCISCO'S NON-POTABLE WATER PROGRAM

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter the Regional Water Board) finds that:

BACKGROUND

1. The City and County of San Francisco (the Discharger) has a Non-Potable Water Program that establishes permitting requirements for the use of Alternate Water Sources (defined in Finding 8) for non-potable applications. In November 2016, a new local ordinance mandated that all new buildings of 250,000 square feet or more of gross floor area install onsite non-potable water systems to treat and reuse available Alternate Water Sources for toilet and urinal flushing and irrigation. The purpose of these Water Reclamation Requirements (this Order) is to ensure that the expansion of discharges of Alternate Water Sources to land by entities enrolled in the Discharger's Non-Potable Water Program do not cause impacts to beneficial uses or threats to human health or the environment. The Findings of this Order acknowledge and support the Discharger's innovative approach to water reuse efficiency.

2. This Order is issued to the City and County of San Francisco (the Discharger) for its Non-Potable Water Program. The three departments within the City and County of San Francisco that implement the Non-Potable Water Program are the San Francisco Public Utilities Commission, the San Francisco Department of Public Health, and the San Francisco Department of Building Inspection. These departments are included in the definition of "Discharger." Throughout the rest of this Order, they will be referred to by their department name. The general responsibilities of these three departments are as follows:

   a. The San Francisco Public Utilities Commission provides retail drinking water and wastewater services to San Francisco, wholesale water to three Bay Area counties, and hydroelectric and solar power to San Francisco's municipal departments. The San Francisco Public Utilities Commission is the agency responsible for the administration and oversight of the Non-Potable Water Program and provides technical assistance for building designers, reviews water budget applications, and assists non-potable project applicants through the permitting process. The San Francisco Public Utilities Commission also oversees cross-connection testing and backflow prevention assembly testing and certification. This Order requires that the Administrator ensure that the Producers and Users abide by the conditions of the Non-Potable Water Program and this Order.

   b. The San Francisco Department of Public Health is the permitting agency for the operation of Alternate Water Source Systems in residential buildings containing three or more dwelling units, commercial buildings, and mixed use developments and where Alternate Water Sources are shared across property lines or in multiple structures. The San Francisco Department of Public Health is responsible for ensuring that Alternate Water Source Systems are in compliance with applicable standards. The San Francisco Department of Public Health

performs monitoring, review, and inspection of permitted Alternate Water Source Systems to ensure compliance is maintained.

c. The San Francisco Department of Building Inspection issues the plumbing, site, and building permits necessary for the construction and completion of the onsite non-potable water system. The Department of Building Inspection conducts inspections during construction and post-construction to verify that the system meets all applicable code requirements.

3. The Discharger's Non-Potable Water Program was established to provide a permitting process for new commercial, multi-family, and mixed-use developments in San Francisco to collect, treat, and reuse water for toilet flushing, irrigation, and other non-potable uses. Prior to the establishment of the Non-Potable Water Program, developers and designers were interested in implementing onsite non-potable water systems into their projects, but the process of navigating which agencies had authority over such systems and what the regulations were for implementing non-potable water reuse was a challenge. As one example, the California Plumbing Code includes water quality standards for graywater and rainwater reuse but does not include regulations pertaining to ongoing monitoring and oversight. The three departments described above collaborated to develop a streamlined local regulatory pathway to permit onsite non-potable water systems and provide standards for ongoing monitoring and reporting to protect both public health and the public water system. The Non-Potable Water Program outlines the collaborative oversight and review by these departments throughout the permitting process and throughout the life of a building's onsite wastewater treatment system.

4. Green building programs and rating systems often encourage onsite non-potable water systems as a sustainable water management tool. The development of green buildings emphasizes the need for a local oversight program to ensure consistency and safety, and improve the efficiency of implementing these systems. The Non-Potable Water Program includes water quality criteria, monitoring, and reporting requirements that are protective of public health, safety and welfare, and waters of the State. As part of the Non-Potable Water Program, the San Francisco Department of Public Health issues Permits to Operate for small publically- or privately-owned onsite non-potable water systems within commercial, multi-family, and mixed use developments located within San Francisco. The Permit to Operate covers both the Producer of the treated non-potable water from Alternate Water Sources and any User receiving treated non-potable water from the Producer's treatment facilities. The permit-based program includes the collection of fees by the San Francisco Department of Public Health to support program administration to ensure ongoing oversight by the City and County.

5. The goals of the Non-Potable Water Program include the reduction of potable water use for non-potable applications, diversifying the City and County's water supply portfolio, and developing local oversight and management over the implementation of onsite non-potable water systems.

6. Non-potable water is not of drinking water quality but can be used for other purposes depending on the quality and level of treatment. The California Code of Regulations (CCR) Title 22, division 4, chapter 3 (hereafter referred to as the Title 22 Water Recycling Criteria) are regulations related to

recycled water, which contains waste associated with human origin, as defined in Water Code section 13050(n). The Non-Potable Water Program addresses non-potable water sources in addition to those covered by the Title 22 Water Recycling Criteria.

7. The Non-Potable Water Program requires various levels of treatment, monitoring requirements, and water quality limitations for the following Alternate Water Sources to be used in an onsite non-potable water system:
   a. Rainwater, which is precipitation that falls upon and is collected from roof surfaces or other man-made aboveground surfaces;
   b. Stormwater, which is precipitation that falls upon and is collected from at or below grade surfaces;
   c. Graywater, which is wastewater from bathroom sinks, lavatories, bathtubs, showers, clothes washing machines and laundry tubs but does not include kitchen sinks or dishwashers;
   d. Blackwater, which is wastewater containing bodily or other biological wastes, as from toilets, dishwashers, kitchen sinks, and utility sinks; and
   e. Foundation Drainage, which is groundwater that is extracted to maintain a building's or facility's structural integrity and would otherwise be discharged to the sewer system.

8. An "Alternate Water Source" is a source of non-potable water that includes graywater, rainwater, stormwater, foundation drainage, blackwater, and/or any other source approved by the Director of the San Francisco Department of Public Health in accordance with the City and County Health Code section 12C.2. An Alternate Water Source System is also referred to as an "onsite non-potable water system" and consists of a system of facilities necessary for providing non-potable water, including, but not limited to, all collection, treatment, storage, and distribution facilities.

9. "Treated blackwater" is wastewater containing bodily or other biological wastes, as from toilets, dishwashers, kitchen sinks, and utility sinks, that has been treated to water quality standards based on the San Francisco Department of Public Health's Rules and Regulations Regarding the Operation of Alternate Water Source Systems (Attachment C) and the Title 22 Water Recycling Criteria.

10. The Non-Potable Water Program permit process and operational requirements require program participants to submit and comply with the following:
    a. Water budget application that is submitted to the San Francisco Public Utilities Commission;
    b. For district-scale non-potable water systems, an implementation plan is submitted to the San Francisco Public Utilities Commission. A district-scale project is a project entailing the sharing of an Alternate Water Source System across property lines or for use in multiple structures, whether under the jurisdiction of one entity or several;
    c. Application for a Permit to Operate an Alternate Water Source System and, if applicable, an Engineering Report that is submitted to the San Francisco Department of Public Health.[1] Since

[1] Rainwater harvesting projects for subsurface or surface non-spray irrigation, and foundation drainage or graywater

the Non-Potable Water Program encompasses multiple Alternate Water Sources, a Title 22 Engineering Report is only required when wastewater contains domestic wastewater. The Non-Potable Water Program includes an Engineering Report template that addresses the requirements of a Title 22 Engineering Report in accordance with Title 22 Water Recycling Criteria, article 7, section 60323.2;

d. Plumbing plans are submitted to the Department of Building Inspection to obtain plumbing permit;

e. An encroachment permit is obtained from San Francisco Public Works, if an Alternate Water Source System is located within the public right-of-way; and

f. Cross-connection test is completed by a certified specialist. The City and County has a cross-connection control program established through the City's Backflow Prevention Ordinance, adopted in 1984. The City's cross-connection control program is administered by the San Francisco Public Utilities Commission's Water Quality Division.

Upon satisfactory submission of the above, a conditional permit is issued by the San Francisco Department of Public Health for a defined duration, followed by a final permit after demonstration of compliance with applicable standards, rules, and guidance. Following the issuance of the conditional or final permit, inspections, routine sampling, and ongoing monitoring reports are submitted by the Treatment System Manager to the San Francisco Department of Public Health.

As part of the permit process, the San Francisco Department of Public Health also requires completion of additional documentation prior to issuance of a Permit to Operate, including: a Construction Certification Letter, a Treatment System Manager affidavit of Knowledge Skills and Abilities, a copy of the contract with the Certified Laboratory, and an Operations and Maintenance Manual.

PURPOSE and APPLICABILITY

11. This Order serves as Water Reclamation Requirements authorizing the collection, treatment, and discharge of Alternate Water Sources by Producers and Users of onsite non-potable water throughout the City and County of San Francisco. The Discharger assumes responsibility for all of these activities, regardless of whether the Producers and Users are private or public entities within the City and County of San Francisco.

12. This Order allows publicly- or privately-owned onsite non-potable water systems providing Alternate Water Sources to discharge at one or more parcels designated commercial, multi-family, and/or mixed-use developments.

13. This Order provides authorization to the Discharger to oversee the following, consistent with this

projects for subsurface irrigation, are not required to submit an Engineering Report since these Alternate Water Sources do not include blackwater.

[2] The Non-Potable Water Program Engineering Report template and instructions for completing the Engineering Report are accessible online at https://www.sfdph.org/dph/EH/Water/nonPotable.asp.

Order's requirements:

a. Producers of Alternate Water Sources shall meet water quality criteria established by the San Francisco Department of Public Health in compliance with this Order and the City and County Health Code Article 12C (Attachment F).

b. Producers, Distributors, and Users of Alternate Water Sources who will be permitted and monitored through the Non-Potable Water Program administered by the San Francisco Department of Public Health and the San Francisco Public Utilities Commission.

A Producer of Alternate Water Sources will typically collect or produce the Alternate Water Sources. A Distributor of Alternate Water Sources may also be the Producer or may receive water from the Producer for the purpose of distribution to Users. Users of Alternate Water Sources take physical possession of the water from Producers and/or Distributors and discharge the Alternate Water Sources, which may include for irrigation purposes. Producers and Distributors may also be Users.

14. Onsite non-potable water systems that utilize Alternate Water Sources under this Order refer to the collection, treatment, and reuse of Alternate Water Sources from commercial, multi-family, or mixed-use developments, at or near the point of waste generation. The benefits of onsite non-potable water systems in the urban environment that include the capture and reuse of Alternate Water Sources include:

    a. Augmenting existing water supply portfolios by treating Alternate Water Sources for beneficial reuse;

    b. Reducing potable water consumption for irrigation and other land applications;

    c. Increasing resiliency and adaptability of the water and wastewater infrastructure;

    d. Avoiding capital investment costs related to pipeline infrastructure that would be required to treat blackwater sources at a publically-owned wastewater treatment system;

    e. Reducing water entering the City's combined sanitary and stormwater sewer system that must be transported and treated at the San Francisco Public Utilities Commission's water pollution control plants; and

    f. Reducing the occurrence of localized flooding due to increased water entering the combined sewer system during major storm events.

15. Part of the San Francisco Public Utilities Commission's water management strategy includes building a municipal recycled water treatment facility on the west side of San Francisco to serve large irrigation demands from existing parks and golf courses located near the recycled water treatment facility. Due to new construction of dense commercial, multi-family, and mixed use development on the eastside of San Francisco, the San Francisco Public Utilities Commission's strategy to meet non-potable demands is to facilitate the implementation of onsite non-potable water systems. Such onsite non-potable water systems are more technically feasible and minimize the cost of building an extensive recycled water transmission network.

REGULATORY FRAMEWORK

16. The Governor's Executive Orders B-29-15 and B-37-16 require a statewide 25 percent reduction in potable urban water usage. They also require that State permitting agencies prioritize review and approval of water programs that increase local water supplies and graywater systems. This Order supports a regulatory structure that provides administrative efficiency and a streamlined project approval process for Alternate Water Source Systems.

17. The State Water Resources Control Board's (State Water Board's) Recycled Water Policy is intended to support the State Water Board's Strategic Plan priority to Promote Sustainable Local Water Supplies. Increasing the acceptance and promoting the use of recycled water is a means towards achieving sustainable local water supplies and can result in reductions in greenhouse gases, a significant driver of climate change. The Recycled Water Policy is also intended to encourage beneficial use of, rather than solely disposal of, recycled water. This Order promotes these goals by encouraging the recycling and use of recycled water throughout San Francisco.

18. In accordance with Finding 33 of the State Water Board's Water Reclamation Requirements for Recycled Water Use, Order No. WQ 2016-0068-DDW, this Order is a site-specific order of the Regional Water Board, which requires an explanation of the need for coverage under a different order. Although the Non-Potable Water Program is consistent with the Recycled Water Policy, it is beyond the coverage of the Recycled Water Policy's Water Reclamation Requirements due to the multiple Alternate Water Sources covered under the Non-Potable Water Program. Additionally, coverage under the Recycled Water Policy's Water Reclamation Requirements is limited to treated municipal wastewater.[3]

19. Section 13550(a) of the California Water Code (Water Code) states that the use of potable domestic water for non-potable uses, including, but not limited to, cemeteries, golf courses, parks, highway landscaped areas, and industrial and irrigation uses, is a waste or an unreasonable use of the water. This Order supports the use of recycled water to reduce potable water use for land applications such as landscape irrigation.

20. Water Code section 13522.5(a) states that any person recycling or proposing to recycle water, or using or proposing to use recycled water, within any region for any purpose for which recycling criteria have been established, shall file with the appropriate Regional Water Board, a report containing information required by the Regional Water Board.

21. Water Code section 13523(a) authorizes the Regional Water Board to prescribe water reclamation requirements for water that is used or proposed to be used as recycled water, if it is necessary to protect the public health, safety, or welfare. This Order provides Water Reclamation Requirements for the discharge of Alternate Water Sources to land.

22. Water Code section 13260(a) requires that any person discharging waste or proposing to discharge

[3] The State Water Board's Water Reclamation Requirements for Recycled Water Use, Order No. WQ 2016 0068-DDW, is accessible online at http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf.

waste within any region, other than to a community sewer system, which could affect the quality of the waters of the State, file a report of waste discharge. This Order provides Water Reclamation Requirements for the discharge of Alternate Water Sources discharged to land.

23. Water Code section 13263(i) allows the Regional Water Board to prescribe general waste discharge requirements for a category of discharges for which the following criteria are found to apply:
    a. The discharges are produced by same or similar operations;
    b. The discharges involve the same or similar types of waste;
    c. The discharges involve the same or similar treatment standards; and
    d. The discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.

    These criteria are met, where Alternate Water Sources will be captured and treated using similar types of operations; all discharges within each type of Alternate Water Source will be subject to the same effluent limits; and due to the numerous anticipated discharges, it is more appropriate to regulate under this Order.

24. The State of California has established statewide water recycling criteria in the Title 22 Water Recycling Criteria. Approved uses of recycled water under the Title 22 Water Recycling Criteria depend on the level of treatment, disinfection, and potential for public contact. The Water Recycling Criteria identify four different qualities of recycled water based on treatment and disinfection levels. The four categories of recycled water relevant to this Order are listed here and defined in the indicated regulations section:
    a. Undisinfected secondary recycled water (Cal. Code Regs., tit. 22, § 60301.900.)
    b. Disinfected secondary-23 recycled water (Cal. Code Regs., tit. 22, § 60301.225.)
    c. Disinfected secondary-2.2 recycled water (Cal. Code Regs., tit. 22, § 60301.220.)
    d. Disinfected tertiary recycled water (Cal. Code Regs., tit. 22, § 60301.230.)

City and County of San Francisco and San Francisco Department of Public Health

25. In September 2012, the City and County adopted Ordinance 195-12, *Onsite Water Reuse for Commercial, Multi-family, and Mixed Use Development Ordinance*, also known as the Non-Potable Water Ordinance. Ordinance 195-12 addresses Alternate Water Source Systems and establishes permitting requirements for the use of Alternate Water Sources for non-potable applications. The Ordinance added Article 12C, entitled *Alternate Water Sources for Non-Potable Applications*, to the San Francisco Health Code (Health Code) (Attachment F). Article 12C allows for the collection, treatment, and use of Alternate Water Sources for non-potable applications. Article 12C, Section 12C.5 of the City and County's Health Code establishes permitting requirements for the application of Alternate Water Sources for non-potable uses, sets permitting and annual fees and authorizes the San Francisco Department of Public Health to set monitoring, sampling, and reporting requirements for onsite treatment systems.

26. In October 2013, Ordinance 208-13 amended the Health Code to establish permitting requirements

for two or more parcels that share Alternate Water Sources for non-potable applications. In July 2015, Ordinance 109-15 mandated that beginning November 1, 2015, all new buildings of 250,000 square feet or more of gross floor area, located within the boundaries of San Francisco's designated recycled water use area,[4] install onsite non-potable water systems to treat and reuse available Alternate Water Sources for toilet and urinal flushing and irrigation. This requirement for buildings greater than 250,000 square feet expanded to the entire city of San Francisco on November 1, 2016. In December 2016, Ordinance 246-16 amended the Health Code again to clarify implementation requirements for district-scale non-potable water systems. Copies of Ordinances 195-12, 208-13, 109-15, and 246-16 are included in Attachment F of this Order.

27. The San Francisco Department of Public Health developed the Director's Rules and Regulations Regarding the Operation of Alternate Water Source Systems (Rules and Regulations) that specifies the criteria for the design, implementation, and permitting of an onsite treatment system for Alternate Water Sources (Attachment C). The Rules and Regulations describe the allowable sources and uses, the permit types, the Alternate Water Source permit application process, the water quality monitoring, sampling, and reporting requirements, and all other standards for the operation of an onsite treatment system for non-potable uses in San Francisco. The water quality limits and monitoring requirements for treated blackwater included in the Rules and Regulations are consistent with the Title 22 Water Recycling Criteria.

28. **State Water Board.** This Order's requirements are consistent with the State Water Board's (previously California Department of Public Health until the Drinking Water Program's transfer to State Water Board on July 1, 2016) water reuse criteria as set forth in CCR Title 22, Division 4, sections 60301 through 60355 and the California's Plumbing Code and are protective of public health, safety, or welfare, and waters of the State. The responsibility to provide recommendations addressing protection of public health, safety, and welfare and to be included in water reclamation requirements for water that is used or proposed to be used as recycled water, currently resides with the State Water Board Division of Drinking Water.

    According to Water Code section 13554.2(c), the State Water Board may delegate all or part of the duties it performs regarding the uses of recycled water within a county to a "local health agency authorized by the board of supervisors to assume these duties, if, in the judgment of that department, the local health agency can perform these duties." The San Francisco Department of Public Health is the local health agency for the consolidated City and County and is authorized to perform duties associated with regulating the production and uses of non-potable water.

    Articles 11 and 12A of the City's Health Code authorize the San Francisco Department of Public Health to investigate and abate any nuisance, activity, or condition that the Department deems to be a threat to public health and safety, and to investigate and abate any cross connection risks between potable and non-potable water and sanitation systems in both public and private facilities. The Health Code authorizes the Department to order a person to vacate property, cease prohibited

[4] Areas in San Francisco designated to be served by a recycled water distribution system in accordance with the Recycled Water Use Ordinance. The designated recycled water use areas in San Francisco are depicted graphically online at http://sfwater.org/index.aspx?page=687.

activities, abate unsafe or unsanitary conditions, and pay penalties for violations.

The San Francisco Department of Public Health reviews engineering reports submitted for Non-Potable Water Program projects and provides recommendations for oversight, water quality, and monitoring that would assist the project developers in avoiding the creation of nuisance conditions that might trigger Health Code enforcement.

29. Article IV, section 4.110 of the Charter of the City and County San Francisco states that the Health Commission, which consists of members appointed by the Mayor, and the San Francisco Department of Public Health shall provide for the preservation, promotion, and protection of the health of the inhabitants of the City and County.

30. **Regional Water Board Basin Plan.** The *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface water and groundwater. It also includes implementation plans to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, Office of Administrative Law, and U.S. EPA, where required.

31. This Order implements the objectives and provisions of the Basin Plan. This Order includes effluent limits and discharge requirements intended to protect existing and potential beneficial uses of waters of the State, as well as to protect public health and the environment.

    This Order covers the discharge of Alternate Water Sources from Alternate Water Source Systems to land. Figure 1 of this Order, which is based on Figure 2-10C of the Basin Plan, depicts the groundwater basins underlying San Francisco County. The existing and potential beneficial uses applicable to groundwater underlying San Francisco County, as stated in Section 2.2.2 and Table 2-2 of the Basin Plan, include the following:

    a. Agricultural Supply (AGR)
    b. Industrial Service Supply (IND)
    c. Municipal and Domestic Supply (MUN)
    d. Industrial Process Supply (PRO)

    Table 1 of this Order lists the designated groundwater basins in San Francisco County and their respective existing and potential beneficial uses:

Table 1: Existing and Potential Beneficial Uses in San Francisco County Groundwater Basins[5]

Groundwater Basin Name	Basin Number	Beneficial Use			
		AGR	IND	MUN	PRO
Visitation Valley	2-32	P	E	P	E
Islais Valley A[6]	2-33A	P	E	P	E
Islais Valley B[6]	2-33B	E	P	P	P
Westside A[6]	2-35A	E	P	E	P
Westside B[6]	2-35B	E	P	P	P
South San Francisco	2-37	P	E	P	E
Lobos	2-38	E	P	E	P
Marina	2-39	E	P	E	P
Downtown	2-40	E	P	E	P

E = Existing beneficial use AGR = Agricultural Supply
P = Potential beneficial use IND = Industrial Service Supply
MUN = Municipal and Domestic Supply PRO = Industrial Process Supply

32. The Non-Potable Water Program and this Order create a streamlined permitting approach for the beneficial reuse and discharge of the Alternate Water Sources listed in Finding 8 of this Order. Existing separate permitting approaches for the following Alternate Water Sources include:

    a. Rainwater: The San Francisco Public Utilities Commission has a voluntary Rainwater Harvesting Program for residents and businesses. A permit is required from the Department of Building Inspection if the rainwater harvesting project needs to disconnect the downspout from the sewer system. Chapter 16 of the Plumbing Code addresses non-potable rainwater catchment systems.

    b. Stormwater: In 2010, the San Francisco Public Utilities Commission developed a Stormwater Management Ordinance and companion design requirements that fulfills state and federal requirements for post-construction stormwater runoff control for development and redevelopment projects. The ordinance and design requirements provide developers with the regulatory context for a post-construction stormwater control program and leads developers, engineers, and architects through the design and approval process for incorporating performance-based green infrastructure into site design.

    c. Graywater: Chapter 15 of the 2016 California Plumbing Code applies to the construction, alteration, discharge, use and repair of Alternate Water Source Systems for non-potable

[5] Source: Water Quality Control Plan for the San Francisco Bay Basin. March 2015. Chapter 2: Beneficial Uses. Table 2-2. http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/tab/tab_2-02.pdf

[6] The basin names Westside A, Westside B, Islais Valley A, and Islais Valley B are informal names in Table 2-2 of the Basin Plan that were assigned by the Water Board to preserve the beneficial use designations in the 1995 Basin Plan and do not represent sub-basins identified by the Department of Water Resources.

applications, which includes graywater.[7] The City and County allow the use of graywater without treatment for subsurface irrigation, and the San Francisco Public Utilities Commission offers a Laundry-to-Landscape Program for single-family and two-unit residential properties in San Francisco. All other graywater projects require a permit from the San Francisco Department of Building Inspection.

d. Foundation Drainage: Foundation drainage that is discharged to land intermittently and in accordance with permit conditions, may qualify for coverage under the State Water Board's General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality, Order No. 2003-0003-DWQ.

e. Blackwater: Discharge of treated blackwater to land requires coverage under Water Reclamation Requirements or Waste Discharge Requirements issued by the State or Regional Water Boards.

33. Although there are currently separate permitting pathways for each of the Alternate Water Sources, this Order and the Non-Potable Water Program provide regulatory coverage of the discharge to land of each and all Alternate Water Sources permitted under the Non-Potable Water Program, subject to the discharge meeting the criteria established in this Order.

34. This Order and the Non-Potable Water Program address potential impacts to water quality through water quality monitoring and limitations for rainwater, stormwater, foundation drainage water, graywater, and blackwater treatment systems stated in Tables 2 through 6 of the San Francisco Department of Public Health Director's Rules and Regulations (Attachment C).

35. This Order requires discharges to meet the water quality limits and frequencies at stated in Tables 2 through 6 of the San Francisco Department of Public Health's Rules and Regulations (Attachment C) or the Title 22 Water Recycling Criteria for blackwater, whichever is more stringent. The Discharger shall ensure discontinuation of any discharges when water quality limits are not met.

36. The Producers must also maintain a waste discharge connection to the City and County's combined sewer system and wastewater treatment plant, which is regulated under a separate National Pollutant Discharge Elimination System (NPDES) permit. This Order does not permit discharges to surface waters.

Operation and Maintenance

37. This Order contains Specifications, Provisions, and Prohibitions requiring the Discharger to ensure that treatment and use of Alternate Water Sources will not impact beneficial uses or pose a threat to human health or the environment. These requirements include descriptions of the type of equipment used to treat and discharge Alternate Water Sources, as well as appropriate training of operators. The Order also requires the Discharger to ensure proper operation and maintenance of equipment used to treat or discharge Alternate Water Sources.

[7] California Plumbing Code, Chapter 15 "Alternate Water Sources for Nonpotable Applications" is accessible online at http://epubs.iapmo.org/2016/CPC/#p= 1.

Monitoring and Reporting

38. The burden of all monitoring and reporting requirements of this Order, including cost of these reports, bears a reasonable relationship to the need for the report and the benefits to be obtained, namely ensuring that discharges do not pose a threat to beneficial uses, human health, or the environment.

39. This Order requires the Discharger to maintain copies of water quality monitoring results from the Producers and Users enrolled in the Non-Potable Water Program and make those results available to Regional Water Board staff upon request.

40. The San Francisco Department of Public Health's Director's Rules and Regulations Regarding the Operation of Alternate Water Source Systems contain water quality limits and monitoring and reporting frequencies for discharges to land of Alternate Water Sources to ensure protection or public health and proper systems operation. The Rules and Regulations are contained in Attachment C and are accessible online at https://www.sfdph.org/dph/EH/Water/nonPotable.asp.

41. This Order contains a Monitoring and Reporting Program (Attachment A) that requires wastewater quantity and quality monitoring in order to ensure proper operation and performance of the Alternate Water Source System, to document compliance with these requirements, to demonstrate that the discharge to land of Alternate Water Sources pursuant to this Order does not pose a threat to beneficial uses, human health, or the environment.

42. **California Environmental Quality Act (CEQA)**

On June 22, 2012, the San Francisco Planning Department and the San Francisco Public Utilities Commission issued a Certificate of Determination of Exemption/Exclusion from Environmental Review, pursuant to State and local requirements, for an amendment to the San Francisco Health Code by adding Article 12C, the On-Site Water Reuse for Commercial, Multi-Family, and Mixed Use Developments Ordinance. The ordinance was exempt from Environmental Review in accordance with CCR Title 14, chapter 3, section 15273, which applies to the adoption of rates, tolls, fares, and other charges.

Ordinance 195-12 amended the previously adopted Article 12C of the San Francisco Health Code to create a streamlined process for new large developments to collect, treat, and reuse water for toilet flushing, irrigation, and other non-potable uses. On August 12, 2013, the San Francisco Public Utilities Commission Bureau of Environmental Management issued a Certification of Determination of Exemption/Exclusion from Environmental Review that stated Ordinance 195-12, is exempt from Environmental Review under Class 8 in accordance with CCR Title 14, chapter 3, section 15308.

Per the Certification of Determination of Exemption/Exclusion from Environmental Review, CEQA Guidelines section 15308, or Class 8 (Actions by Regulatory Agencies for Protection of the Environment), provides an exemption from environmental review for actions taken by regulatory agencies, as authorized by State or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment, where the regulatory process involves procedures

for protection of the environment. The City and County determined the following:

a. Adverse environmental effects are not anticipated as a result of the adoption of the San Francisco Health Code Article 12C Ordinance and implementation of the rules and regulations;

b. Adoption of the Article 12C Ordinance and improved implementation of existing Plumbing and Building Code regulations would result in net positive environmental effects related to aesthetics, air quality, biological resources, cultural resources, hydrology and water quality, public health, and utilities and service systems;

c. Reduction in the frequency of sewer system overflows resulting from reduced demand on the sewer system would enhance the visual quality of the urban environment; and

d. Operation of the City's sewerage system more efficiently would benefit from onsite capture, treatment, and reuse of non-potable water, which would conform to the mission of the San Francisco Public Utilities Commission that calls for the safe, reliable, and efficient collection, treatment, and disposal of San Francisco's wastewater.

The Non-Potable Water Program Ordinance was also amended in 2015 and 2016 and was exempt from environmental review since the action was not defined as a project under CEQA Guidelines sections 15378 and 15060(c)(2) based on the determination that it would not result in a physical change in the environment.

Therefore, adoption and implementation of the Non-Potable Water Program Ordinance and subsequent amendments to the Ordinance are exempt from environmental review under Class 8 as determined by the San Francisco Public Utilities Commission Bureau of Environmental Management. Attachment F contains City and County Health Code Article 12C – Alternate Water Source for Non-Potable Applications, which includes the amended ordinances.

The Regional Water Board, as a responsible agency under CEQA, finds that all environmental effects have been identified for project activities that it is required to approve and that the project will not have significant adverse impacts on the environment provided that the Discharger complies with this Order, the Non-Potable Water Program, and applicable State and federal water quality laws. The Regional Water Board concurs that Class 8 applies to this project. No construction activities are anticipated in conjunction with this permit nor relaxation of environmental standards allowing environmental degradation to occur. There are no exceptions to the exemption, as described in CEQA Guideline section 15300.2.

43. **Antidegradation Policy**. The State Water Board adopted Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, which requires that the authorization to discharge waste maintain high quality waters of the State unless it has been demonstrated that:

a. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;

b. The degradation will not unreasonably affect present and anticipated future beneficial uses;

c. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize

degradation; and

d. The degradation is consistent with the maximum benefit to the people of the State.

44. **Antidegradation Analysis.** The Conditions of this Order and the related City and County ordinances require the following elements that provide assurance that no significant impacts will occur to the groundwater quality as a result of the implementation of and activities authorized through the Non-Potable Water Program:

a. Water quality treatment and limitations;
b. Engineering report for projects;
c. Water quality and operational monitoring and reporting;
d. System design requirements;
e. Permit issuance;
f. Cross-connection control;
g. Backflow prevention;
h. Site inspections; and
i. Penalties and enforcement of violations.

The Westside groundwater basin is used to supply a portion of the potable water supply for San Francisco residents. The Westside Basin is a 45-square-mile series of aquifers extending from Golden Gate Park in San Francisco southward through the City of San Bruno.

All Alternate Water Sources will be treated to an appropriate level before being discharged to land. Blackwater will be treated in accordance with the requirements in the San Francisco Department of Public Health's Rules and Regulations (Attachment C, Table 2) and the Title 22 Water Recycling Criteria requirements. This Order includes water quality monitoring requirements (Attachment A) and effluent limitations for discharges of treated blackwater to land (Table 2). The Non-Potable Water Program contains water quality monitoring requirements for all Alternate Water Sources in accordance with the San Francisco Department of Public Health's Rules and Regulations (Attachment C, Tables 2 through 6).

All of the Alternate Water Source Systems are required to be constructed to also discharge to the City and County's combined sewer system in the event of system malfunction or water quality that does not meet the San Francisco Department of Public Health's standards as established in the Director's Rules and Regulations Regarding the Operation of Alternate Water Source Systems (Attachment C).

By discharging to vegetated areas, additional natural treatment of constituents will occur within the soil. The soil structure acts as a filter to remove particulate pollutants and to adsorb other pollutants to soil particles.

The Antidegradation Analysis considered the Department of Water Resource's California Statewide Groundwater Elevation Monitoring (CASGEM) groundwater basin prioritization ranking and Bulletin 118, land use and hydrogeologically-vulnerable areas geographic information system

(GIS) data, and groundwater quality data from the State Water Board's online database GeoTracker GAMA (Groundwater Ambient Monitoring and Assessment Program).

The Department of Water Resources implemented the CASGEM program in response to legislation enacted in California's 2009 Comprehensive Water package. As part of the CASGEM program and pursuant to Water Code section 10933, California groundwater basins were prioritized, so as to help identify, evaluate, and determine the need for additional groundwater level monitoring that incorporates groundwater reliance. The following eight criteria were used to prioritize California's groundwater basins:

a. Overlying population;
b. Projected growth of overlying population;
c. Public supply wells;
d. Total wells;
e. Overlying irrigated acreage;
f. Reliance on groundwater as the primary source of water;
g. Impacts on the groundwater; including overdraft, subsidence, saline intrusion, and other water quality degradation; and
h. Any other information determined to be relevant by the Department of Water Resources.

In response to Executive Order D-5-99, State Water Board staff established Hydrogeologically Vulnerable Areas, which indicate soil or rock conditions that may be more vulnerable to groundwater contamination. The City and County is not located within a designated Hydrogeologically Vulnerable Area. All of the groundwater basins within the City and County were ranked very low priority by the Department of Water Resources.

Based on the Regional Water Board's assessment of available pertinent information and best professional judgment, it has been determined that the discharges resulting from the implementation of this Order will not be adverse to the intent and purpose of the State and federal antidegradation policies. The existing water quality of the groundwater basins in the City and County's jurisdiction will not be reduced due to the proposed action. The data submitted by the Discharger demonstrates that the limited discharge to vegetated areas; the nature of the discharge; and the measures established for pollution prevention will ensure that the discharges contemplated by this Order will not reduce existing high quality waters. The authorized discharge to land will not unreasonably affect present and anticipated beneficial uses of groundwater. The Regional Water Board has considered antidegradation pursuant to Title 40 Code of Federal Regulations section 131.12 and State Water Board Resolution No. 68-16 and finds that the permitted discharges are consistent with those provisions. The discharge is in compliance with the Antidegradation Policy and no further antidegradation analysis is required.

APPLICATION REQUIREMENTS

45. To obtain coverage under this Order, the City and County submitted a Report of Waste Discharge, draft Engineering Report, and supporting information to the Regional Water Board on December 4, 2015, a revised Engineering Report on February 22, 2016, and a final Engineering Report on August 22, 2017. The Report of Waste Discharge included the following supporting

documentation:

A. Application/General Information Form for Waste Discharge Requirements.

B. City and County Non-Potable Water Program Engineering Report that contains the following:

   a. San Francisco's Non-Potable Water Program Guidebook
   b. City Ordinance 195-12: Non-Potable Water Ordinance
   c. City Ordinance 208-13: District-Scale Non-Potable Water Projects
   d. City Ordinance 109-15: Mandatory Non-Potable Projects in New Construction Over 250,000 Square Feet
   e. San Francisco Health Code Article 12C – Alternate Water Sources for Non-Potable Applications
   f. San Francisco Department of Public Health Director's Rules and Regulations Regarding the Operation of An Alternate Water Source System
   g. Required Levels of Backflow Prevention for Non-Potable Water Systems
   h. San Francisco Health Code Article 12A – Backflow Prevention
   i. San Francisco Public Utilities Commission Water Quality Division Manual for Cross-Connection Control
   j. List of Current and Future Projects of the Non-Potable Water Program
   k. San Francisco's Non-Potable Water System Projects Report
   l. Non-Potable Project Water Budget Application
   m. Example Non-Potable Calculator For Single Buildings
   n. Application for a Permit to Operate an Alternate Water Source System
   o. Non-Potable Engineering Report Template
   p. Example Non-Potable Engineering Report for The Living Machine System for Wastewater Recycling at SFPUC Headquarters
   q. Construction Certification Letter Template
   r. List of Certified Laboratories for Water Quality Testing for Compliance with Article 12C
   s. Monthly Discharge Monitoring Report Form
   t. Annual Report Template
   u. Affidavit Attesting to the Knowledge, Skills, Abilities, and Training of the Treatment System Manager
   v. Training and Educational Resources for Treatment System Managers
   w. Operations and Maintenance Manual Template

C. Non-Potable Water Program CEQA determination documentation.

46. **Annual fee**. The Discharger is responsible for payment of an annual fee, pursuant to Water Code section 13260 and the Annual Fee Schedule as stated in CCR Title 23, division 3, chapter 9, section 2200 (Annual Fee Schedules). The fee amount is determined by the type of order and the Threat to Water Quality and Complexity ratings assigned to that discharge. The Water Quality Fee Schedule accessible online at http://www.waterboards.ca.gov/resources/fees/water_quality/#wdr.

47. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe water reclamation requirements and has provided them the opportunity for a public hearing and to submit their written views and recommendations.

48. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to this matter.

IT IS HEREBY ORDERED that pursuant to Water Code sections 13263, 13267, and 13523, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, the Discharger shall comply with the following:

A. PROHIBITIONS

1. The treatment, storage, distribution, reuse or discharge of Alternate Water Sources shall not create a nuisance as defined in section 13050(m) of the Water Code.

2. No treated blackwater, graywater, or foundation drainage shall be applied to land during periods when soils are saturated and could lead to runoff.

3. Treated blackwater, graywater, or foundation drainage shall not be allowed to escape from the designated use area(s) as surface flow or spray that would either pond and/or enter surface waters.

4. Spray or runoff shall not enter a dwelling or food handling facility, and shall not contact any drinking water fountain, unless specifically protected with a shielding device.

5. The discharge of Alternate Water Sources to land shall not cause rising groundwater discharging to surface waters to impair surface water quality objectives or beneficial uses.

6. The discharge of Alternate Water Sources to waters of the State shall not unreasonably affect present and anticipated beneficial uses of water, not result in water quality less than that prescribed in water quality control plans or policies, and not cause degradation of the existing water quality.

7. No treated blackwater shall be discharged from treatment facilities, irrigation holding tanks, storage ponds, or other containment, other than for permitted reuse in accordance with this Order, other Regional Water Board issued Waste Discharge Requirements or NPDES permits, or for discharge to a municipal sewage treatment system.

8. Alternate Water Sources shall not be used as a potable water supply.

9. This Order does not authorize projects involving the use of ephemeral or year-round streams or other waters of the State for recycled water conveyance or direct or indirect groundwater recharge.

10. There shall be no cross-connection between potable water supply and piping containing the Alternate Water Sources. All users of Alternate Water Sources shall provide for appropriate backflow protection for potable water supplies as specified in CCR Title 17, section 7604 or as specified by the State Water Board, the San Francisco Department of Public Health, or the San Francisco Public Utilities Commission.

11. This Order authorizes the discharge of Alternate Water Sources to land that contain blackwater consistent with Uniform Statewide Recycling Criteria. The following activities are not authorized by this General Order:

    a. Activities designed to replenish groundwater resources. Groundwater replenishment activities include surface spreading basins, percolation ponds, or injection through groundwater wells.

    b. Disposal of treated wastewater by means of percolation ponds, excessive hydraulic loading of application areas, or any other method, where the primary purpose of the activity is the disposal of treated wastewater.

    c. Direct potable reuse (Wat. Code, § 13561(b)), indirect potable reuse for groundwater recharge (Wat. Code, § 13561(c)), or surface water augmentation (Wat. Code, § 13561(d)).

    d. Discharge to surface waters.

B. DISCHARGE SPECIFICATIONS

1. The Discharger shall notify Regional Water Board staff by telephone and/or email whenever an adverse condition occurs as a result of the discharges to land authorized through the Non-Potable Water Program. An adverse condition includes, but is not limited to, a violation or threatened violation of the requirements of this Order, significant spill of petroleum products, or unplanned discharges greater than 1,000 gallons of untreated wastewater or wastewater containing a chlorine residual to waters of the State. Pursuant to Water Code section 13267(b), a written notification shall be submitted to the Regional Water Board within five business days of the occurrence. The written notification shall identify the adverse condition, describe the actions necessary to remedy the condition, and specify a timetable for the remedial actions.

2. The Discharger shall ensure that each Producer and User shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including but not limited to, accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

C. NON-POTABLE WATER QUALITY REQUIREMENTS AND LIMITATIONS

1. The Discharger shall ensure that Producers shall discontinue discharges of Alternate Water Sources to land during any period in which the water quality limits for that use are not being met. The discharge of Alternate Water Sources to land shall not be resumed until all conditions that caused the violations have been corrected.

2. If an onsite non-potable water system is determined to be out of compliance with any provisions of the San Francisco Department of Public Health Rules and Regulations Regarding the Operation of Alternate Water Source Systems (Attachment C), the San Francisco Department of Public Health shall issue a notice of noncompliance or a notice of violation and report violations to the Regional Water Board per sections C.7. and D.1.of this Order's Monitoring and Reporting Program (Attachment A).

3. The Discharger shall investigate all violations and may enforce through suspending or revoking the operational permit or issuing an administrative financial penalty in accordance with the San Francisco Administrative Code. During a permit suspension or after a revocation, the onsite non-potable water system shall not operate, all Alternate Water Sources collected shall be directed to the sewer, and the non-potable distribution system shall be supplied with potable water.

4. Alternate Water Source discharges shall meet water quality limits and monitoring frequencies designated by the San Francisco Department of Public Health, as stated in Tables 2 through 6 of the San Francisco Department of Public Health's Rules and Regulations (Attachment C), this Order (Table 2), and the Title 22 Water Recycling Criteria, as applicable, prior to discharge to land.

   As advancements in wastewater treatment technology, water quality standards, and treatment system performance monitoring occur, elements of the Non-Potable Water Program may require modification. A request for approval of the proposed changes shall be submitted to the Executive Officer and the State Water Board Division of Drinking Water for review and approval. The Executive Officer may approve such modifications if they are consistent with this Order, the Title 22 Water Recycling Criteria, and the State Water Board Division of Drinking Water's recommendations for protection of public health and will not cause degradation.

5. Alternate Water Source discharges may be used for all applications approved by the San Francisco Department of Health and consistent with allowed uses for recycled water based on treatment level in accordance with the Title 22 Water Recycling Criteria and the State Water Board Division of Drinking Water's recommendations for protection of public health.

6. The Discharger shall maintain copies of water quality monitoring results from the Producers and Users enrolled in the Non-Potable Water Program. The water quality monitoring results shall be made available to Regional Water Board staff upon request.

Table 2: Water Quality Limitations for Blackwater Treatment Systems		
Parameter	**Water Quality Limitations for Discharges to Land[8]**	**Monitoring Frequency**
Total Coliform[9]	a. The median concentration shall not exceed an MPN of 2.2 /100 mL utilizing the bacteriological results of the last seven days for which analyses have been completed; b. The maximum number shall not exceed an MPN of 23 /100 mL in more than one sample in any 30 day period; and c. No sample shall exceed an MPN of 240 /100 mL at any time.	Daily
Turbidity	For media filter: a. The average shall not exceed 2 NTU within a 24-hour period; b. The maximum shall not exceed 5 NTU more than 5 percent of the time within a 24-hour period; and c. No sample shall exceed 10 NTU at any time. For membrane filter: a. The maximum shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period; and b. No sample shall exceed 0.5 NTU at any time.	Continuously
Odor	The system shall not emit offensive odors.	n/a
Chlorine Residual	Over any 24-hour period, the average chlorine residual shall be within the range of 0.5 to 2.5 mg/L.	Continuously
Ultraviolet light (UV) dose, if applicable	Minimum of 80 mJ / cm^2	Continuously
UV transmittance, if applicable	Minimum of 65%	Continuously
pH	a. The minimum shall exceed 6 at all times; and b. The maximum shall not exceed 9 at any time.	Weekly
Biochemical Oxygen Demand (BOD_5)	a. The maximum concentration shall not exceed 25 mg/L at any time; and b. The average concentration shall not exceed 10 mg/L utilizing the results of the last 4 weeks for which analyses have been completed (Start-Up).	Weekly, Monthly[10]

[8] MPN denotes units of most probable number. NTU denotes units of nephelometric turbidity unit. mg/L denotes units of milligrams per liter. mJ/cm^2 denotes units of millijoule per square centimeter.

[9] Total coliform sampling shall be conducted at least once daily when the treatment plant is in operation and not discharging to the sanitary sewer system. The samples shall be taken from the disinfected effluent and shall be analyzed by a certified laboratory.

[10] Systems shall be sampled weekly for BOD and TSS during the Conditional Startup Mode period, after which monthly

Table 2: Water Quality Limitations for Blackwater Treatment Systems		
Parameter	**Water Quality Limitations for Discharges to Land[8]**	**Monitoring Frequency**
Total Suspended Solids (TSS)	a. The maximum concentration shall not exceed 30 mg/L at any time; and b. The average concentration shall not exceed 10 mg/L utilizing the results of the last 4 weeks for which analyses have been completed (Start-Up).	Weekly, Monthly[10]

D. NON-POTABLE WATER PROGRAM PROVISIONS

1. Pursuant to this Order and Water Code sections 13523.1 and 13554.2, the Discharger may authorize the discharge of Alternate Water Sources on a case-by-case basis in accordance with the Non-Potable Water Program at commercial, multi-family, and mixed-use developments. The San Francisco Department of Public Health has developed administrative procedures specifying how the permit-based system for regulating Producers and Users will be implemented and how compliance with the water quality criteria and the Title 22 Water Recycling Criteria, where applicable, will be assured.

2. The Discharger shall enforce rules and regulations governing the design and construction of treatment facilities for the use and discharge to land of Alternate Water Sources in accordance with the San Francisco Department of Public Health permit-based system and the Title 22 Water Recycling Criteria, where applicable.

3. The San Francisco Department of Public Health shall review Engineering Reports submitted in support of each project that proposes to beneficially reuse Alternate Water Sources and ensure the proposed design meets the Title 22 Water Recycling Criteria, where applicable.

4. The Discharger shall require the Producers and Users to use Alternate Water Sources in designated areas in accordance with all applicable laws and regulations. The San Francisco Department of Public Health shall take whatever actions are necessary, including shut down of the treatment facility and termination of the permit, to correct any Producer violations.

5. The Discharger shall comply with the attached Monitoring and Reporting Program (Attachment A) or any amendments thereafter.

6. The Discharger shall require Producers to submit documentation of the proper installation of Title 22-mandated backflow prevention devices and the absence of cross-connections for review and approval prior to commencing discharge of Alternate Water Sources at all

sampling shall be performed. Based on the results, the Director may reduce the frequency of sampling as described in Section 11 of the Rules and Regulations (Attachment C).

sites. Attachment D contains the San Francisco Health Code Article 12A that establishes requirements for backflow prevention and cross-connection control program. Attachment E contains the San Francisco Public Utilities Commission Water Quality Division manual for cross-connection control.

7. The Discharger shall require Producers, at all times, to properly operate and maintain all facilities and systems of treatment disposal and control all related appurtenances which are installed or used by the Producer to achieve compliance with the Producer's Permit to Operate. Proper operation and maintenance also includes adequate controls and appropriate quality assurance procedures. All of these procedures shall be described in an Operation and Maintenance Manual maintained at the Producer's facility.

8. The San Francisco Department of Public Health's Director's Rules and Regulations Regarding the Operation of Alternate Water Source Systems contains information on the required components of an Operation and Maintenance Manual (Attachment C). The Discharger shall inspect systems, both those in service and reserve, to ensure they are maintained on a regular basis. Records shall be kept of the tests, including but not limited to, water quality analysis results, cross-connection, and system integrity testing, and made available to the Discharger. The records and testing and analysis results shall be made available to the Regional Water Board upon request.

9. Producers' treatment facilities subject to this Order shall be supervised by an Operator possessing certificates of appropriate grade as determined by the State Water Boards' Office of Operator Certification or must possess a Grade II or higher certification from the California Water Environmental Association. The State Water Board's regulations define the experience and training requirements necessary to meet the minimum levels of competence to administer this responsibility.

10. The Discharger shall require the Producer to conduct periodic inspections of the User's facilities and operations to monitor and assure compliance with conditions of the Producer's permit and this Order. The Producer shall take whatever actions are necessary, including the termination of delivery of Alternate Water Sources to the User, to correct any User violations.

11. The Discharger shall require that a copy of the permit from the San Francisco Department of Public Health be provided to the Users by the Producer(s). The Users must have these available at all times for inspection by the San Francisco Department of Public Health staff, the Producer(s), or Regional Water Board staff.

12. The Discharger shall require Producers to comply with the monitoring program administered through the San Francisco Department of Public Health. Producers are responsible for submitting onsite observation reports and use data to the San Francisco Department of Public Health, who will compile and file an annual report with the Regional Water Board.

13. The Discharger shall implement a cross-connection program that forbids cross-connections between potable water and Alternate Water Source Systems and ensures that backflow prevention devices are in proper working order by conducting or requiring User testing, in accordance with the Non-Potable Water Program criteria and CCR Title 17, section 7605. Dual-plumbed Alternate Water Source Systems shall comply with CCR Title 22, sections 60313 – 60316. The Discharger shall maintain reports of testing and maintenance.

14. The Discharger shall require the Producers and Users to maintain in good working order and operate as efficiently as possible any facility or control system installed by the Producers or Users, respectively, to achieve compliance with the water reuse requirements.

15. The Discharger shall require Producers to ensure that all above ground equipment, including pumps, piping, storage reservoir, and valves, etc., that may at any time contain Alternate Water Sources shall be adequately and clearly identified with appropriate warning signs. The Discharger shall require the Producers and Users to make all necessary provisions to inform the public that the liquid being distributed and/or discharged is an Alternate Water Source and is unfit for human consumption.

E. GENERAL PROVISIONS

1. If any condition or criteria set forth in this Order conflicts or is inconsistent with any requirement set forth in any State regulation, the more stringent condition or criterion shall apply.

2. The Executive Officer may revoke this Order upon a finding of non-compliance.

3. The Discharger is responsible for compliance with the applicable conditions of this Order. Any noncompliance with this Order constitutes a violation of the Water Code, and regulations adopted thereunder, and is grounds for enforcement actions by the Regional Water Board.

4. Regional Water Board staff may conduct an annual inspection/audit of the Non-Potable Water Program and conduct periodic spot field inspections of Producers and Users permitted through the Non-Potable Water Program. The Discharger shall ensure that the Regional Water Board or its authorized representatives:

    a. Have access to and copy of, at reasonable times, any records that must be kept under the conditions of this Order, including Producer and User records;

    b. May inspect, at reasonable times, any facility, equipment (including monitoring and control equipment), practices, premises, activity, or operations regulated or required under this Order, including Producer, User and Distributor facilities; and

    c. May sample or monitor, at reasonable times, all User, Producer, and Distributor discharges for the purpose of assuring compliance with this Order.

5. The Discharger shall pay an annual fee in accordance with the fee schedule given in CCR Title 23, section 2200 and annual fee invoices issued by the State Water Board.

6. Upon review by the Executive Officer, this Order may be terminated or modified for cause, including, but not limited to:
   a. Violation of any term or condition contained in this Order;
   b. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts;
   c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse; or
   d. Endangerment to public health or environment that can only be regulated to acceptable levels by Order modification or termination.

7. The Discharger shall immediately comply with all the Prohibitions, Water Quality Limitations, and Provisions of this Order.

8. The Discharger shall report to the Regional Water Board any changes to the Non-Potable Water Program-related Ordinances, Health Code, monitoring, or water quality limitations that indicate a significant change in the character or operation of the Non-Potable Water Program.

9. Pursuant to this Order and Water Code section 13267, the Discharger shall furnish, within a reasonable time, any information the Executive Officer may request to determine whether cause exists for modifying, revoking, reissuing, or terminating coverage under this Order.

10. This Order does not relieve each Producer or User from the responsibility to obtain other necessary local, State, and federal permits, nor does this Order prevent impositions of additional standards, requirements, or conditions by any other regulatory agency.

11. The Regional Water Board will review this Order periodically and may revise the requirements as deemed necessary.

I, Bruce Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on September 13, 2017.

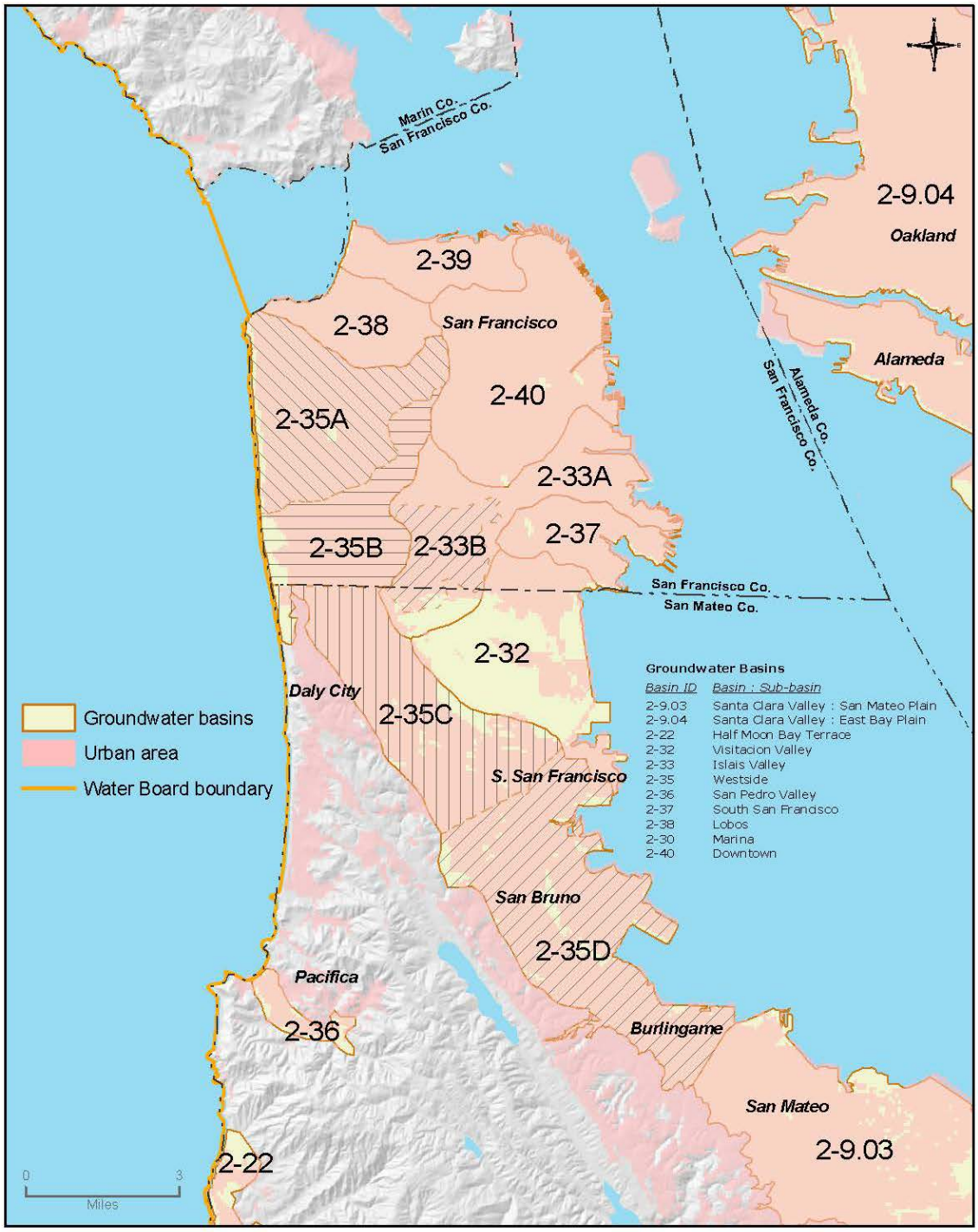
Digitally signed by Bruce H. Wolfe
Date: 2017.09.27 18:24:19 -07'00'

Bruce H. Wolfe
Executive Officer

Attachments:

A. Monitoring and Reporting Program
B. Definition of Terms
C. The San Francisco Department of Public Health's Rules and Regulations regarding the Operation of Alternate Water Source Systems
D. City and County of San Francisco Health Code Article 12A – Backflow Prevention
E. San Francisco Public Utilities Commission Water Quality Division Manual for Cross-Connection Control
F. City and County of San Francisco Ordinances 195-12, 208-13, 109-15, 246-16, and Health Code Article 12C

Figure 1: Groundwater Basins: San Francisco[11]



[11] Source: Water Quality Control Plan for the San Francisco Bay Basin. March 2015. Chapter 2: Beneficial Uses. Figure 2-10c. http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/fig/fig_2-10c.pdf

ATTACHMENT A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

MONITORING and REPORTING PROGRAM

FOR

Order No. R2-2017-0036

A. PURPOSE

1. This Monitoring and Reporting Program (Monitoring Program) is for water reclamation requirements adopted by the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), as Order No. R2-2017-0036, Water Reclamation Requirements for the Non-Potable Water Program as administered by the San Francisco Public Utilities Commission.

2. The principal purposes of the monitoring program, also referred to as the self-monitoring program (Monitoring Program), are:

   a. To document compliance with requirements and prohibitions established by this Regional Water Board through these Water Reclamation Requirements (Order);

   b. To facilitate accountability and self-monitoring by the Producers and Users in the prevention and abatement of pollution or potential threats to water quality arising from waste discharges; and

   c. To document the number of small public- or privately-owned onsite Alternate Water Source Systems located within San Francisco.

3. The Order authorizes discharges of Alternate Water Sources to land subject to specified requirements. In order to ensure compliance with those requirements, Producers of Alternate Water Sources are required to conduct monitoring of the discharges and submit reports of monitoring results on a regular basis to the Discharger.

B. GENERAL PROVISIONS

1. Duty to Provide Information

   The Discharger shall furnish, within a reasonable time, any information the Regional Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Discharger shall also furnish to the Regional Water Board, upon request, copies of records required to be kept by this Order.

   Reporting responsibilities of waste dischargers are specified in Water Code sections 13225(a), 13267(b), 13268, 13383, and 13387(b) and this Regional Water Board's Resolution No. 73-16.

2. Availability

   A copy of this Order shall be maintained by the Discharger and be available at all times to applicable personnel.

3. The Discharger shall ensure that all monitoring and analysis instruments and devices used by the Producer(s) to fulfill the prescribed Non-Potable Water Program monitoring and this Order’s Monitoring Program shall be properly maintained and calibrated as

recommended by the manufacturer to ensure their continued accuracy.

C. NON-POTABLE WATER PROGRAM – PRODUCER MONITORING AND REPORTING REQUIREMENTS

1. The Non-Potable Water Program includes monitoring, reporting, and permitting requirements for each Producer of Alternate Water Sources. When the User(s) is other than the Producer, delegation or responsibilities must be clearly defined and included in the Producer's Permit(s). Per the San Francisco Department of Public Health's Director's Rules and Regulations Regarding the Operation of Alternate Water Source Systems (Attachment C), there is a tiered permit process for the operation of an Alternate Water Source System, which includes a temporary permit for conditional start-up mode and a final use mode operating permit. Monitoring, reporting, and responsibilities are defined and included in each permit.

2. The Alternate Water Sources discharged pursuant to the Non-Potable Water Program shall meet the water quality limits and monitoring and reporting frequencies as stated in Tables 2 through 6 of the San Francisco Department of Public Health's Rules and Regulations (Attachment C) and **Table 1** of this Monitoring Program.

3. In 2000, the San Francisco Public Utilities Commission began coordinating regular groundwater monitoring efforts on the Westside Basin. The San Francisco Public Utilities Commission measures groundwater conditions quarterly in 51 wells, semi-annually in 5 wells, and continuously through the use of pressure transducers in 49 additional wells throughout the Westside Basin. In cooperation with the City of Daly City, the City of San Bruno, and California Water Service Company, the San Francisco Public Utilities Commission prepares an Annual Groundwater Monitoring Report for the Westside Basin in San Francisco and San Mateo counties. The Annual Groundwater Monitoring Report shall be made available to the Regional Water Board upon request.

Table 1: Water Quality Monitoring Requirements for Blackwater Treatment Systems		
Parameter	**Water Quality Limitations for Discharges to Land[12]**	**Monitoring Frequency**
Total Coliform[13]	a. The median concentration shall not exceed an MPN of 2.2 /100 mL utilizing the bacteriological results of the last seven days for which analyses have been completed; b. The maximum number shall not exceed an MPN of 23 /100 mL in more than one sample in any 30 day period; and c. No sample shall exceed an MPN of 240 /100 mL at any time.	Daily
Turbidity	For media filter: a. The average shall not exceed 2 NTU within a 24-hour period; b. The maximum shall not exceed 5 NTU more than 5 percent of the time within a 24-hour period; and c. No sample shall exceed 10 NTU at any time. For membrane filter: a. The maximum shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period; and b. No sample shall exceed 0.5 NTU at any time.	Continuously
Odor	The system shall not emit offensive odors.	n/a
Chlorine Residual	Over any 24-hour period, the average chlorine residual shall be within the range of 0.5 to 2.5 mg/L.	Continuously
Ultraviolet light (UV) dose, if applicable	Minimum of 80 mJ/cm^2	Continuously
UV transmittance, if applicable	Minimum of 65%	Continuously
pH	a. The minimum shall exceed 6 at all times; and b. The maximum shall not exceed 9 at any time.	Weekly
Biochemical Oxygen Demand (BOD_5)	a. The maximum concentration shall not exceed 25 mg/L at any time; and b. The average concentration shall not exceed 10 mg/L utilizing the results of the last 4 weeks for which analyses have been completed (Start-Up).	Weekly, Monthly[14]

[12] MPN denotes units of most probable number. NTU denotes units of nephelometric turbidity unit. mg/L denotes units of milligrams per liter. mJ/cm^2 denotes units of millijoule per square centimeter.

[13] Total coliform sampling shall be conducted at least once daily when the treatment plant is in operation and not discharging to the sanitary sewer system.

[14] Systems shall be sampled weekly for BOD and TSS during the Conditional Startup Mode period, after which

Table 1: Water Quality Monitoring Requirements for Blackwater Treatment Systems		
Total Suspended Solids (TSS)	a. The maximum concentration shall not exceed 30 mg/L at any time; and b. The average concentration shall not exceed 10 mg/L utilizing the results of the last 4 weeks for which analyses have been completed (Start-Up).	Weekly, Monthly[10]

Discharger Inspection Program

The Discharger shall conduct periodic random inspections of Producers' and Users' facilities to ensure compliance with this Order and the Producer's permit. Inspections shall be performed when the system is in operation. Inspections shall be performed when treated blackwater is included in the Alternate Water Sources being discharged.

For all Users utilizing Alternate Water Sources that include treated blackwater, the Discharger shall require inspections for the following deficiencies or violations of use, at a frequency as determined by the San Francisco Department of Public Health and identified in the Producer's Permit:

4. Standard Observations
   a. Evidence of runoff of treated blackwater from the site (Photo-documentation of the affected area and an estimated volume shall be included.).
   b. Odor of wastewater originating from a discharge area. If present, indicate apparent source, characterization, and direction of travel.
   c. Evidence of ponding and/or evidence of mosquitoes breeding within the discharge area due to ponded water.
   d. Warning signs properly posted to inform public that discharged water is not safe for drinking.
   e. Evidence of leaks or breaks in the discharge system pipelines, other appurtenances such as valves, irrigation system laterals or tubing.
   f. Evidence of broken or otherwise faulty drip irrigation system emitters or spray irrigation sprinklers.
   g. Evidence of overflows or leaks of impoundments. All violations shall be followed by discussion of when and how deficiencies were corrected.

5. Description of Sampling and Observation Stations
   a. Land Observation Stations – Locations at a sufficient number of points of areas where Alternate Water Sources including treated blackwater are discharged to land surface

monthly sampling shall be performed. Based on the results, the Director may reduce the frequency of sampling as described in Section 11 of the Rules and Regulations (Attachment C).

in order to ensure compliance with water use requirements.

b. Treated Wastewater (Effluent) Water Quality - Effluent monitoring locations shall provide a representative sample of the final effluent after all treatment processes prior to the use of Alternate Water Sources including blackwater to determine compliance with the final effluent limitations established in the Non-Potable Water Program.

Producer Reporting Program

The Discharger shall require that all Producers submit an annual report to the San Francisco Department of Public Health by January 15 of each calendar year. The report shall contain a statement by the reporting official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

6. The Producer's annual report shall include:
   a. A tabular summary of treated blackwater analysis results.
   b. A tabular summary of treated blackwater use by each User.
   c. A summary of the average daily quantity of Alternate Water Sources delivered by the Producer and discharged to land.
   d. Tabulation of User site inspections conducted by the Producer.
   e. A summary of effluent violations related to a discharge of Alternate Water Sources, violations found during inspection of reuse sites, corrective actions taken and any changes to, or revoking of User authorizations by the Producer.

7. Violation Reporting

   The Discharger shall require that violations of the San Francisco Department of Public Health water quality criteria are orally reported by the Producer to the San Francisco Department of Public Health within 24 hours, followed by a written report within 5 days describing the corrective actions taken.

8. Signatory Requirements
   a. The Discharger shall require all reports and other information required or requested by the San Francisco Department of Public Health to be signed by the Producer's principal Operator, or by a duly authorized representative of that person as identified in the Producer's Permit.
   b. The Discharger shall require that all reports shall contain a statement certifying the results are true and correct.

9. Should the responsible reporting party discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information.

10. False Reporting

    Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained by the Producer's Permit, including monitoring reports or reports of compliance or noncompliance shall be subject to enforcement procedures as determined by the Discharger.

D. MONITORING AND REPORTING REQUIREMENTS

Any significant violations, repairs or modifications identified or denoted in the Producer's Annual Report shall be described in the Annual Report submitted to the Regional Water Board. The Annual Report for each calendar year shall be submitted to the Regional Water Board by the San Francisco Department of Public Health by March 1 of each year.

1. The Annual Report to the Regional Water Board shall include:
   a. A tabular summary of the average daily quantity of non-potable water from Alternate Water Sources delivered by the Producers for discharge to land.
   b. Tabulation of Producer and User site inspections conducted by the Discharger and the Producers.
   c. A site map, addresses, or latitude and longitude coordinates of the sites that are permitted through the Non-Potable Water Program discharging Alternate Water Sources containing blackwater.
   d. A summary of the following:
      i. Effluent violations related to treated blackwater use for irrigation;
      ii. Violations found during inspection of reuse sites; and
      iii. Corrective actions taken and any changes to, revoking of User authorizations by the Producer, or revoking of any Producer permits.
   e. A comprehensive discussion of the progress and results of the Non-Potable Water Program. The discussion shall also include an update regarding current and future development of the Non-Potable Water Program, including planning, design, and construction of new Producer facilities, preparation of required reports and technical documents, and progress toward regulatory approvals or revisions to the Non-Potable Water Program-related ordinances.
   f. Progress and evaluation of any special studies or projects being undertaken related to the Non-Potable Water Program.
   g. The contact information, including email address, of City and County staff with primary responsibility for the Non-Potable Water Program.

2. Signatory Requirements

   a. All reports required by the Order and other information requested by the Regional Water Board shall be signed by a San Francisco Department of Public Health staff person duly authorized to provide such information. A duly authorized representative may thus be either a named individual or any individual occupying a named position, and

   b. Certification

      All reports signed by a duly authorized representative under Provision D.2.a. shall contain the following certification: "I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

3. Should the responsible reporting party discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information.

4. False Reporting

   Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall be subject to the Regional Water Board and the San Francisco Department of Public Health enforcement procedures.

ATTACHMENT B

DEFINITION OF TERMS

Alternate Water Source: A source of non-potable water that includes graywater, rainwater, stormwater, foundation drainage, blackwater and/or any other source approved by the Director of the San Francisco Department of Public Health.

Alternate Water Source System: Also referred to as "onsite non-potable water system." A system of facilities necessary for providing non-potable water and includes, but is not limited to, the collection, treatment, storage, and distribution facilities.

Blackwater: Wastewater containing bodily or other biological wastes, as from toilets, dishwashers, kitchen sinks, and utility sinks.

Certified Laboratory: An environmental testing laboratory certified by the California Environmental Laboratory Accreditation Program or the National Environmental Laboratory Accreditation Program (NELAP). Laboratories must be certified to perform each test for which they are providing results.

Distributor: A private or public agency which receives Alternate Water Sources from a Producer for the purpose of distribution to Users. In some cases, a Distributor may not take physical possession of the Alternate Water Sources and may act simply as an Administrator.

District-scale Project: A project entailing two or parcels that share Alternate Water Sources for non-potable applications.

Foundation Drainage: Nuisance groundwater that is collected to maintain a building's or a facility's structural integrity and would otherwise be discharged to the sanitary sewer system. Foundation drainage does not include non-potable groundwater extracted for a beneficial use that is subject to City groundwater well regulations.

Graywater: Untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. Graywater includes, but is not limited to, wastewater from bathtubs, showers, bathroom sinks, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.

Irrigation: The application of Alternate Water Sources to vegetation or landscape through sprinklers, drip systems, or other means.

Non-Potable Water: Water that is collected from Alternate Water Sources, treated, and is suitable for direct beneficial use.

Operator: A person or entity designated by the Producer of an onsite non-potable Alternate Water Source System, to discharge the responsibility of the Producer for the following. The Operator can also be the Producer.

a. Acting as the direct contact between the Producer and the User;

b. Proper operation of the system for distributing Alternate Water Sources;

c. Implementing and complying with conditions of the Producer's Permit to Operate; and

d. Monitoring operations at the Alternate Water source use area(s) for prevention of potential hazards.

Permit: Permit to operate an Alternate Water Source System issued and enforced by the City and County to Producers and/or Operators within San Francisco.

Producer: The entity who treats blackwater. The Producer can also be the Operator or the User.

Recycled Water: Water, which as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource (Water Code section 13050(n).).

Treated Blackwater: Wastewater containing bodily or other biological wastes, as from toilets, dishwashers, kitchen sinks, and utility sinks that has been treated to water quality standards based on the San Francisco Department of Public Health's Rules and Regulations Regarding the Operation of Alternate Water Source Systems and the Title 22 Water Recycling Criteria.

Use Area: An area that uses Alternate Water Sources and has defined boundaries. A use area may contain one or more areas of discharge.

User: The entity that discharges Alternate Water Sources from a Producer. The User can also be the Producer, a Distributor, or both.