COMPLETE CHECKLIST IN BLUE PEN AND SUBMIT ELECTRONICALLY OR BY MAIL TO THE ADDRESSES BELOW

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

Urban Watershed Management Program
ATTN: Stormwater Review
525 Golden Gate Ave, 6th Floor
SAN FRANCISCO, CA 94102
stormwaterreview@sfwater.org

Annual Self-Certification Checklist

RAINWATER HARVESTING

(AKA: rainwater collection, rainwater reuse, Cisterns and associated components)

Inspection Date: _____ **Address:** _____ **Block / Lot #**_____ **Installation Date:** _____

Inspected By: Name: _____ **Phone:** _____ ☐ Property Owner ☐ Site Manager ☐ Contractor ☐ Other: _____

INSTRUCTIONS: All inspections, maintenance tasks and repairs are to be completed prior to the beginning of the rainy season (October 15). Mark all status boxes with and S or U, where S = Satisfactory (no maintenance required), and U = Unsatisfactory (maintenance required). See the Rainwater Harvesting Inspection instructions included in this packet for detailed descriptions of conditions requiring maintenance and further action. See note on page 2 for confined space entry safety requirements.

Item #	Inspection Item Description	Status	Indicate Action Required or Action Planned	Indicate Action Taken (Include Date Completed)
1	Unpleasant odors			
2	Lids, access hatches, screens, ladders, etc. damaged / inoperative / inaccessible / missing			
3	Catchment surface condition			
4	Conveyance system condition			
5	Pretreatment device / first flush diverter damaged, offline or missing			
6	Pretreatment device / first flush diverter clear of debris			
7	Storage tank condition			

8	Visible contaminants / pollution in tank or within the catchment area			
Item #	**Inspection Item Description**	**Status**	**Indicate Action Required or Action Planned**	**Indicate Action Taken (Include Date Completed)**
9	Sediment accumulation in tank			
10	Treatment system (filters, UV lamp) operational and properly maintained			
11	Piping, valves, vents, drains or baffles damaged, blocked or leaking			
12	Backflow preventer / air gap operational (if make-up system is included)			
13	Structural damage of vault / tanks, conveyance system or treatment system			
14	Vandalism / catastrophic damage to components or entire system			
15	Unauthorized modifications			
16	Distribution systems / irrigation system condition			
17	Pre rainy season drawdown - verify that system has adequate capacity			
18	Mosquitos or mosquito larvae observed			

*If mosquitos or mosquito larvae are observed, please contact the San Francisco Environmental Health Vector Control Program at (415) 252-3806, or email EnvHealth.DPH@sfdph.org.

NOTE: SFDPH is the permitting agency for the operation of Alternate Water Source Systems in Residential Buildings containing three or more dwelling units, in Non-Residential Buildings and where alternate water systems are shared across property lines or in multiple structures. Therefore, all buildings except one and two unit residential buildings must comply with the most current version of the *SFDPH Director's Rules and Regulations Regarding the Operation of Alternate Water Source Systems*. For more information on Alternate Water Source Systems, visit: http://www.sfdph.org/dph/EH/Water/nonPotable.asp.

SAFETY NOTE: Rainwater harvesting cisterns and tanks are confined spaces. A confined space is a space that has limited openings for entry or exit, is large enough for entering and working, and is not designed for continuous worker occupancy. Refer to and follow all OSHA requirements and regulations before entering a confined space. Visit https://www.osha.gov/SLTC/confinedspaces/ for more information.

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Maintenance Inspection Checklist

By completing and signing the Annual Self Certification (ASC), the Owner/Representative of the property subject to this ASC hereby acknowledges receipt of the ASC and agrees to take any and all necessary steps to comply with the ASC, the San Francisco Stormwater Management Requirements and Design Guidelines, the San Francisco Stormwater Management Ordinance (San Francisco Public Works Code Section 147 et seq.), and all other applicable laws, ordinances, and regulations. Failure to complete and provide a signature by the established deadline will result in the issuance of a non-reporting fee in accordance with the SFPUC Rates Schedule.

Signature: _____ Date: _____

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Annual Self-Certification Checklist Instructions

RAINWATER HARVESTING
(AKA: rainwater collection, rainwater reuse, Cisterns and associated components)

NOTE: These instructions are intended to be a companion piece to the Annual Self-Certification Checklist. The information contained herein is to be used to help the preparer of the Annual Self-Certification Checklist accurately conduct an inspection and properly complete the form.

SAFETY NOTE: Rainwater harvesting cisterns/tanks are confined spaces. A confined space is a space that has limited openings for entry or exit, is large enough for entering and working, and is not designed for continuous worker occupancy. Refer to and follow all OSHA requirements and regulations before entering a confined space. Visit https://www.osha.gov/SLTC/confinedspaces/ for more information.

Abbreviations: SMR: San Francisco Stormwater Management Regulations and Design Guidelines; SCP: Stormwater Control Plan; SMO: San Francisco Stormwater Management Ordinance; BMP: Best Management Practice (Rainwater Harvesting System); GI: Green Infrastructure

Item #	Inspection Item Description	Inspection Instructions and Explanation
1	Unpleasant odors	**Area of Concern:** Any rainwater harvesting system vault or tank that consistently fails to draw down completely within 48 hours can become anaerobic. The buildup of bacteria inside the tank, along with decaying organic material and trash, can cause these odors. **Maintenance Solution:** For more information on ponded water and extended drawdown time, see Item #17 below.
2	Lids, access hatches, ladders, etc. damaged / inoperative / inaccessible / missing	**Area of Concern:** Inspection and maintenance tasks rely on unobstructed access to all rainwater harvesting system components, including the storage tank structure. Access to these components is facilitated by lids, access hatches, ladders, etc. **Maintenance Solution:** Note if there are any accessibility issues with any system components and take steps to correct the issue and restore accessibility.
3	Catchment surface condition	**Area of Concern:** Inspect the catchment area for sediment / debris accumulation and algae growth. Also check for obstructions, such as damaged or dislodged roofing materials that may block or redirect flows from the conveyance system. **Maintenance Solution:** Clear any debris and sediment accumulation to eliminate the chance of clogged or blocked gutters or pretreatment devices. If algae growth is evident, disconnect the downspouts or conveyance structures from the rainwater harvesting system and wash the algae from the roof. Repair any damaged roofing materials.

Item #	Inspection Item Description	Inspection Instructions and Explanation
4	Conveyance system condition	**Area of Concern:** Conveyance systems have multiple inspection points: • Inspect gutters, downspouts, piping, connection, and mounting hardware to ensure that these items are structurally sound and are not leaking. • Ensure that these conveyance structures maintain positive drainage and that no back-pitch conditions exist. **Maintenance Solution:** • Remove accumulated debris and clogs. Also ensure that overhanging vegetation is trimmed back from the roof to maintain a 24” clear zone. • Eliminate rust, mold, and algae from gutters • Check downspouts for animal intrusions, clogs or overgrowth that could obstruct drainage.
5	Pretreatment device / first flush diverter damaged, offline, or missing	**Area of Concern:** To provide floatable and sediment capture from stormwater upstream of the rainwater harvesting system, a pretreatment device must be in place and working properly. To ensure that pretreatment devices are online and working properly during dry weather, run a garden hose or other water source into a nearby cleanout or inlet to test that water enters and exits the pretreatment device before accumulating in the rainwater harvesting system. **Maintenance Solution:** If the pretreatment device is clogged by debris or sediment accumulation, remove that accumulation by hand or by vactor truck.
6	Pretreatment device / first flush diverter clear of debris	**Area of Concern:** Sediment accumulation in pretreatment devices is normal and expected. However, steps must be taken to remove sediment accumulation on an annual basis (or more often, depending on site conditions) to keep the pretreatment device functioning properly. **Maintenance Solution:** Sediment and debris can collect in the sump area (sediment storage area). This accumulated sediment and debris must be removed by hand or by vactor truck before the start of the rainy season (October 15) or as frequently as site conditions dictate, and discarded at an appropriate facility.
7	Storage tank condition	**Area of Concern:** Inspect tank inlets and outlets to ensure that there are no blocked, clogged, disconnected, or leaking components. Ensure that lid seals are tight and in good condition. Check to make sure that the tank structure is not leaking and that the foundation, base, or support legs are stable and seismic bracing is securely fastened to the tank. For aboveground tanks, ensure that the tank remains opaque to eliminate photosynthesis and algae blooms inside the tank. **Maintenance Solution:** Note if tank components are damaged and take steps to correct the issue and restore the component’s function.
8	Visible contaminants / pollution in tank or within the catchment area	**Area of Concern:** Visible surface contaminants and pollution can range from inert substances to hazardous substances that impact environmental or human health. Examples of inert contaminants are masonry, plaster or concrete “washout,” and masonry or roadway saw cutting slurry and residue. Examples of hazardous contaminants are petroleum-based substances, caustic chemicals, pesticides, and herbicides. These pollutants can often be identified by sight or smell when they become deposited in a rainwater harvesting tank. If pollutants are detected, investigations must be conducted to determine the source of the contaminant, mitigate that source, and then take steps to clean up the contamination. **Maintenance Solution:** For inert substances, cleanup can typically be conducted by regular maintenance personnel by simply scraping off or pressure washing / vactoring and discarding the contaminated material at an appropriate facility after drawing down and emptying the tank. Hazardous substance cleanup will require specially trained and licensed contractors and special disposal conforming to local and national laws and regulations.

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Item #	Inspection Item Description	Inspection Instructions and Explanation
9	Sediment accumulation in tank	**Area of Concern:** Sediment can accumulate in rainwater harvesting tanks and clog outflow structures, which could lead to excessive drawdown times. Clogged outflow structures can lead to overflowing and flooding. **Maintenance Solution:** All sediment should be removed from tank before the start of the rainy season (October 15) or as frequently as site conditions dictate, and discarded at an appropriate facility.
10	Treatment system (filters, UV lamp) operational and properly maintained	**Area of Concern:** Treatment system components are essential to public health and safety. Check to ensure that all connections within the treatment system remain watertight and free from leakage and all components are operating properly. **Maintenance Solution:** Empty filter screen chambers and inspect for damage. Wash the screens before reinserting. Inspect sand filters for clogging and conduct a backwash or clear as per manufacturer's recommendations. Remove and replace bag filters and/or cartridge filters as recommended by the manufacturer. Ensure that the UV lamp is operational. Replace lamp element if needed.
11	Piping, valves, vents, drains or baffles damaged, blocked or leaking	**Area of Concern:** Rainwater harvesting tanks can contain many piping components that play key roles in the function of the installation. Inlet and outlet piping that directs stormwater to and from the tank, vent pipes and cleanouts that provide maintenance access and provide air movement and venting, along with baffles to separate floating and settled debris from the rainwater are all key components. If any of these components are damaged, the function of the tank may be compromised. **Maintenance Solution:** Note if piping components are damaged and take steps to correct the issue to restore the component's function.
12	Backflow preventer / air gap operational (if make-up system is included)	**Area of Concern:** The backflow assembly must be tested annually by a licensed professional and the results must be reported to the SFPUC Water Quality Division's Cross Connection Control Program. For more information on backflow prevention device testing, visit: http://sfwater.org/index.aspx?page=359. **Maintenance Solution:** Note any backflow preventer issues and ensure that the assembly is maintained by a qualified professional.
13	Structural damage of vault / tanks, conveyance system or treatment system	**Area of Concern:** Minor damage to structural components such as walls, floors, baffles, and lids should be repaired on a yearly basis. These minor repairs can consist of, but are not limited to, patching chips and cracks to concrete structures. More significant structural damage, such as damage caused by nearby construction work or natural disasters must be repaired as soon as possible. **Maintenance Solution:** Major repairs can consist of removal and replacement of damaged lids, walls, floors, baffles, or outflow structures. It can also include structural bracing and supplemental reinforcement of failing structural components.

Item #	Inspection Item Description	Inspection Instructions and Explanation
14	Vandalism / catastrophic damage to components or entire system	**Area of Concern:** Vandalism can range from minor issues like graffiti to tearing out/stealing major system components. Catastrophic damage can result from natural events and disasters or construction or repair of nearby utilities or structures that impact the system. **Maintenance Solution:** Repair of vandalism or catastrophic damage can consist of simply removing graffiti or complete reconstruction of the system if catastrophic damage occurs.
15	Unauthorized Modifications	**Area of Concern:** Unauthorized modifications consist of any changes to a vault that deviate from the approved construction documents. These modifications can take place during construction or can happen over time after the vault is constructed. The SMR Maintenance Agreement Exhibit B recorded on the deed of the property provides the original approved construction documents that can be referred to and used to determine if modifications have been made. **Maintenance Solution:** All unauthorized modifications must be corrected by returning the system to its original configuration, as described in the approved construction documents contained in the SMR Maintenance Agreement Exhibit B.
16	Distribution Systems / Irrigation system condition	**Area of Concern:** Distribution systems can be routed to both indoor non-potable uses (such as toilet flushing and HVAC/cooling towers) and outdoor non-potable uses (such as irrigation, car washing, and ornamental water features). These systems can include pumps, pressure tanks, and valves which must be inspected and maintained. Malfunctioning irrigation systems can also be identified by dry areas and evidence of browning or wilting plants that show signs of under-watering. Systems that are out of adjustment are identifiable by observation during the irrigation cycle. **Maintenance Solution:** Irrigation system sprinkler head patterns must be adjusted to ensure that the spray pattern does not deposit water on surrounding hard surfaces or nearby structures. Irrigation systems must be maintained year-round by a qualified professional. This maintenance includes the repair of leaks, the adjustment of irrigation head spray patterns to avoid buildings and paved surfaces, and the inspection, testing, and certification of backflow prevention devices. Damaged or leaking distribution systems should be repaired immediately.
17	Pre rainy season drawdown - verify that system has adequate capacity	**Area of Concern:** Extended drawdown times that are beyond 48 hours in rainwater harvesting tanks can lead to several problems such as: unpleasant odors, lack of capacity to accommodate runoff from successive storms, and creation of mosquito habitats. Ponded water and drawdown failure can be caused by the following: • large amounts of sediment or debris accumulation in the vault • blocked, clogged, or broken drains • blocked or clogged outflow structures and/or sand traps • damaged or malfunctioning distribution systems **Maintenance Solution:** See the Inspection instructions and explanation for Item #s 7, 8, 9, 10, 11, 14 and 15 for issues that could cause extended drawdown times.

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18	Mosquitos or mosquito larvae observed	**Area of Concern:** Ponded water resulting from extended drawdown time beyond 48 hours may lead to the development of a mosquito habitat. **Maintenance Solution:** See Item #2 above for remedies to extended drawdown times. For more information on mosquito control visit http://www.sfdph.org/dph/eh/WestNile/default.asp or http://www.sfmosquito.org/. If mosquitos or mosquito larvae are observed, please contact the San Francisco Environmental Health Vector Control Program at (415) 252-3806, or email EnvHealth.DPH@sfdph.org. Also, consult with a licensed professional pest control service for eradication, as appropriate.

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