

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401-7906

MASTER RECLAMATION PERMIT  
ORDER NO. R3-2008-0039

(Waste Discharger Identification No. 3 440308181)

FOR

CITY OF WATSONVILLE, SUPPLIER OF RECYCLED WATER AND  
PÁJARO VALLEY WATER MANAGEMENT AGENCY, DISTRIBUTOR OF  
RECYCLED WATER  
SANTA CRUZ COUNTY

The California Regional Water Quality Control Board, Central Coast Region (hereafter Water Board), finds that:

1. **Basin Plan.** The Regional Water Board has adopted the *Water Quality Control Plan, Central Coast Basin* (the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for receiving waters within the Region.
2. **Beneficial Uses.** The Basin Plan designates the existing and anticipated beneficial uses of groundwater in the vicinity of the recycled water use areas as follows:
  - a. Municipal and Domestic Water Supply (MUN); and
  - b. Agricultural Water Supply (AGR).
3. The Basin Plan's Section II.A.4. (Objectives for Groundwater) provides both narrative and numeric groundwater quality objectives (WQO) for the protection of MUN and AGR beneficial uses. The WQOs identify the Maximum Contaminant Levels (MCLs) for drinking water supply provided in California Code of Regulations (CCR), Title 22, Division 4, Chapter 15 as the numerical WQOs. The recommended secondary MCL for TDS in drinking water is 500 mg/L while 1,000 mg/L shall not be exceeded.

The Basin Plan states that "ground waters shall not contain concentrations of chemical constituents in amounts that adversely affect beneficial uses" and provides that "interpretation of adverse effect shall be as derived from the California Agricultural Extension Service guidelines provided in Table 3-3" on page III-14 of the Basin Plan. For example, Table 3-3 provides that irrigation water containing chloride in excess of 142 mg/L may cause increasing problems to crops and/or soils.

4. **Excessive pumping and seawater intrusion.** Decades of pumping to irrigate farmlands and to supply urban areas in the Pájaro Valley has overdrafted groundwater supplies. The pumping has lowered groundwater levels year-round to below sea level, which has allowed seawater to flow inland and supplant fresh groundwater near the shoreline. Seawater intruding into aquifers near Monterey Bay has contaminated a number of irrigation supply wells.
5. **Groundwater quality degradation.** The Distributor has completed five monitoring well clusters in the recycled water use areas. Each cluster contains three wells to monitor the shallow, middle and deeper water bearing zones for potential pollutants and water table elevations. Monitoring results demonstrate substantial increases in concentrations of seawater constituents, including chloride and Total Dissolved Solids (TDS). Concentrations of chloride, TDS, and other pollutants in groundwater often exceed water quality objectives, sometimes greatly.
6. **Beneficial use impairment.** Seawater intrusion has impaired the beneficial uses of groundwaters in water-bearing zones underlying farmlands and urban areas in the Pájaro Valley near Monterey Bay. Municipal and domestic supply (MUN) and agricultural supply (AGR) are the impaired beneficial uses of the groundwaters. The impairment has limited the supply of fresh groundwater needed to sustain the long-term agricultural and urban economy of the Pájaro Valley.
7. **Remedy for impairment.** The City of Watsonville (the Supplier) and the Pájaro Valley Water Management Agency (the Distributor) are jointly implementing the Watsonville Area Water Recycling Project (Recycling Project). The Supplier will operate a Recycled Water Facility (Recycling Plant) to produce disinfected tertiary recycled water for the Distributor to send through the Coastal Distribution System (Distribution System) to irrigate farmland near the coast, instead of pumping from the local aquifers. Groundwater modeling has indicated that the coastal area is the most effective area to supply with recycled water to allow reduction or cessation of groundwater pumping. It is hoped that nearshore groundwater levels will consequently rise and then begin to prevent seawater intrusion into the nearshore aquifers.
8. California Water Code (CWC) Section 13576(e) states that the use of recycled water has proven to be safe from a public health standpoint.
9. The Distributor developed the Recycling Project in the 2002 Revised Basin Management Plan, which evaluated alternative approaches to (1) gradually reduce and finally eliminate seawater intrusion and (2) balance water extractions and recharge in the groundwater basin. The chosen project combines water conservation and water supply development, which would ultimately produce 4,000 acre feet per year (AFY) of recycled water, 1,100 AFY from the local Harkins Slough project, up to 1,400 AFY of local groundwater and 1,600 AFY of the City of Watsonville's potable water.

10. An assessment of urban, agricultural, environmental enhancement, and groundwater recharge water recycling opportunities described in the August 2004 *Recycling Project Feasibility Study* demonstrated that agricultural irrigation in the coastal portion of the Pájaro Valley is the best opportunity for the use of recycled water. The Feasibility Study investigated the water quality goals provided by the agricultural users and identified water quality objectives for agricultural irrigation.
11. **Secondary-treated wastewater.** The Supplier owns and operates a Wastewater Treatment Facility (WWTF) at 401 Panabaker Lane in Watsonville, California, next to the Pájaro River, as shown on Attachment A. The Supplier treats municipal wastewater collected from approximately 61,000 people living in a 21 square mile service area, which includes the City, the Freedom County Sanitation District, the Pájaro County Sanitation District, and the Salsipuedes Sanitary District.
12. The WWTF's treatment processes include screening, pre-aeration/grit removal, primary sedimentation, biological tower trickling filters, solids contact stabilization (activated sludge), and secondary clarification.
13. The WWTF's design secondary wastewater treatment capacity is 12.0 million gallons per day (mgd) average dry weather flow and 38.2 mgd peak wet weather flow. The Supplier treats municipal wastewater to secondary standards and discharges the effluent into Monterey Bay through a 7,350 foot outfall/diffuser system. In 2007, flow through the WWTF averaged 6.20 mgd.
14. **Disinfected tertiary treated recycled water.** To comply with treatment standards in CCR, Title 22, Division 4, Chapter 3, Article 3, §60304(a), the Supplier proposes to treat secondary effluent from the WWTF to tertiary standards in the new Recycling Plant. The Recycling Plant's treatment processes include coagulation-flocculation-sedimentation, cloth media filtration, and ultraviolet disinfection.
15. The Recycling Plant's design capacity is 7.7 mgd, and will produce up to 7.0 mgd of recycled water to provide 4,000 AFY to the Distributor. Future plant improvements will increase production to 11.6 mgd.
16. **Distribution for irrigation.** The Distributor will provide recycled water to agricultural users to irrigate up to 238 properties on 9,500 acres through the Distribution System, which comprises 31 miles of pipeline. The recycled water use areas primarily overlie alluvial soils consisting of sands, gravels, and clays. The Aromas Sands, the main water-bearing zone, underlies the alluvial deposits. The maximum flow through the Distribution System will be 50,000 gallons per minute (gpm). Attachment A depicts the use areas and the Distribution System.
17. **Recycled water limitations.** This Permit establishes recycled water limitations that require the Distributor to blend freshwater with the recycled water to reduce pollutants to levels that ensure the irrigation water complies with the Basin Plan's water quality objectives, including TDS, nitrate, and chloride.

18. **Engineering report.** In September 2007, in accordance with CCR Title 22, Division 4, Chapter 3, Article 7, § 60323, the Supplier and Distributor submitted the final Title 22 Engineering Report for the Recycling Project to the Water Board's Executive Officer. A properly qualified engineer registered in California and experienced in wastewater treatment systems prepared the Engineering Report in accordance with the California's Department of Public Health's (DPH) March 2001 *Guidelines for the Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water*. The Engineering Report clearly describes the means to comply with the Title 22 Water Recycling Criteria (CCR Title 22, Division 4, Chapter 3) and includes a contingency plan, which will ensure that the Supplier and Distributor will deliver no untreated or inadequately-treated wastewater to the use areas. Attachment B provides the Recycling Plant process flow chart.
19. With comments, DPH approved the Engineering Report on February 25, 2008. The Supplier and Distributor will respond to the comments before distributing recycled water to the use areas.
20. **Report of Waste Discharge.** The Supplier and Distributor submitted a report of waste discharge for the Recycling Plant on April 1, 2008.
21. **Master reclamation permit.** In accordance with CWC §13523.1 and other CWC and CCR Title 22 sections, this Master Reclamation Permit specifies water recycling requirements, waste discharge requirements, and water reclamation requirements to ensure the Supplier produces and the Distributor uses the recycled water in a manner protective of the public's health and the beneficial uses of groundwaters and surface waters. The Board has consulted with DPH regarding the regulation of this discharge.
22. **Water User's Handbook.** To ensure that recycled water users comply with this Master Reclamation Permit (Permit), the Distributor developed and adopted Rules and Regulations and the Water User's Handbook. The Distributor incorporated the Rules and Regulations into the Water User's Handbook.
23. **Surface waters beneficial uses.** The Pájaro Estuary and the Watsonville Slough and its tributaries are the surface waters nearest the use areas. The Basin Plan designates existing and anticipated beneficial uses as follows:
  - a. Water Contact Recreation;
  - b. Non-Contact Water Recreation;
  - c. Wildlife Habitat;
  - d. Cold Freshwater Habitat;
  - e. Warm Freshwater Habitat;
  - f. Migration of Aquatic Organisms; and
  - g. Commercial and Sport Fishing.



24. The Basin Plan also designates the shellfish harvesting beneficial use for the Pájaro River Estuary.
25. Compliance with the Permit will protect the beneficial uses of the Pájaro estuary and Watsonville Slough and its tributaries.
26. **Antidegradation policy.** State Water Board Resolution No. 68-16 *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (Resolution No. 68-16) requires Regional Water Boards, in regulating the discharge of waste, to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in a Regional Water Board's policies (e.g., quality that exceeds applicable water quality standards). Resolution No. 68-16 also states, in part:

*Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in best practicable treatment and control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.*

The discharges regulated by this Order are subject to waste discharge requirements that will result in best practicable treatment or control, the prevention of pollution and nuisance, and maintenance of the highest water quality consistent with maximum benefit to the people of the State.

27. **TMDL.** Clean Water Act (CWA) §303(d) requires states to identify and list water bodies that do not meet water quality standards for specific pollutants and to establish Total Maximum Daily Loads (TMDL) for listed water bodies.
28. The Pájaro River's 303(d) listed pollutants include sediment, nitrate, and fecal coliform. The sediment TMDL received final approval on November 27, 2006, and the nitrate TMDL on November 13, 2006. Water Board staff are developing the fecal coliform TMDL for the Pájaro River. The Watsonville Slough TMDL for pathogens received final approval on November 20, 2006, and the pesticide TMDL is in development.
29. In accordance with the February 24, 2004, State Water Resources Control Board memorandum discussing the incidental runoff of recycled water, potential pollutants in the recycled water will not likely contribute significantly to the pollutant loads in the surface waters mentioned above because only incidental runoff of irrigation water will occur.

30. **Monitoring and Reporting Program.** Attached Monitoring and Reporting Program (MRP) No. R3-2008-0039 is part of the Permit. The MRP requires routine monitoring to verify compliance with the Permit and to protect the beneficial uses of nearby surface waters and groundwaters underlying the use areas.
31. **CEQA.** These waste discharge requirements are an action to maintain, restore, enhance or protect the natural environment and are exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) in accordance with CCR Title 14, Chapter 3, §15308.
32. **Stormwater.** The Supplier will route stormwater at the Recycling Plant to the WWTF's headworks for treatment. Therefore, the Supplier need not enroll under the State Water Resources Control Board's General Industrial Activities Storm Water Permit.
33. **Conditional Waiver for Irrigated Lands.** The *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands* requires all commercial irrigated farming operations in the Central Coast Region to prepare Farm Water Quality Management Plans. Accordingly, the Distributor manages a Nitrate Management Program (NMP), which helps farmers use the recycled water's nitrogen to optimize its application to crop needs. The NMP complies with the requirements of the agricultural waiver program.
34. In accordance with Water Code section 13263(g), no discharge into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to discharge. All discharges of waste into waters of the state are privileges, not rights.
35. On **April 11, 2008**, the Board notified the Supplier, Distributor, and other interested parties of its intent to prescribe water reclamation requirements for the Facility and associated reuse areas. In addition, the Water Board provided them with an opportunity for a public hearing and to submit their written views and recommendations.
36. The Board, at a public meeting held on December 5, 2008, heard and considered all comments pertaining to the discharge and found this Order consistent with the above findings.
37. Any person affected by this action of the Board may petition the State Water Board to review the action in accordance with Section 13320 of the California Water Code and Title 23 of the California Code of Regulations, Section 2050. The State Water Board must receive the petition within 30 days of the date of adoption of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

**IT IS HEREBY ORDERED**, pursuant to authority in Sections 13263 and 13523.1 of the California Water Code that Supplier, its agents, successors, and assigns, may produce reclaimed wastewater from the Recycled Water Facility for distribution by the Distributor, and that Distributor, its agents, successors, and assigns, may distribute reclaimed wastewater for irrigation providing they comply with the following:

The following footnotes provide the sources of requirements. Unless otherwise noted, BPJ is the source of requirements without footnotes. Footnotes are as follows:

40CFR	Title 40 Code of Federal Regulations
BP	Water Quality Control Plan, Central Coast Region
DPH	California DPH
T22	CCR Title 22, Division 4, Chapter 3: Water Recycling Criteria
CWC	California Water Code
SWRCB	State Water Resources Control Board memorandum
ER	Engineering Report
ROWD	The Supplier and Distributor's Report of Waste Discharge
RWU	Guidelines for Use of Reclaimed Wastewater for Irrigation and Impoundment, California DPH
BPJ	Best Professional Judgment of Water Board Staff

#### **A. PROHIBITIONS**

1. The treatment, storage, distribution, or reuse of recycled water shall not create a nuisance as defined in section 13050(m) of the California Water Code. <sup>CWC</sup>
2. No recycled water used for irrigation shall be applied during periods of rainfall or when soils are saturated such that runoff occurs. <sup>CWC</sup>
3. Recycled water shall be confined to use areas of authorized storage and use with no discharge to surface waters or drainages. <sup>CWC</sup>
4. No recycled water shall be discharged from the treatment facilities other than for designated irrigation or other approved reuse applications in accordance with this Permit. <sup>CWC</sup>
5. The incidental discharge of recycled water to waters of the State shall not unreasonably affect the beneficial uses of the water, and not result in an exceedance of an applicable water quality objective in the receiving water. <sup>SWRCB</sup>
6. There shall be no cross-connections between the potable water supply and pipes containing recycled water. Supplementing recycled water with water used for domestic supply shall not be allowed except through an air-gap separation. In

accordance with CCR Title 17, §7604, a reduced pressure principle backflow device shall be provided at premises where recycled water is used and there is no interconnection with the potable water system.<sup>T22</sup>

## B. SPECIFICATIONS

1. The Supplier and Distributor shall produce and distribute recycled water according to the following guidelines, except as noted above, in case of an inconsistency between the listed guidelines and the Permit, conditions stated in the Permit shall take precedence:
  - a. *Guidelines for Use of Reclaimed Wastewater for Irrigation and Impoundment*, California DPH;
  - b. *Guidelines for Worker Protection at Reclamation Use Areas*,
  - c. *Guidelines for the Distribution of Non-potable Water*, American Water Works Association, California-Nevada Section (AWWA);
  - d. *Guidelines for On-site Retrofit of Facilities Using Disinfected Tertiary Recycled Water* (AWWA);
  - e. *Manual of Cross-Connection Control, Procedures and Practices*, DPH;
  - f. *Guidelines for the Use of Reclaimed Water*, DPH;
  - g. *Drinking Water Supplies - Backflow Prevention*, CCR Title 17, and
  - h. The Distributor's approved reclaimed water use rules and regulations.<sup>BPJ</sup>
2. Personnel involved in producing, transporting, or using recycled water shall be informed of possible health hazards that may result from contact and use of recycled water.<sup>T22</sup>
3. Personnel involved in inspecting, maintaining or operating any distribution system equipment for recycled water shall be informed of the possible health hazards that may result from contact and use of recycled water.<sup>T22</sup>
4. Delivery and application of recycled water shall cease during any period the Facility fails to produce "disinfected tertiary recycled water" meeting CCR Title 22 criteria. The delivery of recycled water shall not be resumed until all conditions which caused the limits to be violated have been corrected and effluent in the storage ponds is suitable for disinfected tertiary recycled water applications.<sup>T22</sup>
5. Spray irrigation of recycled water shall be accomplished at a time and in a manner to minimize ponding and the possibility of public contact with sprayed materials.<sup>RWU</sup>
6. All recycled water use areas with public access shall be posted (in English and Spanish) to warn the public not to drink the recycled water.<sup>ER</sup>
7. Recycled water systems shall be properly labeled and regularly inspected to ensure proper operation, absence of leaks, and absence of illegal connections.<sup>T22</sup>



8. The Supplier and Distributor shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the Supplier, Distributor or Users to achieve compliance with this Order and all applicable water reclamation requirements.<sup>RWU</sup>
9. The Supplier and Distributor shall implement, and ensure that Users implement, annual employee training to ensure proper operation of reclamation facilities, worker protection, and compliance with this Order.<sup>RWU</sup>
10. The Supplier and Distributor shall ensure that all above-ground equipment, including pumps, piping, storage reservoir, and valves, etc. under their respective control which may at any time contain reclaimed water shall be adequately and clearly identified with warning signs. The Supplier and Distributor shall make all necessary provisions to inform the public that the water being stored or distributed is reclaimed municipal wastewater and is unfit for human consumption. The Supplier and Distributor shall ensure that each User complies with these requirements for all above-ground equipment under a User's control.<sup>RWU</sup>

### C. SUPPLIER REQUIREMENTS

#### I. Flow and WWTF Effluent Limitations

1. Monthly average influent wastewater flow volumes shall not exceed 7.2 mgd.<sup>ER</sup>
2. The Recycling Plant effluent shall not exceed the following effluent limitations:

**Recycling Plant Effluent Limitations  
(mg/L)**

Parameter	Daily Max	30-Day Mean	7-Day Mean
CBOD <sub>5</sub>	--	10	25
Total Suspended Solids	--	10	25

3. The effluent pH shall not be less than 6.5 or greater than 8.4.<sup>BP</sup>

#### II. Recycled Water Requirements<sup>T22</sup>

4. The Supplier shall ensure that recycled water shall be adequately oxidized, filtered, and disinfected.
5. The turbidity of the disinfected tertiary recycled water shall not exceed any of the following:
  - a. An average of 2 NTU within a 24-hour period;

- b. 5 NTU more than 5 percent of the time within a 24-hour period; and
  - c. 10 NTU at any time.
6. The recycled water from the Recycling Plant shall not contain total coliform concentrations exceeding the following:
- a. the seven-day median concentration must not exceed an MPN of 2.2/100 milliliters (mL);
  - b. concentrations must not exceed 23/100 mL in more than one sample taken over a 30-day range; and
  - c. concentrations must be less than 240/100 mL at all times.
7. There shall be no bypass of untreated or partially treated wastewater from the reclamation plant or any intermediate unit processes to the point of use.

### III. Reclamation Facility Operational Requirements

The Supplier shall:

8. Install alarm devices required for various unit processes as specified in other sections of these regulations to provide warning of:
- a. Loss of power from the normal power supply.
  - b. Failure of a biological treatment process.
  - c. Failure of a disinfection process.
  - d. Failure of a coagulation process.
  - e. Failure of a filtration process.
  - f. Any other specific process failure for which warning is required by the regulatory agency.<sup>T22</sup>

All required alarm devices shall be independent of the normal power supply of the Facility.

The person to be warned shall be the plant operator, superintendent, or any other responsible person designated by the management of the reclamation plant and capable of taking prompt corrective action.<sup>T22</sup>

Individual alarm devices may be connected to a master alarm to sound at a location where it can be conveniently observed by the attendant. In case the reclamation plant is not attended full time, the alarm(s) shall be connected to sound at a police station, fire station or other full-time service unit with which arrangements have been made to alert the person in charge at times that the reclamation plant is unattended.  
<sup>T22</sup>

9. Provide one of the following reliability features for the power supply:
- a. Alarm and standby power source,
  - b. Alarm and automatically actuated short-term retention or disposal provisions, or

- c. Automatically actuated long-term storage or disposal.<sup>T22</sup>.
10. Ensure the design of process piping, equipment arrangement, and unit structures in the reclamation plant must allow for efficiency and convenience in operation and maintenance and provide flexibility of operation to permit the highest possible degree of treatment to be obtained under varying circumstances.<sup>T22</sup>.
11. Provide the Recycling Plant with a sufficient number of qualified personnel to operate the facility to always achieve the required treatment level.<sup>T22</sup>.
12. Ensure the qualified personnel shall be those meeting requirements established pursuant to Chapter 9 (commencing with Section 13625) of the Water Code.<sup>T22</sup>.
13. Provide a preventive maintenance program at the Recycling Plant to ensure that all equipment is kept in a reliable operating condition.<sup>T22</sup>.
14. Maintain operating records at the Recycling Plant or a central depository. These shall include all analyses specified in the reclamation criteria; records of operational problems, plant and equipment breakdowns; and diversions to emergency storage or disposal; and all corrective or preventive action taken.<sup>T22</sup>.
15. Record, and maintain as a separate record file, process or equipment failures triggering an alarm. The recorded information shall include the time and cause of failure and corrective action taken.<sup>T22</sup>.
16. A monthly summary of operating records as specified in these requirements shall be filed with the regulatory agency.
17. Immediately report any discharge of untreated or partially treated wastewater to the use area, and the cessation of same, by telephone to the Executive Officer, the State Department of Health, and the local health officer at the numbers provided in the Monitoring and Reporting Requirements.<sup>T22</sup>
18. Implement a Contingency Plan, including but not necessarily limited to, the provisions in the Engineering Report's section 2.9, to prevent inadequately-treated recycled water from distribution to the Distribution System.<sup>ER</sup>

#### **D. DISTRIBUTOR/USER REQUIREMENTS**

##### **I. Recycled water limitations<sup>BP</sup>**

The Distributor shall ensure compliance with the following:

1. Recycled water shall be applied in an amount that will not cause nitrogen within the root zone to exceed the agronomic demand for nitrogen and result in the leaching of nitrate to groundwater. Hydraulic and nutrient loading rates for the application of

disinfected tertiary recycled water shall be based on crop consumption and tolerance and shall not exceed what is reasonable for crop production. The Distributor shall ensure the Nitrate Management Plan includes procedures to optimize and account for irrigation water and fertilizer use to achieve these goals.

## II. Coastal Distribution System Use Area Requirements<sup>T22</sup>

The Distributor shall ensure compliance with the following requirements:

1. No irrigation with recycled water shall occur within 50 feet of a potable water supply well unless all of the following conditions have been met:
  - a. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface,
  - b. The well contains an annular seal that extends from the surface into the aquitard,
  - c. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities,
  - d. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well, and
  - e. The owner of the well approves of the elimination of the buffer zone requirement.
2. No impoundment of disinfected tertiary recycled water shall occur within 100 feet of any domestic water supply well.
3. Use of recycled water shall comply with the following:
  - a. Irrigation runoff shall be confined to the recycled water use area;
  - b. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities;
  - c. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.
4. Except as allowed in CCR Title 17, §7604, no physical connection shall be made or allowed to exist between a recycled water system and a separate system conveying potable water.
5. Quick couplers different from those used on the potable water system, instead of hose bibbs, shall be installed on recycled water system piping in publicly accessible areas.
6. Backflow prevention devices shall be in prime working order, as shown by initial and annual testing. The Distributor shall maintain records of testing and maintenance.

7. The public water supply shall not be used as a backup or supplemental source of water for a dual-plumbed recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of sections 7602(a) and 7603(a) of title 17, California Code of Regulations, and the approval of the public water system has been obtained.

### III. Groundwater Limitations

8. The application of disinfected tertiary recycled water shall not cause groundwater to contain taste- or odor-producing substances in concentrations that adversely affect beneficial uses.<sup>BP</sup>
9. To protect the MUN beneficial use of groundwater underlying the use areas, the application of disinfected tertiary treated water shall not cause groundwater to:<sup>BP, T22</sup>
  - a. Exceed the Primary Maximum Contaminant Levels (MCLs) for organic chemicals set forth in CCR Title 22, Division 4, Chapter 15, Article 5.5, §64444.
  - b. Exceed the Primary MCLs for inorganic chemicals set forth in CCR Title 22, Division 4, Chapter 15, Article 4, §64431.
  - c. Exceed the levels for radionuclides set forth in CCR Title 22, Division 4, Chapter 15, Article 5, §64443.
10. The application of disinfected tertiary recycled water shall not cause radionuclides to be present in groundwater in concentrations that are deleterious to human, plant, animal, or aquatic life, or result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.<sup>BP</sup>

### IV. Groundwater Monitoring Well Work Plan<sup>BPJ</sup>

11. **By June 30, 2009**, the Distributor shall submit a work plan for the Executive Officer's review and approval. The workplan's goal shall be to ensure the groundwater monitoring well network is adequate to evaluate the effect on groundwater quality, if any, of the application of recycled water in the reuse areas.

The Distributor shall ensure the workplan is prepared by a registered professional engineer or geologist with experience in monitoring well network design, monitoring well construction, and groundwater hydrology. The workplan shall include a record of the workplan preparer's experience.

The workplan shall address, but not necessarily be limited to, the following:

- a. The condition of existing monitoring wells in the reuse areas with regard to the ability to obtain groundwater samples representative of the waters in the water-bearing formations. To that end, the workplan should provide for consideration of the level of siltation in the filter pack around the screened intervals, condition



- of the casing and screen, the pump and all other well features, and other relevant factors.
- b. The need for additional monitoring wells to adequately monitor the effects of the irrigation water on the quality of groundwaters underlying the reuse areas.
  - c. The workplan shall provide adequate numbers of monitoring wells to allow implementation of the Nitrate Management Plan
  - d. The workplan shall provide for the complete installation of new monitoring wells and/or rehabilitation of existing monitoring wells in a timely manner, but **no later than June 30, 2010**.

#### V. Nitrate Management Plan<sup>BPJ</sup>

12. The Distributor shall prepare and implement a nitrate management plan (Nitrate Plan) for the application of recycled water. The Nitrate Plan's goal shall be to ensure the recycled water applied to farmlands does not further degrade the quality of underlying groundwaters. The Distributor shall submit the Nitrate Plan for the approval of the Executive Officer **by March 31, 2009**.
13. The Distributor shall ensure the Nitrate Plan is prepared by professionals with expertise in nitrate management, nitrate uptake by crops in recycled water use areas, and other relevant factors. The Distributor shall attach a record of the preparer's experience to the Nitrate Plan.
14. The Nitrate Plan shall account for nitrate discharges to application areas in both recycled water and fertilizers, and shall limit the amount of applied nitrogen to ensure it does not exceed that required by the crops for their optimum growth.
15. **Water User's Handbook.** On September 2, 2008, the Distributor submitted, for the approval of the Executive Officer, the final Water User's Handbook. The Water User's Handbook shall include the Rules and Regulations adopted by the Distributor.<sup>CWC</sup>
16. **Site Supervisor.** The Distributor and Supplier shall require each User to designate a Reclaimed Water Site Supervisor responsible for compliance with permit conditions and answerable to the Distributor and immediately notify the Distributor of changes in the Reclaimed Water Site Supervisor and provide documentation that the new supervisor has received training.<sup>BPJ</sup>
17. **Use permits.** Recycled Water Use permits, issued by the Distributor in accordance with the approved rules and regulations, are the basis of permitted recycled water use by specific Users. Recycled Water Use permits shall specify self-monitoring and reporting requirements for each User, and require compliance with all applicable requirements of this Permit. The Distributor must provide a copy of the Recycled Water Use permit and this Permit to the Users. Recycled Water Use permits shall require Users to have these available at all times for inspection by Water Board staff, the Distributor, or State/County Health Officers.<sup>BPJ</sup>

18. If someone other than the Distributor or User is responsible for applying the recycled water, then the Distributor shall inform the secondary distributor of these requirements in a written permit or other suitable manner. In addition, the secondary distributor shall fill out a Recycled Water Release Form when receiving reclaimed water from the Distributor. The secondary distributors must carry the Recycled Water Release Form at all times.<sup>BPJ</sup>

## **E. PROVISIONS**

1. The Supplier and Distributor shall comply with all applicable requirements of Monitoring and Reporting Program No. R3-2008-0039. The Distributor shall collect required data and reports from the Supplier and Users. The Distributor shall require each User to train a Recycled Water Supervisor and to submit on-site observation reports and use data to the Distributor, who will compile and file self-monitoring reports with the Water Board. The Distributor, at its discretion, may appoint and train the Users' Recycled Water Supervisors, and collect on-site observation reports and use data.
2. The Supplier shall document that reclaimed water meets the quality standards of this Permit. The Distributor shall be responsible for regulating the design, construction, maintenance and operation of recycled water transport facilities, application areas and associated appurtenances owned and operated by the Users and for ensuring that Users meet all water application, operations and maintenance requirements of this Permit. The Distributor shall conduct periodic inspections of User facilities and conduct monitoring and reporting to document compliance with the conditions of the Users' permits and this Permit.
3. The Supplier, Distributor and Users shall allow the Board or its authorized representative in accordance with CWC§ 13267(c):
  - a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the Permit,
  - b. Access to and copy of any records that must be kept under conditions of this Permit,
  - c. Inspection of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit,
  - d. To photograph, sample, and monitor for the purpose of assuring compliance with this Permit.
5. The Supplier and Distributor shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated January 1984. The Board will revise this Permit periodically and may revise these requirements when necessary.
6. The State Department of Public Health is currently revising the Title 22 regulations for water reuse. When revised regulations are finalized, the Executive Officer may

authorize changes to the restricted and unrestricted recycled water uses consistent with those regulations. <sup>DHS</sup>

7. Pursuant to CCR, Title 23, Division 3, Chapter 9, the Discharger shall submit a report to the Executive Officer not later than July 11, 2013 addressing:
  - a. Whether there will be changes in the continuity, character, location, or volume of the discharge; and,
  - b. Whether, in their opinion, there is any portion of the Permit that is incorrect, obsolete, or otherwise in need of revision.

I, **ROGER W. BRIGGS, 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, Central Coast Region, on December 5, 2008.

Ordered By:

\_\_\_\_\_  
Executive Officer

S:\WDR\WDR Facilities\Santa Cruz  
Co\Pajaro Valley Water Management  
Agency\WRP R3-2008-0039\Final  
Nov 12 WR Permit R3-2008-0039.doc

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401-7906**

**SUPPLIER AND DISTRIBUTOR  
MONITORING AND REPORTING PROGRAM NO. R3-2008-0039**

**FOR**

**CITY OF WATSONVILLE WATER RECYCLING FACILITY (SUPPLIER) AND  
PAJARO VALLEY WATER MANAGEMENT AGENCY COASTAL DISTRIBUTION  
SYSTEM (DISTRIBUTOR),  
SANTA CRUZ COUNTY**

This Monitoring and Reporting Program is issued pursuant to Water Code section 13267. The Dischargers named in this Order are subject to Section 13267 because they operate the facilities that treat and discharge the recycled water. The Monitoring and Reporting Program is necessary to assure compliance with the waste discharge requirements.

**SUPPLIER REQUIREMENTS**

**A. RECYCLED WATER FACILITY INFLUENT MONITORING**

1. The Supplier shall take representative samples of the wastewater treatment facility effluent supplied to the recycled water facility and shall analyze the samples for the constituents/parameters at the frequencies in Table 1:

<b>TABLE 1</b>			
<b>Constituent/Parameter<sup>a</sup></b>	<b>Units</b>	<b>Sample Type<sup>b</sup></b>	<b>Sampling Frequency</b>
Daily Flow Volume	gal/day	Metered	Continuous
Min Daily Flow	gal/day	Calculated	Monthly
Max Daily Flow	gal/day	Calculated	Monthly
Average Daily Flow	gal/day	Calculated	Monthly
pH	Units	Grab	Weekly
BOD <sub>5</sub>	mg/L	24-hour composite	Monthly
Total Suspended Solids	mg/L	24-hour composite	Monthly
Total Nitrogen (as N)	mg/L	24-hour composite	Monthly
Nitrate nitrogen (as N)	mg/L	24-hour composite	Monthly
Total Dissolved Solids	mg/L	24-hour composite	Semiannually <sup>c</sup>
Sodium	mg/L	24-hour composite	Semiannually <sup>c</sup>
Chloride	mg/L	24-hour composite	Semiannually <sup>c</sup>
Sulfate	mg/L	24-hour composite	Semiannually <sup>c</sup>
Boron	mg/L	24-hour composite	Semiannually <sup>c</sup>

- a) After one year, the Supplier may request to discontinue sampling for specific parameters/constituents.
- b) Composite samples shall be flow weighted. 24-hour composite samples shall be collected on a Monday through Sunday rotating schedule and subsequent

monthly sampling events shall be separated by at least 16 days and no greater than 30 days.

- c) Semiannual monitoring shall be conducted in January and July.

**B. RECYCLED WATER MONITORING**

1. The Supplier shall take representative samples of disinfected tertiary-treated recycled water, when it is supplied to the Distributor, and shall analyze the samples for the following constituents/parameters and at the following frequencies:

<b>Table 2</b>			
<b>Constituent/Parameter<sup>a</sup></b>	<b>Units</b>	<b>Sample Type</b>	<b>Sampling Frequency</b>
Daily Flow	mgd	Metered	Continuous
Turbidity	NTU	Metered	Continuous
Total Coliform	MPN/100 mL	Grab	Daily
CBOD <sub>5</sub>	mg/L	24-hr composite	Weekly <sup>b</sup>
Total Suspended Solids	mg/L	24-hr composite	Weekly <sup>b</sup>
Total Nitrogen (as N)	mg/L	Grab	Monthly <sup>b</sup>
Nitrate (as N)	mg/L	Grab	Monthly <sup>b</sup>
Ammonia (as N)	mg/L	Grab	Monthly <sup>b</sup>
pH	Units	Grab	Weekly <sup>b</sup>
Total Dissolved Solids	mg/L	Grab	Monthly <sup>b</sup>
Sodium	mg/L	Grab	Monthly <sup>b</sup>
Chloride	mg/L	Grab	Monthly <sup>b</sup>
Sulfate	mg/L	Grab	Monthly <sup>b</sup>
Boron	mg/L	Grab	Monthly <sup>b</sup>

- a) Sampling shall occur immediately after the final treatment process.
- b) Weekly and monthly samples shall be collected on a Monday through Sunday rotating schedule. Subsequent monthly sampling events shall be separated by at least 16 days and no greater than 30 days.

**C. SUPPLIER REPORTING**

1. If the Supplier implements the Contingency Plan (Supplier Requirement No. C , III, 18), the Supplier shall immediately notify the following agencies:

Central Coast Water Board (805) 549-3147  
 Pájaro Valley Water Management Agency (831) 722-9292  
 Santa Cruz County Environmental Health Services (831) 454-2022

The Supplier shall submit a written report to the Executive Officer, Santa Cruz County Environmental Health Services, and the Distributor within five (5) days of the time the Supplier learns of the violation.



The written report shall contain a description of the non-compliance and its cause; the period of non-compliance, including dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance.

2. The Supplier shall submit **Quarterly** monitoring reports to the Central Coast Water Board by the first of the second month following the end of each quarter as follows:

<b>Monitoring Period</b>	<b>Report Submittal Date</b>
January 1 – March 31	May 1 <sup>st</sup>
April 1 – June 30	August 1 <sup>st</sup>
July 1 – September 30	November 1 <sup>st</sup>
October 1 – December 31	February 1 <sup>st</sup>

3. The monitoring reports shall contain all data collected or calculated over the previous quarterly monitoring period. All monitoring data shall be tabulated in a logical and coherent format and be accompanied by copies of laboratory analytical data sheets as applicable. The data shall be summarized in a manner that clearly illustrates compliance with the Permit and Title 22 requirements for disinfected tertiary recycled water.
4. **By January 30<sup>th</sup> of each year**, the Supplier shall submit to the Central Coast Water Board an annual monitoring report pursuant to Standard Provisions and Reporting Requirements, General Reporting Requirement C.16.

The annual reports shall also include the following:

- a. A complete electronic copy of the previous years data in a Microsoft Excel spreadsheet format;
  - b. A copy of the most recent Contingency Plan, or a statement certifying the plan has been reviewed but not updated during the previous year with reference to the date of the current plan.
5. If the Supplier monitors any pollutant more frequently than is required by this Monitoring and Reporting Program, the results of such monitoring shall be included in the monitoring reports.

## **DISTRIBUTOR REQUIREMENTS**

### **D. RECYCLED WATER USE AREA MONITORING**

1. **Weekly**, the Distributor shall record the quantity of reclaimed water distributed to each reuse site.

2. **Weekly**, during periods of recycled water application the Distributor or Users, as applicable, shall inspect the irrigation use areas to verify and document compliance with Order No R3-2008-0039. The visual inspections shall be noted in a bound inspection logbook(s) and at a minimum shall document proper sprinkler operation, runoff, erosion, saturated surface conditions, and odors. The logbook(s) shall be provided to the Water Board upon request. A summary of observations made during water recycling area inspections and a brief discussion of any corrective actions taken or planned shall be included with each annual monitoring report.
3. **Annually**, the Distributor and Users shall ensure and document that backflow devices are present, tested by a certified person, and repaired or replaced if found defective.
4. **At least quarterly**, the Distributor shall inspect and document the operation of the reuse site irrigation systems to verify that the Users are operating the reuse sites in compliance with Order No. R3-2008-0039.
6. **Annually**, if necessary, the Distributor shall perform and document a cross-connection test by an appropriately certified person on an annual basis at each reuse site where both recycled water and potable water piping systems are utilized for irrigation or are otherwise in proximity to each other. Cross-connection tests will not be required for portions of the distribution system or reuse site areas for which no distribution system or potable water system maintenance, modifications, or additions have occurred since the last cross-connection test. The Distributor shall provide a certified statement as such for portions of the distribution system or reuse sites not tested for potential cross-connection.
5. **Quarterly**, each individual User Recycled Water Site Supervisor shall provide updates to the Distributor regarding irrigation frequency and flow rates, proposed system modifications, system peculiarities, and to verify employee training. The Distributor shall keep a record of system modifications and document that all work is conducted in accordance with the Cross Connection Control Plan and applicable regulations.
6. The Distributor shall compile and conduct quarterly reviews of the applied recycled water flows to identify unusual usage behavior or significant changes. The Distributor shall conduct and document follow-up investigations if patterns change dramatically.

#### **E. GROUNDWATER MONITORING**

1. The Distributor shall obtain representative samples of groundwater from monitoring wells in PV1 through PV8 and all newly installed monitoring wells. Samples of groundwater shall be obtained in accordance with Table 4.

<b>Table 4</b>			
<b>Constituent/Parameter<sup>a, b, c</sup></b>	<b>Units</b>	<b>Sample Type</b>	<b>Sampling Frequency<sup>d</sup></b>
Depth to Water	Feet	Measured	Annually
Total Nitrogen (as N)	mg/L	Grab	Annually
Nitrate (as N)	mg/L	Grab	Annually
pH	Units	Grab	Annually
Total Dissolved Solids	mg/L	Grab	Annually
Sodium	mg/L	Grab	Annually
Chloride	mg/L	Grab	Annually
Sulfate	mg/L	Grab	Annually
Boron	mg/L	Grab	Annually

- a) Sampling for specific analytes or from specific monitoring wells may be reduced or discontinued after one year upon Discharger request and Executive Officer approval for parameters/constituents for which additional data provides no benefit.
- b) Provide well construction details for each monitoring well, as follows: total well depth, screened interval, top of well casing elevation, and groundwater elevations.
- c) The Executive Officer may request geologic and hydrogeologic information to evaluate if the monitoring well network is adequate.
- d) After the first year, the Discharger may request the Executive Officer approve less frequent sampling.

**F. REPORTING**

1. The Distributor shall submit **annual** reports by March 1<sup>st</sup> of each year summarizing reclaimed water use, including the total volume of reclaimed water supplied, and the total number of reclaimed use sites and their locations. Reports shall include records of the Distributor's or User's reuse site inspections and results of the annual cross-connection tests. Annual monitoring reports shall contain at a minimum:
  - a. Documentation of the use area and groundwater monitoring requirements listed above;
  - b. A list of Users accompanied by a scaled map showing the recycled water use areas;
  - c. A table summarizing monthly recycled water application rates in acre-feet and gallons for each recycled water use area; and
  - d. The Nitrate Management Plan report;
2. The monitoring reports shall contain all data collected or calculated over the previous annual monitoring period. All monitoring data shall be tabulated in a logical and coherent format and be accompanied by copies of laboratory analytical data sheets as applicable. The data shall be summarized in a manner that clearly illustrates compliance with the Permit. The User list, use area map,

and recycled water application summary table shall be cross-referenced for easy evaluation.

3. The Distributor shall report any adverse conditions or non-compliance with Order No. R3-2008-0039 potentially endangering public health or the environment to the Water Board (805/549-3147), Santa Cruz County Environmental Health Services (831/454-2022), and other agencies as appropriate within 24 hours of learning of the conditions. A summary record of all adverse conditions or non-compliance along with corrective actions taken shall be included in each annual monitoring report.

Depending on the severity of the reported adverse condition or non-compliance, a written report may also be required by the Water Board. The written report shall be required within five days of the initial informal reporting date and shall contain a description of the non-compliance and its cause; the period of non-compliance, including dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent future non-compliance.

4. **Nitrate Management Plan (Nitrate Plan) Reporting.** The Distributor shall submit an annual report of allowable, as determined by the Nitrate Plan, and actual nitrate loading to the recycled water application areas. The report shall include, at a minimum:
  - a. Quantities of nitrate from recycled water and fertilizer applied to the use areas and the groundwater basin overall;
  - b. Comparison of the allowable nitrate and hydraulic contribution to the actual contributions;
  - c. Nitrate concentrations in groundwater;
  - d. Evaluation of potential adverse effects of nitrate loading on the groundwater basin, if any; and,
  - e. Recommendations and time schedules for the implementation of measures addressing excessive nitrogen loading (i.e., actual loading greater than allowable loading) as applicable.
5. **Salts Reporting.** The Distributor shall submit an annual report comparing the Total Dissolved Solids (TDS), sodium, and chloride concentrations in the recycled water to the concentrations in the shallow, medium and deep zones as measured by well clusters PV1 through PV8.

## **SUPPLIER AND DISTRIBUTOR REQUIREMENTS**

### **G. PROVISIONS**

1. All quarterly monitoring shall be performed any time during the monitoring quarter (calendar quarter), but samples representative of two consecutive quarterly periods must be separated by at least one month. Monthly sampling shall be conducted at regularly scheduled times during each month and

consecutive events should be approximately four weeks apart and no less than two weeks apart. Unless otherwise specified by the Monitoring and Reporting Program, annual sampling shall be performed any time during the calendar year, but samples representative of two consecutive annual periods must be obtained at least six months apart.

2. All analyses shall be conducted according to test procedures established at 40 CFR 136, *Guidelines Establishing Test Procedures for Analysis of Pollutants*.
3. All samples collected shall be tracked and submitted under chain of custody and analyzed by a laboratory certified by California Department of Public Health for the specified analysis.
4. The Executive Officer may revise this Monitoring and Reporting Program.
5. The Supplier and Distributor shall submit a copy of each monitoring report with a completed copy of the attached monitoring and reporting program transmittal sheet to:

California Water Quality Control Board  
Central Coast Region  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401

Ordered By:

\_\_\_\_\_  
Executive Officer



Date \_\_\_\_\_

California Water Quality Control Board  
Central Coast Region  
Attn: Monitoring and Reporting Review Section  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401-7906

Mr. Briggs:

**Facility Name**

\_\_\_\_\_  
\_\_\_\_\_

**Address**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Contact Person**

**Job Title**

**Phone Number**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**WDR/NPDES Order Number**

\_\_\_\_\_

**Type of Report** (circle one):

**Monthly      Quarterly      Semi-Annual      Annual**

**Month(s)** (circle applicable months):

**JAN    FEB    MAR    APR    MAY    JUN**  
**JUL    AUG    SEP    OCT    NOV    DEC**

**Annual Reports** (Circle the first month of the reporting period)

**Year:**

\_\_\_\_\_

**Violation(s)**

**No** (there are no violations to report)  
 **Yes**

*If 'Yes' is marked, complete a-g:*

**a) Parameter(s) in Violation:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**b) Section(s) of WDR/NPDES Violated:**

\_\_\_\_\_  
\_\_\_\_\_

**c) Reported Value(s):**

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**d) WDR/NPDES Limit or Condition:**

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**e) Dates of Violation(s):**

(reference page of report/data sheet)

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**f) Explanation of Cause(s):**

(attach additional information as needed)

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**g) Corrective Action(s):**

(attach additional information as needed)

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In accordance with the Standard Provisions and Reporting Requirements, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision following a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my knowledge of the person(s) who manage the system, or those directly responsible for data gathering, 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.

If you have any questions or require additional information, please contact me at the number provided above.

Sincerely,

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Name:

Title: