State of California
Regional Water Quality Control Board
San Diego Region

EXECUTIVE OFFICER SUMMARY REPORT
February 14, 2007

ITEM: 11

SUBJECT: Status Report: Regulation of discharges from graywater systems. The Regional Board will hear a report from staff on the current regulation of discharges from graywater treatment systems and pending changes to that regulatory scheme. *(Art Coe)*

PURPOSE: To receive information regarding graywater disposal systems and regulation of such systems.

PUBLIC NOTICE: The Agenda for the February 14, 2007 Regional Board meeting was distributed to the public by mail on January 26, 2007 and made available at the Regional Board's web site and office for review thereafter.

DISCUSSION: During the public forum at the January 24, 2007 Regional Board meeting, Mr. Stephen Bilson, Chairman & CEO of ReWater Systems, Inc. expressed opposition to the current requirements by the San Diego County Department of Environmental Health for oversight of the installation and operation of graywater treatment and disposal systems. Mr. Bilson requested that the Regional Board allow municipalities, and not just the County, to oversee and inspect these systems. The Regional Board asked for additional information on this issue.

Graywater sytems are installed for the purpose of water conservation. They provide graywater, that would otherwise be discharged to the sewage disposal system, for landscape irrigation.

As defined in the California Water Code, graywater is untreated wastewater which has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and which does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. Graywater includes wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs but

does not include wastewater from kitchen sinks, photo lab sinks, dishwashers or laundry water from soiled diapers. The California Water Code requires that graywater systems maintain the graywater below the ground surface.

Persons, who discharge or propose to discharge graywater, other than into a community sewer system, are subject to the California Water Code requirement to file a report of waste discharge. Currently, the Regional Board defers regulation of graywater discharges to subsurface disposal systems to the health officials of the County of San Diego under the provisions of the existing waiver of waste discharge requirements for subsurface disposal systems serving individual residential units.

This decision to defer regulation to the health officials of the County of San Diego was first made in 1991 in response to drought conditions and anticipated water shortages. At that time the County issued *A Homeowner's Guide to Temporary Use of Greywater During a Drought Emergency* and adopted it's *Graywater Ordinance and Standards*. This decision was reaffirmed in the late 1990s when the County prepared its *Guideline for Installation of Graywater Systems*. The basis for this decision has been the application of a Regional Board policy contained in the Basin Plan for conditionally waiving waste discharge requirements for those individual sewerage systems, utilizing subsurface disposal, for which the County Department of Health Services has developed and enforces appropriate regulatory standards. Although in the strict sense of the term, a "graywater disposal system" may not be a "sewerage system", at the time it was expedient to apply the existing waiver rather than to develop specific waiver conditions for graywater subsurface disposal systems.

State of California standards for the installation of graywater standards are contained in Appendix G of the California Plumbing Code. These standards include requirements for siting, design, construction, inspection and testing of the treatment systems and the sub-surface mini-leach field disposal systems. Appendix G requires persons who construct, install or alter any graywater system to obtain a permit from the Administrative Authority prior to doing such work. The Administrative Authority is a city or county. California Water Code section 14877.3 allows a city or county to adopt standards that are more restrictive than the standards.

Currently, the County of San Diego Department of Health Services, with the consent and cooperation of municipalities within the county, is the "Administrative Authority" for graywater systems in San Diego County. This arrangement has been an extension of the agreement that the County has had for many years with municipalities for the regulation of septic systems. As noted in the Regional Board letter dated April 25, 2006 to Mr. Bilson, the Basin Plan could be modified to establish conditions for waiving waste discharge requirements for graywater systems. The conditions for such a waiver could be based upon effective regulation of the discharges by a municipality, rather than the County, provided that the municipality's program provides requirements at least as stringent as the Plumbing Code and requirements and oversight consistent with the County's program. As with any waiver, the waiver for graywater systems must include monitoring requirements to verify the adequacy and effectiveness of the waiver's conditions. Consequently, the Regional Board will need to rely on each entity that implements a graywater regulatory program to assess the effectiveness of its program. For septic systems, the Regional Board and the counties will be using a Memorandum of Agreement for this monitoring. A similar Agreement will need to be developed with interested counties and cities for graywater systems.

The County of San Diego has informed the Regional Board that Mr. Bilson has issues with County's process for reviewing and approving his proposals. They do not object to municipalities having the authority to regulate these projects under a Regional Board waiver, provided that:

1. Regulation of septic systems remains within the jurisdiction of the County of San Diego.

2. Municipalities not regulate these systems just as complex plumbing fixtures but obtain the necessary expertise to regulate the systems in a manner that protects health and water quality.

3. Percolation testing be performed in compacted soils because compacted soil (95% of void space removed) does not have the same percolation rate as native soil of the same type.

4. A site design be submitted and reviewed prior to installation on sites where there is no prior knowledge of site conditions.

In June 2006 the Regional Board conducted a survey of the eighteen municipalities in San Diego County to evaluate what level of interest they might have in regulating graywater systems. In response to the survey (twelve responses received), one city was very interested, two were somewhat interested and nine respondents were not interested. Based upon these results, the Executive Officer notified Mr. Bilson that consideration of a graywater waiver would be deferred until the next update of the Regional Board waiver policy, projected to be completed in 2008. This update process is currently underway with the goal of bringing the Policy to the Regional Board in Fall 2007.

Pending Regional Board consideration of an updated waiver policy, staff plans to continue to adhere to the 1991 decision to defer regulation of graywater systems to the health officials of the County of San Diego. Notwithstanding the issues between Mr. Bilson and the County, the current practice provides a path for approval of graywater systems that provides for protection of public health and water quality. Alternatives for regulation of discharges from graywater systems include:

- Initiating a parallel Basin Plan amendment process to consider a specific waiver for graywater systems that would include interested cities.
- Issuing project specific waivers of waste discharge requirements.
- Issuing project specific waste discharge requirements.
- Issuing general waste discharge requirements.

Initiating a parallel Basin Plan amendment process would not be warranted based on the apparent mild interest by the cities in gaining oversight of the installation and operation of the graywater systems. Pursuing any of these alternatives would be an inefficient, costly and time consuming way of addressing this matter.

KEY ISSUE: Should the matter of waivers of waste discharge requirements for discharges from graywater systems be addressed as part of the ongoing reissuance of the Regional Board's waiver policy?

LEGAL CONCERNS: None.

SUPPORTING DOCS:

1. Appendix G to the Plumbing Code
2. May 26, 2006 e-mail from County of San Diego regarding regulation of graywater systems by municipalities
3. Regional Board May 30, 2006 letter to City Managers regarding Graywater Regulation Survey
4. March 15, 2006 letter from County of San Diego to Regional Board
5. April 11, 2006 letter from Regional Board to County of San Diego
6. April 25, 2006 letter from Regional Board to Stephen Bilson
7. May 12, 2006 letter from Stephen Bilson to Regional Board
8. June 2, 2006 letter from Stephen Bilson to mayors and city council members of San Diego County cities
9. July 10, 2006 letter from Stephen Bilson to Regional Board
10. July 25, 2006 letter from Regional Board to Stephen Bilson
11. August 7, 2006 letter from Stephen Bilson to Regional Board
12. August 28, 2006 letter from Stephen Bilson to Regional Board
13. September 8, 2006 letter from Regional Board to Stephen Bilson
14. September 14, 2006 letter from Stephen Bilson to Regional Board

RECOMMENDATION: Receive report and continue to address waivers for discharges from graywater systems under the update of the Basin Plan waiver policy.

APPENDIX G-A [For DWR]

GRAYWATER SYSTEMS

G 1 Graywater Systems (General)

(a) The provisions of this Appendix shall apply to the construction, installation, alteration and repair of graywater systems for subsurface landscape irrigation. The graywater system shall not be connected to any potable water system without an air gap (a space or other physical device which prevents backflow) and shall not result in any surfacing of the graywater. Except as otherwise provided for in this Appendix, the provisions of the Uniform Plumbing Code (U.P.C.) shall be applicable to graywater installations.

(b) The type of system shall be determined on the basis of location, soil type and ground water level and shall be designed to accept all graywater connected to the system from the building. The system shall discharge into subsurface irrigation fields and may include surge tank(s) and appurtenances, as required by the Administrative Authority.

(c) No graywater system, or part thereof, shall be located on any lot other than the lot which is the site of the building or structure which discharges the graywater; nor shall any graywater system or part thereof be located at any point having less than the minimum distances indicated in Table G-1.

(d) No permit for any graywater system shall be issued until a plot plan with appropriate data satisfactory to the Administrative Authority has been submitted and approved. When there is insufficient lot area or inappropriate soil conditions for adequate absorption of the graywater, as determined by the Administrative Authority, no graywater system shall be permitted. The Administrative Authority is a city or county.

(e) No permit shall be issued for a graywater system which would adversely impact a geologically sensitive area, as determined by the Administrative Authority.

(f) Private sewage disposal systems existing or to be constructed on the premises shall comply with Appendix K of this Code or applicable local ordinance. When abandoning underground tanks, Section 722.0 of the U.P.C. shall apply. Also, appropriate clearances from graywater systems shall be maintained as provided in Table G-1. The capacity of the private sewage disposal system, including required future areas, shall not be decreased by the existence or proposed installation of a graywater system servicing the premises.

(g) Installers of graywater systems shall provide an operation and maintenance manual, acceptable to the Administrative Authority, to the owner of each system. Graywater systems require regular or periodic maintenance.

(h) The Administrative Authority shall provide the applicant a copy of this Appendix.

G 2 Definitions

Graywater is untreated waste water which has not come into contact with toilet waste. Graywater includes used water from bathtubs, showers, bathroom wash basins, clothes washing machines and laundry tubs or an equivalent discharge as approved by the Administrative Authority. It does not include waste water from kitchen sinks, photo lab sinks, dishwashers or laundry water from soiled diapers.

Surfacing of graywater means the ponding, running off or other release of graywater from the land surface.

G 3 Permit

It shall be unlawful for any person to construct, install or alter, or cause to be constructed, installed or altered, any graywater system in a building or on a premises without first obtaining a permit to do such work from the Administrative Authority.

G 4 Drawings and Specifications

The Administrative Authority may require any or all of the following information to be included with or in the plot plan before a permit is issued for a graywater system:

(a) Plot plan drawn to scale completely dimensioned, showing lot lines and structures, direction and approximate slope of surface, location of all present or proposed retaining walls, drainage channels, water supply lines, wells, paved areas and structures on the plot, number of bedrooms and plumbing fixtures in each structure, location of private sewage disposal system and 100 percent expansion area or building sewer connecting to public sewer, and location of the proposed graywater system.

(b) Details of construction necessary to ensure compliance with the requirements of this Appendix together with a full description of the complete installation, including installation methods, construction and materials as required by the Administrative Authority.

(c) A log of soil formations and ground water level as determined by test holes dug in close proximity to any proposed irrigation area, together with a statement of water absorption characteristics of the soil at the proposed site as determined by approved percolation tests. In lieu of percolation tests, the Administrative Authority may allow the use of Table G-2, an infiltration rate designated by the Administrative Authority, or an infiltration rate determined by a test approved by the Administrative Authority.

(d) A characterization of the graywater for commercial, industrial or institutional systems, based on existing records or testing.

G 5 Inspection and Testing

(a) Inspection

(1) All applicable provisions of this Appendix and of Section 103.5 of the U.P.C. shall be complied with.

(2) System components shall be properly identified as to manufacturer.

(3) Surge tanks shall be installed on dry, level, well-compacted soil if in a drywell, or on a level, 3-inch (76 mm) concrete slab or equivalent, if above ground.

(4) Surge tanks shall be anchored against overturning.

(5) If the irrigation design is predicated on soil tests, the irrigation field shall be installed at the same location and depth as the tested area.

(6) Installation shall conform with the equipment and installation methods identified in the approved plans.

(7) Graywater stub-out plumbing may be allowed for future connection prior to the installation of irrigation lines and landscaping. Stub-out shall be permanently marked GRAYWATER STUB-OUT, DANGER—UNSAFE WATER.

(b) Testing

(1) Surge tanks shall be filled with water to the overflow line prior to and during inspection. All seams and joints shall be left exposed and the tank shall remain watertight.

(2) A flow test shall be performed through the system to the point of graywater irrigation. All lines and components shall be watertight.

G 6 Procedure for Estimating Graywater Discharge

(a) Single Family Dwellings and Multifamily Dwellings

The Administrative Authority may utilize the graywater discharge procedure listed below, water use records, or calculations of local daily per person interior water use:

1. The number of occupants of each dwelling unit shall be calculated as follows:

First bedroom	2 occupants
Each additional bedroom	1 occupant

2. The estimated graywater flows for each occupant shall be calculated as follows:

Showers, bathtubs and wash basins	25 GPD/ occupant
Laundry	15 GPD/ occupant

3. The total number of occupants shall be multiplied by the applicable estimated graywater discharge as provided above and the type of fixtures connected to the graywater system.

(b) Commercial, Industrial and Institutional Projects

The Administrative Authority may utilize the graywater discharge procedure listed below, water use records or other documentation to estimate graywater discharge:

1. The square footage of the building divided by the occupant load factor from U.B.C. Table 10-A equals the number of occupants.

2. The number of occupants times the flow rate per person (minus toilet water and other disallowed sources) from U.P.C. Table I-2 equals the estimated graywater discharge per day.

The graywater system shall be designed to distribute the total amount of estimated graywater discharged daily.

G 7 Required Area of Subsurface Irrigation

Each irrigation zone shall have a minimum effective irrigation area for the type of soil and infiltration rate to distribute all graywater produced daily, pursuant to Section G-6, without surfacing. The required irrigation area shall be based on the estimated graywater discharge, pursuant to Section G-6 of this Appendix, size of surge tank, or a method determined by the Administrative Authority.

If the mini-leachfield irrigation system is used, the required square footage shall be determined from Table G-2, or equivalent, for the type of soil found in the excavation. The area of the irrigation field shall be equal to the aggregate length of the perforated pipe sections within the irrigation zone times the width of the proposed mini-leachfield trench.

No irrigation point shall be within 5 vertical feet (1524 mm) of highest known seasonal groundwater nor where graywater may contaminate the ground water or ocean water. The applicant shall supply evidence of ground water depth to the satisfaction of the Administrative Authority.

G 8 Determination of Irrigation Capacity

(a) In order to determine the absorption quantities of questionable soils other than those listed in Table G-2, the proposed site may be subjected to percolation tests acceptable to the Administrative Authority or determined by the Administrative Authority.

(b) When a percolation test is required, no mini-leachfield system or subsurface drip irrigation system shall be permitted if the test shows the absorption capacity of the soil is less than 60 minutes/inch or more rapid than five minutes/inch, unless otherwise permitted by the Administrative Authority.

(c) The irrigation field size may be computed from Table G-2, or determined by the Administrative Authority or a designee of the Administrative Authority.

G 9 Surge Tank Construction (Figure 1)

(a) Plans for surge tanks shall be submitted to the Administrative Authority for approval. The plans shall show the data required by the Administrative Authority and may include dimensions, structural calculations, and bracing details.

(b) Surge tanks shall be constructed of solid, durable materials, not subject to excessive corrosion or decay, and shall be watertight.

(c) Surge tanks shall be vented as required by Chapter 5 of this Code and shall have a locking, gasketed access opening, or approved equivalent, to allow for inspection and cleaning.

(d) Surge tanks shall have the rated capacity permanently marked on the unit. In addition, GRAYWATER IRRIGATION SYSTEM, DANGER—UNSAFE WATER shall be permanently marked on the surge tank.

(e) Surge tanks installed above ground shall have an overflow, separate from the line connecting the tank with the irrigation fields. The overflow shall have a permanent connection to a sewer or to a septic tank, and shall be protected against sewer line backflow by a backwater valve. The overflow shall not be equipped with a shut-off valve.

(f) The overflow and drain pipes shall not be less in diameter than the inlet pipe. The vent size shall be based on the total graywater fixture units, as outlined in U.P.C. Table 7-5 or local equivalent. Unions or equally effective fittings shall be provided for all piping connected to the surge tank.

(g) Surge tanks shall be structurally designed to withstand anticipated loads. Surge tank covers shall be capable of supporting an earth load of not less than 300 pounds per square foot (14.4 kN/m²) when the tank is designed for underground installation.

(h) Surge tanks may be installed below ground in a dry well on compacted soil, or buried if the tank design is approved by the Administrative Authority. The system shall be designed so that the tank overflow will gravity drain to a sanitary sewer line or septic tank. The tank must be protected against sewer line backflow by a backwater valve.

(i) Materials

(1) Surge tanks shall meet nationally recognized standards for nonpotable water and shall be approved by the Administrative Authority.

(2) Steel surge tanks shall be protected from corrosion, both externally and internally, by an approved coating or by other acceptable means.

G 10 Valves and Piping (Figure 1)

Graywater piping discharging into a surge tank or having a direct connection to a sanitary drain or sewer piping shall be downstream of an approved waterseal-type trap(s). If no such trap(s) exists, an approved vented running trap shall be installed upstream of the connection to protect the building from any possible waste or sewer gases. Vents and venting shall meet the requirements in Chapter 9 of the U.P.C.

All graywater piping shall be marked or shall have a continuous tape marked with the words DANGER—UNSAFE WATER. All valves, including the three-way valve, shall be readily accessible and shall be approved by the Administrative Authority. A backwater valve, installed pursuant to this Appendix, shall be provided on all surge tank drain connections to the sanitary drain or sewer piping.

G 11 Irrigation Field Construction

The Administrative Authority may permit subsurface drip irrigation, mini-leachfield or other equivalent irrigation methods which discharge graywater in a manner which ensures that the graywater does not surface. Design standards for subsurface drip irrigation systems and mini-leachfield irrigation systems follow:

(a) Standards for a subsurface drip irrigation system are:

(1) Minimum 140 mesh (115 micron) filter with a capacity of 25 gallons (94.6 L) per minute, or equivalent, filtration, sized approximately to maintain the filtration rate, shall be used. The filter backwash and flush discharge shall be caught, contained and disposed of to the sewer system, septic tank or, with approval of the Administrative Authority, a separate mini-leachfield sized to accept all the backwash and flush discharge water. Filter backwash water and flush water shall not be used for any purpose. Sanitary procedures shall be followed when handling filter backwash and flush discharge or graywater.

(2) Emitters shall have a minimum flow path of 1,200 microns and shall have a coefficient of manufacturing variation (Cv) of no more than 7 percent. Irrigation system design shall be such that emitter flow variation shall not exceed " 10 percent. Emitters shall be recommended by the manufacturer for subsurface use and graywater use, and shall have demonstrated resistance root intrusion. For emitter ratings, refer to Irrigation Equipment Performance Report, Drip Emitters and Micro-Sprinklers, Center for Irrigation Technology, California State University, 5730 N. Chestnut Avenue, Fresno, California 93740-0018.

(3) Each irrigation zone shall be designed to include no less than the number of emitters specified in Table G-3, or through a procedure designated by the Administrative Authority. Minimum spacing between emitters is 14 inches (356 mm) in any direction.

(4) The system design shall provide user controls, such as valves, switches, timers and other controllers, as appropriate, to rotate the distribution of graywater between irrigation zones.

(5) *All drip irrigation supply lines shall be polyethylene tubing or PVC Class 200 pipe or better and Schedule 40 fittings. All joints shall be properly solvent-cemented, inspected and pressure tested at 40 psi (276 kPa), and shown to be drip tight for five minutes, before burial. All supply lines will be buried at least 8 inches (203 mm) deep. Drip feeder lines can be poly or flexible PVC tubing and shall be covered to a minimum depth of 9 inches (229 mm).*

(6) *Where pressure at the discharge side of the pump exceeds 20 psi (138 kPa), a pressure-reducing valve able to maintain downstream pressure no greater than 20 psi (138 kPa) shall be installed downstream from the pump and before any emission device.*

(7) *Each irrigation zone shall include a flush valve/antisiphon valve to prevent back siphonage of water and soil.*

(b) *Standards for the mini-leachfield system are:*

(1) *Perforated sections shall be a minimum 3-inch (76 mm) diameter and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated PVC pipe, or other approved materials, provided that sufficient openings are available for distribution of the graywater into the trench area. Material, construction and perforation of the piping shall be in compliance with the appropriate absorption field drainage piping standards and shall be approved by the Administrative Authority.*

(2) *Clean stone, gravel or similar filter material acceptable to the Administrative Authority, and varying in size between 3/4 inch (19 mm) to 21/2 inches (64 mm) shall be placed in the trench to the depth and grade required by this section. Perforated sections shall be laid on the filter material in an approved manner. The perforated sections shall then be covered with filter material to the minimum depth required by this section. The filter material shall then be covered with landscape filter fabric or similar porous material to prevent closure of voids with earth backfill. No earth backfill shall be placed over the filter material cover until after inspections and acceptance.*

(3) *Irrigation fields shall be constructed as follows:*

	Minimum	Maximum
Number of drain lines per valved zone	1	—
Length of each perforated line	—	100 ft. (30840 m m)
Bottom width of trench	6 in. (152 mm)	18 in. (457 m m)
Total depth of trench	17 in. (432 mm)	18 in. (457 mm)
Spacing of lines, center-to-center	4 ft. (1219 mm)	—
Depth of earth cover of lines	9 in. (229 mm)	—
Depth of filter material cover of lines	2 in. (51 mm)	—
Depth of filter material beneath lines	3 in. (76 mm)	—
Grade of perforated lines	level	3 in./100 ft. (76 mm/30 480 mm)

G 12 Special Provisions

(a) Other collection and distribution systems may be approved by the Administrative Authority as allowed by Section 310.0 of the U.P.C.

(b) Nothing contained in this Appendix shall be construed to prevent the Administrative Authority from requiring compliance with stricter requirements than those contained herein, where such stricter requirements are essential in maintaining safe and sanitary conditions or from prohibiting graywater systems. The prohibition of graywater systems or more restrictive standards may be adopted by the Administrative Authority by ordinance after a public hearing.

G 13 Health and Safety

(a) Graywater may contain fecal matter as a result of bathing and/or washing of diapers and undergarments. Water containing fecal matter, if swallowed, can cause illness in a susceptible person.

(b) Graywater shall not include laundry water from soiled diapers.

(c) Graywater shall not be applied above the land surface or allowed to surface and shall not be discharged directly into or reach any storm sewer system or any water of the United States.

(d) Graywater shall be not be contacted by humans, except as required to maintain the graywater treatment and distribution system.

(e) Graywater shall not be used for vegetable gardens.

Table G-1 Location of Graywater System

Minimum Horizontal Distance From	Surge Tank (feet) x 304.8 for mm	Irrigation Field (feet) x 304.8 for mm
Buildings or structures[1]	5[2]	8[3]
Property line adjoining private property	5	5
Water supply wells[4]	50	100
Streams and lakes[4]	50	50
Seepage pits or cesspools	5	5
Disposal field and 100 percent expansion area	5	4[5]
Septic tank	0	5[6]
On-site domestic water service line	5	5[7]
Pressure public water main	10	10[8]
Water ditches	50	50

Notes: When mini-leach fields are installed in sloping ground, the minimum horizontal distance between any part of the distribution system and ground surface shall be 15 feet (4572 mm).

[1]Including porches and steps, whether covered or uncovered, but does not include carports, covered walks, driveways and similar structures.

[2]The distance may be reduced to 0 feet for aboveground tanks if approved by the Administrative Authority.

[3]The distance may be reduced to 2 feet (610 mm).

[4]For subsurface drip irrigation systems, 2 feet (610 mm) from property line.

[5]Where special hazards are involved, the distance may be increased by the Administrative Authority.

[6]Applies to the mini-leachfield type system only. Plus 2 feet (610 mm) for each additional foot of depth in excess of 1 foot (305 mm) below the bottom of the drain line.

[7]Applies to mini-leachfield-type system only.

[8]A 2-foot (610 mm) separation is required for subsurface drip systems.

[9]For parallel construction or for crossings, approval by the Administrative Authority shall be required.

Table G-2 Mini-Leachfield Design Criteria of Six Typical Soils

Type of Soil	Minimum sq. ft. of irrigation area per 100 gallons of estimated graywater discharge per day	Maximum absorption capacity, minutes per inch, of irrigation area for a 24-hour period
1. Coarse sand or gravel	20	5
2. Fine sand	25	12
3. Sandy loam	40	18
4. Sandy clay	60	24
5. Clay with considerable sand or gravel	90	48
6. Clay with small amount of sand or gravel	120	60

Table G-3 Subsurface Drip Design Criteria of Six Typical Soils

Type of Soil	Maximum emitter discharge (gal/day)	Minimum number of emitters per gpd of graywater production
1. Sand	1.8	0.6
2. Sandy loam	1.4	0.7
3. Loam	1.2	0.9
4. Clay loam	0.9	1.1
5. Silty clay	0.6	1.6
6. Clay	0.5	2.0

Use the daily graywater flow calculated in Section G-6 to determine the number of emitters per line.

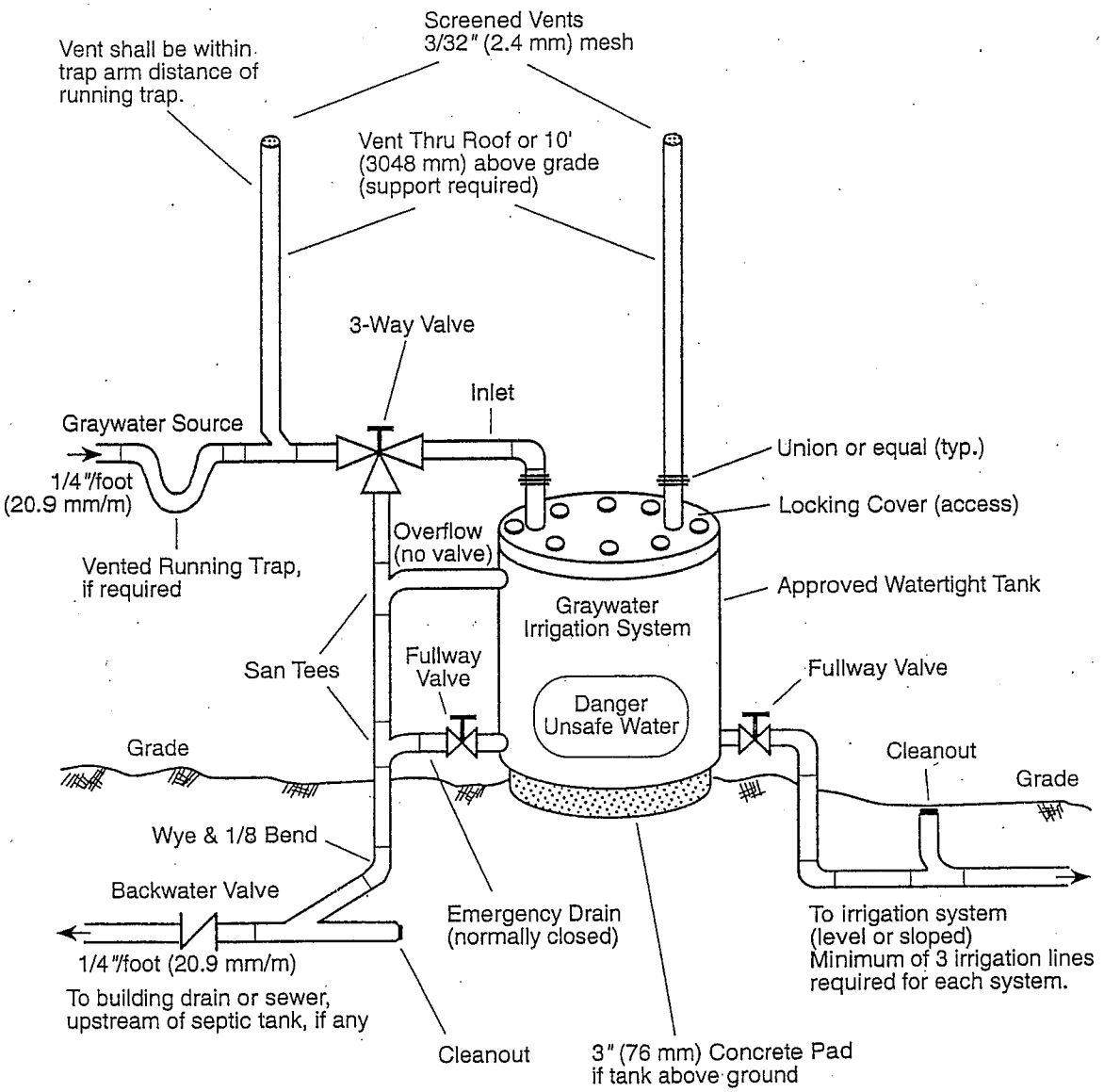


Figure G-1
Graywater System Tank – Gravity (conceptual

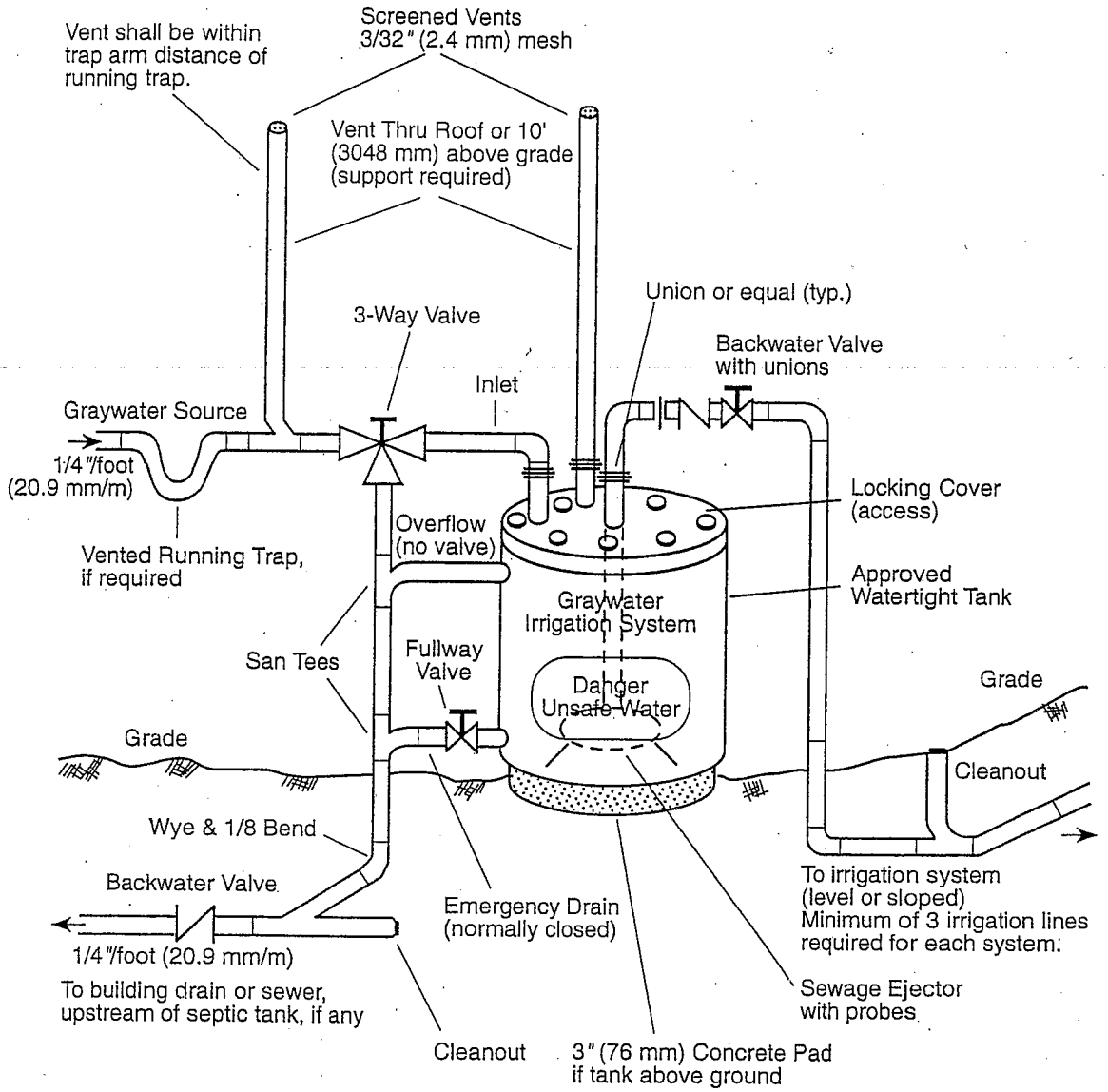


Figure G-2
Graywater System Tank – Pumped (conceptual)

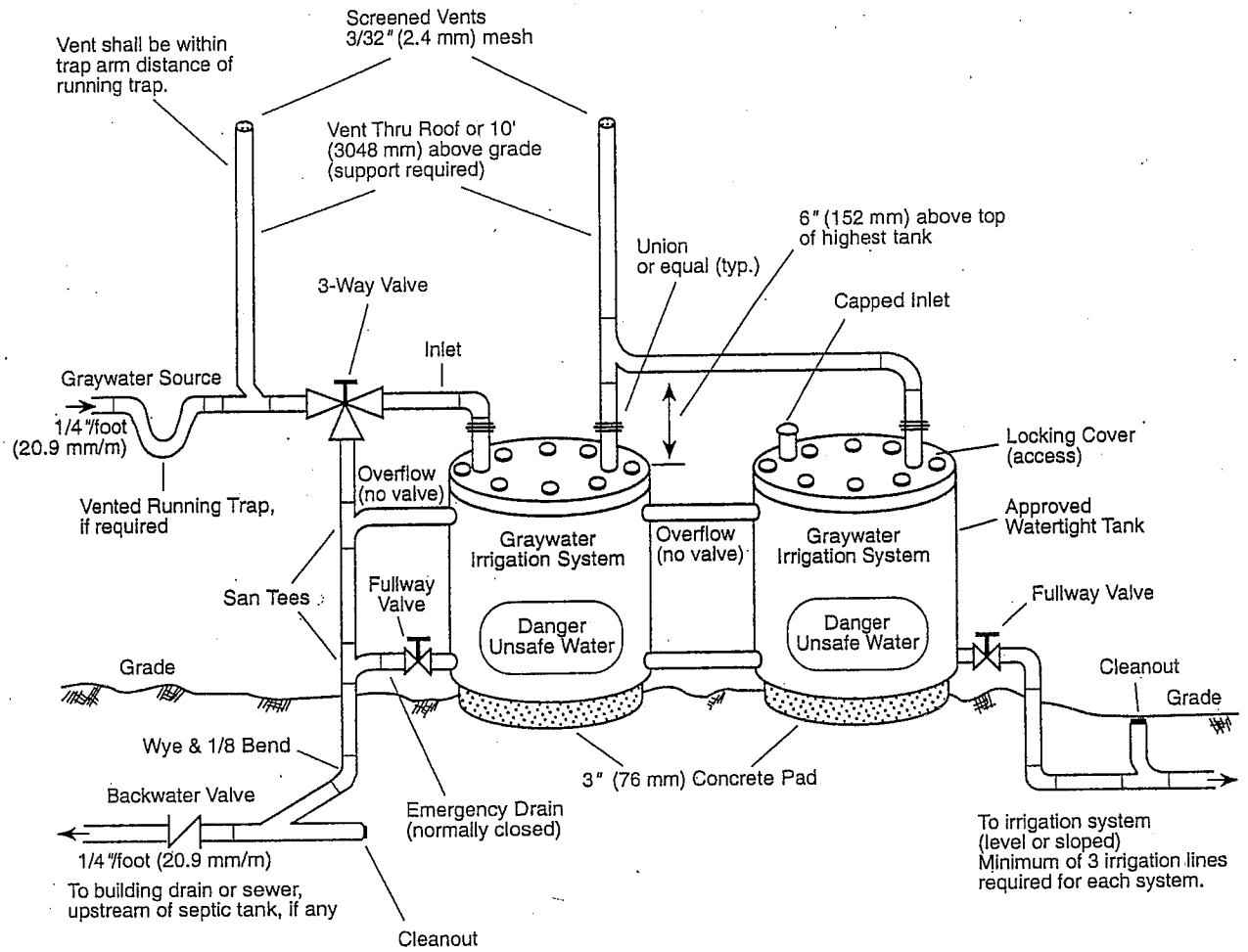


Figure G-3
Graywater System Multiple Tank Installation (conceptual)

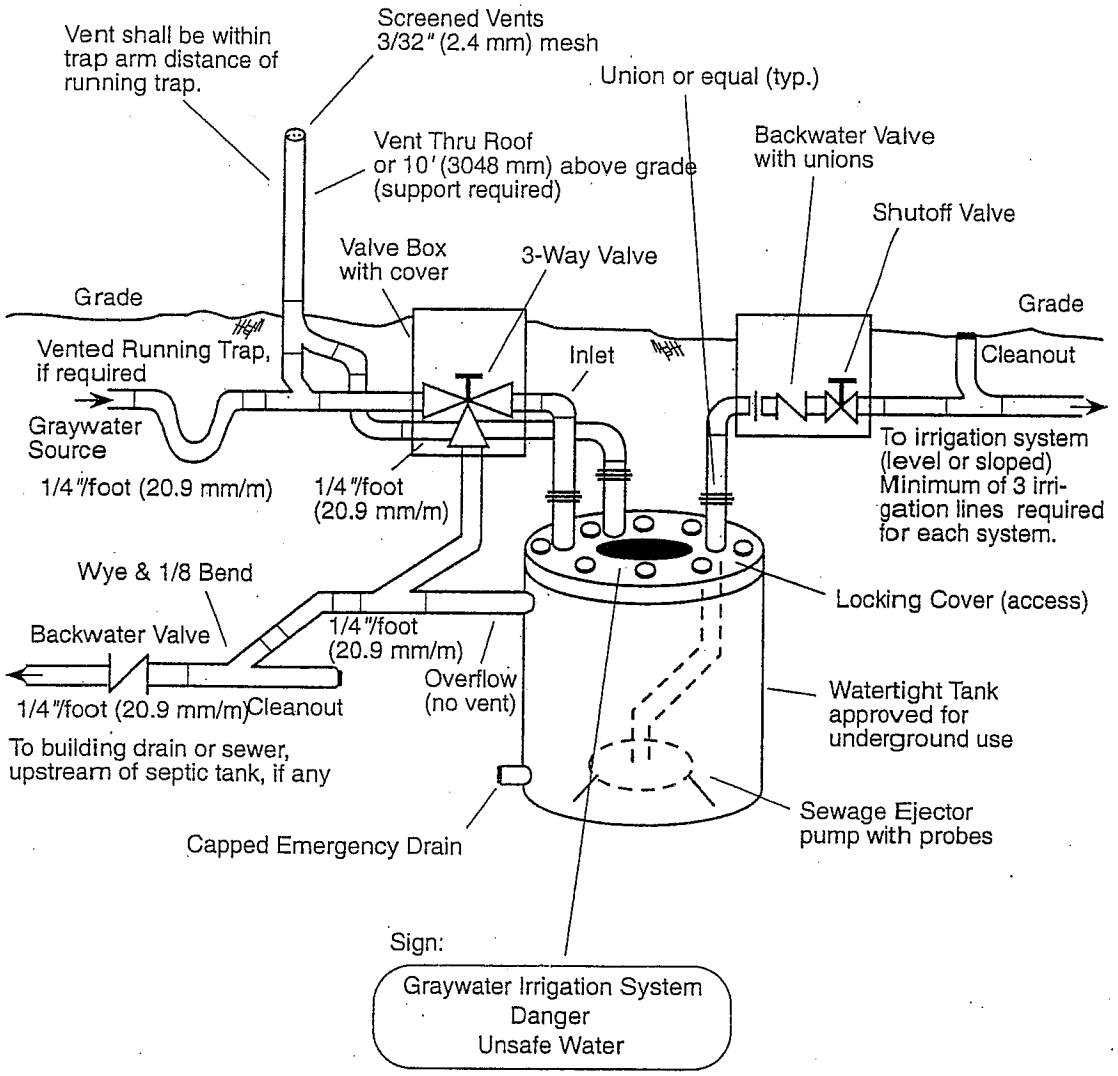
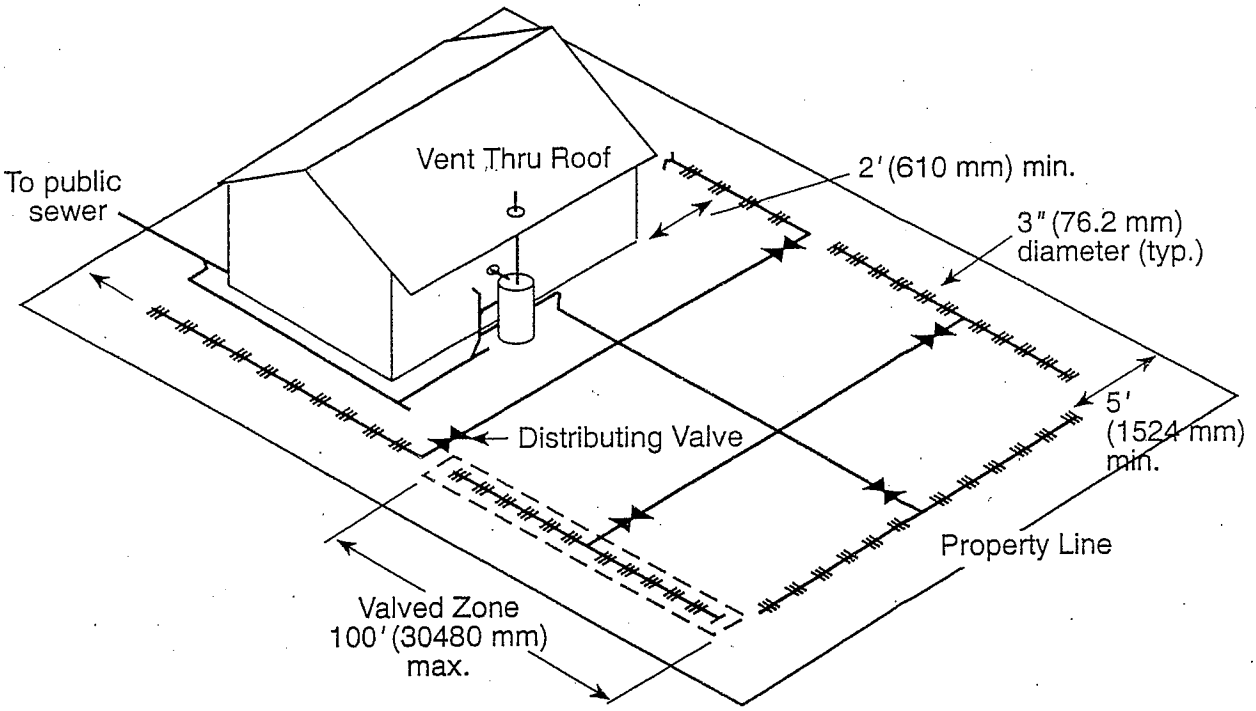


Figure G-4
Graywater System Underground Tank – Pumped (conceptual)



Note: Each valved zone shall have a minimum effective absorption/irrigation area in square feet predicated on the estimated graywater discharge in gallons per day and on the type of soil found in the area. The area of the field shall be equal to the aggregate length of perforated pipe sections within the valved zone times the width of the proposed field.

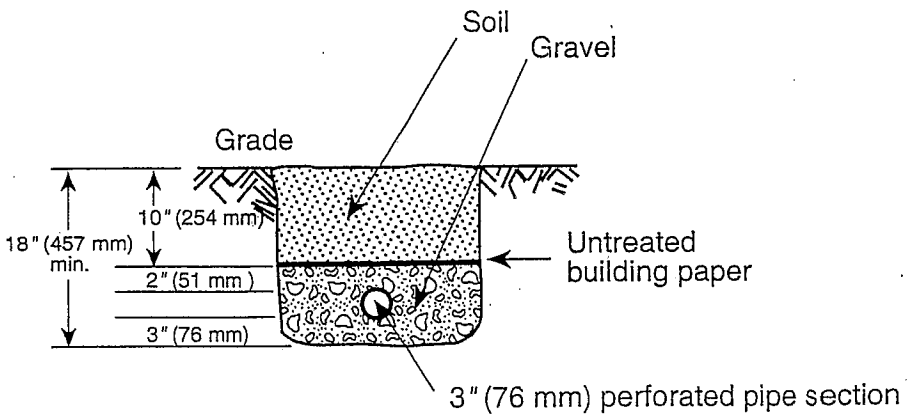


Figure G-5
Graywater System Typical Irrigation Layout (conceptual)

From: "McPherson, Mark" <Mark.McPherson@sdcounty.ca.gov>
To: "Bob Morris" <BMorris@waterboards.ca.gov>
Date: Thu, May 25, 2006 2:53 PM
Subject: RE: Graywater

Bob,

Thanks for asking us our opinion. I have spoken to my staff and others and we have significant concerns, both legal and practical. Our legal concerns could be resolved if the RWQCB formally issues WDRs on a case-by-case basis, or formerly waives WDRs (on a case-by-case or general basis) for graywater systems that a municipality chooses to permit pursuant to the Plumbing Code. However, even if this legal concern is resolved, we have a number of practical concerns.

Legal Concerns

In a detailed four page letter to you dated March 15, 2006, which we prepared and submitted because of Mr. Bilson's prior assertions of illegality made to the County, the County asked for "a written confirmation or if necessary, correction of Regional Water Quality Control Board staff guidance recently provided to us concerning the County's authority to regulated graywater systems." We noted that we were seeking this confirmation or correction in the context of anticipated litigation on this issue. That letter was prepared with substantial assistance from County Counsel, and it laid out the issues that appeared to us to require consideration, whether advantageous to us or not.

You replied in writing on April 11, 2006, and the County has relied on that reply in its subsequent and often difficult interactions with Mr. Bilson. As we interpret it a fundamental premise of your reply was that graywater system discharges are regulated under the Water Code as discharges, and that they therefore require a WDR or a waiver, in addition to being required to comply with Plumbing Code. You also confirmed that existing waivers for septic systems permitted by the County under the authority you have delegated to us are applicable to graywater systems permitted by the County. We appreciated this interpretation because it is consistent with our own interpretation of our authorities.

However, this existing RWQCB waiver applies only to systems that are permitted by the County, and does not apply to municipalities within the County.

If it is still RWQCB's position that graywater system discharges require

Water Code permits or waivers, then we believe that WDRs or a new waiver is needed for any graywater systems permitted by a municipality. If the RWQCB no longer believes the Water Code applies to graywater system discharges, then the County's graywater program would also be based solely on the plumbing code and would be conducted without RWQCB involvement or oversight. We would of course need to have any such conclusion communicated to us formally and in writing, because that conclusion would be inconsistent with the letter we received from you in April.

We informed Mr. Bilson several months ago that he was free to do business with any municipality that cared to deal with him for plumbing code purposes, provided his customers also obtained a WDR or waiver for each graywater system installed.

Practical Concerns

We have several practical concerns as well:

First, if municipalities begin to permit graywater systems within their jurisdictions, they could come under pressure prior to the 2007 review of the Basin Plan to also seek authority to issue permits for septic systems. We believe the septic system program is better retained at a County level, and we believe graywater system issues are so similar to septic system issues that it makes sense to keep those programs co-located.

Second, at this point in time the County has the expertise and personnel to oversee the installation of these systems and consistently apply the design and installation requirements across the entire County. Cities do not have this expertise, and by default might regulate graywater systems as complex plumbing, without attention to discharge conditions and related health and water quality risks.

Third, it may not make sense for municipalities to try to develop programs for onsite wastewater systems just before new and more detailed statewide regulations are adopted and implemented by the RWQCB and the County. State law contemplates that the County's current regional role in regulating conventional septic systems will be expanded to alternative systems when new state regulations are in place. Decisions concerning a municipal role in graywater system permitting should take that context into account.

Fourth, the RWQCB may want to take into account that this possible

change in the policy and legal positions the RWQCB so recently confirmed to the County, is being promoted by a graywater system installer. Correct me if I am wrong but I don't believe that any municipalities have come to the RWQCB and asked to be given the authority to regulate these systems. From our contact with the municipal building officials, they have no desire to regulate graywater systems and are quite happy to have the County oversee the installations.

Fifth, we know from our communication with Mr. Bilson, and you should also know, that Mr. Bilson is urging interpretations of the Water Code and the Plumbing Code that are incorrect. Mr. Bilson is seeking new audiences for his mistaken theories, and if Mr. Bilson persuades any municipality that his positions on these issues are correct, human health and the waters of the state will be at risk. The County has instituted a program to ensure that graywater systems are properly sited and installed. Mr. Bilson wants to circumvent that program by getting city permits instead. We believe that the RWQCB should not assist a vendor in shopping for a regulatory forum in these circumstances.

Specifically, Mr. Bilson takes exception to our some of our graywater design submittal requirements such as:

* Requiring percolation testing when effluent is proposed to be discharged into compacted fill. As you know we do not allow onsite wastewater system leach fields to be installed in fill or compacted fill unless percolation tests are provided, because the native soil structure has been changed and assimilative capacity of the soil and treatment ability is compromised (this is consistent with most permitting agencies in the state). Appendix G permits the installation disposal lines in fill soils. Mr. Bilson has argued that we should just use Appendix G Table G2 or G3 to determine assimilative capacity of soil regardless of whether it is compacted or not. Our professional staff are adamant that compacted soil (95% of void space removed) will not have the same percolation rate as native soil of the same type. Therefore we require that percolation testing is performed in compacted soils.

* We require that a site design is submitted and that we review this design on site prior to installation of a graywater system for properties where we do not have current onsite wastewater system as-builts on file. Mr. Bilson believes that we should approve designs "over the counter" and make any corrections after the system is installed. DEH feels that the proper siting of a system is crucial to its long term viability as a disposal system. Appendix G is specific as to the size of the system, setbacks to structures, separation to ground water etc. and DEH feels that for sites were we have no knowledge of site conditions that we need to ensure that the design meets site limitations. This is also how we oversee the installation of septic systems.

It is possible that Mr. Bilson feels that he can get a municipality to relax the graywater design submittal standards enough so that he can install systems unimpeded. DEH has not required any additional

requirements that are not already specified in Appendix G. Recently there have been two projects that Mr. Bilson's company, ReWater Systems Inc., has submitted for review and approval by DEH that we have denied because of a lack of pertinent information in the design submittals, and because of site conditions that make the installation of a graywater system difficult.

We are currently revising our graywater guidelines to provide more guidance on the expectations of graywater design requirements and the permitting process. We have offered to have Mr. Bilson provide comments and we would like to extend the same offer to the RWQCB.

Summary and Conclusions

If the RWQCB really wants other municipalities taking on this program activity, the interim requirements that you have suggested, combined with formal issuance of WDRs or waivers (or a formal retraction of your recent advice to us), seem reasonable to DEH. However, we do not favor this change in RWQCB policy at this time because of the practical concerns discussed above, and because you are not being asked by a municipality for permission to take on this activity. You are being asked by a company that sells and installs graywater systems. We believe that the RWQCB should reserve judgment on this issue until a municipality directly asks for permission to regulate graywater systems.

If you have any questions please give me a call at the number below.

Thanks,

Mark McPherson
Chief
Land and Water Quality Division
Department of Environmental Health
County of San Diego
5201 Ruffin Road, Suite C
San Diego, CA, 92123
Office: (858) 495-5572
Fax: (858) 694-3670
MS O564

Healthy People in Healthy Communities
Free From Disease due to the Environment

From: Bob Morris [mailto:BMorris@waterboards.ca.gov]
Sent: Tuesday, May 23, 2006 3:15 PM

California Regional Water Quality Control Board

San Diego Region

Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Dan Skopec
Acting Secretary

Arnold Schwarzenegger
Governor

9174 Sky Park Court, Suite 100, San Diego, California 92123-4353
(858) 467-2952 • Fax (858) 571-6972
http:// www.waterboards.ca.gov/sandiego

May 30, 2006

In reply refer to:
ncru:13-0092.02:bmorris

See Attached Mailing List

Dear City Manager:

SUBJECT: GRAYWATER REGULATIONS

The San Diego Regional Water Quality Control Board (Regional Board) has been requested by a proponent of graywater reuse to modify its current regulatory position on this issue. Specifically, the Regional Board has been asked to extend to local municipalities its waiver of waste discharge requirements that has been granted to the County of San Diego. The purpose of this letter is to initiate a survey of the municipalities to determine the level of interest in the development of such a waiver. Please complete the attached survey form and return it to us by June 30, 2006.

As previously noted, the Regional Board has deferred regulation of graywater discharges to the County of San Diego. This decision was first made in 1991 when the County issued *A Homeowner's Guide to Temporary Use of Greywater During a Drought Emergency* and adopted its *Graywater Ordinance and Standards*. This decision was reaffirmed in the late 1990s when the County prepared its *Guideline for Installation of Graywater Systems*. The basis for this decision has been the application of a Regional Board policy contained in the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) for conditionally waiving waste discharge requirements. This policy, adopted pursuant to California Water Code (CWC) Section 13269, prescribes conditions for waiving waste discharge requirements for those individual sewerage systems that the County Department of Health Services has developed and enforces appropriate regulatory standards. Although in the strict sense of the term, a "graywater disposal system" may not be a "sewerage system', it was expedient to apply the waiver rather than to develop specific waiver conditions for this category of waste discharges. Please note that if the RWQCB had not waived its authority to regulate graywater discharges, persons who discharge or propose to discharge graywater would be required to obtain waste discharge requirements (CWC Section 13264).

The Regional Board, if there is sufficient interest, could modify its waiver policy to establish conditions for the waiver to be based upon effective regulation of the discharges by a city that has established by ordinance applicable standards for protection of water quality. We would expect that such standards would be at least as stringent as Appendix G of the California Plumbing Code and would be consistent with standards of the County Department of Environmental Health and other communities in the Region with similar regulatory programs.

We appreciate the timely response to this survey request. If you have any questions or need further information, please contact Mr. Bob Morris at (858) 467-2962 or e-mail at bmorris@waterboards.ca.gov. The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

Respectfully,

JOHN H. ROBERTUS
Executive Officer
Regional Water Quality Control Board

JHR:rwm

Enclosure: Graywater Waiver Survey Form

cc: Mark McPherson, Chief
Land and Water Quality Division
County of San Diego Dept. of Environmental Health
5201 Ruffin Road, Suite G
San Diego, California 92123

Stephen Bilson, Chairman & CEO
ReWater Systems, Inc.
P.O. Box 210171
Chula Vista, CA 91921

California Regional Water Quality Control Board
San Diego Region

REGIONAL BOARD SURVEY ON GRAYWATER REGULATORY PROGRAMS

The purpose of this survey is to evaluate interest in regulation of graywater discharges to subsurface dispersal systems by municipalities in San Diego County.

Survey Question 1: What level of interest does your City have in regulating graywater systems? *(Please check the box that most closely indicates the City's level of Interest)*

☐ Very interested ☐ Somewhat ☐ Not interested

Survey Question 2: Does your City have the expertise and personnel to oversee the installation of these systems and consistently apply the design and installation requirements throughout the City?

☐ Yes ☐ Not at this time

Survey Question 3: Is the City willing to require percolation testing be performed in compacted soils prior to approving installation, as currently required by the County of San Diego?

☐ Yes ☐ Not at this time

Survey Question 4: Is the City willing to require that a site design be submitted for review and approval by the City prior to installation of a graywater system for properties where onsite wastewater system as-builts are not on file?

☐ Yes ☐ Not at this time

Name of City: _____

Signature: _____

Print Name: _____

E-mail/telephone no. _____

Use back of form to provide any written comments and please return completed survey form to:

Northern Core Regulatory Unit
RWQCB
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

JOHN H. ROBERTUS
Executive Officer

May 31, 2006
JHR:rwm

Additional space for written comments:

Supporting Document 4

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
5201 Ruffin Road, Suite C
San Diego, CA 92123
(619) 338-2222 FAX (619) 338-2315
1-800-253-9933
http://www.sdcounty.ca.gov/deh/lwq/index.html

GARY W. ERBECK
DIRECTOR

JACK MILLER
ASSISTANT DIRECTOR

March 15, 2006

Robert Morris, Senior Water Resources Control Engineer
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego CA 92123

Dear Mr. Morris:

GRAYWATER SYSTEMS WITHIN SAN DIEGO COUNTY

This letter requests a written confirmation or if necessary, correction of Regional Water Quality Control Board (RWQCB) staff guidance recently provided to us concerning the County's authority to regulate graywater systems. Litigation concerning the County's graywater program is reasonably possible in the near future. Your timely advice will also be taken into account as part of the County review of its graywater program guidance, fees and ordinances. We hope to complete that review and revision process by May of this year.

In 1990, the RWQCB ended its program to directly review individual on-site waste water treatment systems and turned to the County to do that work. Based on that delegation, and with the consent and cooperation of the municipalities within the county, the County has permitted and regulated septic systems and graywater systems in both the incorporated and unincorporated areas of San Diego County for many years. This program was initially based on a delegation of the RWQCB's authority to issue Waste Discharge Requirements (WDR) for any discharge of waste to the waters of the state. The Basin Plan delegation language applies to "individual sewerage systems consisting of conventional septic tanks and leach fields or seepage pits," and grants "authority to regulate the discharge of domestic wastes to the appropriate county health officer." Similarly, when it updated it's waiver policy in Resolution R09-2003-0060, the RWQCB waived WDR's for conventional septic tank/subsurface disposal systems for residential units provided those systems received permits from the County pursuant to the Basin Plan delegation.

Graywater is not expressly addressed in the Basin Plan delegation or in Resolution R09-2003-0060, but RWQCB staff has recently orally confirmed the longstanding interpretation of both the RWQCB and the County that graywater is a form of domestic waste or sewage for purposes of RWQCB authority, and for purposes of this RWQCB delegation to the county health officer. The RWQCB delegations also do not provide that a County permit for a subsurface drip dispersal system will make an RWQCB permit unnecessary. In practice, however, the County has issued permits for graywater systems that rely on subsurface drip dispersal, instead of referring these "unconventional" systems to the RWQCB for permitting. (The County does not issue permits for

drip fields for septic systems except to allow repairs, but has conducting a California Environmental Quality Act (CEQA) review process for a pilot program that would allow these systems to be permitted once approval is granted by the RWQCB.)

Pursuant to our understanding of the RWQCB's delegation, the County has enacted septic system and graywater provisions in its County Code. All municipalities in the County have enacted companion ordinances authorizing the county health officer to permit and regulate on-site waste water systems, and to collect fees to support that program, within their boundaries. Some but not all of these companion ordinances expressly refer to graywater systems. In addition, municipal building officials coordinating through the San Diego chapter of the International Code Council (ICC) (formerly the International Conference of Building Officials (ICBO)), have agreed that graywater systems and discharges should be permitted, inspected and regulated by the County. (See ICC San Diego Chapter Policy No. P-1100). Of course, the views of this consensus organization may not reflect or predict the view of the governing body of each municipal jurisdiction, and ICC policies cannot determine the scope of the County legal jurisdiction over graywater systems.

A second body of law, enacted after the RWQCB's delegation to the County was put in place, is also applicable here. In 1992, the Water Code was amended through the addition of Sections 14875 through 14877.3, expressly addressing graywater. That new law directed the Department of Water Resources (DWR)--not the State Water Regional Control Board (SWRCB) to develop standards for graywater systems. Section 14877.2 addressed implementation of those standards, stating that "A graywater system may be installed if the City or County having jurisdiction over the installation determines that the system complies with standards adopted by the department [i.e., DWR]."

On March 8, 1994, the California Building Standards Commission implemented the standards developed by DWR, when it approved Graywater Standards as part of the California Plumbing Code. See Title 22, California Code of Regulations, Part 5, Appendix G (Appendix G). Those regulations require permits from an Administrative Authority, and specify that the Administrative Authority is a city or county. There is no reference in these standards to the authority of RWQCB's to regulate discharges. These standards were to take effect in every California city and county in November 1994.

A third body of potentially relevant law is Sections 13290 to 13291.7 of the Water Code [AB 885, enacted in 2000], which direct the SWRCB to develop state-wide standards for on-site sewage treatment systems by 2004. (Those standards are not yet in place.) These provisions do not refer to graywater, and the Water Code does not define "sewage." The materials so far issued by the State Board related to these standards do not address graywater systems.

These laws and regulations do not expressly address whether the RWQCB continues to have the authority to require a discharge permit for a graywater system that meets the standards set out in Appendix G, for which an installation permit has been issued by a city or county. The County's position (and we believe the RWQCB's position) is and has been that the RWQCB's authority to regulate graywater system discharges has not been removed by the city and county installation permit program established pursuant to Sections 14875 through 14877.3 of the Water Code. Essentially all point source discharges involve some plumbing that requires a plumbing permit, but these sources also result in discharges that require WDR's. A permit to install plumbing is not a permit to discharge wastes to the waters of the State.

In addition, the County believes that the companion ordinances enacted by local municipalities are sufficient to confer each city's authority under Section 1877.2 of the Water Code to the County. We recognize however that this position is somewhat weaker for ordinances that do not refer expressly to graywater than it is for ordinances that expressly address the permitting of

graywater systems. One reason for our request that you clarify and document the RWQCB position on these issues, is so that we can work with local municipalities as necessary to coordinate a regional graywater system permitting program, if you conclude that the County no longer has authority County-wide based on your delegations of authority to the County.

These are current issues in San Diego county because a graywater systems vendor has recently sent letters to the municipalities within San Diego county, challenging the County's assertion of authority over graywater systems installed within those cities. To the extent we understand his position, Mr. Stephen Wm. Bilson, the President of ReWater Systems Inc., appears to be asserting that the SWRCB and RWQCB were entirely divested of jurisdiction over graywater systems either when Sections 14875 through 14877.3 of the Water code were enacted, or when Appendix G took effect. If the RWQCB was stripped of its authority in this manner, then the Basin Plan delegations could not continue to confer authority over graywater systems to the County.

An effective regional program to regulate graywater systems discharges is important to the protection of human health and the environment. As stated in Appendix G, Section G 13(a), *"Graywater may contain fecal matter as a result of bathing and/or washing of diapers and undergarments. Water containing fecal matter, if swallowed can cause illness in a susceptible person. Therefore graywater shall not be contacted by humans, except as required to maintain the graywater treatment and distribution system. (b) Graywater shall not include laundry water from soiled diapers. (c) Graywater shall not be applied above the land surface or allowed to surface and shall not be discharged directly into or reach any storm sewer system or any water of the United States."* Because of these risks, the site suitability and installation requirements for graywater systems are very similar to those for septic systems.

Department of Environmental Health (DEH) is also concerned that graywater systems are being installed without permits, which creates a risk to public health and the environment through the potential improper placement of the system in unsuitable soils or in areas without the required separation to seasonal high groundwater levels. In addition, these unpermitted systems may lead to violations of stormwater programs as the systems may contribute to nitrate and bacteria contaminations of local waters. DEH is planning a regional effort to identify and inspect already-installed unpermitted graywater systems, but we want to be certain there is a broad consensus concerning the legal foundations of this program before launching that program.

Because of Mr. Bilson's challenges, and our plans for increased compliance and enforcement efforts, we are requesting a written record of the support that RWQCB staff has already provided to us orally. We also want to ensure that all involved government agencies are on the same page on these issues. If, as we expect, you confirm that you Basin Plan delegations are applicable to and effective for graywater, DEH would also like the RWQCB to include graywater's designation as sewage to be included in future Basin Plan amendments and waiver resolutions. Finally, if any city wants to assume an increased role in graywater system permitting pursuant to Section 14877.2 (as Mr. Bilson urges), it will also be necessary to work out whether the RWQCB or the County also have a role to play in permitting or regulating graywater systems in that city.

We do not expect that your answers to these questions will ultimately have a significant effect on the permitting and regulation of graywater systems in San Diego County. Local municipalities appear to prefer that the County run this program because of its expertise in on-site waste water treatment and disposal issues. The County's graywater program is designed to protect human health and the environment, and those goals will remain fundamental whether the program it is based on discharge authority delegated down from the RWQCB, or on Section 14877.2 and Appendix G authority passed to the County by the cities, or on both of those programs.

Due to the urgency of this issue, your earliest response would be greatly appreciated. Should you have any questions in this matter, please call me at (858) 495-5572 or Tom Lambert, Supervising Environmental Health Specialist at (760) 940-2861. Rod Lorang at County Counsel (619) 531-4884 is also assisting us in this review.

Sincerely,

MARK MCPHERSON, Chief
Land and Water Quality Division

MM:RL:cc
2 Enclosures:
Appendix G
ICBO Policy P-1100

cc: Rodney Lorang, Senior Deputy
County Counsel, MS A-12

Jeff Murphy, Building Chief
Department of Planning and Land Use, MS 0-650

Stephen William Bilson
ReWater Systems, Inc.,
P.O. Box 210171
Chula Vista CA 91921

Ali Fattah
International Code Council
San Diego Area Chapter
1222 First Avenue
San Diego, CA 92101

California R gional Water Quality ontrol Board
San Diego Region
Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Alan C. Lloyd, Ph.D.
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

9174 Sky Park Court, Suite 100, San Diego, California 92123-4340
(858) 467-2952 • Fax (858) 571-6972
http:// www.waterboards.ca.gov/sandiego

April 11, 2006

In response refer to:
CRNU:73-35.02:morrb

Mark McPherson, Chief
Land and Water Quality Division
County of San Diego Dept. of Environmental Health
5201 Ruffin Road, Suite G
San Diego, California 92123

Dear Mr. McPherson:

GRAYWATER SYSTEMS WITHIN SAN DIEGO COUNTY

This is in response to your March 15, 2006 letter requesting clarification about the Regional Water Quality Control Board (RWQCB) regulation of graywater discharges to onsite disposal systems. As noted in the letter, the RWQCB has deferred regulation of graywater discharges to the County of San Diego. This decision was first made in 1991 when the County issued *A Homeowner's Guide to Temporary Use of Greywater During a Drought Emergency* and adopted its *Graywater Ordinance and Standards*. This decision was reaffirmed in the late 1990s when the County prepared its *Guideline for Installation of Graywater Systems*.

The basis for this decision has been the application of a RWQCB policy contained in the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) for conditionally waiving waste discharge requirements. This policy, adopted pursuant to California Water Code (CWC) Section 13269, prescribes conditions for waiving waste discharge requirements for those individual sewerage systems that the County Department of Health Services has developed and enforces appropriate regulatory standards. Although in the strict sense of the term, a "graywater disposal system" may not be a "sewerage system', it was expedient to apply the waiver rather than to develop specific waiver conditions for this category of waste discharges. Please note that if the RWQCB had not waived its authority to regulate graywater discharges, persons who discharge or propose to discharge graywater would be required to obtain waste discharge requirements (CWC Section 13264).

The RWQCB is scheduled in 2007 to review and update, if necessary, its waivers of waste discharge requirements. As part of this review, the RWQCB may either clarify its decision to include "graywater discharges" under the waiver category for "individual sewerage systems", or prescribe specific conditions for waiving waste discharge requirements for such discharges. As part of this review, the RWQCB would consider the County's effectiveness in implementing the standards for the design and installation of the disposal systems contained in the Title 22,

California Code of Regulations, Part 5, Appendix G, as well as input from interested stakeholders.

If you have any questions or need further information, please contact Mr. Bob Morris at (858) 467-2962 or e-mail at bmorris@waterboards.ca.gov. The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

Respectfully,

JOHN H. ROBERTUS
Executive Officer
San Diego Regional Water Quality Control Board

JHR:mpm:rwm

cc: Stephen Bilson
ReWater Systems, Inc.
P.O. Box 210171
Chula Vista, CA 91921

California R. ional Water Quality (ntrol Board
San Diego Region
Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Dan Skopec
Acting Secretary

Arnold Schwarzenegger
Governor

9174 Sky Park Court, Suite 100, San Diego, California 92123-4353
(858) 467-2952 • Fax (858) 571-6972
http:// www.waterboards.ca.gov/sandiego

File 73-35.02

April 25, 2006

In reply refer to:
crnu:73-35.02:morrb

Stephen Bilson, Chairman & CEO
ReWater Systems, Inc.
P.O. Box 210171
Chula Vista, CA 91921

Dear Mr. Bilson:

WAIVERS OF WASTE DISCHARGE REQUIREMENTS FOR GRAYWATER DISPOSAL SYSTEMS

By telephone conversation on April 18, 2006, you requested a written response to your March 23, 2006 letter regarding the regulation of graywater subsurface disposal systems. Specifically, you asked whether the Regional Board waiver of waste discharge requirements, which was described in our April 11, 2006 letter to the County of San Diego on this subject, could be extended to graywater regulatory programs implemented by public agencies other than the County Department of Environmental Health.

As noted in our April 11th letter, the Regional Board is currently applying the waiver for individual sewerage disposal systems to graywater subsurface disposal systems. As a condition for waiving requirements for this waste category, the Regional Board requires the project proponent to obtain approval by the appropriate county health officer. The Regional Board, however, could modify in the future its waiver policy to establish specific conditions for waiving requirements for subsurface disposal of graywater. The conditions for such a waiver could be based upon effective regulation of the discharges by a city that has established by ordinance applicable standards for protection of water quality. We would expect that such standards would be at least as stringent as Appendix G of the California Plumbing Code and would be consistent with standards of the County Department of Environmental Health and other communities in the Region with similar regulatory programs.

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

Respectfully,

Robert Morris

ROBERT W MORRIS
Senior Water Resource Control Engineer

cc: Mark McPherson, County of San Diego Department of Environmental Health

Supporting Document 7

5/16
Art Cre 5/17
FYI - pass to staff
for a response by 1 June.
MR
RM
file

REWATER
SYSTEMS, INC.

P.O. Box 210171
Chula Vista, CA 91921
Phone/Fax (619) 421-9121
www.rewater.com

May 12, 2006

John Robertus, Executive Officer
SDRWQCB
9174 Sky Park Court, Suite 100
San Diego, CA 92123

2006 MAY 15 A 11:
SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

Dear Mr. Robertus:

ReWater makes greywater irrigation systems that meet all the requirements of California's greywater irrigation code, Appendix G of the California Plumbing Code Title 24, Part 5, California Administrative Code, (the "Code") and we would like the SDRWQCB to establish a waiver from sewer discharge requirements for such systems when they are installed and permitted by a city or county as required by that Code and its statutory authority, Water Code Section 14877 et seg.

Water Code Sections 14877.2 and 14877.3 allow both cities and counties to permit such systems in their jurisdictions under that Code. Because such systems are privately owned, and nobody can tell where the next person will want to install one, a waiver covering your entire jurisdiction is necessary, or each city and the county would have to request a waiver for the same reasons, using the same Code as the bases for their waiver request.

In 1992, Assembly Bill #3518 directed the California Department of Water Resources (DWR), in consultation with the Department of Health Services (DHS), to publish a code for the "maximum, safe use of greywater" in single-family residences. In 1994, after a series of public hearings and much debate, the 14-page Code was published. In 1995 pursuant to AB313, DWR and DHS were directed to revise the Code for multi-family, commercial, and institutional greywater systems, and again after a series of hearings and much public debate, that revised Code was published in 1997.

There is nothing anyone can imagine that concerns greywater irrigation that is not considered by that Code. DHS testified that the Code will result in systems that are safer than what is allowed for septic systems.

Please establish a waiver from sewer discharge requirements for greywater systems when they are installed and permitted by a city or county as required by the Code.

Sincerely,

Stephen Wm. Bilson
Chairman & CEO

"THE WORLD'S MOST EFFICIENT IRRIGATION SYSTEM"

Supporting Document 8

REWATER SYSTEMS, INC.

P.O. Box 210171
Chula Vista, CA 91921
Phone/Fax (619) 421-9121
www.rewater.com

June 2, 2006

Dear Mayor and Council Members:

Your City will soon receive a letter from the San Diego Regional Water Quality Control Board asking whether your city wants to inspect greywater irrigation systems in its own jurisdiction as specifically allowed under state law, Water Code Sections 14877.2 and 14877.3.

I strongly encourage you to return the Regional Board's questionnaire informing them that your city will inspect greywater irrigation systems in your jurisdiction. Cities all over this state have approved such systems under that code for over a decade now, and none of them have the problems ostensibly claimed by Mark McPherson at the San Diego County Department of Environmental Health (DEH) in his efforts to raise revenues by increasing permit costs.

As I'd written you previously, Mark McPherson is trying to support his department's sagging revenues by claiming greywater irrigation systems must be treated and inspected just like sewage systems, resulting in permit costs that now exceed the cost of a greywater irrigation system.

Contrary to all evidence, even that produced by Mark McPherson under the California Public Records Act, greywater is not the same as sewage and there are no failures of systems installed under that code. DEH helped write that code and DEH successfully used that code prior to his reign there.

Your city recently received correspondence from Mark McPherson falsely claiming that only DEH can inspect such systems anywhere in this county. If your city does not inform the Regional Board that your city will inspect greywater systems in your own jurisdiction, people in your community will not install these extremely efficient, water conserving, wastewater reducing, irrigation run-off pollution preventing irrigation systems solely due to DEH's exorbitant permit costs.

Sincerely,

Stephen Wm. Bilson
Chairman & CEO

"THE WORLD'S MOST EFFICIENT IRRIGATION SYSTEM"

Supporting Document 9

REWATER SYSTEMS, INC.

P.O. Box 210171
Chula Vista, CA 91921
Phone/Fax (619) 421-9121
www.rewater.com

July 10, 2006

John Robertus, Executive Officer
SDRWQCB
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Dear Mr. Robertus:

The May 30, 2006, letter that the RWQCB sent out to various cities asking about their interest in receiving a waiver of the sewer requirements for greywater irrigation systems included some misinformation that needs to be corrected.

The California Water Code at Sections 14877.2 and 14877.3 already gives cities the ability and rules to follow for permitting greywater irrigation systems in this state. Cities do not need to "pass by ordinance" anything to do so, as that letter suggests. Moreover, said misinformation could lead cities to attempt to pass a greywater ordinance that would conflict with the state greywater code, which is a violation of that state code at section 14877.3 and the California Plumbing Code in general.

Just like the posted speed limit on the freeway is state law, the state greywater code is state law on greywater permitting. For purposes of the RWQCB's waiver from sewer disposal requirements, the only thing cities need to do is to request the same waiver that the county DEH presently enjoys when it enforces the state greywater code.

While the differences between what the RWQCB asked for and what the RWQCB actually meant to ask for are minor, if left as is, those differences could be a major stumbling block to a city that does not want the hassle of having to pass a new ordinance. The state greywater code is in place to keep cities from having to hassle.

Please send the cities a letter stating that neither the RWQCB or the state greywater code requires them to pass an ordinance to use the state greywater code. This clarification will go a great way in fulfilling the Legislative intent for the state greywater code and in securing interest by cities for receiving their own waiver. Thank you.

Sincerely,

Stephen Wm. Bilson
Chairman & CEO

"THE WORLD'S MOST EFFICIENT IRRIGATION SYSTEM"

Bob - pls. evaluate & w/ John Richards as necessary

ok 7/11 RM

Supporting Document 10

California Regional Water Quality Control Board

San Diego Region

Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

9174 Sky Park Court, Suite 100, San Diego, California 92123-4353
(858) 467-2952 • Fax (858) 571-6972
http:// www.waterboards.ca.gov/sandiego

July 25, 2006

In reply refer to:
crnu:73-35.02:morrb

Stephen Bilson, Chairman & CEO
ReWater Systems, Inc.
P.O. Box 210171
Chula Vista, CA 91921

Dear Mr. Bilson:

WAIVERS OF WASTE DISCHARGE REQUIREMENTS FOR GRAYWATER DISPOSAL SYSTEMS

By letter dated July 10, 2006, you raised an issue regarding the Regional Board May 30, 2006 letter to the city managers within San Diego County. You expressed concern that the letter might discourage some cities from assuming responsibility for regulating graywater systems by inferring that the cities must establish an ordinance to do so.

Based upon the Regional Board experience with the cities pertaining to their municipal storm water programs, we are confident that the cities are aware of their legal authority and what regulations must be enforced through adoption of city ordinances. Consequently, we do not see a need to clarify the May 30, 2006 letter.

In response to the survey, one city was very interested in regulating graywater systems, two were somewhat interested, and nine respondents were not interested. Based upon these results, we will continue to defer development of a waiver for graywater systems until we are scheduled to update the Regional Board waiver policy in 2008.

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

Respectfully,

OSB

JOHN H. ROBERTUS
Executive Officer

JHR:mpm:rwm

REWATER SYSTEMS, INC.

P.O. Box 210171
Chula Vista, CA 91921
Phone/Fax (619) 421-9121
www.rewater.com

August 7, 2006

John Robertus, Executive Officer
Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Re: crnu:73-35.02:morrb

Dear Mr. Robertus:

The title of your most recent letter – "Waiver Of Wastewater Discharge Requirements for Graywater Disposal Systems" - and the contents of that letter, show that your staff still does not understand or appreciate all that I've informed them about regarding the SDRWQCB's policy discriminating against cities in the cities' lawful duties to regulate greywater irrigation systems within their city.

First off, the state greywater code is not a greywater *disposal* code as indicated in the letter's heading, rather, it is a greywater irrigation system code and as such it controls an individual's right to reuse their water and a city's right to allow that reuse. As I've pointed out to this RWQCB in previous letters concerning this subject, that control is limited by the state greywater law (Water Code Section 14775 et seg) and subsequent code itself (Title 24, Part 5, California Administrative Code, Appendix G - Graywater Systems, aka, Appendix G of the California Plumbing Code).

One of the SWRCB's, and thus the RWQCB's, main legal obligations is to promote the beneficial and reasonable use of water within the state, and this state greywater irrigation law and state greywater irrigation code allow the RWQCB to do so within the confines of that law and code. While Title 22 tertiary disinfected reclamation plants cost hundreds of millions of dollars and fail to reuse the vast majority of their water as intended, the small on-site greywater irrigation systems allowed by the state greywater irrigation code use all of their relatively benign water, safely underground, in highly efficient drip irrigation, very cost effectively. These beneficial reuse systems are extremely reasonable and should be receiving the strongest support of the SDRWQCB, not a bunch of grief.

The laws and codes on which your staff's letters are premised pertain to obligations concerning sewage disposal. As your staff's own letters mentioned, greywater is not sewage, and greywater irrigation systems do not need to be treated the same as sewage disposal systems.

Sewage disposal laws and codes are made for the protection of society, and thus are enforcement tools to protect society. Prior to the passage of Assembly Bill #3518 in 1992, all wastewater was classified as sewage, and that included greywater. But after AB3518 described greywater and created a code for the use of greywater, greywater became legally distinguishable from sewage.

This state's greywater irrigation laws and codes are made for the benefit of society too, but they are water reuse tools that can not restricted except through a finding of need by a *city or county* (Water Code Sections 14877.2 and 14877.3 and Appendix G), and then only as prescribed by the California Plumbing Code, with needs exceptions granted only by the California Building Standards Commission (CBSC). There are no granted exceptions on file with the CBSC.

As I politely pointed out in my most recent letter to you, Mr. Morrison's letter to the cities within San Diego County misinformed them about the state law regarding inspections of greywater irrigation systems. Accordingly, his letter contradicts the law. His misinformation caused, encouraged, or otherwise allowed some cities to not follow the state greywater law, as evidenced by the fact that some of those cities chose to not perform their own greywater irrigation inspections.

Further, Mr. Morrison knew that Mark McPherson at San Diego County DEH had previously sent out letters to all those cities falsely stating that special skills were necessary to inspect greywater systems, scaring some into thinking they needed to let SDCDEH perform greywater inspections, and thus Mr. Morrison knew or should have known that some if not all of those cities were probably predisposed to not following the law and inspecting their own greywater systems.

Whether Mr. Morrison knew or should have known that his own misinformation would exacerbate the cities' misconception and cause, encourage, or otherwise allow some to not follow the state greywater law is not relevant. It did.

Your recent letter dated July 25, 2006, informs us that, despite the above-stated barrage of misinformation concerning the state greywater irrigation permitting process, at least three cities want to inspect their own greywater irrigation systems as allowed under state law per the state code. By definition, any SDRWQCB decision to not let those cities enjoy the same waiver from the sewage disposal laws that this RWQCB Board already gives to SDCDEH to perform those cities' obligations under the state greywater code arbitrarily and capriciously discriminates against those three cities and the people in them.

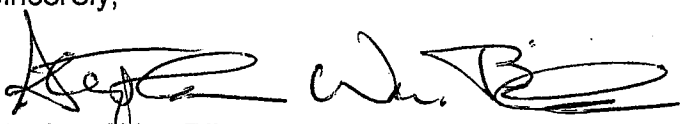
Let me put it another way, the RWQCB does not have the right to not let cities inspect their own greywater irrigation systems. If the state greywater irrigation code is good enough for the SDCDEH to get a waiver from sewage disposal requirements, it is good enough for the cities and must be granted.

If you have any questions, please call me immediately, as the RWQCB's failure to allow cities to inspect their own systems is costing ReWater thousands of dollars

per month, because, as I've previously informed the RWQCB, Mark McPherson at SDCDEH, who tried to raise the county's greywater inspection fee to pad his budget until I called him on it, is now treating greywater irrigation systems like sewage disposal systems, falsely claiming, and contrary to 100% of the extensive documentation the county provided pursuant to the California Public Records Act, that his former boss, Frank Gabrian, failed to adequately inspect greywater irrigation systems under a low-fee policy.

Let me put it another way, Mark McPherson is a proven liar, Bob Morrison inadvertently misinformed the cities in a way that supported McPherson's lies, Mr. Morrison then calculated the consequences didn't matter enough to bother with, the results of Mr. Morrison's miscalculation are ruining the cause of water reuse and my water reuse business, and I need the RWQCB to set things right by immediately granting cities the same waiver the county has.

Sincerely,



Stephen Wm. Bilson
Chairman & CEO

REWATER SYSTEMS, INC.

Supporting Document 12

Box 210171
Chula Vista, CA 91921
Phone/Fax (619) 421-9121
www.rewater.com

August 28, 2006

John Robertus, Executive Officer
Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Re: cmu:73-35.02:morrb

Dear Mr. Robertus:

This is a follow-up to my August 7, 2006, letter in which I asked the RWQCB to grant cities within its jurisdiction the same waiver for greywater irrigation systems from the sewage discharge requirements as the county already enjoys.

Enclosed is an August 25, 2006, 6:28 p.m., email I received from Jim Barrett, Director, Water Department, City of San Diego, expressing his mistaken belief that the City of San Diego needs to "adopt an ordinance assuming the inspection responsibility" for greywater irrigation systems, as erroneously suggested by your employee, Bob Morrison, via his letter to the cities that I previously complained about to you.

When I complained that Mr. Morrison's misinformation caused, encouraged, or otherwise allowed some cities to be mistaken about their existing rights and duties under the law, I was not theorizing about some hypothetical situation, I was complaining about actual situations - Mr. Barrett's email is proof of at least one example.

Except for Mark McPherson's and perhaps others lobbying your staff, I really do not understand why your staff has blown this very simple matter up into such a big deal. Please have your staff immediately issue a greywater irrigation waiver to the cities just like it has been issued to the county.

Sincerely,

Stephen Wm. Bilson
Chairman & CEO

Linda S. Adams
Secretary for Environmental Protection

California Regional Water Quality Control Board

San Diego Region

Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Arnold Schwarzenegger
Governor

9174 Sky Park Court, Suite 100, San Diego, California 92123-4353
(858) 467-2952 • Fax (858) 571-6972
http:// www.waterboards.ca.gov/sandiego

September 8, 2006

Mr. Stephen Bilson
Chairman & CEO
ReWater Systems, Inc.
P.O. Box 210171
Chula Vista, CA 91921

Dear Mr. Bilson:

SUBJECT: WAIVERS OF WASTE DISCHARGE REQUIREMENTS FOR GREYWATER SYSTEMS

This is in response to your letter of August 28, 2006. As I indicated in my letter of July 25, 2006, I do not plan to proceed with any modifications to the Regional Board's Waiver Policy with regard to discharges from greywater systems at this time. This is based on the following:

1. There is currently a process available whereby homeowners in any of the cities in San Diego County can obtain approvals to install greywater systems and discharge from those systems under oversight by the County of San Diego.
2. Based on our May 2006 survey, there is not a great demand by cities in San Diego County to assume the oversight responsibility for the greywater systems.

As I also indicated in my letter, I believe the appropriate time for the Regional Board to consider modifications to its Waiver Policy for greywater discharges is during the reissuance process for that Policy. This process will get underway in early 2007 with the goal of bringing the Policy before the Regional Board during the Fall of 2007.

In your letter you also indicated that Mr. Jim Barrett of the City of San Diego was confused with regard to the procedures the City would have to follow to assume oversight responsibility for greywater systems. You attributed this confusion to

statements in my May 30, 2006 letter to the municipalities in San Diego County. I believe Mr. Barrett knows very well the procedures the City of San Diego would have to follow to set up a program for oversight of greywater systems. Based on my review of Mr. Barrett's August 25, 2006 e-mail to you (attached to your letter), I see no evidence of confusion on his part.

Respectfully,

JOHN H. ROBERTUS
Executive Officer

JHR:alc

Supporting Document 14

JM 10/17

Bob Morris 10/23

& don't know if a response is required or warranted. your opinion?

No →

ALC 10/24

RM

File

REWATER SYSTEMS, INC.

P.O. Box 210171
Chula Vista, CA 91921
Phone/Fax (619) 421-9121
www.rewater.com

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD
2006 SEP 18 P 2:49

September 14, 2006

John Robertus, Executive Officer
SDRWQCB
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Dear Mr. Robertus:

I read the September 8, 2006, response you sent denying the waiver to the cities that would allow them to enforce the state greywater irrigation code under the state greywater law as DEH currently is allowed to enforce it. Your response is unacceptable because it arbitrarily and capriciously discriminates against people in cities.

By denying people in cities their right to have their systems inspected by their city without interference by DEH, Mark McPherson has been able to kill a large segment of the population's interest in greywater reuse by heaping totally unnecessary inspection costs on greywater systems proposed within cities, ostensibly because he has no soil information for sites that do not have a septic system, but really in his efforts to cover up his lies about why he had earlier added new inspection fees on all greywater systems, which was just to increase his revenues, as I have explained to you.

Knowing that, your response therefore contradicts the RWQCB's own charter vis-à-vis promoting the beneficial use of water and the protection of water quality, in that it allows McPherson's unnecessary costs to kill an otherwise cost effective water conservation method in the cities, thereby encouraging people to do what many in San Diego have done with greywater, which is to dump it on their landscapes. You can help the people who want to do the right thing by simply acknowledging their legal rights.

Further, not only does Jim Barrett's email show he is suffering from the misunderstanding promoted by Bob Morris' letter, as I complained about in my previous letter, but Mr. Barrett's misunderstanding is *obvious*.

Other cities may also have been confused about the law thanks to Mr. Morris' mistake. Regardless, some cities have told the RWQCB they want to inspect their own systems as allowed under the law, and the RWQCB has no legal authority to deny them their right to do so. The waiver that DEH received must be extended to the cities now.

Sincerely,

Stephen Wm. Bilson
Chairman & CEO "THE WORLD'S MOST EFFICIENT IRRIGATION SYSTEM"