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July 3, 2012

Ms. Jeanine Townsend, Clerk of the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, California, 95814

Dear Ms. Townsend:

Subject: Comment Letter – Amendment to the Recycled Water Policy

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to provide comments on the May 8, 2012 Amended Recycled Water Policy and Draft Attachment A Documents. LADWP strongly supports the development of scientifically defensible policies and regulations that aggressively protect groundwater basins and public health, while encouraging the development of local water supplies.

Recycled water is a vital component of the City of Los Angeles' (City) plans to ensure a sustainable water supply future for its nearly 4 million citizens. The use and expansion of recycled water is more critical than ever as our region continues to face gradual but permanent reductions in imported water supplies.

Currently, LADWP delivers over 8,000 acre-feet per year (AFY) of recycled water to its customers. The City's recycled water deliveries have included an average of 2,000 AFY of advanced treated water for the Dominguez Gap Seawater Intrusion Barrier Project, which ultimately recharges the West Coast Basin. To ensure the safety and reliability of this water, the City actively monitors for constituents of emerging concern (CECs) as a part of the Monitoring and Reporting Program for the project.

In 2012, the City completed the development of the Recycled Water Master Planning documents (RWMP documents). These documents recommend the implementation of a program to replenish groundwater in the San Fernando Basin with up to 30,000 AFY of purified recycled water. As a part of the master planning process, the City pilot tested the treatment system for the groundwater replenishment (GWR) project and monitored for numerous constituents, including CECs. Testing results demonstrated that CECs were removed to non-detectable levels with the proposed treatment process of microfiltration (MF), reverse osmosis (RO), and advanced oxidation.

Irrigation with recycled water is also important to the City's local water supply strategy. The RWMP documents recommend the expansion of the LADWP's non-potable reuse (purple pipe) systems to provide 29,000 AFY recycled water to targeted LADWP customers for irrigation and other non-potable uses. Together, groundwater replenishment and non-potable projects would increase the amount of recycled water use in the City of Los Angeles to 59,000 AFY by 2035.

LADWP recognizes that the State Water Resources Control Board (State Board) staff is working hard to address the concerns regarding recycled water reuse and appreciate their efforts to amend the policy in regards to the monitoring requirements of Constituents of Emerging Concern (CECs).

Providing clarity and consistency of the monitoring requirements for CECs within the Recycled Water Policy will allow LADWP to continue delivering recycled water as a safe and reliable water source for the City of Los Angeles. It will help us respond consistently to potential concerns from stakeholders and the general public and will set the stage for a successful Groundwater Replenishment Project in the future.

LADWP appreciates the changes reflected in the Amendment that allow for:

- Reduced monitoring requirements on landscape irrigation projects
- Acknowledgement of the California Department of Public Health (CDPH) as the lead on determining which CEC's shall be monitored, and
- Flexibility in choosing appropriate site specific surrogates for performance monitoring.

However, there are still several issues in the proposed amendment for which LADWP requests additional action from the State Board. As stated on page 13, Section 10, paragraph a(3) of the Recycled Water Policy – "The state of knowledge regarding CECs is incomplete. There needs to be additional research and development of analytical methods and surrogates to determine potential environmental and public health impacts." LADWP agrees with this statement of finding in the Recycled Water Policy and would urge the State Board to conduct further research and development in regards to the question of CECs. This additional research and development is also consistent with the findings of the Science Advisory Panel Final Report on Monitoring Strategies for CECs in Recycled Water published June 25, 2010. In their report the Science Advisory Panel recommends the development of robust and reproducible analytical methods to measure CECs in recycled water. With the current lack of data regarding potential environmental and public health impacts and analytical methods to accurately measure and reproduce meaningful data, LADWP supports activities focused on achieving these goals and furthering the CEC knowledge base.

As an alternative to amending the Recycled Water Policy today, the State Board could use existing options outlined in Section 13267 of the Water Code to request that recycled water users conduct information gathering sampling and analyses on recycled water to determine additional information on CECs that may be present in recycled water. This targeted and

specific option could be performed on a quarterly basis until sufficient data have been collected to support conclusions regarding potential environmental and public health concerns over CECs. This sampling could in turn meet the recommendations of the Science Advisory Panel by providing a better sampling methodology, improved and cost effective analytical procedures for testing and focused rationale for the data collected.

In the event that the State Board does amend the Recycled Water Policy, LADWP urges the State Board to make the suggested changes to the proposed Recycled Water Policy amendment and Attachment A and offers the following comments below for consideration. LADWP hopes that incorporating these comments will result in a better understanding of the Monitoring Requirements for CECs and help ensure their consistent implementation statewide.

Comments on Attachment A and the Recycled Water Policy[1]

1.) Groundwater Recharge Reuse – Subsurface Application Section 2.2.2, Page 6

As additional data are collected and processed, changes to the recycled water treatment systems and reuse criteria are sure to occur. The draft Attachment A specifies treatment system components by type in this section which may be altered in the future. In order to keep the document from needing future revision, the reference to the type of treatment units in use should be removed and replaced with the generic wording "after each treatment unit". This will provide for sampling of each treatment unit to determine removal efficiency.

LADWP requests that the reference to specific treatment units be removed and this section should state that sampling should occur between treatment units or after each treatment unit as necessary and prior to discharge. The sampling locations should also be coordinated with the CDPH most current draft of the groundwater replenishment reuse regulations to ensure consistent requirements across all aspects of the recycled water regulatory arena.

2.) CEC Methods - Section 1.1.2, Page 4

The Policy Amendment requires the use of "approved" Environmental Protection Agency (EPA) methods. The language does not clearly state that "Approved" methods only refer to methods promulgated in 40 Code of Federal Regulations (CFR) Part 136 or Part 141. Specifically, LADWP is concerned about two EPA methods for CECs: Method 1694 for the analysis of pharmaceuticals and personal care products and Method 1698 for the analysis of steroids and hormones. These two methods have been released but not yet promulgated and have not been properly validated.

LADWP requests that the language be clarified to indicate that "approved EPA methods" only refers to methods that have been promulgated by EPA, in addition, where no method is promulgated, an alternate method as submitted by a project sponsor may be used when reviewed and approved by the Regional or State Board.

[1] All references to page numbers refer to the marked up copies of the Recycled Water Policy and Attachment A as provided on the State Board website.

3.) Groundwater Recharge Reuse – Section 2.1.2, Page 6

This section indicates that monitoring shall be conducted at a location following RO/AOP treatment prior to discharge into an aquifer. Two comments in relation to this section, first, the use of the word "discharge" and second the specificity of the type of treatment systems identified.

For those projects involved with subsurface application of recycled water LADWP would request that the word "discharge" be replaced with "recharge." Since the recycled water is being used to recharge the groundwater aquifers, this is a better description of what is happening in these cases.

This same substitution of the word "discharge" would also apply in the following locations when discussing subsurface application projects: Section 2.2.2, item (3), Table 3, monitoring point location for subsurface application, Table 4, monitoring point for subsurface application, Table 5, monitoring point for subsurface application, and Section 4.1.2.

In an effort to maintain consistency and not confuse what treatment may or may not be needed in different and potentially fluid requirements for groundwater recharge, LADWP suggests that the reference to RO/AOP be removed and simply state that the water will be sampled prior to recharge. This will allow the policy to be more flexible in light of future or changing regulatory requirements on the types of treatment that are necessary for the Groundwater Recharge Reuse.

LADWP requests that the reference to RO/AOP be removed and sampling be required before recharge into an aquifer.

4.) Table 3: Initial Assessment Phase Monitoring Requirements, Page 10

Estimates for current recycled water projects to conduct initial testing are on the order of $100,000 per location per year. If the purpose of the testing is to accumulate information regarding the recycled water and its content, sampling could be spaced out over time rather than done close together as is the case in weekly testing. All things being constant, weekly testing would not be expected to show large differences in data analysis results. LADWP believes weekly tests should be changed to be conducted on a quarterly or semi-annual. This proposed frequency is consistent with the findings of the Science Advisory Panel as reported in their Final Report (Science Advisory Panel Final Report, page 68-69). In this Final Report, the Panel recommended quarterly and semi-annual sampling as adequate frequencies to gather additional information on CECs and to track their presence in the recycled water.

Baseline sampling follows the initial assessment phase and increases the sampling and monitoring time frame to four years. Both of these sampling events are collecting essentially the same information and could be combined. By combining these two functions into one and allowing the initial assessment phase to become part of the baseline assessment, recycled water projects would collect the required information and could also remove some of the sampling and analysis burden and duplication.

LADWP requests that sampling frequency be reduced to quarterly in order to obtain data based on the Science Advisory Panel Final Report. LADWP also requests that the initial and baseline sampling be combined into one three year time frame. While this will remove a portion of the sampling and analysis burden on the recycled water projects it will still serve the purpose of gathering the needed information. The same comment and request regarding frequency of sampling would also apply to the requirements as outlined in Table 4 – Baseline Phase Monitoring Requirements and Table 5 – Standard Operation Monitoring Requirements.

This recommendation is supported by data obtained through the City's "Groundwater Replenishment Treatment Pilot Study", which took place over 16 months at the Donald C. Tillman Water Reclamation Plant. The pilot study demonstrated the treatment efficacy of advanced water purification processes on the alternative source waters to remove pathogens, salts, and organic compounds from treated wastewater, creating purified recycled water that can be used indirectly to supplement potable water supplies.

The City's pilot testing was conducted in three phases. Phase 1, considered the baseline treatment process, validated the proposed processes used at existing advanced water purification facilities in California, including microfiltration (MF), RO, and ultraviolet (UV)/peroxide. Phase 2 evaluated ozone/peroxide as an alternative to UV/peroxide, with both advanced oxidation processes (AOPs) tested side-by-side and with target contaminants spiked into the AOP supply. Phase 3 confirmed the recommended operating conditions from Phases 1 and 2 and also evaluated two alternative RO membranes.

Water quality results from the pilot testing confirmed that all existing and draft drinking water and recycled water regulations can be met using the RO treatment processes. All of the regulated compounds had average and maximum values in the product water below their regulatory limits, with the vast majority already below regulatory limits in the source water.

Over 200 regulated and non-regulated parameters were tested in the pilot study. All but ten non-regulated pharmaceuticals and personal care products were removed to concentrations below detection levels by the RO process. All but three of these (TCEP, Tris (chloroisopropyl) phosphate (TCPP), and 1,3-Dichloro-2-propanol phosphate (TDCPP)) were removed to below detection levels by the UV/peroxide process, and all but two were removed by the ozone/peroxide.

5.) Pilot and Startup Monitoring Requirements – Page 12

LADWP requests that the Policy amendment state that agencies that have completed a pilot demonstration within the conditions prescribed in the Scientific Advisory Panel's report (Table 8.3, page 67 of the report) which followed CDPH-approved testing protocols and yielded acceptable results, such as the City of Los Angeles, are not required to conduct additional pilot and/or startup monitoring and that the project sponsor may proceed with full-scale operation.

6.) Landscape Irrigation – Section 2.1.3, Page 6 and Section 4.1.3, Page 15

LADWP is supportive of the reduced requirements on landscape irrigation projects. LADWP also supports the amended Policy language which does not require the determination of removal differentials for surrogates for irrigation projects.

7.) Priority Pollutant Testing (Location) – Recycled Water Policy, Section b, Item 4, Page 9

The amended Recycled Water Policy calls for priority pollutant testing for landscape irrigation projects, but is not specific on where this testing should take place. The requirements are unclear as to where the water should be tested for the priority pollutants. Since the recycled water distribution systems are closed systems, the location where the water leaves the treatment facilities and enters the distribution system would be a logical choice as a testing location for priority pollutants in the recycled water. This information could then be made available to all recycled water users on the system, not just landscape irrigation projects.

LADWP requests that the language in this section clearly indicate that the testing location is at the recycled water plant only and not individual landscape irrigation projects for the priority pollutant testing. This is not clear in the current language and further clarification would provide for consistent implementation of monitoring requirements state-wide.

8.) Priority Pollutant Testing (Frequency) – Recycled Water Policy, Section b, Item 4, Page 9

The amended policy further stipulates that landscape irrigation projects need to sample for priority pollutants twice per year except those projects owned by small disadvantaged communities where priority pollutants need only be tested once every two years. LADWP believes that this requirement should be applied consistently regardless of the project community's status. A disadvantaged community should have the same opportunity to determine if the recycled water contains priority pollutants of concern. Testing only once every two years doesn't allow for the same knowledge on a timely basis as it does for the other communities.

LADWP recommends that the priority pollutant testing frequency be the same for all recycled water projects regardless of the type of community the project is located. If the frequency is to be twice per year and a disadvantaged community cannot afford the sampling, grants should be made available to those communities in order to make testing available and to provide the necessary information on the quality of the recycled water found within those communities on the same frequency as the other communities.

In closing LADWP appreciates the opportunity to provide these comments on Attachment A and the amended Recycled Water Policy. LADWP looks forward to working with the State Board in developing a comprehensive solution to the use and monitoring of recycled water to ensure that California continues to develop this vital resource.

LADWP also supports the comments submitted by the WateReuse Association, the Association of California Water Agencies (ACWA) and the Los Angeles Bureau of Sanitation.

If you have any questions, please feel free to contact Ms. Katherine Rubin at 213-367-0436 or Ms. Evelyn Cortez-Davis at 213-367-2360.

Sincerely,

Mark J. Sedlacek
Director of Environmental Affairs

MH:lr
c: Hassan Rad, Bureau of Sanitation
Katherine Rubin
Evelyn Cortez-Davis