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April 18, 2013

Mr. Samuel Unger
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013

Dear Mr. Unger,

ADDENDUM TO REQUEST FOR TIME SCHEDULE ORDER FOR THE CITY OF LOS ANGELES TO IMPLEMENT THE WASTE LOAD ALLOCATIONS OF THE TOTAL MAXIMUM DAILY LOAD FOR BACTERIA AT MARINA DEL REY HARBOR MOTHERS' BEACH AND BACK BASINS

On December 24, 2012, the City of Los Angeles (City) submitted a letter requesting a Time Schedule Order (TSO) to implement the dry weather Waste Load Allocations (WLAs) for Back Basin E as specified by the Total Maximum Daily Load for Bacteria at Marina del Rey Harbor Mothers' Beach and Back Basins (Mdr Bacteria TMDL). The December 24, 2012 letter provided the information required by the California Water Code and as described in Section VI.E.4.d of the MS4 Permit. The City appreciates the discussions of our request letter with Regional Board staff on several occasions, and the input that was provided to us. We also appreciate the opportunity of submitting this addendum to our original request letter for addressing the two following requests that were received from Regional Board staff:

1. Provide additional specificity on the actions that will be taken during the course of the TSO.
2. Reconsider the proposed interim limits and include incremental decreases in the allowable exceedance days over the course of the TSO to ensure incremental improvements in water quality.

SPECIFIC ACTIONS

The City is proposing three tiers of implementation actions to address exceedances in Back Basin E, as follows:

- **Tier I – Regional BMPs:** This tier represents the structural approach and is included in the City's request because all of the City's dry weather runoff discharges from the under-represented area are collected in Oxford Basin prior to the discharge to Back Basin E. The County of Los



Angeles as the agency with jurisdiction over Oxford Basin is coordinating the Oxford Retention Basin Multi-use Enhancement Project, which is expected to provide significant water quality improvements to Oxford Basin and Back Basin E. The Oxford Basin project is expected to be completed by December 2015.

- **Tier II – Address Non-stormwater Discharges:** This tier represents the institutional or source control approach. In the first year, the City will conduct extensive dry weather runoff investigations in the under-represented area to:
 - Determine the extent/amount of dry weather runoff;
 - Identify the sources of dry weather flows;
 - Identify potential enforcement actions to reduce non-stormwater discharges; and
 - If applicable, identify potential locations for distributed BMPs for treating non-stormwater.

The results will be submitted to the Regional Board in the Dry Weather Flow Investigations and Abatement Report. Flow investigations will continue during years 2-5 on a monthly to quarterly basis depending on the amount of non-stormwater flows being observed; follow-up actions will be taken to address prohibited non-storm water discharges.

- **Tier III – Effectiveness Assessment and Follow-up:** This tier is to confirm that Back Basin E water quality has improved after completing the Oxford Retention Basin Multi-use Enhancement Project and flow abatement efforts. If exceedances persist and additional time is needed, source investigations and follow-up actions will be conducted to address remaining sources.

The revised action plan is summarized in Table 1.

INTERIM LIMITS

The City reconsidered the proposed interim limits based on discussions with Regional Board staff, and identified an approach to reflect progressive improvement of Back Basin E water quality over the course of the TSO. Similar to the original TSO request, interim limits are expressed as the number of allowable exceedance days at the existing monitoring locations in Back Basin E. As compared to the December 24, 2012 request to the Regional Board, we have revised the method for calculating the interim limit percentiles. The calculation methodology is detailed in Attachment A.

Three interim limits are proposed:

- **Years 1, 2, and 3 (May 1 2013 through April 30 2016):** No significant improvement of the water quality in Back Basin E is expected until the Oxford Basin project has been completed (approximately 2 ½ years after TSO adoption, see Table 1). As such, the initial interim limits would be set at the 99th percentile of exceedance days during years 1, 2 and 3.
- **Year 4 (May 1 2016 through April 30 2017):** Improvements in water quality in Back Basin E are expected with the completion of Oxford Basin; however, given the potential for non-point sources to continue to affect water quality, the interim limit would be reduced from 99th percentile to 85th percentile.
- **Year 5 (May 1 2017 through April 30 2018):** The interim limits would be reduced from 85th percentile to 75th percentile.

The calculated interim limit percentiles are shown in the Table 2 and Table 3, below. For each monitoring location in Back Basin E, the number of exceedance days is provided based on daily and weekly sampling frequencies.

Table 1. Action Plan for Marina del Rey Under Represented Area

Tier	Action	Schedule	Responsible Party	Description
Tier I	Complete Oxford Retention Basin Multi-Use Enhancement Project	Present – Dec 2015	County	This project by Los Angeles County Flood Control District proposes conversion of Oxford Basin into a multi-use facility with several water quality improvement components. Estimated project schedule: design by January 2014; bid & award by January 2015; construction by August 2015; post construction by December 2015.
Tier II	Complete Dry Weather Flow Investigations and Abatement Report	March 1, 2014	City	Submit a summary report that details the results of the 2013 flow investigations, identifies a process for addressing dry weather flows (including those flows unlikely to be abated with enforcement actions), and highlights potential locations for dry weather BMPs .
	Conduct monthly to quarterly field observations and submit semi-annual summary reports	Nov 2013 – End of TSO	City	Conduct monthly dry weather flow investigations and follow-up on flows as appropriate though procedures identified in Dry Weather Flow Abatement Report. Semi-annual reports (one for the winter and one for the summer period) will summarize dry weather flow observations and actions taken for non-stormwater discharges that are not authorized or exempt.
Tier III	Assess Back Basin E water quality	Present – End of TSO	City and County	Continue/perform CMP monitoring to determine whether exceedances persist and to evaluate water quality improvements as a result of completing the Oxford Basin project and flow abatement efforts.
	If Back Basin E exceedances continue: Quantify the contributions of non-point sources and MS4 discharges	May 2016 – April 2017	City	If exceedances persist post-Oxford Basin, initiate study to evaluate the extent to which MS4s are causing or contributing to exceedances and also quantify the loading of bacteria from non-point sources. Results of dry weather flow investigations would support quantification of MS4 inputs. This effort may be performed collaboratively with other agencies.
	In the case that exceedances persist due to non-point sources: provide technical documentation to support Basin Plan amendments	May 2017 – End of TSO	City and County	In the event MS4s are not responsible for continued exceedances after Oxford Basin is completed, use study results and other data as technical documentation to support the Regional Board with Basin Plan/TMDL amendments

Table 2. Summer Dry Weather Interim Limits Percentile Exceedance Rates and Exceedance Days

Years Applicable	Percentile	MDRH-5			MDRH-6 (DEPTH)			MDRH-6 (SURFACE)			MDRH-7		
		% Exc.	Exc. Days (daily)	Exc. Days (weekly)	% Exc.	Exc. Days (daily)	Exc. Days (weekly)	% Exc.	Exc. Days (daily)	Exc. Days (weekly)	% Exc.	Exc. Days (daily)	Exc. Days (weekly)
1, 2, and 3	99 th	63.6%	107	15	37.5%	63	9	69.4%	117	17	69.2%	117	17
4	85 th	44.4%	75	11	14.3%	24	3	40.0%	68	10	50.0%	84	12
5	75 th	37.5%	63	9	14.3%	24	3	33.3%	56	8	37.5%	63	9
Not applicable	Maximum	70.0%	118	17	37.5%	63	9	75.0%	126	18	69.2%	117	17

Maximum percentiles/exceedance days are shown for reference.

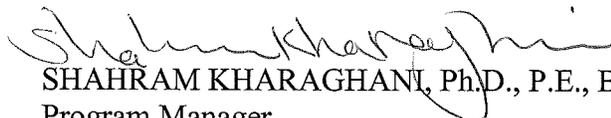
Table 3. Winter Dry Weather Interim Limits: Percentile Exceedance Rates and Exceedance Days

Years Applicable	Percentile	MDRH-5			MDRH-6 (DEPTH)			MDRH-6 (SURFACE)			MDRH-7		
		% Exc.	Exc. Days (daily)	Exc. Days (weekly)	% Exc.	Exc. Days (daily)	Exc. Days (weekly)	% Exc.	Exc. Days (daily)	Exc. Days (weekly)	% Exc.	Exc. Days (daily)	Exc. Days (weekly)
1, 2, and 3	99 th	43.3%	53	8	27.3%	34	5	70.5%	87	12	61.5%	75	11
4	85 th	25.0%	31	4	20.0%	25	4	25.0%	31	4	33.3%	41	6
5	75 th	20.0%	25	4	20.0%	25	4	20.0%	25	4	20.0%	25	4
Not applicable	Maximum	70.0%	118	17	37.5%	63	9	75.0%	126	18	69.2%	117	17

Maximum percentiles/ exceedance days are shown for reference.

The City appreciates your consideration of the additional information contained herein and we thank you and your staff for your continued assistance. If you or your staff has any questions regarding this request, or needs additional information, please contact Dr. Shahram Kharaghani, Manager of the City's Watershed Protection Program at 213-485-0587 or Shahram.Kharaghani@lacity.org.

Sincerely


 SHAHRAM KHARAGHANI, Ph.D., P.E., BCEE
 Program Manager

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- cc: Ivar Ridgeway, California Regional Water Quality Control Board, Los Angeles Region
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APPENDIX A: METHODOLOGY FOR INTERIM LIMITS CALCULATIONS

The following is a description of the methodology used to calculate interim limits for the Mdr Bacteria TMDL. The interim limits calculations were based on the following formula:

Interim Exceedance Days = Percentile [*Historic % Exceedance*] x [*Number of Days in Critical Year*],
where Percentile can be incrementally decreased for phased implementation (e.g.,
from 99th percentile to 85th percentile to 75th percentile).

The calculated *Interim Exceedance Days* are based on daily sampling; the values would be scaled proportionately if the CMP performs weekly sampling (or other frequency).

Calculating [*Number of Days in a Critical Year*]:

The numbers of days in a critical year were pre-determined by the bacteria TMDLs, as follows:

- Winter dry days: 122 days
- Summer dry days: 168 days
- Wet days: 75 days

Calculating Percentile [*Historic % Exceedance*]:

Historic % Exceedance was calculated using data collected during the TMDL Coordinated Monitoring Plans. For the Mdr Bacteria TMDL, CMP data collection began on April 2, 2007. Because relatively few years of data are available, if *Historic % Exceedance* was calculated based on discrete calendar year or seasonal exceedance rates, then relatively few data points would be available to calculate percentiles (i.e., 5 values – one for each year/season). With so few values, the calculated percentiles would not capture/represent the variability of exceedances of Mdr. As such, a rolling calculation was used to step through the dataset and calculate exceedance rates over multiple intervals, greatly increasing the number of data points available for percentile calculations. The rolling approach also captures varying wet and dry periods, thereby representing future periods that could be exceptionally wet or dry.

In order to generate additional data points for percentile estimates of *Historic % Exceedance*, the rolling calculation must be shorter than the winter and summer seasons that the TMDL uses to categorize allowable exceedance days. Considered options included 30, 42, or 60 days. For example, a duration of 90 days was considered too long because calculations would essentially be limited to the last two months of the winter dry season (calculations wouldn't start until the 4th month and the winter season is five months long).

The following approach was applied for calculations of Percentile [*Historic % Exceedance*]:

- Duration of 42-days was selected because it corresponds to the duration of the geometric mean calculation for the TMDL and thus has relevance to the applicable WQOs for the bacteria TMDLs. This duration is also sufficiently short to allow the calculation to be performed over the course of the whole season.
- Each time a sample was collected, the single sample WQO exceedance rate was calculated for the previous 42-days (starting on the 42nd day in each season). If any of the applicable indicators (total coliform, fecal coliform, enterococcus, or the total-to-fecal ratio) exceeded the single sample target in a given sample, that sample was counted as one exceedance.

- The values for each Percentile (99th, 85th, and 75th) were calculated based on all the exceedance rates calculated in the CMP dataset (i.e., the exceedance rates calculated with the rolling calculation were ranked from highest to lowest and percentiles were determined).

Based on the discussions with Regional Board staff, options for the time period of CMP data were considered, as follows:

- **Option 1:** Use all CMP data from April 2007 to January 2013 (“5-year data set”).
- **Option 2:** Use data collected after November 2009, when the last LFD came online in Back Basin E (“3-year data set”)

The calculations for Option 2 are shown in Table A1 and Table A2, below. These tables can be compared to Table 2 and Table 3 in the main letter, as follows:

- For some percentiles (e.g., 99th percentile), the calculated *Historic % Exceedance* under Option 2 is actually higher than under Option 1.
- For other percentiles (e.g., 75th percentile), the calculated *Historic % Exceedance* under Option 2 is lower than under Option 1.
- There were also differences by sites in terms of whether *Historic % Exceedance* increased or decreased for a given percentile.

Because there was no consistently obvious effect between the two Options on the exceedance rates, the City proposes to use the entire dataset (Option 1). Furthermore, Option 1 would promote consistency among the TSO for Back Basin E (City) and the TSO for other Back Basins (County).

Table A1. Summer Dry Weather: Percentile Exceedance Rates and Exceedance Days – December 2009 - Present

Percentile	MDRH-5		MDRH-6 (DEPTH)		MDRH-6 (SURFACE)		MDRH-7	
	% Exc.	Exc. Days (daily)	% Exc.	Exc. Days (daily)	% Exc.	Exc. Days (daily)	% Exc.	Exc. Days (daily)
99 th	57.7%	97	37.5%	63	25.0%	42	50.0%	84
85 th	27.1%	46	16.7%	28	7.5%	13	17.6%	30
75 th	23.5%	40	14.3%	24	7.1%	12	12.5%	21
Max	58.3%	98	37.5%	63	28.6%	48	50.0%	84

Table A2. Winter Dry Weather: Percentile Exceedance Rates and Exceedance Days – December 2009 - Present

Percentile	MDRH-5		MDRH-6 (DEPTH)		MDRH-6 (SURFACE)		MDRH-7	
	% Exc.	Exc. Days (daily)	% Exc.	Exc. Days (daily)	% Exc.	Exc. Days (daily)	% Exc.	Exc. Days (daily)
99 th	45.8%	56	29.5%	36	74.0%	91	63.3%	78
85 th	25.0%	31	20.0%	25	25.0%	31	42.9%	53
75 th	20.0%	25	16.7%	21	19.5%	24	27.1%	34
Max	58.3%	98	37.5%	63	28.6%	48	50.0%	84