August 9, 2012

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

Re: Comments on City of Malibu Conceptual Groundwater Injection Plan Technical Memorandum, Dated June 29, 2012

Dear Mr. Unger:

On behalf of Heal the Bay and the Los Angeles Waterkeeper, we provide the following comments on the Conceptual Groundwater Injection Plan Technical Memorandum ("Injection Plan Technical Memo") submitted by City of Malibu ("City" or "Malibu") on June 29, 2012 in an effort to comply with the requirements of the Memorandum of Understanding Regarding the Phased Implementation of Basin Plan Amendment Prohibiting On-Site Wastewater Disposal Systems in the Malibu Civic Center Area ("MOU"). As discussed in detail below, the comment period on Malibu's Conceptual Groundwater Injection Plan required by Article II, Section A.3 of the MOU should be extended because an essential part of the Plan was not provided to the public until August 8, 2012, a day before the August 9, 2012 comment deadline. In addition to the inadequate notice provided to the public, Heal the Bay and the Los Angeles Waterkeeper urge the Los Angeles Regional Water Quality Control Board ("Regional Board") to reject the June 29, 2012 Injection Plan Technical Memo as inadequate and require the City to address the issues outlined in Section II of this letter. We appreciate the opportunity to provide these comments.

I. The Comment Period on Malibu's Conceptual Groundwater Injection Plan Should be Extended by Two Weeks to Provide the Interested Public with Adequate Time to Review the Entire Plan

Under the MOU, Malibu's Conceptual Groundwater Injection Plan was to be completed and submitted to the Los Angeles Regional Water Quality Control Board ("Regional Board") by June 30, 2012. MOU at 4 (Article II, Section A.3). On June 29, 2012, Malibu submitted to the Regional Board the Injection Plan Technical Memo. The Injection Plan Technical Memo was subsequently posted on the Regional Board's website and the Board sent out a notice to interested parties inviting comments on the document. Notice of Availability of Documents for Public Review – Conceptual Groundwater Injection Plan by City of Malibu (July 9, 2012).

Contrary to the representations made in the July 9, 2012 public notice, however, the public was not provided with Malibu's complete Conceptual Groundwater Injection Plan required by Section A.3 of Article II of the MOU. As the June 29, 2012 Injection Plan Technical Memo itself makes it clear, the Injection Plan Technical Memo addresses the MOU directive to Malibu to "complete and submit to the Los Angeles Water Board a conceptual groundwater injection plan that is based on field testing and modeling" by June 30, 2012 only "[i]n combination with the Technical Memorandum dated February 7, 2012." Injection Plan Technical Memo at 2. Although the Injection Plan Technical Memo asserts that the February 7, 2012 Technical Memorandum was submitted to the Regional Board, the document was not posted on the Regional Board's website. *See* http://www.waterboards.ca.gov/rwqcb4/water_issues/programs/basin_plan/index.shtml#PhaseI (last visited on August 7, 2012). The February 7, 2012 Technical Memo was provided to Los Angeles Waterkeeper and Heal the Bay on August 8, 2012, one day before the August 9, 2012 deadline, and only after a detailed e-mail inquiry to Regional Board staff.

Los Angeles Waterkeeper and Heal the Bay have had no opportunity to review and evaluate the February 7, 2012 Technical Memo and hereby request a three-week extension of the August 9, 2012 deadline. Given the circumstances, we believe this extension is warranted and should be granted to allow us and other members of the public to evaluate Malibu's complete Conceptual Groundwater Injection Plan.

II. Malibu's Injection Plan Technical Memo Is Inadequate and Lacks Essential Technical Analysis and Details

Without waiving any of our objections to the deficient public notice and our request for extension of the comment deadline, we urge the Regional Board to reject the Injection Plan Technical Memo. While the Injection Plan Technical Memo concludes that groundwater injection is a viable option, the Plan lacks necessary details to support this conclusion. For instance, we are concerned that the Injection Plan Technical Memo as written does not adequately address potential impacts the project may have on the soon-to-be restored Malibu Lagoon. Also, the document does not incorporate the results of the City of Malibu Recycled Water Use and Storage Study ("Water Study") to further assess feasibility of groundwater disposal performed in accordance with Milestone 2 of the MOU. In general, we believe the Injection Plan Technical Memo lacks important details of the technical analyses performed to ensure that injection is technically sound. Also, the Injection Plan Technical Memo fails to include important analyses to prove that groundwater injection truly is a feasible disposal option, such as seismicity and impacts to existing groundwater aquifers and beneficial uses within these aquifers. These issues are expressed in more detail below.

A. <u>The Injection Plan Technical Memo should explain how the project could reduce flows of injected effluent to Malibu Lagoon.</u>

Malibu Lagoon is currently undergoing an extensive restoration to aid in protecting and enhancing beneficial uses and improving water quality. The Injection Plan Technical Memo states that "approximately 20% of the injected water is predicted to travel through the groundwater flow system and ultimately discharge to Malibu Lagoon" if all three phases of the

Septic Prohibition are implemented and "approximately 15% of the injected water … travels through the groundwater flow system and discharges to the Malibu Lagoon" if the wastewater flow from Phase 1 properties only are injected. Injection Plan Technical Memo at 26, 29.

This is of particular concern because the anticipated quality of the effluent to be injected will be high in nutrients, while Malibu Lagoon is currently impaired by nutrients and is currently undergoing an extensive restoration effort to address this impairment. Table 7 of the Plan shows ammonia levels in the treated water to be 13.3 mg/L, with nitrate-N at 6.5 mg/L, which are much higher levels than current groundwater quality extracted from the three deep exploratory wells MW01, MW02, and MW03. When this water reaches the Lagoon in large quantities, it will negatively impact the effectiveness of the restoration. Per the USEPA TMDL established for nutrients in the Malibu Creek Watershed, Malibu Creek and Lagoon have an acute ammonia target of 2.59 mg/l, a summer total nitrogen target of 1.0 mg/L, and a winter total nitrogen target of 8.0 mg/L. The Injection Plan states that "the City will use the model to further optimize injection to meet a combined goal of staying within the depth to water constraints while minimizing flow in the direction of the lagoon," but provides no detail of how the City will do this. Injection Plan Technical Memo at 26. These details should be added to the plan. In addition, there is a prohibition on discharges from the Tapia Wastewater Treatment Plant upstream from Lagoon mid-April to November. This prohibition was instituted to protect water quality in Malibu Creek and Malibu Lagoon. The proposed groundwater injection and associated nutrient flows that will reach the Malibu Lagoon appear to conflict with the discharge prohibition imposed on the Tapia Wastewater Treatment Plant. How will the Regional Board reconcile allowing this discharge while this prohibition is in place? Neither the Regional Board nor the public and stakeholders can evaluate the impacts on the Malibu Lagoon from any proposed groundwater injection in the absence of these details. Thus, the Regional Board should request City of Malibu to revise the Injection Plan Technical Memo accordingly.

B. <u>The Injection Plan Technical Memo should incorporate findings from the Malibu Recycled Water Use and Storage Study.</u>

The Injection Plan Technical Memo states that "[t]o augment total disposal capacity, it is recommended that the percolation capacity of the Winter Canyon basin be utilized with the prime program of maximized water reuse." Injection Plan Technical Memo at 2. Yet, the Plan fails to incorporate any of the findings of the Water Study performed in accordance with Milestone 2 of the MOU. In fact, neither study acknowledges the existence of the other. To select the best wastewater management option and ensure most water quality protective compliance with the Septic Prohibition, the Regional Board should require a detailed comparison between water recycling and groundwater injection as wastewater management options. In addition, the City of Malibu should specify the percentage of treated wastewater the City proposes to inject and the percentage of wastewater to be reused.

In short, the Regional Board and City of Malibu must evaluate the Water Study and the Injection Plan in concert to adequately characterize the viable scenarios for a centralized water recycling facility in Malibu. This comprehensive evaluation should occur before the CEQA analysis takes place to aid in developing project alternatives. In fact, to achieve the best outcome and comply with the Septic Prohibition, each milestone of the MOU should not be conducted and

evaluated in isolation, but should instead take into consideration and build on the previous studies and information. At the very least, the Injection Plan Technical Memo should specify how much of the effluent injected could be offset with water reuse, per the findings of the Water Study.

Of note, there are puzzling discrepancies in the projected buildout wastewater flow estimations in the Water Study and this Injection Plan Technical Memo. For instance, the Water Study anticipates Phase 1 buildout flows to be 211,000 gallons per day (gpd) while the Injection Plan anticipates around 190,300 gpd after buildout. Table 1 shows a side-by-side comparison between the estimations for the other phases provided in the Water Study and Injection Plan Technical Memo. Considering the importance of the total buildout flow estimation, the City of Malibu should provide an explanation for these differences.

Phase	Recycled Water Use and Storage Study Total Buildout Flows (gpd)	Conceptual Groundwater Injection Study Total Buildout Flows (gpd)	Difference (gpd)
1	211,000	190,300	20700
2	350,000	296,700*	53300
3	502,000	404,200**	97800

* Calculated from Table 1 of the Conceptual Groundwater Injection Plan by summing Phase/Zone 1 and 2 (190,300gpd+106,400gpd)

** The total of all three phases/zones shown on Table 1 of the Conceptual Groundwater Injection Plan

C. <u>The Injection Plan should evaluate potential impacts to drinking water.</u>

The California Department of Public Health's most recent draft Groundwater Recycling and Replenishment Regulations require that disinfected tertiary recycled water meet a minimum subsurface retention time prior to reaching the nearest downgradient drinking water well.[1] Malibu's groundwater basin is listed in the Los Angeles Basin Plan as having a potential municipal drinking water beneficial use. Water Quality Control Plan Los Angeles Region (4) at 2-4. The Injection Plan Technical Memo, however, fails to analyze the potential impacts of groundwater injection on Malibu's groundwater basin and drinking water supply.

To fully analyze potential impacts on Malibu's groundwater basin, the Injection Plan Technical Memo should, at a minimum, provide the locations of any drinking water wells near the proposed injection sites. In addition, the Injection Plan Technical Memo should provide specific information on any plans to develop Malibu's local groundwater resources for municipal supply that may conflict with the Injection Plan Technical Memo.

D. <u>The Injection Plan Technical Memo should include more details regarding the modeling analyses performed.</u>

[1] California Department of Public Health Groundwater Replenishment and Reuse Draft Regulations November 21, 2011

The Injection Plan Technical Memo asserts that "[t]he behavior of the actual system will need to be carefully monitored and analyzed during initial injection operations due to simplifications and uncertainties inherent in this type of analysis" Injection Plan Technical Memo at 2. It is not stated in the Plan which simplifications were made and what uncertainties exist. The Plan should, for example, include the margin of error on the models as well as specify whether the models incorporate a margin of safety or any conservative assumptions in their calibration.

Further, the Injection Plan Technical Memo assumes that since the study considered groundwater conditions from years 2003 to 2009, which contains one of the wettest years recorded (2005), the modeling scenarios represent groundwater conditions that may be considered a worst case scenario. Injection Plan Technical Memo at 23. It is unclear, however, whether the model took into consideration groundwater levels resulting from sea level rise due to climate change or regulatory prohibitions on discharge to Malibu Lagoon.

In addition, given that the model has not been validated with in-situ data, model outcomes contain a great deal of uncertainty. As mentioned in the Plan, the model results are not considered to be a guarantee that the planned injection will work, but rather an estimate. Injection Plan Technical Memo at 30. The Injection Plan Technical Memo should discuss the level of confidence that this model output accurately reflects the true groundwater path of the injected treated water and specify any contingencies if the model predictions are inaccurate.

E. <u>The Injection Plan Technical Memo should evaluate seismicity and potential geohazards related to the project.</u>

One important consideration in assessing the feasibility of groundwater injection into an area is the seismicity and potential geohazards in the vicinity of the injection project. Other injection projects, such as the Terminal Island Renewable Energy (TIRE) Project, assessed seismic impacts through a simple desktop analysis. In fact, according to a the *Preliminary Geologic and Seismic Assessment, City of Los Angeles, Bureau of Sanitation TIRE Project*, the Malibu Coast contains a significant active/potentially active fault that spans 25 miles with an estimated maximum earthquake magnitude of 6.7 on the Richter Scale.

The Injection Plan Technical Memo should therefore analyze the impact of a potential seismic event on the City's plans to inject groundwater near the Civic Center. The Plan should evaluate the possibility of the injection of water to aggravate the earthquake fault. The Plan should include a desktop analysis to identify and assess potential significant earthquake-induced ground shaking or fault rupture risks and the associated consequences to the Civic Center area that could either impact or result from the wastewater injection into the geologic formations underlying Malibu. For instance, the Injection Plan Technical Memo should evaluate whether injection could lead to increased potential for soil liquefaction, which could impact structures in the Civic Center area.

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III. Conclusion

Due to the inadequate public notice, the Regional Board should extend by three weeks the comment period on Malibu's Conceptual Groundwater Injection Plan in order to provide the public with an opportunity to evaluate all documents comprising the City's Plan. In addition, and without waiving any objections to the July 9, 2012 public notice, we urge the Regional Board to reject the June 29, 2012 Injection Plan Technical Memo and require Malibu to revise the Plan and address the issues specified above.

Thank you for your consideration of these comments. Please contact Susie Santilena and Kirsten James, Heal the Bay, at (310) 451-1500 and Tatiana Gaur, Los Angeles Waterkeeper, at (310) 394-6162 if you have any questions.

Sincerely,

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