



December 4, 2019

Ms. Hope Smythe
Executive Officer
Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, CA 92501-3348

Re: Comments on the NPDES Permit Renewal for Proposed Huntington Beach Desalination Project

Hope:

On December 6, 2019, the Santa Ana Regional Water Quality Control Board (Regional Board) will hold a workshop on the renewal of the National Pollutant Discharge Elimination System (NPDES) Permit for Poseidon Water's proposed Huntington Beach Desalination Project (HBDP). IRWD has conducted technical investigations of the impacts that the HBDP will have on the water quality of potable and recycled water supplies of IRWD and other retail water agencies that utilize local groundwater. These investigations provide important information that is essential when considering the renewal of the HBDP permit. Attachment A to this letter provides a summary of the investigations and an overview of the expected water quality impacts from the HBDP to the local groundwater basin and to the retail water agencies that rely on this water. The purpose of this letter is to provide you, the Regional Board, and your staff the results of these investigations and to describe impacts, conclusions, and recommendations related to the renewal of the NPDES permit.

Overview of Investigations:

Many months ago, IRWD retained three highly-qualified consulting firms to investigate the expected water quality impacts of the HBDP. The three firms were Thomas Harder & Co., HDR, and Trussell Technologies, Inc. Harder and HDR quantified water quality impacts to IRWD's potable and recycled water supplies. Harder also quantified water quality impacts to the potable water supplies of other Orange County Groundwater Producer Agencies (Producers), while Trussell analyzed specific water quality impacts to the Orange County Groundwater Basin (Basin) from boron.

HBDP Product Water Distribution Options:

Orange County Water District (OCWD) and Poseidon have executed a non-binding term sheet for the purchase of product water from the HBDP. Harder and HDR assessed the water quality impacts associated with the following options that OCWD is considering for the distribution of the product water, should it decide to execute a water purchase contract with Poseidon:

- Recharging the product water into the Basin;
- Making direct deliveries of the product water to Producers willing to accept the water in-lieu of groundwater pumping (an alternate form of recharging); and
- Making direct deliveries to South Orange County water agencies that do not have access to groundwater.

OCWD has acknowledged that it has not received any firm commitments from retail groundwater agencies willing to accept deliveries of the HBDP product water. The non-binding commitments from the South Orange County (non-groundwater producing) agencies were highly conditional, with deliveries taken only during certain times of the year and in amounts that are a fraction of the expected output of the proposed facility. Without firm commitments to accept direct deliveries of water from the HBDP on a year-round basis, OCWD will have to resort to recharging into the Basin nearly all of the HBDP product water it purchases from Poseidon. This approach will force all of the groundwater producer agencies to accept and pay for water that many agencies have no need for; agencies that have no need for the water produced by the HBDP should be allowed to opt-out of this supply.

Water Quality Impacts:

The investigations conducted by Harder and HDR quantified water quality impacts to IRWD's potable and recycled water supplies from total dissolved solids (TDS), chloride and boron that will be in HBDP product water. Trussell quantified additional water quality impacts to the Basin that will result from the additional accumulation of boron as HBDP product water is used for recharge. Such degradation of the high quality groundwater in the Basin would be a contravention of the State Water Resources Control Board Anti-Degradation Policy (Resolution No. 68-16). To mitigate the expected water quality impacts, Trussell recommends second pass Reverse Osmosis (RO) treatment systems that would need to be implemented by Poseidon.

Conclusions:

The investigations conducted by Harder, HDR and Trussell quantified significant water quality impacts to the Basin as well as to the water supplies of IRWD and other Producers that have not been previously analyzed in compliance with the California Environmental Quality Act (CEQA). Trussell has demonstrated that avoiding the impacts of boron will require subjecting 80 percent to 100 percent of the flow through the HBDP to a second pass RO treatment process. These second pass treatment requirements will significantly increase the flow rates through the seawater intake and brine discharge facilities proposed by Poseidon. The draft NPDES permit being considered by the Regional Board does not consider the increased flow rates through the HBDP seawater intake and brine discharge facilities that will be needed to avoid the identified significant impacts to water quality.

To Avoid Impacts:

The HBDP, as it is currently being proposed, would require an ocean water intake capacity of 106.7 million gallons per day (MGD) and a brine discharge capacity back to the ocean of 56.6 MGD. Using an 80 percent second pass RO treatment process to avoid water quality impacts to IRWD's recycled water system (caused by the recharge of the HBDP product water) would require approximately a 127-MGD intake and a 77-MGD brine discharge. Using a 100 percent second pass RO treatment process to avoid additional boron accumulation in the Orange County Groundwater Basin would require approximately a 131-MGD intake and an 81-MGD brine discharge. Until the HBDP treatment process is refined, the HBDP cannot be evaluated by the Regional Board for an NPDES permit.

Recommendations:

Based on the comments provided above and the summary of the investigations provided as Attachment A, IRWD recommends that the Regional Board defer consideration of an order to renew the NPDES permit for the HBDP until such a time the following have been accomplished:

- Water agencies interested in purchasing the water produced by the HBDP have committed to purchase and take delivery of this water;
- OCWD has developed a plan for distributing water from the HBDP and water supply integration studies have been completed based on the distribution method(s);
- Water quality specifications for the HBDP product water have been identified that are compatible with the selected distribution option and that avoid water quality impacts;
- A preliminary design of the HBDP has been completed that complies with the identified water quality specifications;
- Final HBDP intake and brine discharge flow requirements have been identified; and
- A new or subsequent Environmental Impact Report is prepared and certified by the water agencies that have committed to purchase and take delivery of the product water, that evaluates the final HBDP intake and brine discharge flow requirements.

Should the Regional Board decide to proceed with an NPDES permit for the HBDP, it should require a more complete anti-degradation analysis to determine that the project meets the “maximum benefit” test under the State Water Resources Control Board Anti-degradation Policy. This complete analysis should include a degradation analysis of groundwater due to recharge of the product water and a degradation analysis of the ocean that includes intake and brine discharge flow scenarios associated with a two-pass RO system that will be needed to avoid water quality impacts. The Regional Board should also include a requirement for routine monitoring of boron in the seawater intake, brine discharge and product water. This will allow maintaining a mass balance of boron that will assist in avoiding impacts to the Basin and retail agency water supplies.

IRWD greatly appreciates the opportunity to provide its comments. Please provide a copy of this letter and Attachment A to each of the members of the Regional Board. We hope that the information provided is helpful to you, your staff and the Board in evaluating the renewal of the NPDES Permit for the HBDP Project. If you would like to discuss these issues further, feel free to contact Paul Weghorst at (949) 453-5632.

Sincerely,



Paul A. Cook P.E.
General Manager

Enclosure: Attachment A – Summary of IRWD Investigations of the Water Quality Impacts

cc: Members of the Santa Ana Regional Water Quality Control Board