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ORANGE COUNTY WATER DISTRICT
ORANGE COUNTY'S GROUNDWATER AUTHORITY

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June 26, 2020

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

Subject: Huntington Beach Ocean Desalination Project

Dear Ms. Smythe:

You recently requested additional information from Orange County Water District ("OCWD: District") regarding the proposed Huntington Beach Ocean Desalination Project. We have repeated your seven questions in **bold font** and provided answers below.

1. From the Term Sheet, how was the actual rate quoted calculated (provide a calculation of costs based on all of the components in the pricing).

The estimated cost of water reflected in the 2018 term sheet and supporting OCWD staff reports is based on competitive bids procured by Poseidon for the construction and operation of the desalination plant. The estimated acre-foot cost of water is identified in the OCWD July 18, 2018 staff report as \$1,916/acre-foot treatment plant costs plus an additional \$350/acre-foot for distribution. The \$350/acre-foot cost is an estimate. The dollars were escalated to 2022 dollars to reflect what the plant's anticipated first-year operation date was thought to be in 2018.

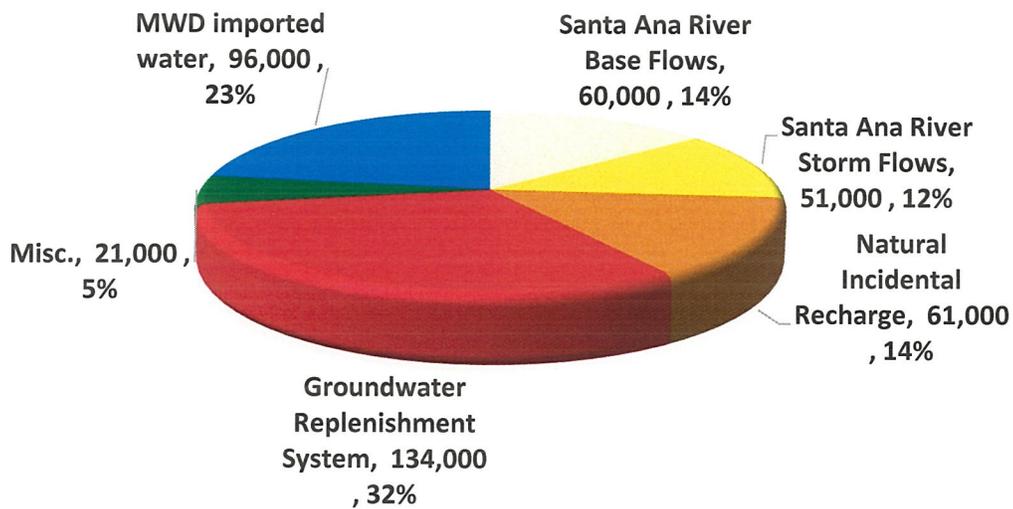
Breaking down the cost of water, approximately 50% of the unit cost of desalinated water is intended to repay the upfront capital that is borrowed to pay for the project development, permitting, design, construction, and financing costs. The remaining 50% funds the ongoing plant operating costs. Approximately half of the operating costs are attributable to the plant's power needs while the other half covers all other non-electricity operations and maintenance costs (including labor, consumables, equipment repair and replacement, and permit compliance costs).

2. Total water demand in 2025 (the first year of projected commercial operation). Can you please produce a pie-chart similar to slide #8 from the May 15th presentation.

The requested pie-chart is provided below. Total water demand within the OCWD Service territory is estimated at 423,000 acre-feet per year in 2025. The water supply sources estimated to be available to meet that water demand are shown in the following pie-chart.

POTENTIAL FUTURE 2025 OCWD SERVICE TERRITORY WATER SUPPLY SOURCES

TOTAL WATER DEMANDS OF 423,000 AFY



3. Population projections in the OCWD service area and in south OC.

The latest population projections from the Orange County Center for Demographic Research are shown below.

<u>Agency</u>	<u>Current Population</u>	<u>2045 Population</u>
Orange County Water District	2,502,914	2,676,016
South Orange County	566,073	584,843

South Orange County includes: Aliso Viejo, Dana Point, Laguna Beach, Laguna Hills, Laguna Niguel, Laguna Woods, Lake Forest, Mission Viejo, Rancho Santa Margarita, San Clemente and San Juan Capistrano

4. What are the factors OCWD would be considering in deciding on the final distribution plan – specifically whether OCWD will distribute the water or if Poseidon will distribute water (per Term Sheet). This affects Regional Board potential permitting.

Under all circumstances “OCWD will distribute the water” after accepting the water at a specified delivery point, which is currently contemplated to be the fence line of the desalination facility site. This arrangement ensures all costs and risks associated with operating the plant rests with Poseidon and the District only accepts and pays for water delivered meeting contractual specifications for quantity, quality, reliability and price.

The 2018 term sheet allows for the option of Poseidon building the desalinated water distribution system before turning it over to the District to own and operate once the desalination plant is ready to deliver drinking water. This is the same approach the San Diego County Water Authority and Poseidon implemented with the Carlsbad Desalination Project. The District may decide to build the distribution system if we determine it is a more cost effective and timely approach. No decision on the distribution of the water will be made until the project is fully permitted and the District can make a final assessment of the project’s cost.

We want to take this opportunity to provide additional information on one option to distribute the ocean desalination water. At the May 15th Regional Board workshop, a statement was made that the District was putting desalinated water into the groundwater basin because “it is not needed”. This statement reflects a fundamental misunderstanding of how the District manages the groundwater basin. The District replenishes the groundwater basin daily through injection wells or recharge basins with various sources of water. These sources of water include untreated imported water purchased from the Metropolitan Water District (MWD) via the Municipal Water District of Orange County, Santa Ana River water and over 100 million gallons per day of purified wastewater from the Groundwater Replenishment system. The Huntington Beach ocean desalination water could be used in the same manner.

By recharging the ocean desalination water into the groundwater basin, the District can allow increased annual groundwater pumping by the cities and retail water districts within OCWD. These same agencies will then be able to reduce how much treated imported water they need to annually purchase from the MWD to meet the water demands in their service areas. With this operation, the groundwater basin in effect distributes the desalination water to the cities and retail water districts within OCWD. Thus, all of these agencies are able to benefit from the project.

- 5. In the OCWD May 15th presentation, slide #13 speaks to why 50 MGD is preferred size for the desalinated facility and that this size provides “economies of scale”. Can you please provide the cost comparison for the 50 MGD facility compared to a potential 30 or 35 MDG facility.**

Downsizing the Huntington Beach Desalination Project’s capacity to 30 or 35 MGD would not meet the District’s desire of developing a 50 MGD (56,000 acre-foot per year) project and would also increase the unit cost of the water.

As a primary matter, it is important to understand that we project over 100,000 acre-feet of imported water will be needed annually within the OCWD service territory in the future. The District’s pursuit of the project is based in part on OCWD’s policy of increasing water supply reliability by reducing demand on imported water. A materially smaller plant (i.e., 30-35 MGD) would significantly diminish the value of the project and require the District to pursue an additional (and as of today unidentified) large-scale water supply project or numerous smaller projects to help fill the gap.

Regarding the increased unit cost from building a smaller plant, there are many costs associated with permitting, developing, financing, and constructing the project that would remain the same regardless of the plant’s capacity. These costs include much of the construction costs to modify the intake and discharge structures; it includes all of the site preparation, grading, demolition and remediation work; it includes all of the development costs spent to-date trying to secure the project’s permits; and perhaps most importantly it includes the majority of the cost of the concrete and construction materials since the buildings themselves would not be able to be proportionally reduced in size by a capacity reduction. While there would be some marginal savings associated with a smaller pretreatment system and fewer RO trains, the project water supply unit cost would increase in our opinion.

Additionally, the idea of building an expandable plant would increase the initial unit cost of water even further because certain components of the facility would need to be initially constructed to accommodate the plant’s eventual expansion. These costs include the plant’s intake, discharge, building structures, water storage tank, all the plant piping, and the distribution system.

As discussed during the May Regional Board workshop, the downsizing of the Doheny Desalination Project has contributed to that project proponent reevaluating the financial feasibility of that project.

6. Is there an upper limit on how much OCWD would be willing to pay for the desalination water?

An upper limit on how much OCWD will be willing to pay for the desalinated water has not been established. However, OCWD is sensitive to increases in the water supply cost as purchasing water from the project will be funded through an increase to our Replenishment Assessment which is charged for all groundwater pumping within OCWD. An example of this price sensitivity is in the project Term Sheet which includes a provision that the project will not move forward if the \$475/acre-foot MWD Local Resources Program operating subsidy cannot be obtained.

OCWD is closely following the project's permitting process to determine how various conditions and requirements may increase the project's cost. If the project is ultimately permitted by the Regional Board and the Coastal Commission, the OCWD Board will need to determine if the reliability and security benefits of the project outweigh its additional cost.

You should also realize that assuming the project is fully permitted, the District and Poseidon will negotiate a final water purchase agreement that will be provided to the OCWD Board for consideration. The key term of this agreement is the price OCWD will pay for the project water. The District will negotiate as low a price as possible. OCWD staff cannot provide an estimated upper limit amount that could possibly impact those future negotiations.

7. We received comments asking if OCWD is the appropriate water agency that should be responsible for purchasing and distributing water. Although this is not necessarily our responsibility, we would like to provide an answer. Any assistance you could provide in answering this question, would be helpful.

The mission of the District is to provide a reliable, high quality water supply in a cost-effective and environmentally responsible manner. The District Act gives OCWD the authority to enter into an agreement with Poseidon Resources to develop the project to assist in meeting that mission.

OCWD has the technical and financial wherewithal to implement large-scale water facilities as evidenced by the success of the District's world-renown Groundwater Replenishment System. The Huntington Beach Desalination Project provides the District and Orange County with a unique opportunity to add the single largest source of new, locally controlled and climate resilient water supply available.

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In addition to offsetting imported water demand, water from the desalination facility could provide flexibility in how the District manages the groundwater basin, specifically the desalinated water could be used to augment water supplies we inject into our Talbert Seawater Barrier to help prevent seawater intrusion into the groundwater basin. Desalinated water also provides the District and its member agencies with insurance against future climate and regulatory impacts to Santa Ana river flows and water quality regulations that could affect OCWD supplies.

Lastly, you should be aware that OCWD and Poseidon have entered into a confidentiality agreement. The agreement protects from premature public disclosure the financial information in Poseidon's detailed project cost model which is considered proprietary at this time. Detailed project cost information would eventually be made available once a final water purchase agreement is negotiated with Poseidon for review by the OCWD Board, The agreement limited the information we were able to provide for your questions #1 and #5.

The District will continue to work closely with the Regional Board on this project. If you have any further questions or would like to meet, please contact John Kennedy at (714) 378-3304 or at jkennedy@ocwd.com.

Sincerely,

A handwritten signature in blue ink, appearing to read 'M. Markus', with a long horizontal flourish extending to the right.

Michal R. Markus, P.E., D.WRE, BCEE, F.ASCE
General Manager

cc: OCWD Board
Scott Maloni