

September 20, 2021

VIA Electronic Mail: tom.luster@coastal.ca.gov

Mr. Tom Luster
California Coastal Commission
Energy and Ocean Resources Unit
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

***RE: Response to Notice of Incomplete (“NOI”) Coastal Development Permit Application
No. 9-21-0488 for the Huntington Beach Desalination Project***

Dear Tom:

Enclosed please find Poseidon Resources’ (Surfside) LLC’s (“Poseidon”) response to Commission staff’s August 5, 2021, letter deeming incomplete Coastal Development Permit application no. 9-21-0488 (“CDP”) for the proposed Huntington Beach Desalination Project (“Project”).

The NOI identifies additional information needed to deem complete the CDP application as well as information that is not required to complete the CDP application but that Commission staff states may be helpful for the Commission to consider in its review of the Project’s Local Coastal Development Permit (“LCDP”) appeal.

It is our understanding that Commission staff is tentatively holding a date on the Commission’s November agenda for the CDP hearing. In order to preserve this date, once you have reviewed our letter, we request an in-person meeting to discuss resolution of any outstanding matters and to discuss any CDP conditions of approval Commission staff plans to recommend.

A. Information needed to complete CDP application

Comment 1: Please provide the application fee for the proposed project. As described in the CDP Application’s Attachment E – Filing Fee Schedule, the total fee required is \$326,623.

Response 1: Remittance of \$326,623 will be the third time Poseidon has paid a CDP application fee for the proposed Project, including most recently in 2015 after which point Commission staff requested that Poseidon withdraw its CDP application and then denied our request for reimbursement of the substantial application fee paid. To avoid this situation again, we will pay the application fee once Commission staff have informed Poseidon it has received all the information required to deem the application complete, provided Poseidon with the draft permit

and conditions of approval for discussion and finalization prior to the CDP hearing, and the CDP hearing date has been scheduled.

Comment 2: List of interested parties and addressed, stamped envelopes: As noted in your application, Poseidon plans to submit the required list of interested parties and envelopes under separate cover. We would like to discuss this requirement with you prior to your submittal.

Response 2: Poseidon will submit the list of interested parties and addressed, stamped envelopes, after consulting with Commission staff.

Comment 3: Project Description - Intake system: We understand from Poseidon’s recent correspondence to the San Diego Regional Water Quality Control Board that Poseidon is having difficulty maintaining and cleaning a similar pilot-scale screen and intake system Poseidon has installed at its Carlsbad facility. Please describe what measures Poseidon plans to implement at its Huntington Beach facility to ensure its intake system remains functional, including proposed cleaning and maintenance methods for the screens and the pipe interior and the expected frequency of implementing these measures. These descriptions should also identify coastal resource impacts that may result from implementing these measures, and any feasible methods to avoid or reduce those impacts – for example, the use of vessels may require anchoring plans to ensure impacts to benthic habitats are minimized, the use of chemical treatments may require specific operating procedures to ensure they do not result in adverse effects to water quality nearby, etc.

Response 3: The Carlsbad Desalination Plant’s seawater intake technology pilot study is not analogous to the proposed Huntington Beach project seawater intake technology due to the differences in where the intake is located. The Huntington Beach seawater intake is located offshore in the open ocean with deeper water and different oceanographic conditions as compared to the intake location of the Carlsbad pilot study inside the Agua Hedionda Lagoon. Furthermore, the Huntington Beach seawater intake will be affixed to the existing 14 ft diameter pipe, compared to four much smaller 6-8 ft diameter lateral pipelines for the Carlsbad Desalination Plant’s intake modification pilot study, limiting the effects of marine growth¹. As such, the maintenance of the two distinct seawater intake facilities is not comparable.

The seawater intake 1-mm wedgewire screening technology and the maintenance and operations measures Poseidon must implement at its Huntington Beach facility to ensure its successful operations are described and analyzed in the State Lands Commission’s 2017 Final Supplemental Environmental Impact Report (“FSEIR”) and Lease Amendment. Santa Ana Regional Water Quality Control Board (Order R8-2021-0011; NPDES NO. CA8000403 and CEQA Addendum) regulates water quality associated with the Project and within the Coastal Zone. The findings

¹ A condition assessment report on the Huntington Beach seawater intake and discharge facilities was previously submitted to the State Lands Commission and Santa Ana Regional Water Quality Control Board. The report by Hibbard Inshore (appendix to the Subsea Global report) can be found <https://poseidon1.box.com/s/xlo9z5f4pemjx29qzsts2r5xk4aeuxt>

and conditions in State Lands Commission's Lease and FSEIR and the Regional Board's permit ensure the construction and operation and maintenance of the 1-mm wedgewire screen seawater intake will have no significant impact to water quality or coastal resources.

Comment 4: Mitigation at Bolsa Chica and sea level rise ("SLR"): Recent SLR analyses show that Bolsa Chica's configuration and its estuarine functions are likely to change significantly over the next five to 20 years, which could limit its effectiveness as a mitigation site expected to provide required annual mitigation credits during Poseidon's proposed 50-year operating life. As described in the Commission's SLR guidance documents, these SLR-related changes must be factored into an evaluation of Poseidon's proposed mitigation. To facilitate this review, please provide a Bolsa Chica SLR analysis using the same SLR projections Poseidon applied to its analyses at the proposed facility site – i.e., 1.7 and 3.3 feet above current water levels – along with other projections that apply to its facility's proposed operating life. If the analysis indicates that SLR will modify the expected mitigation functions at Bolsa Chica over the life of the desalination project, please describe additional mitigation measures, including restoration of additional mitigation sites, that Poseidon could implement to ensure full mitigation of the facility's adverse impacts during its operating life.

Response 4: Despite our best efforts we cannot identify *“recent SLR analyses show[ing] that Bolsa Chica's configuration and its estuarine functions are likely to change significantly over the next five to 20 years.”* We have consulted with the State Lands Commission, the Bolsa Chica Wetlands property owner, who is also unfamiliar with the cited analyses. We request that Commission staff provide Poseidon a copy of the cited analyses.

Furthermore, it is speculative to conclude sea level rise would *“limit its effectiveness as a mitigation site expected to provide required annual mitigation credits during Poseidon's proposed 50-year operating life.”* For example, the most ecologically critical component of Poseidon's proposed Bolsa Chica mitigation plan is the maintenance of the ocean inlet. Higher sea levels would not negatively affect the effort to maintain a functional tidal inlet. In fact, the increasing tidal prism could aid in sediment transport through the inlet.

Furthermore, as illustrated in the attached exhibit [**see attachment 1**], due to the existing berm separating the Bolsa Chica Full Tidal Basin from the muted tidal area, the proposed restoration of the Fieldstone Property, Oil Pads and Roads and associated water circulating system would be unaffected by flooding from up to 4.9 feet of sea level rise, which is the Medium-High Risk Aversion probabilistic scenario (0.5% probability) in the year 2090, well beyond the 50-year design life of the desalination facility.

Finally, the Regional Board did consider the long-term vulnerability of Bolsa Chica to sea level rise in evaluating and approving Poseidon's proposed Bolsa Chica Marine Life Mitigation Plan. The MLMP includes performance standards and a required adaptive management plan to address sea level rise. Detailed sea level rise analyses, such as those requested by Commission staff, will be performed as part of the mitigation project design. Adaptive measures will be incorporated into the four Bolsa Chica mitigation projects' design plans to ensure that each of the mitigation

projects continues to meet its performance standards under reasonably anticipated future sea level rise conditions.

B. Information requested for appeal proceedings

Comment 5: Facility Design - Facility foundations: Please provide preliminary design plans for the facility's various structural foundations, or alternatively, provide detailed descriptions of the different design options being considered. These descriptions should include proposed construction methods and materials to be used, the times needed to construct, the amount of dewatering anticipated, and known or likely effects of the methods on nearby coastal resources.

Response 5: As Commission staff are aware, detailed project design plans, including foundation designs, are developed in ordinary course after permits and related conditions have been approved and prior to construction. The construction of the facility has been analyzed under the California Environmental Quality Act and no significant, unmitigable impacts to nearby wetlands or coastal resources were identified or are anticipated with any of the foundation designs under consideration.

Several preliminary foundation design options – informed by the recent successful construction of the AES Huntington Beach Energy Project, which reported no impacts to coastal resources and adjacent wetlands – are described below and include construction methods and materials. Once facility construction is started, the existing, disused oil tank farm and related facilities would be demolished allowing the issuance of the grading permit from the City of Huntington Beach. Following the issuance of the grading permit, the work on the foundations would start and require approximately 12 months to complete.

In addition, based on the AES Huntington Beach Energy Project construction, in order to mitigate against lateral spread in portions of the east and north sides of the site, 3ft thick soil/cement mixed shear panels would be installed. These soil/cement mixed shear panels would be approximately 50 ft. long, spaced at approximately 9 ft. center to center, and approximately 26 ft. deep to extend below the liquefiable layer. The techniques utilized for installing these shear panels does not require dewatering. As this measure would address lateral spread, the foundation design for individual structures does not need to address lateral spread risk.

Liquefaction may still induce settlement within the liquefiable layer, therefore individual foundation design for the facility may, if necessary, include several proven methods of ground improvement to minimize settlement such as rigid grout inclusions with a load transfer platform, over excavation and soil compaction, and/or auger cast in place pile deep foundation elements depending on the final loading of the individual structures. The decision of which specific foundation type for each structure will be selected by the Engineer of Record.

Descriptions of these foundation types are described below:

Rigid grout inclusions with a load transfer platform:

Rigid grout inclusions are either drilled or auger grouted (displacement) columns spaced at 5-10ft on center with a 3ft thick crushed aggregate "load transfer platform" (LTP) placed over the top of the rigid inclusions. The spacing selected for the rigid inclusions will be determined by the required soil bearing capacity of the system. Spread footings and mat foundations are able to be utilized and constructed on and above this load transfer platform. Minimal to no dewatering effort is required for this method of ground improvement depending on the elevation of the working surface for installing the rigid inclusions.

ACIP - Auger Cast Piles:

The use of auger cast piles supporting heavy structures also mitigates settlement and resists lateral loads imposed by the structure. Auger cast piles are typically 18" to 24" diameter and utilize grout/concrete with reinforcing steel and is drilled to a depth below the liquefiable layer to mitigate against any settlement. The piles are embedded deep enough to resist lateral forces induced by the structure above since the ACIP's are attached to the structure's mat foundation or pile caps. Minimal to no dewatering effort is required unless the bottom elevation of the foundation being supported lies beneath the current groundwater elevation of approximately +2.6ft NAVD 88.

Over excavation and soil compaction:

In the case of structures that incorporate subsurface vaults and/or sumps, over excavation and soil compaction may be required. This method of ground improvement removes all soil to down to and including the liquefiable layer and then filling and recompacting the area with structural fill. This ground improvement technique would require dewatering of the excavation due to the location of the liquifiable layer at approximately -6 ft. NAVD 88. This technique was successfully utilized by the contractor that constructed the new AES power generating facility immediately adjacent to the proposed desalination facility. Dewatering was performed using local sumps and wellpoints, and the discharge permit requirements were achieved without impacts to nearby facilities or the environment.

Stone Columns:

Although stone column foundations were considered earlier in the foundation design for the facility, the use of stone columns would likely see only limited use or may not be utilized at all on this project.

In conclusion, while some amount of dewatering will be required during construction based on the final designs, based on the findings in the City of Huntington Beach's FSEIR and the most-recent AES experience with the construction of the new Huntington Beach Energy Project, no negative impacts are expected to any nearby wetlands or coastal resources.

Comment 6: Coastal Hazards – Proposed design modifications to address coastal hazards: Poseidon's previously proposed facility design would have kept the existing containment berms along the exterior of the facility footprint, while the current application proposes to remove most of them and then increase site elevations, construct sound walls, and implement other measures to protect the facility from most expected coastal hazards. However, some of these proposed

measures may be considered “shoreline protective devices,” which the LCP prohibits at this location – for example, Poseidon proposes to remove the existing berm along the east side of the facility site, which borders a tidally-influenced wetland area, and would replace it with a sound wall and stormwater BMP system that may be considered a shoreline protective device. Please provide a detailed description of these facility components and proposed measures, including their dimensions, materials to be used, depth of foundations, and their proximity to wetlands or other shoreline features.

Response 6: As a primary point of clarification, Poseidon is not proposing to “*construct sound walls to protect the facility from most expected coastal hazards.*” As previously explained to Commission staff, a sound wall was included in the CDP application’s project description to be located near the outside toe of the existing northern exterior berm in place of the existing chain-link fence. This added Project feature was an effort to be responsive to the stated desire of Commission staff for enhanced noise attenuation. It should be noted that the Project’s FSEIR noise analysis does not find that a sound wall or any other external attenuation features are required to mitigate external noise from the operation of the facility. To avoid further confusion, Poseidon can remove the sound wall from the Project description as an added feature. Alternatively, Commission staff can clarify its rationale for a sound wall and its desired design and function.

Furthermore, no Project feature is located on or near the shoreline and no Project feature meets the definition of a “shoreline protective device.” None of the features identified in the comment would have the effect of blocking the landward retreat of the shoreline – and as discussed above, the sound wall was added to respond to staff’s concern for more noise attenuation, not to protect the facility from erosion or other hazards, such as wave action and currents, which is the function of a true shoreline protective device. The proposed Project site is located over 2,000 feet away from the active shoreline behind one of the widest and most stable beaches in Orange County and inland of the Pacific Coast Highway. Even under a very conservative, probabilistic worst-case future sea level rise scenario (i.e., 6.6 ft. in the year 2100), the Project will be setback 1,750 feet from the active shoreline, which indicates the site has a high adaptive capacity in the form of a horizontal setback from littoral processes and hazards through 2100 and likely beyond. The location of the proposed Project does not contribute to the alteration of any natural shoreline processes.

Moreover, the existing earthen berms that provided containment for the unused oil storage tanks have a top elevation of approximately 22 ft NAVD 88 rising above the existing ground approximately 14 ft. These existing earthen berms surround the footprint of the proposed desalination facility. The proposed design for the desalination facility would incorporate removal of the 14 ft high berms followed by the construction of the individual structures in the desalination facility with finished floor elevations ranging from 14 to 16 ft NAVD 88 with the exception of the Product Water Tank and Pump Station that would have a top of concrete elevation of the base of 10 ft NAVD 88. Putting aside the fact that the Project site is over 2,000 feet from the active shoreline, no aspect of the proposed desalination facility and site design and grading could be considered a shoreline protective device considering that the construction of the

facility involves the removal of the existing 14 ft tall earthen berms. The 2020 Moffatt & Nichol sea level rise and flood hazard analysis provided to Commission staff confirms that removal of the existing earthen berms and elevation of the finished floors would not result in the displacement or deflection of flood water on surrounding communities or coastal resources.

Finally, the storm water BMP/detention area that was included in the facility design is not a "shoreline protective device". The BMP, or best management practices, is designed to capture runoff from the proposed project as required by the City of Huntington Beach's policy for utilizing BMPs to manage storm water quality. The BMPs proposed as part of the desalination facility incorporate storm water/detention areas in several areas of the site.

The BMP detention areas on the east side of the project site have a bottom elevation of approximately 8 ft. NAVD 88 (see section E below) and a top elevation of 11 ft. This compares to the elevation of the existing earthen berm of approximately 22 ft NAVD 88 that would be removed during the construction of facility. The BMP is designed to capture runoff from the proposed project along the entire length of the east side of the project. A pump system within the BMP allows for removal of the water from the detention areas.

There is also a BMP feature for stormwater treatment/detention in the vicinity of the proposed Product Water Tank with bottom elevations of approximately 6 ft NAVD 88 and top elevations of approximately 9 ft NAVD 8 which includes a pump system for removal of the water from the detention areas. This compares to the elevation of the existing berm in this area of approximately 22 ft. NAVD 88.

Comment 7: Future adaptation measures and strategies: Poseidon expects that its facility will be able to accommodate most anticipated hazards – e.g., five feet of SLR with a 100-year coastal storm event – but not several worst-case hazard scenarios, such as coastal storms accompanying 6.6 feet of SLR. It proposes to conduct an updated SLR analysis in the future – either in 2050 or when SLR has increased by three feet – and to identify any needed adaptation measures or facility changes at that time. It is not clear that the facility, once built, will have adaptive capability, so we request that Poseidon provide examples of what adaptive or mitigation measures it would consider employing to avoid these worst-case hazard – for example, might it be feasible for Poseidon to increase the elevation of structures in the future or to “floodproof” their foundations?

Response 7: To clarify, the 2020 Moffatt & Nichol Sea Level Rise Hazard Analysis and Adaptation Plan finds that even under worst-case flood hazard projections (i.e., 6.6 ft., which is the medium-high risk scenario in the year 2100 and the H++ scenario in the year 2080 – both beyond the design life of the facility) the site of the proposed Project and its design features comply with all Coastal Act and LCP hazard policies, expressly the fundamental principle

behind the Coastal Act and LCP hazard policies that require development to “minimize risks to life and property.”²

The Coastal Commission staff’s August 2021 public review draft document entitled *Critical Infrastructure at Risk, Sea Level Rise Planning Guidance for California’s Coastal Zone* recommends evaluating the extreme risk aversion (H++) scenario for projects and planning efforts, however, the guidance states the “*recommendation is to understand and plan for the H++ scenario, not necessarily to site and design for the H++ scenario*”³ [emphasis added].

There is no assigned probability that sea levels will rise 6.6 feet during the Project’s 50-year design life. Nonetheless, this overly-conservative sea level rise scenario was analyzed by Moffat & Nichol, and coupled with coastal storms this flooding hazard scenario would not result in the facility’s structural instability or the loss of life.

Furthermore, the ASCE 7-16 guidelines, which were adopted by the State of California in the 2019 California Building Standards Code (Cal. Code Regs., Title 24), only require the facility design to consider historical sea level rise conditions. In the case of the Huntington Beach area, historical sea level rise would anticipate approximately 0.58 ft. of sea level rise by the year 2080. This means that during the facility’s 50-year operating life, it will not be vulnerable to any of the worst-case flood hazards and is appropriately designed to meet the California building code.

The adaptive management strategies recommended by Moffatt & Nichol can be found starting on page 40 of their report. If after the year 2050 updated sea level rise science finds flooding beyond 6.6 ft. during the design life of the facility then an adaptive measure that can be taken for the Product Water Tank, for example, is to add ballast concrete inside the tank. The bottom elevation of the tank foundation would be above the design groundwater elevation. Any buoyancy could be countered by placing an additional ballast concrete inside the tank that could easily be accomplished during an extended shutdown in the future. Or, if the tank is never completely emptied during operation, the remaining fluid inside the tank would be adequate to offset the additional buoyant force.

For the distribution pipeline within the coastal zone, if sea level rise were to exceed the level allowed for in the buoyancy calculations, several relatively simple options are available including excavating to top of the pipe and replacing the soil with low strength grout (heavier than soil) or to provide anchors along the pipe alignment. Both options could be employed at such time that it is determined that sea level rise would exceed the current predictions.

Comment 8: Seismic: Poseidon’s application included an updated seismic analysis in which Poseidon increased assumptions on ground surface displacement of the NIFZ South

² The coastal hazards evaluated in Section 3 indicate the site has a high adaptive capacity for sea level rise and associated coastal hazards. In concert with the worst case, probabilistic sea level rise projections, the Project site is not exposed to shoreline erosion, king tide flooding, extreme coastal storms, fluvial storms or tsunamis at the 2070 planning horizon. There is a ~99.5% chance SLR will not exceed 6.6 feet this century, indicating the Project is very unlikely to be exposed to coastal hazards at the 2100 planning horizon. Moffat & Nichol’s 2020 report entitled *Huntington Beach Desalination Project Sea Level Rise Hazard Analysis and Adaptation Plan*, pg. 40.

³ See page 22

Branch Fault under the facility site from 25% to 50% and 80% of the expected displacement at the NIFZ's nearby Main Branch. However, as we have described previously, some studies suggest that an earthquake on the South Branch could generate the same seismic forces as the Main Branch. We therefore request that Poseidon calculate potential displacement at the site using 100% of the Main Branch displacement, along with any needed update of expected ground motions at the site using this 100% calculation. Please also describe what engineering design elements or other measures Poseidon would implement to allow the facility to resist structural collapse and allow for continued operations in the event of these higher seismic forces.

Response 8: Relying on much of the same site-specific geological data and geotechnical analyses prepared for the proposed desalination Project, the California Energy Commission conducted a seismic analysis and permitted the AES Huntington Beach Energy Project in 2014 after finding that the much larger and heavier electrical generating station could be designed to withstand worst-case seismic hazards at the site.

The Newport-Inglewood Fault is a known major fault with currently assigned Moment Magnitude of M 7.5. Traces of faults with postulated magnitudes of this size are typically very well defined and constrained. There is no rational basis to assume that the south branch: (1) forms the main trace of a major fault; and (2) can generate a Moment Magnitude M 7.5 event. The California Energy Commission did not consider a south branch to be in a category comparable to that of the Newport-Inglewood Fault ("NIF"). Existing technical literature does not assign a magnitude or style of faulting to a south branch and we are not aware of any more recent evidence to support such an assumption.

Nonetheless, at the request of Commission staff, Poseidon already analyzed the hypothetical situation where there is a south branch of the NIF located immediately beneath the proposed Project site. As staff noted, Poseidon conducted an analysis based on ground surface displacement of a hypothetical south branch fault under the facility site assumed to be 25%, and further, as a check, to be 50% and 80% of the expected displacement at the NIF's Main Branch. Even this extremely conservative hazard analysis demonstrates that the proposed Project can be built to withstand hypothetical worst-case seismic hazards. Therefore, it is not warranted to perform additional engineering evaluations, especially not based upon the extremely conservative assumptions outlined above.

Comment 9: Tsunami: Poseidon's application states that its proposed facility would not be vulnerable to a 2,475-year Maximum Considered Tsunami ("MCT") with a 3.3-foot increase in sea level, even though some structures would be subject to tsunami inundation and water velocities. Because the water supply and water storage provided by the proposed project may be considered "critical" services, we recommend you describe the specific design measures Poseidon will implement to ensure that all structures associated with those services (including, but not limited to, the water treatment and storage facilities, pumps and electrical supply components, etc.) can resist significant damage or collapse and can continue operating after a major tsunami.

Response 9: The 2020 Moffat & Nichol report entitled *Huntington Beach Desalination Project Tsunami Flood Assessment* includes a site-specific model concluding the proposed facility would not be vulnerable to a 2,475-year Maximum Considered Tsunami (“MCT”) coupled with a 3.3-foot increase in sea level. This hazard scenario analysis is extremely conservative because the state of California’s prevailing engineering design guidelines (i.e., ASCE 7-16) only require tsunami analysis coupled with historic sea level rise rates, which would result in approximately 0.58 ft. of sea level rise by the year 2080. Under this scenario, the majority of the project site would remain dry during a MCT event if one were to occur at any point during the facility’s anticipated operating life. The probability of a MCT event occurring at a time during the facility’s 50-year operating life after there has been 3.3 ft. or more of sea level rise as analyzed in the Moffat & Nichol report is approximately 0.004% or 1 in 25,000. If this unlikely scenario were to occur, the project site would be subject to temporary flooding of water depths less than 3 ft., which would pose a minimal threat to the facility.

It should be noted that flooding is defined as the increased extent of a temporarily wet condition whereas inundation is defined as the increased extent of a permanently wet condition (See California Coastal Commission June 4, 2019). As such, a tsunami hazard of any magnitude would result in short-term flooding (i.e., temporarily wet) and not inundation (permanently wet) as stated in staff’s comment letter. This is an important distinction when assessing hazard risk. The Moffatt & Nichol tsunami model simulations previously shared with Commission staff depict tsunami-induced flood waters receding from the Project site and nearby roads in under one hour after the extreme MCT event. Furthermore, the anticipated velocity of the tsunami-induced flood waters has been taken into consideration in the project description’s facility design provided with the CDP application.

Finally, neither the proposed Project, nor any feature of the individual Project structures (e.g., the product water storage tank) are considered “critical” for the purposes of tsunami flood evaluation. The Coastal Commission staff’s August 2021 public review draft document entitled *Critical Infrastructure at Risk, Sea Level Rise Planning Guidance for California’s Coastal Zone* correctly excludes seawater desalination facilities from the proposed “critical infrastructure” facility guidance.

As noted in the Moffatt & Nichol tsunami report, ASCE 7-16 establishes widely accepted criteria for evaluating site-specific tsunami hazards. ASCE 7-16, Chapter 6 – “Tsunami Loads and Effects” – provides design provisions applicable to Risk Category III and IV buildings. These guidelines were adopted by the State of California in the 2019 California Building Standards Code (Cal. Code Regs., Title 24). Under this ASCE 7-16 guidance, all proposed project structures should be considered as Risk Category III buildings and are not “critical facilities” as defined by the California Building Code.

Comment 10: Flooding: The proposed project will rely in part on flood protection provided by the proposal to elevate the building site and by the adjacent Huntington Beach Flood Channel. To the extent that fill would be placed in the floodway or flood fringe, please provide an analysis showing whether the fill would result in any increase in flood levels. The analysis should

incorporate flood levels for the full range of SLR projections expected during the proposed project's operating life.

Response 10: It is unclear what Commission staff mean by “floodway or flood fringe.” According to FEMA there is no regulatory floodway defined for the Huntington Beach Channel and the project is outside the floodplain (i.e., “flood fringe” or 1% annual chance flood zone). The Project does not propose any fill in the “floodway or flood fringe.”

Comment 11: High groundwater elevations: The proposed facility site is underlain by shallow groundwater levels that are expected to increase with sea level rise. Most, if not all, of the facility's structures, including its water distribution pipeline, may be subject to additional buoyancy forces and require more extensive construction methods and different foundations than had been described in Poseidon's previous submittals (i.e., wider and/or deeper excavations, larger structural components, increased dewatering volumes, etc.). As part of the foundation design request above, we also request that you describe what construction methods and foundation designs will be used for all structures within the coastal zone to address these buoyancy forces, identify any expected adverse effects to coastal resources, and propose measures to be implemented that will avoid or minimize those effects.

Response 11: Relying on site-specific groundwater data and the AES Huntington Beach Energy Project construction experience, preliminary structural design of the foundations for buoyancy considered the following: Current groundwater elevation at approximately +2.6ft NAVD 88, plus 3ft sea level rise (ground water elevation of +5.6ft NAVD 88). The top elevations of the concrete foundations for the majority of the structures are located at approximately El. 14ft to 16ft NAVD 88, with the Product Water Tank and Pumpstation at a lower elevation of +10ft NAVD 88. During construction, dewatering will only be required for structures with foundation excavations extending below the current groundwater elevation of approximately 2.6 ft NAVD 88.

The description of the foundation designs options that are being considered are discussed in the response to comment No. 5. The preliminary design for the structures within the facility account for the buoyancy forces resulting from sea level rise. In the case of the water distribution pipelines, buoyancy calculations were performed as part of the initial design. The weight of the pipeline (empty) along with the overlying soil is sufficient to prevent the pipe from rising as a result of sea level rise.

Comment 12: Wetlands and mitigation: As we have described previously, construction and operation of Poseidon's facility would result in direct and indirect impacts to on-site and adjacent wetlands. If the Commission allows these impacts, they will need to be mitigated in accordance with requirements of the LCP. In addition, and as described our June 29, 2021 letter to you, construction of Poseidon's facility will affect areas where wetlands were previously disturbed without Coastal Act authorization. We recommend Poseidon provide additional detailed information about what measures it will implement to avoid and reduce project impacts and to mitigate for the impacts that cannot be avoided or reduced, as well as provide information about

whether Poseidon plans to mitigate for the impacts to the previously disturbed wetlands that are the subject of the Commission's Notice of Violation.

Response 12: Poseidon disagrees with the statement that “*construction and operation of Poseidon's facility would [emphasis added] result in direct and indirect impacts to on-site and adjacent wetlands.*”

The Project's FSEIR and approved Local Coastal Development Permit found that the construction and operation of the proposed desalination facility would not result in direct or indirect significant unmitigable impacts to adjacent wetlands. These findings are supported by the California Energy Commission's environmental assessment and permitting of the AES Huntington Beach Energy Project and the recent successful construction of this facility, which resides closer to the nearest wetlands – the Magnolia Marsh – and in between the proposed desalination facility and Magnolia Marsh Wetlands.

In regard to Commission staff's concern about “*indirect*” impacts to adjacent wetlands, we would suggest a meeting with Commission staff to jointly review the data and analysis staff is relying upon to reach its stated impacts conclusions. Once we have a chance to review this information, and based on its validity, Poseidon would be willing to discuss appropriate CDP conditions that might be beneficial in addition to those already found in the Project's Local Coastal Development Permit and FSEIR.

Furthermore, Commission staff states it is concerned that construction of the Project could directly affect areas on the site where it believes wetlands were previously disturbed without Coastal Act authorization. We understand that the assessment that wetlands conditions may have existed onsite at one point in time is based upon a site visit conducted by Commission staff in 2009 and documented in Commission staff's October 25, 2013, Project CDP application report.

Commission staff raised the same concerns during the California Energy Commission's proceedings on the AES Huntington Beach Energy Project. Commission staff's July 9, 2014 report (page 11) on the AES project states “*Regarding the AES tank farm area, we understand that it is currently devoid of wetland characteristics; however, as noted above, AES's removal of wetland vegetation in that area several years ago is the subject of a Commission enforcement action.*” The California Energy Commission (“CEC”) considered the Commission's staff concerns about the previous existence of conditions that could be considered wetlands and found that the circumstances did not require mitigation.

Putting aside the fact that Commission staff has acknowledged during the CEC proceedings that wetland conditions do not exist on the site today, and the fact that that contention is still the subject of an unresolved enforcement action with the property owner AES that does not involve Poseidon, we are willing to work with Commission staff and the property owner AES on an appropriate resolution.

We propose to schedule a separate phone call with Commission staff and AES to discuss appropriate next steps to resolve Commission staff's concerns about the past existence of wetlands conditions on the site.

Comment 13: Water quality: Our June 29, 2021, letter asked if Poseidon would be modifying its previously proposed water treatment methods in response to several reports that identified Poseidon's product water as causing possible water chemistry and water quality problems when distributed to the area's water users. Poseidon's application states that Poseidon will not be modifying its previously proposed treatment methods. Please note that any treatment changes that may be needed later that would involve additional or modified structures, different types or volumes of chemical use, etc., may require that any CDP issued by the Commission be amended.

Response 13: Comment noted.

Thank you again for your continued cooperation and coordination.

Sincerely,

A handwritten signature in cursive script that reads "Scott Maloni".

Scott Maloni
Vice President, Poseidon Water

Enclosures

cc: Susan Hori, Manatt
DJ Moore, Latham & Watkins