



Residents for Responsible Desalination

"Organized for coastal protection advocacy and education about seawater desalination."

TO: Santa Ana Regional Water Quality Control Board
FROM: Residents for Responsible Desalination (R4RD)
DATE: October 15, 2018
RE: **Poseidon Application: Comments on Poseidon's Response to the CA Coastkeeper Alliance Letter and Reports**

Via Electronic Mail:

hope.smythe@waterboards.ca.gov

Hope A. Smythe

Executive Officer, Santa Ana Regional Water Quality Control Board

Dear Ms. Smythe:

As the Board of Directors of Residents for Responsible Desalination (R4RD), we are writing in regard to the Poseidon-Huntington application for permits to operate a desalination facility, and in particular a recent exchange of materials submitted to the Regional Board. On June 21 and July 9, 2018, the CA Coastkeeper Alliance (CCKA) submitted several expert reports and a detailed cover letter explaining the relevance of the reports to the permitting consideration. On August 21, 2018, Poseidon sent a letter and attachments responding to the CCKA letter and reports.

As explained below, it is clear that the arguments represented by both parties must be resolved before the Regional Board can consider the permit applications. And we believe the information submitted by CCKA shows that Poseidon has failed to submit evidence that is required to allow an exception to the rule requiring subsurface intakes. In this case, Poseidon must either supplement the record with adequate proof, or the Regional Board must deny the permit because Poseidon failed to carry their burden of proof.

Below you will find our comments on the insufficiency of Poseidon's evidence to show proof of several elements required in the Ocean Plan before the Regional Board can issue permits for the proposed desalination facility:

- Overview of OPA Mandates
- Need for the product water;
- Technical feasibility of slant wells, and;
- Economic feasibility of slant wells.

We strongly urge the Regional Board to demand further proof from Poseidon to fill the gaps in the application before determining the application is sufficient to allow exceptions to using the best available technology to minimize intake and mortality of marine life. Without sufficient proof that subsurface intakes are not feasible, the Regional Board must deny the permits.

Sincerely,

-Dave Hamilton, *president*,

- *Residents for Responsible Desalination*

COMMENTS

1. The Rule for Seawater Intakes

CCKA and Poseidon differ on their interpretation of the Ocean Plan amendment (OPA) regulations of seawater intakes for desalination facilities. We generally agree with the interpretation by CCKA. First, the OPA mandates the use of subsurface intakes unless the Applicant can show sufficient evidence to prove that subsurface intakes are not technically and/or economically feasible. Second, if that can be sufficiently proven, Poseidon must provide sufficient evidence to prove that the need for the product water is so definitive that a smaller facility could not be built at the proposed site or alternative sites using subsurface intakes. Poseidon has failed to do either in their application materials.

The OPA makes it clear that it is the Applicant's duty to supply "sufficient information" for the Board to ensure a facility minimizes the intake and mortality of marine life through use of the best available site, design, technology and mitigation, including "additional studies and information if needed." See III M 2(a)(1)¹ The OPA also states that the Regional Board must look at the four elements in the Porter-Cologne Act separately and in combination. See III.M.2(a)(2)

The disagreement between Poseidon and CCKA is central to the important question of whether or not subsurface intakes are "feasible." We agree with the CCKA evidence that the studies and information submitted by Poseidon to date are "insufficient" to fully analyze the proposed project's compliance with the OPA, and that "additional studies and information is needed."

It is critical to first look at the mandate to use subsurface intakes. Section III.M.2(d)(1)(a) clearly states:

Subject to chapter M.2.a.(2), the regional water board in consultation with State Water Board staff shall require subsurface intakes unless it determines that subsurface intakes are not feasible based upon a comparative analysis of the factors listed below for surface and subsurface intakes. A design capacity in excess of the need for desalinated water as identified in Chapter III.M.2.b.(2) shall not be used by itself to declare subsurface intakes as not feasible. [emphasis added].

¹ OPA, III M 2(a)(1): *"The owner or operator shall submit a request for a Water Code section 13142.5(b) determination to the appropriate regional water board as early as practicable. This request shall include sufficient information for the regional water board to conduct the analyses described below. The regional water board in consultation with the State Water Board staff may require an owner or operator to provide additional studies or information if needed, including any information necessary to identify and assess other potential sources of mortality to all forms of marine life. All studies and models are subject to the approval of the regional water board in consultation with State Water Board staff. The regional water board may require an owner or operator to hire a neutral third party entity to review studies and models and make recommendations to the regional water board."* [emphasis added]

Clearly, subsurface intakes are the best technology available to minimize the intake and mortality of marine life and are therefore mandatory unless proven to be “not feasible.” However, Section 2(d)(1)(a) also makes it clear that a design capacity greater than the “need” shall not be used to declare subsurface intakes not feasible.²

Section III.M.2(b)(2) defines what evidence is used to prove the “need”:

Consider whether the identified need for desalinated water is consistent with an applicable adopted urban water management plan prepared in accordance with Water Code section 10631, or if no urban water management plan is available, other water planning documents such as a county general plan or integrated regional water management plan.

It is clear that an applicant must show the “need” for the proposed volume of product water, and that the purported “need” is consistent with an “applicable” urban water management plan (UWMP). That is, the UWMP, in and of itself, does not establish the “need.” The applicant must prove the need and show that proof is “consistent” with an UWMP. Further, alternative documents are only allowed where an UWMP is not “available.” In this case, while Poseidon, and their partner agency OCWD, have not decided how the water will be distributed, it is clear that the distribution will be within the service area of the Municipal Water District of Orange County (MWDOC). Therefore, MWDOC has an “applicable” and “available” UWMP. A sufficiently defined “need” must be submitted by Poseidon, as well as a showing the need is consistent with the MWDOC UWMP.

Section III.M.2(d) defines the “best available technology” to minimize intake and mortality of marine life as subsurface intakes. This section also defines the factors to consider when determining whether subsurface intakes are “not feasible”:

...[g]eotechnical data, hydrogeology, benthic topography, oceanographic conditions, presence of sensitive habitats, presence of sensitive species, energy use for the entire facility; design constraints (engineering, constructability), and project life cycle cost.

Below we generally refer to these factors for consideration as “technical feasibility” and “economic feasibility.”

In connection to the “need”, Section III.M.2(d)(1)(a)(ii) states:

If the regional water board determines that subsurface intakes are not feasible for the proposed intake design capacity, it shall determine whether subsurface intakes are feasible for a reasonable range of alternative intake design capacities. The regional water board may find that a combination of subsurface and surface intakes is the best feasible alternative to minimize intake and mortality of marine life and meet the identified need for desalinated water as described in chapter III.M.2.b.(2). [emphasis added]

That is, if the Regional Board finds that subsurface intakes are not feasible for the proposed intake volume, the Regional Board is mandated to consider a reasonable range of alternative design capacities that would make subsurface intakes feasible. Further, this

² Oddly, this sub-section discusses “design” capacity by referring to text in the sub-section on “site.”

may include a combination of surface and subsurface intakes to meet the “need” identified in III.M.2(b)(2). In brief, the Applicant must show a “need” for the volume of product water that is consistent with an applicable UWMP. The identified “need” must justify an exception to the otherwise mandated use of the best available technology – subsurface intakes. If the evidence submitted is not sufficient to show a definitive “need”, the Regional Board must fully consider whether subsurface intakes would be feasible for a reasonable range of alternative design capacities.

Finally, Section 2(e) states:

Mitigation for the purposes of this section is the replacement of all forms of marine life* or habitat that is lost due to the construction and operation of a desalination facility* after minimizing intake and mortality of all forms of marine life* through best available site, design, and technology.

As implied in the CCKA letter, this provision clearly states that, at least in regard to the proposed seawater intake, mitigation is a separate consideration after best available site, design and technology have been implemented. Because Poseidon has failed to supply sufficient information and studies to prove subsurface intakes are not feasible, we do not discuss proper mitigation in our comments below.

2. “Need” for the Product Water

CCKA argues in their letter that Poseidon’s submittals to the Regional Board are not sufficient proof of “need” for a 50mgd seawater desalination facility. CCKA’s attachments included a study by James Fryer -- a thorough analysis of historical and current UWMPs in Orange County and critique of the purported “need” for a 50mgd seawater desalination facility in the area.

In large part, Poseidon’s response concludes that the findings in the “Fryer Report” are not germane because the proposed seawater desalination³:

- a. Is listed in OCWD planning documents that are consistent with MWDOC’s UWMP, which, in and of itself complies with the OPA requirements;
- b. Is not intended to meet future demand, but intended to offset imported water; and,
- c. CCKA is simply advocating for preferential consideration of supply options they consider superior – and this “loading order” was dismissed in the final OPA.

As explained in more detail below, if Poseidon’s rebuttal points are accepted by the Regional Board, the required proof of “need” before making an exception to the mandate to use the best technology available (subsurface intakes) will be rendered all but meaningless.

For example, below are our comments on the 3 objections Poseidon raised in the rebuttal to the CCKA submittals, taken from their attached document “Attachment CCCCC.”

- a. **Poseidon states:** *“The Orange County Water District’s updated future demand projections within its service territory are 447,000-acre feet per year in 2035, which is consistent with the demand projections in the Municipal Water District of Orange County’s (“MWDOC”) 2015 Urban Water Management Plan*

³ See Poseidon Attachment CCCC: Executive Summary

(“UWMP”). *The Regional Board can make findings in OPA chapter III.M.2.b.(2) because the Project is identified in applicable water planning documents....*” See CCCCC at pg. 8-9

Poseidon’s statement misinterprets the requirements in the OPA. It is a gross oversimplification and misstatement to say that because a project is “identified” in applicable water planning documents, the project proponent has proven a “need” for the facility. That interpretation would mean that OPA compliance would simply require project proponents that also prepare UWMPs to simply “identify” a seawater desalination facility in their plans and the Regional Board would not be required to scrutinize the “need” prior to allowing an exception to the rule mandating subsurface intakes. That would be “an exception to the rule that swallows the rule.”

First, the cumulative demand of 447,000 acre-feet per year is not an identified “need” for the proposed project. OCWD, Poseidon’s project partner, may project demands for 447,000 acre-feet of water in 2035, but there are numerous sources of water to meet that demand. And Poseidon fails to identify those alternative sources and the remaining “need” for an additional 56,000 ac-ft/yr.

Second, Poseidon compounds the error by implying that because OCWD’s projected cumulative demand is consistent with MWDOC’s UWMP, it proves the “need” is consistent with an adopted UWMP. That is incorrect – neither the OCWD cumulative demand projection nor the MWDOC UWMP provide a definitive “need” for the proposed Poseidon 56,000 ac-ft/yr seawater desalination facility.

Poseidon also complains that the Fryer Report is outdated. Regardless of the date the Fryer study was conducted, and any changes in demand projections since, the Fryer Report provides detailed data and analyses the Regional Board must consider when determining the purported “need” for a 56,000 ac-ft/yr facility. The Fryer Report is most certainly “germane” and “relevant” to critique the assumptions and calculations used to identify a “need” for the facility’s design capacity – in fact that analysis of need is clearly required in the OPA.

It is critical to keep in mind that the OPA clearly states that subsurface intakes are the mandatory intake technology unless the Applicant can prove a “need” that is “consistent” with an UWMP. If water agencies are allowed to state a “need” without any analysis of alternatives to meet projected demand and/or simply listing desalination as an option in an UWMP, the exception to the mandate to use subsurface intakes would be completely left to the project proponent’s discretion. Clearly, challenges to the purported “need”, as those in the Fryer Report, are relevant information that must be considered by the Regional Board.

- b. **Poseidon states:** *“Desalinated water will replace on a one-for-one basis the need to import water into Orange County. As such, desalinated water is not serving planned future growth in water demand, and thus various projections – high or low – are irrelevant.”* See CCCCC at pg.8 [emphasis added]. Poseidon admits, *“[a]bsent the Project, the OCWD’s service territory alone will need to import over 100,000-acre feet of water per year (twice the Project’s capacity).* Id.

While reducing demand for imported water is arguably a laudable desire, it is not a defined “need” for a 50mgd facility. That statement begs the question: If the proposal is to eliminate imported water in the region, why isn’t the proposal for a 100,000 acre-feet of water per year (ac-ft/yr)? Or, alternatively, if the project is only meant to partially replace imported water, why not propose a 20,000 ac-ft/yr project – or 30,000 or 40,000? To comply with the mandates in the OPA, the project should only replace the amount of imported water by the amount of water that can be produced by a desalination facility using subsurface intakes for source water.

Poseidon undercuts its own argument that there is a “need” for the facility that is consistent with an adopted UWMP by stating, “...desalination is not serving planned future growth in water demand.” In other words, Poseidon is not defining a “need” for the water to meet projected demands, it is defining a “desire” to replace one source of water with another.

- c. **Poseidon states:** *“Finally, the State Water Board expressly rejected the notion that there should be a water resource preference, or ‘loading order’, when determining a proposed desalination project’s compliance with the OPA.”* See CCCCC at pg. 9 Poseidon then goes on to cite a letter from OCWD to the State Lands Commission which states: *“OCWD’s letter included the following, ‘[Coastkeeper] indicates that if the proposed Metropolitan Water District (MWD) Carson Indirect Potable Reuse project is completed and provides OCWD with water, that the Poseidon project would not be needed. OCWD believes this statement is incorrect. At this time it is OCWD’s understanding that if recycled water from the MWD Carson project is received by the District it would replace the 65,000-acre-feet per year of untreated MWD water that is currently annually purchased by OCWD. Additionally this comment by Orange County Coastkeeper does not account for the primary purpose of the proposed Poseidon project which is too (sic) reduce the areas need for imported water.’”* Id.

Poseidon and its partner OCWD argue that the planned Carson plant would “replace 65,000 acre feet per year of untreated MWD water that is currently annually purchased by OCWD...” Importantly, that water OCWD annually purchases from MWD is “imported water.” But OCWD simultaneously argues this alternative source of water “does not account for the primary purpose of the proposed Poseidon project which is too (sic) reduce the areas need for imported water.” That is clearly a contradictory statement. Any purported “need” would be better served by the product water from the planned Carson plant, and it would also better serve OCWD’s “desire” to reduce the volume of imported water they purchase.

Further, while the State Board may have rejected a strict “loading order”, that does not mean that proving a “need” for the facility does not require an analysis by the Regional Board that includes alternatives to meet the projected demand in the UWMP. The Regional Board would not be stepping into the shoes of the water agency by requiring a thorough documentation of need – nor would the Regional Board be imposing a “loading order.” The regulations mandate using subsurface intakes unless there is sufficient evidence of a “need” that would make subsurface intakes “not feasible.” In fact, if the desalination project proposes to utilize subsurface intakes, there is no requirement for the

Regional Board to consider “need” or consistency with an UWMP. It is the Applicant’s choice to request an exception to using the best technology available to minimize intake and mortality (subsurface intakes). But that choice by the Applicant triggers the Regional Board’s mandate to thoroughly consider “need” and the documented need’s consistency with an adopted UWMP – consequently it is the applicant’s duty to prove the “need.”

Poseidon protests too much. We don’t see anything in the CCKA letter, or the Fryer Report, that indicates the Regional Board must consider a “water resource preference” or a “loading order.” The CCKA argument is much simpler: Poseidon has not sufficiently shown a need for a 50mgd desalination facility, as mandated in the OPA, before the Regional Board can grant an exception to the rule mandating subsurface intakes. OCWD has the discretion to add whatever supply of water it chooses to its portfolio, including seawater desalination. However, OCWD does not have the discretion to violate water code Section 13142.5(b) nor the implementing regulations included in the OPA that mandate the use of subsurface intakes – the Regional Board has the duty to fully enforce those laws.

Finally, we would like to put this “need” discussion into an historical perspective. Poseidon has been arguing there is a need for a 50mgd plant in Orange County since the year 2000, with the first permits and CEQA documents completed in 2005. Their inability to complete the permitting process and begin construction resulted in their permit expiring in 2010. Since 2000 much has changed, including the adoption of the OPA. But the documentation of “need” has also changed. As illustrated in the Fryer Report, since 2000, demand for water in the region has remained relatively stable, local recycled water from the Groundwater Replenishment System has been added to the supply portfolio and is soon to be at 130mgd, and the Carson project will add an additional 65mgd of local supply. But with all this, Poseidon’s argument for “need” has stayed exactly the same. History shows us Poseidon was wrong then and it is wrong now.

CONCLUSION

Neither Poseidon nor their partner OCWD has provided sufficient evidence to prove the need for a 50mgd seawater desalination facility. Poseidon’s response to CCKA does not argue the Fryer Report’s analysis is flawed, they errantly argue that it is not germane and is irrelevant. Ironically, in making their rebuttal argument they have clearly exposed their own flawed interpretation of OPA, and their so-called documentation of “need” is not germane nor relevant. The Regional Board must reject their arguments.

We strongly recommend the Regional Board review the California Public Utilities Commission record and decision approving a Certificate of Public Convenience and Necessity for the approved seawater desalination facility in Monterey. The CPUC is admittedly enforcing different regulatory authority than the Regional Board, nonetheless their method for considering and documenting “need” is instructive.

See eg.

<http://docs.cpuc.ca.gov/publisheddocs/published/g000/m228/k102/228102918.pdf>

[“Need for Water Supply” starting at page 18]

Unless or until Poseidon can sufficiently prove a defined “need” that is consistent with MWDOC’s UWMP (as opposed to the “desire” in OCWD’s plans), Poseidon must propose an alternative facility design capacity that utilizes subsurface intakes.

3. Technical Feasibility

CCKA argues in their letter that Poseidon’s submittals to the Regional Board are not sufficient proof that slant wells are not technically feasible. CCKA’s attachments included a study by HydroFocus -- a thorough review and analysis of the Geosyntec reports Poseidon submitted to show slant wells are not feasible. HydroFocus has direct and relevant experience from analyses of slant wells for the proposed CalAm Monterey desalination facility.

HydroFocus’ report used the same computer model as Geosyntec for additional runs of the model using different potential input variables, and concluded that several steps must be taken, including collection of additional data, to improve the model and increase confidence in the output. Poseidon seems to ignore the reasoning for the “next steps” recommended by HydroFocus, and instead attempts to defend the results of Geosyntec’s “screening tool” assumptions and results.

The CCKA letter also cites and refers to documentation of two seawater desalination projects currently proposed to use slant wells for the intake of source water – the Doheny project and the CalAm-Monterey project. We want to add to CCKA’s comments that these two project proposals differ from the Poseidon project in one glaring way -- both the Doheny and Monterey projects were designed to use slant wells to take advantage of the economic and environmental benefits of avoiding full conventional pre-treatment. Consequently, the project proponents did thorough feasibility testing, including developing test wells to ground-truth computer modeling, as a part of their project development. In contrast, Poseidon’s business model was founded on co-locating with coastal generators to utilize their existing open ocean cooling water intakes - which are now being abandoned by the power plant owners to come into compliance with California regulations compelling the use of best available technology for seawater intakes for cooling purposes. Despite adoption of the regulations for cooling water intakes finalized in 2011, and the efforts by the power plant owner to come into compliance by 2020, Poseidon continues to pursue their co-location business model by declaring the project a “stand alone” operation of the outlawed cooling system. Consequently, Poseidon has an incentive not to gather data and fully analyze the feasibility of slant wells, and that resistance is apparent in its responses to the CCKA letter and attached studies.

In large part, Poseidon’s arguments rest on the Geosyntec “screening tool” findings that slant wells would withdraw too much inland groundwater, rendering them not feasible. These arguments stem from assumptions about hydraulic conductivity values used in the model. HydroFocus’ analysis used a wider range of model hydraulic conductivity values, which demonstrated the potential for decreasing the percentage of inland groundwater. Therefore, a key shortcoming is the lack of site-specific hydraulic conductivity data in the model and calibration of the model using local data. The model currently relies on literature and professional opinions for input values for hydraulic conductivity.

Further, Poseidon relies on their project partner OCWD's rigid objection to modify the seawater intrusion barrier management to adjust to the benefits of slant wells in reducing seawater intrusion.

In large part, Poseidon argues CCKA's letter and attached HydroFocus review are not relevant to enforcement of the OPA because:

- a. HydroFocus recommended data collection that Poseidon feels is unnecessary for "screening" analyses;
- b. OCWD will not adjust the volume of water injected into the seawater intrusion barrier to complement the slant wells; and,
- c. OCWD would need to charge their member agency a replenishment assessment fee for freshwater lost to the slant well intake.

Poseidon and OCWD have failed to supply "sufficient information" and consequently the Regional Board must demand "additional studies and information" See III.M.2(a)(1)

As explained in more detail below, if Poseidon's rebuttal points are accepted by the Regional Board, the required proof that slant wells are "technically infeasible" before making an exception to the mandate to use the best technology available (subsurface intakes) will be rendered all but meaningless.

For example, below are comments on 3 objections Poseidon raised in the rebuttal to the CCKA submittals, taken from their attached document "Attachment CCCCC."

It is important to note at the outset that we agree with the CCKA assertion that the OPA compels the use of subsurface intakes because it has already been determined in the OPA that they are the best available technology to minimize the intake and mortality of marine life.

The OPA also includes conditions that would allow an exception to the rule. One exception, generally speaking, is that slant wells would not be technically feasible. The question for the Regional Board is whether or not Poseidon has complied with the OPA mandate in Section 2(a)(1) to provide "sufficient information" to overcome the burden of proving slant wells are not feasible, or if the Regional Board needs "additional information and studies" to make a finding that slant wells are not feasible. The answer is clearly the latter.

- a. **Poseidon states:** "*As discussed above, the models are designed as screening tools and assigned properties are based on well-established models and existing hydraulic testing data as well as site-specific geotechnical and geophysical data." See CCCCC at page 18 [emphasis added] See also page 22: "*The Coastal Commission's independent model reviewer and the WIT review panel that worked with the Coastal Commission on requesting additional model sensitivity runs indicated that the Kh and Kv values of 10 and 1 ft/d were too high. Consequently, they concluded that the model likely underestimated the contribution from inland aquifers to the slant well pumping.*" [citations omitted, emphasis added]*

Poseidon is responding to HydroFocus' recommendations that: *“Several additional steps can be taken to improve the model and increase confidence in evaluating impacts of the project.”* That is, HydroFocus is recommending improving the computer modeling by collecting data to replace assumptions about the “likely” hydraulic conductivity. Poseidon's response simply verifies that the recommended data is missing and that the evidence they have submitted as proof is designed as a “screening tool.” Feasibility analysis requires more than a screening tool. A well-calibrated model based on data collected at the proposed site is essential for a determination of feasibility.

Further, their response admits that where data is used in the model, it is limited to “existing data.”

The response by Poseidon ignores the fact that both the CalAm Monterey and Doheny projects conducted testing and data collection to improve the modeling, resulting in findings that slant wells at those sites were feasible. That is not to say that the proposed site in Huntington Beach, nor alternative sites nearby, would also be technically feasible for slant wells – it simply offers examples of how to ensure “sufficient information” is presented before the Regional Board considers an exception to the rule mandating subsurface intakes.

Poseidon seems to argue elsewhere that because the Monterey and Doheny projects have yet to be built and operated, they are not proven as “available.” That argument is not relevant to the use of the computer modeling to assess feasibility and the Regional Board mandating “sufficient information” and/or “additional studies and information if needed.” Further, slant wells are a relatively common technology. The fact they are not yet used in California for seawater desalination intakes is a result of limited development of seawater desalination facilities in California – none since adoption of the OPA – not evidence that slant wells are not “available.”

Further, we note that Poseidon does not state they used “all” existing data available. Without knowing otherwise, it seems possible that there is “existing” data that was not included in the modeling.

To meet the burden of proving slant wells are not feasible, Poseidon must be compelled to use all existing data. And where existing data is not sufficient, Poseidon must be compelled to take additional steps to collect data where necessary to improve the model and increase confidence in evaluating the impacts of slant wells.

Because OPA only applies to new or expanded facilities, the decision before the Regional Board on whether or not to grant an exception to the mandate to use subsurface intakes would be final. The finality of the decision makes it critical to ensure the greatest possible “confidence in evaluating” the feasibility of slant wells before granting the permit. If Poseidon refuses to use all available data, or to provide additional studies or information needed, the permit must be denied.

We agree with CCKA that: *“The recent communications posted on the Regional Board's project webpage have failed to address the paucity of actual testing of the offshore strata and the conductivity of seawater into the aquifer. The assumptions used in the model of*

regarding the hydraulic conductivity in aquifers and confining layers that underlying the ocean has a substantial impact on model predictions. As noted in the HydroFocus report, actual test wells are necessary to make any scientifically sound predictions about offshore vertical conductivity to the aquifer and the slant well intakes, as these variables are a major component of the prediction of freshwater drawdown.” See: CCKA letter at page 15

https://www.waterboards.ca.gov/santaana/water_issues/programs/Wastewater/Poseidon/2018/Subsurface_Feasibility_Poseidon_Huntington_Beach_7.9.2018.pdf

The Regional Board cannot rely on a “screening tool” analyses of slant well feasibility. The Monterey and Doheny projects serve as a template for the type of technical analyses required for “sufficient” proof that slant wells are not technically feasible. For example, the Monterey project used extensive field data collection efforts to inform and calibrate groundwater flow models. The Regional Board must require “additional studies and information” from Poseidon before concluding that slant wells are not feasible. See III.M.2(a)(1)

- b. **Poseidon states:** *“SSIs would reduce the inland migration of seawater within the Talbert Aquifer because the SSI pumping would increase hydraulic gradient from inland toward the coastal margin. This is why a portion of the water pumped by the SSIs would come from the inland aquifers and the Talbert Barrier Injection wells. Reduction of the effectiveness of aquifer replenishment by the Talbert Barrier Injection wells is unacceptable to the OCWD.” See CCCCC at page 17. See also page 21: “Also, for 6 of the additional model runs, HydroFocus assigned a constant head elevation of sea level (0 ft msl) at the inland model boundary, which represents the Talbert Injection Barrier. This is inconsistent with the observed groundwater conditions near the injection barrier and represents curtailment or drastic decrease of a crucial component of OCWD’s aquifer replenishment program. Injection of recycled water at the Talbert Barrier has been occurring for more than 35 years and is critical for sustaining groundwater production in Orange County. Accordingly, the model runs without significant injection at the Talbert Barrier represent unacceptable scenarios.”*

Poseidon appears to misinterpret the findings in the HydroFocus review that: *“Pumping at lower rates than originally simulated will reduce impacts on the groundwater system. Operation of the slant wells will affect the extent of seawater intrusion in the Talbert Aquifer; pumping will likely increase the gradient from inland areas toward the project wells which will enhance the movement of inland freshwater toward the coast and move the seawater/freshwater interface closer to the coastline. This increase in seaward gradient along with capture of seawater by the slant wells will have the effect of reducing the inland migration of seawater.”*

CCKA also states in their letter: *“It is clear from the recent responses to the Regional Board’s requests for information that OCWD adjusts the volume of water injected into the seawater barrier to ensure the loss of freshwater to the ocean is maintained at approximately 2.3 million gallons a day, while serving the dual function of fending against inland seawater movement and replenishing the basin for nearby freshwater withdrawals. However, given the benefits of offshore withdrawals of seawater through*

slant wells on the gradient, it is feasible that OCWD could adjust the volume of freshwater injected into the barrier and dramatically reduce the volume of ‘drawdown’ of freshwater predicted by the models. While this may mean adjusting the volume of water injected elsewhere in the aquifer to ensure nearby replenishment, it does not mean that freshwater drawdown in the dramatic volumes predicted in the Geosyntec modeling is inevitable and consequently “infeasible.” While OCWD has the authority to object to compulsory adjustments to their management of the seawater intrusion barrier to minimize freshwater ‘drawdown’, they cannot simultaneously object to the use of slant wells because that avoidable drawdown renders their use ‘infeasible.’” CCKA letter at page 15

First, HydroFocus does not state an increase in the gradient from the inland aquifer toward the coastal margin would completely eliminate some of the water withdrawn coming from inland aquifers. As explained in the Hanneman Report and summarized below, withdrawing water from the inland aquifer does not render slant wells technically infeasible, it simply means that the net addition of the Poseidon product water to the OCWD portfolio would be the gross output of the treatment plant minus whatever inland water was mixed in the intake. The question is not whether inland water would be withdrawn in the intake. The question is how much water comes from the inland aquifer, and how much does that change when the volume of water pumped from the slant wells is changed and/or the volume of water injected into the barrier is adjusted. HydroFocus’ analysis indicated that reduced pumping could reduce the inland groundwater contribution to the slant wells.

Second, withdrawal from the inland aquifer does not necessarily “reduce the effectiveness of aquifer replenishment” that OCWD finds unacceptable. It is our understanding that an increase in gradient resulting from slant well pumping will complement the seawater barrier injection and allow reducing the volume of injected water necessary to maintain, if not improve, the barrier effectiveness. The HydroFocus’ report stated that project pumping from the slant wells will likely increase the hydraulic gradient from inland areas toward the project wells. This increase in seaward gradient will enhance the movement of inland freshwater toward the coast and will likely move the seawater/freshwater interface to the west, closer to the coastline. This increase in seaward gradient along with capture of seawater by the slant wells will have the effect of reducing the inland migration of seawater and may allow the OCWD to maintain a lower water level in the well while still obtaining the objective of reducing seawater intrusion.

Further, it appears to us that the aquifer replenishment value of the injection wells is in flux. OCWD is currently proposing changes to the distribution of the potential Poseidon product water, including coastal agencies reducing their basin pumping to take Poseidon’s water directly. Those changes may require modifying the volume of water injected into the seawater barrier – regardless of whether the seawater intake comes from slant wells. Before accepting OCWD’s unwillingness to modify operation of the seawater intrusion barrier because it will affect replenishment, the Regional Board must require an analysis of proposed distribution plans and/or alternatives for replenishing the basin in the coastal area.

Finally, the project proposal is a public-private partnership. OCWD is a partner in the proposal (or there is no proposal). The burden of proof cannot be based on what is “acceptable” to the project proponents. That would allow project proponents to determine the outcome of the Regional Board’s enforcement of the OPA – a case of “the fox watching the hen house.”

- c. **Poseidon states:** “*Moreover, extraction by subsurface intakes of groundwater from inland aquifers in Orange County would be subject to a replenishment assessment by the OCWD.*” See CCCCC at page 17.

There doesn’t appear to be any disagreement between Poseidon and CCKA on the issue of whether there would be some cost associated with any withdrawal of freshwater from the inland aquifer from slant well pumping.

OCWD states it would require a replenishment assessment, and Hanneman calculates the cost differently. We do not have any opinion which cost calculation is more appropriate.

Nonetheless, this comment misses the point in the Hanneman Report. The cost assessment is irrelevant to technical feasibility (as discussed more below). Further, once again, the Regional Board cannot accept the unwillingness of OCWD to pay an incremental cost as proof that slant wells are not feasible. As noted above, project proponents’ willingness or unwillingness is not an objective factor to be considered by the Regional Board.

- d. **As a final note, Poseidon** repeatedly complains that they have been supplying information for over 15 years and that the record is sufficient. But R4RD has been tracking the project since its first inception and knows that the information Poseidon cites is not accurate, and their complaints about the time it has taken is the result of their own stubborn refusal to site and design a facility that can utilize subsurface intakes.

In 2005, the City of Huntington Beach was considering Poseidon’s Coastal Development Permit and accompanying EIR. R4RD commented that it was reasonably foreseeable that the State would soon adopt regulations for once-through cooling and Poseidon’s co-location plan would be unworkable. But those comments were ignored.

In 2010, after 5 years of complete inaction by Poseidon, the CDP expired because Poseidon failed to ask for an extension while they were not advancing the project. And in 2010 the OTC Policy was on the near horizon. So, in 2010 Poseidon applied for a new permit and Subsequent EIR to analyze a “stand alone” operation when the OTC Policy was final. R4RD cautioned that the OPA for desalination was reasonably foreseeable and should be documented in the SEIR. Poseidon objected and the SEIR was approved without that information.

In 2013 Poseidon finally applied for a CDP from the Coastal Commission. But Poseidon voluntarily withdrew the application at the 2014 decision hearing.

The following years can only be described as Poseidon’s continued stubborn resistance to planning a facility that is sited and designed to utilize subsurface intakes in compliance with the adopted OPA. It is now our prediction that the Monterey and Doheny projects will find State permits a relatively easy path because they chose the best available technology in the first place, and then completed truly sufficient testing to document the

feasibility of slant wells. The Regional Board should be neither impressed by, nor sympathetic to, Poseidon's whining about the time spent trying to force approval of exceptions to the rule rather than spending their time and resources on full compliance with the laws of the State.

CONCLUSION

It is critical to note that the proposed Poseidon-Huntington desalination facility is the first to be reviewed for consistency with the adopted mandates of the OPA. To allow an exception to the clear mandate to use subsurface intakes, the OPA is clear that applicants must supply sufficient evidence proving that subsurface intakes are not feasible, and if the application fails to provide sufficient evidence, the Regional Board may require additional studies and information needed for a sufficient feasibility analysis.

The CCKA letter and HydroFocus study clearly identify that a "screening tool" is insufficient evidence and that additional studies and information are required before the Regional Board can conclude that subsurface intakes are not feasible.

The Regional Board must communicate to Poseidon that their responses to the CCKA letter and HydroFocus study are not sufficient, and that additional data must be collected to improve the confidence in the computer modeling submitted to date. In the absence of sufficient evidence, the application must be denied.

4. Economic Feasibility

CCKA argues in their letter that the intake of freshwater from the inland aquifer is an economic consideration, not a technical feasibility concern. That argument is supported by a report written by Michael Hanneman, an expert in resource economics with experience in economic analyses of water management issues for the State Water Board.

Much of Poseidon's response simply reiterates their arguments rebutting the topics of "need" and "technical feasibility" above. We offer some responses. But Poseidon fails to directly rebut the primary message in the Hanneman report: withdrawal of freshwater in a slant well is an economic consideration. Poseidon seems to assert that, because the economic cost of that freshwater withdrawal is unacceptable to OCWD, it is infeasible in terms of the OPA. As discussed above, OCWD is a project partner. Allowing OCWD and Poseidon to decide for the Regional Board what is acceptable or not acceptable would effectively allow the project proponent to enforce the OPA itself – the "fox watching the hen house."

Further, CCKA argues that, had the ISTAP thoroughly analyzed the life-cycle cost savings of slant wells it would have uncovered the significant construction and operational savings from avoiding the need for full conventional pre-treatment necessary for open ocean intakes. And, of course, that full pre-treatment is a major source of chemicals diluted in the wastewater treatment system and/or brine discharge – making the avoidance of full pre-treatment both an economically and environmentally preferred alternative.

Again, Poseidon has failed to respond in a way that accurately interprets the rules in OPA and has not supplied sufficient analyses to allow an exception to the rule mandating the use of subsurface intakes.

- a. **Hanneman simply stated:** *The ISTAP reports are being relied upon by the Applicant as evidence that sub-surface intakes are neither technically nor economically feasible, making the Poseidon project eligible for an exemption to the regulatory preference compelling the use of sub-surface intakes. See CCCCC at page 25*

Poseidon responds in a long and mostly irrelevant reply that: *“Poseidon is not relying exclusively on the Coastal Commission’s ISTAP Phase 1 and Phase 2 reports to support a determination that subsurface intakes are infeasible. Instead, Poseidon is relying on the entirety of the Project’s fifteen-year permitting history and the extensive evaluation of subsurface intake feasibility including but not limited to the Project’s 2005 FREIR, 2010 FSEIR, 2012 Regional Board NPDES Permit and State Lands Commission’s 2017 FSEIR.*

Nonetheless, the Regional Board’s website lists over 100 Project reports, including the results of the only independent subsurface intake feasibility reviews, which were conducted by the ISTAP and WIT. Also, only Geosyntec’s Talbert Aquifer model has been used in an independent process (WIT) and the results were independently peer reviewed. Id.

Later Poseidon adds: *“The ISTAP is the most comprehensive and independent, site-specific evaluation of subsurface seawater intake technology feasibility ever conducted in the state. Further, the ISTAP Phase 1 report conclusions are consistent with prior conclusions reached by the City of Huntington Beach in 2005 and 2010 and the Regional Board in 2012, as well as with the State Lands Commission’s 2017 SEIR.” CCCCC at page 28*

First, it is clear that the investigations of slant wells for the Monterey and Doheny facilities were far more comprehensive than the ISTAP Reports. To the extent the ISTAP and WIT relied on the Geosyntec Report, it was reliance on a “screening tool.” In contrast, the Monterey and Doheny analyses collected and analyzed data. And the WIT report wasn’t available until after the ISTAP Phase 1 had found slant wells to be technically infeasible. As noted in the Hanneman review, ISTAP Phase 2 did not analyze the economic feasibility of slant wells because Phase 1 had already discounted them as technically infeasible.

Second, the prior documents Poseidon repeatedly refers to, including the CEQA documents and now inapplicable permit issued by the Regional Board, were all completed prior to adoption of the OPA. And the 2017 SEIR certified by the State Lands Commission is currently under review by a court, and the challenge includes that the SEIR was inadequate because it did not review the feasibility of subsurface intakes.

Finally, the Poseidon responses describe the timeline and tasks of the ISTAP Phase 1, as well as the ISTAP Phase 2 and WIT review process. The insufficiency of the Geosyntec and WIT “screening tool” to prove technical infeasibility are expressed above in our

section on “Technical Feasibility.” But it appears to us that Hanneman was simply saying that the ISTAP Phase 2 did not analyze the economic feasibility of slant wells because the ISTAP Phase 1 had already dismissed that technology as “infeasible.” And the Hanneman representation of the process is consistent with our memory as public participants commenting on the ISTAP work.

The Regional Board cannot rely on a “screening tool” analyses of slant well feasibility. The Monterey and Doheny projects serve as a template for the type of technical analyses required for “sufficient” proof that slant wells are not technically feasible. See III.M.2(a)(1) The Regional Board must require “additional studies and information” from Poseidon before concluding that slant wells are not feasible. Id

- b. **Hanneman stated:** *“ISTAP Phase 1 rejects slant wells as an option because they ‘would draw large volumes of water from the Orange County Groundwater Basin, which in itself is considered a fatal flaw’. From my perspective as an economist, this is not a valid criterion of technical feasibility – it is an economic consideration.”* See CCCCC at page 34

Poseidon writes several objections to characterizing freshwater drawdown as an economic consideration. However, ironically, Poseidon’s partner in the project seems to agree with Hanneman. Poseidon’s responses quote and cite OCWD as writing:

“[I]t is OCWD staff’s position that a SSI constructed within the Talbert aquifer near the coast would produce an unacceptable amount of inland groundwater that would reduce the yield of the groundwater basin and, likewise, would effectively reduce the net yield of “new” water produced by an ocean desalination project. Not only would such a reduction in net yield of an ocean desalination project undermine its objective of increasing water reliability, but it would cause the project to be economically infeasible. For these reasons, OCWD staff would not be in favor of continued consideration of a SSI option for the Huntington Beach Seawater Desalination Project.”
See CCCCC at page 36 [emphasis added]

Contrary to Poseidon’s response, this quoted comment by OCWD confirms Hanneman’s argument that withdrawal of inland groundwater is an economic consideration.

Further, the OCWD quote above reveals a certain bias by OCWD to not even “continue considering a SSI option”, despite the fact there was no economic analysis performed on slant wells. This economic bias is contrary to the OPA, which states that: *“Subsurface intakes shall not be determined to be economically infeasible solely because subsurface intakes may be more expensive than surface intakes.”* See III.M.2(d)(1)(a)(ii). Rather than simply rejecting slant wells because they were more expensive than an existing open ocean intake (a fairly unremarkable finding), Hanneman argued for, and described, a rigorous economic analysis based on sound economic principles.

As noted above, the Regional Board must reject Poseidon’s “screening tool” assumptions and conclusions that slant wells are not technically feasible until they provide actual data to back up the findings. Further, if Poseidon continues to argue that slant wells are not economically feasible, it must be proven through rigorous economic analyses – not the desires of their partner agency OCWD. Finally, the cost of freshwater withdrawn in a

slant well intake must be combined with the foreseeable savings of avoiding the cost of constructing and operating a full pre-treatment system – savings that were highlighted in the CCKA letter.

- c. **Hanneman states:** *“Rather than emerging as the outcome of a selection process which identified them as the best alternative in order to minimize the intake and mortality of marine life, the site and scale of the Huntington Beach proposal have been a fixed datum since the project’s inception twenty years ago.”* CCCCC at page 31. Also, *“In short, the 50mgd scale of the Huntington Beach facility was a pre-determined decision made without the identification of any discrete need for 50 mgd of supplemental water in any Urban Water Management Plan from 2002 through the most recent plan adopted for 2015.”* Id at page 32 [emphasis added]

Poseidon’s response here somewhat differs from responses above. Here Poseidon asserts that:

“The scale of the Huntington Beach Project is based on meeting the Project’s objectives, which include using proven technology to affordably provide a long-term, local and reliable source of water not subject to the variations of drought or regulatory constraints; reducing local dependence on imported water and strengthening regional self-reliance; and contributing desalinated water to satisfy regional water supply planning goals. These project objectives are identified in the City of Huntington Beach’s 2005 certified FREIR and 2010 FSEIR and have remained unchanged.” See CCCCC at page 31

Once again, Poseidon’s explanation simply avoids the question. The “objectives” Poseidon cites do not include a volume of 50mgd. As pointed out above, the OPA clearly requires a showing of “need” that is consistent with an adopted UWMP – what Hanneman defines as a “discrete need.” As noted above, simply claiming that a project is listed as a potential source of additional water in an UWMP does not satisfy the OPA mandate to identify “need” for 50mgd. The “objectives” in an EIR fall even shorter than what is mandated in the OPA. An analysis of a project’s CEQA compliance with the broad “objectives” cited in the Poseidon response cannot be compared to the mandate to show “need” in the OPA. And as pointed out above, both OCWD planning documents and the CEQA “objectives” Poseidon cites here would equally apply to a facility that produced 10mgd, or 20mgd or 30mgd. It is important to refer to the HydroFocus report, which found that reducing the volume withdrawn from slant wells would likely reduce the proportional amount of inland groundwater in the intake.

Further, the 2005 and 2010 CEQA documents were prepared and certified prior to adoption of the OPA. Consequently, those documents did not consider “need” as defined in the OPA. Nor did the more recent 2017 State Lands Commission Supplemental EIR.

The Regional Board must require Poseidon to provide sufficient proof of “need” prior to allowing an exception to the rule mandating subsurface intakes.

- d. **Hanneman states:** *The drawdown of aquifer water is a factor that increases the effective cost per mgd supplied via desalination using a slant-well intake but, by itself, it does not constitute a “fatal flaw.” This may be why SWRCB dropped “impact on freshwater aquifer” from its criteria for technical feasibility. See CCCCC page 38*

Poseidon focuses its response on whether or not the OPA mandates a consideration of “the critical relationship of hydrology and water quality with desalination projects.” Id. The Poseidon response cites the OPA Staff Report:

- i. *12.1.9 Hydrology and Water Quality Desalination projects in general can have significant impacts to hydrology and water quality if a project were to cause or result in: Violation of any water quality standards or WDRs • Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted) (Draft OPA Staff Report, p. 157.) [emphasis added]*

It is unclear what Poseidon is inferring by citing this language. Without data-driven technical analyses, recommended in the HydroFocus report, there is no “sufficient” evidence that groundwater supplies would have “significant impacts to hydrology and water quality”, be “substantially” depleted, nor that slant wells would “substantially” interfere with replenishment. In fact, OCWD’s responses cited above indicate that maintaining the supplies and recharge capacity would require an additional “replenishment assessment” – an economic consideration not a technical impediment. In fact, the Monterey project addressed these very same issues, and prompted additional testing that is totally absent here.

Poseidon then cites:

- ii. *12.4.5 Hydrology and Water Quality Alternative 1 would have similar construction related impacts as those described in section 12.1.9. As such, it is unlikely that construction and operation of a coastal desalination facility would alter the drainage of streams or rivers, place housing or structures within flood plain, or redirect or impede flood waters, or expose people or structures to significant risk or loss due to flooding. It is possible that a subsurface intake could cause or exacerbate saltwater intrusion into freshwater wells, but it is unlikely that the regional water boards or other permitting agencies would approve such a project. One important factor to consider would be the quality (p. 190) and quantity of water to be pumped into the intake system. Another important factor to consider is the yield required to meet the anticipated need and ability to maintain adequate flows over the life of the project. If surface or subsurface potable water supplies are located nearby, they could potentially be impacted by pumping from subsurface wells. Additional studies may be necessary to assess potential impacts under a range of pumping rates. If pumping from the subsurface intakes has the potential to alter groundwater flow to freshwater aquifers and wells, then the intake may need to either be relocated or flow rates reduced so existing aquifers are not affected.*

Alternative 2 would also have construction related impacts from foreseeable intake methods and discharge technologies similar to Alternative 1 and those described in section 12.1.9. As such, it is unlikely that construction and operation of a coastal desalination facility would alter the drainage of

streams or rivers, place housing or structures within flood plain, or redirect or impede flood waters or expose people or structures to significant risk or loss due to flooding. Operational impacts would also be similar to Alternative 1, except that the potential for seawater intrusion would be absent from facilities that choose surface water intakes. (Draft OPA Staff Report, pp. 190-191.)

Again, it is unclear what Poseidon is implying in citing this language. First, there is no indication that slant wells here would result in exacerbating saltwater intrusion into the basin. Both HydroFocus and Geosyntec agree that just the opposite would occur – slant wells would change the gradient and improve seawater intrusion protection.

As clearly articulated in the CCKA letter:

During the initial inception of OCWD’s seawater barrier, a system was considered that used both inland injection wells and extraction wells at the coast. This design would have established a “double-barrier” by creating a groundwater “trough” from coastal well pumping, and a groundwater “ridge” from inland injection wells. In the end, the coastal wells were not built because the injection wells on their own were sufficient. Thus, installing a series of slant wells at the coastline, in addition to the existing injection barrier, would create a steeper groundwater gradient, which exceeds what is currently used to protect inland aquifers from seawater intrusion. The groundwater level at which OCWD maintains its injection barrier is termed the “protective elevation”. The protective elevation that Geosyntec used in its scenarios assumed that OCWD will maintain its current protective elevations. In practice, as noted in the Hydrofocus analysis, the creation of a trough from pumping coastal slant wells would allow OCWD to operate with a lower protective elevation at the injection barrier. This would:

- (1) Maintain the same protection against seawater intrusion, while lowering the amount of water that OCWD would need to inject into the barrier and making that injection water available for other beneficial uses, and;*
- (2) Lower the coastal groundwater gradient by decreasing the “ridge” caused by injection. As Hydrofocus has shown in their model analysis, these lower protective elevations would result in greater percentages of seawater, and less inland freshwater, pumped by the coastal wells.*

It is clear from the recent responses to the Regional Board’s requests for information that OCWD adjusts the volume of water injected into the seawater barrier to ensure the loss of freshwater to the ocean is maintained at approximately 2.3 million gallons a day, while serving the dual function of fending against inland seawater movement and replenishing the basin for nearby freshwater withdrawals. However, given the benefits of offshore withdrawals of seawater through slant wells on the gradient, it is feasible that OCWD could adjust the volume of freshwater injected into the barrier and dramatically reduce the volume of “drawdown” of freshwater predicted by the models. While this may mean adjusting the volume of water injected elsewhere in the aquifer to ensure nearby replenishment, it does not mean

that freshwater drawdown in the dramatic volumes predicted in the Geosyntec modeling is inevitable and consequently “infeasible.” While OCWD has the authority to object to compulsory adjustments to their management of the seawater intrusion barrier to minimize freshwater “drawdown”, they cannot simultaneously object to the use of slant wells because that avoidable drawdown renders their use “infeasible.” See CCKA letter at page 15.

Second, we agree with the State Board staff report cited by Poseidon that “need must be anticipated.” As stated above, Poseidon has failed to identify the discrete need for 50mgd.

Third, we agree with State Board staff report cited by Poseidon that “additional tests” are “necessary to assess the potential impacts under a range of pumping rates.” In fact, the “additional tests” should include collection of data to improve confidence in the computer modeling as recommended by HydroFocus, additional studies on how the seawater intrusion injection rates may be reduced to complement the slant wells, as well as alternatives for ensuring adequate replenishment through alternative injection options and/or changes in the barrier injection necessary to accommodate foreseeable changes to withdrawals by coastal communities anticipated in the draft OCWD-Poseidon distribution plans.

Poseidon then cites the Staff Report finding:

- iii. *A key factor to consider in siting subsurface intakes is the potential for the subsurface well to contribute to or exacerbate seawater intrusion problems. Seawater intrusion can irreversibly contaminate freshwater supplies, negating the benefit of the desalination facility’s ability to produce potable water. (OPA Staff Report, p. 72.)*

Again, there is no evidence that slant wells at this site or nearby sites would “contribute to or exacerbate seawater intrusion.” In fact, all the evidence submitted to date suggests that slant wells will improve defenses against seawater intrusion, not “contribute to or exacerbate seawater intrusion problems.” Further, without additional studies and information, it is premature to conclude that the current injection of freshwater into the seawater intrusion barrier cannot be successfully adjusted to limit the volume of inland groundwater mixing with the seawater intake once slant wells contribute to the defense. And as stated above, until OCWD completes their distribution plans for the desalination product water, including the alternative of coastal agencies reducing extraction from coastal wells in return for direct supply of the desalination product water, it is premature to accept OCWD’s stated objection to any alteration of the volume of water injected into the barrier.

CONCLUSION

The consideration of “economic feasibility” is inherently linked to both sufficient evidence of “need” and “technical feasibility” discussed above.

Poseidon and OCWD appear to interpret the OPA in a way that allows the project applicants the discretion to define “need” and “technical feasibility.” As we have noted

throughout these comments, the OPA requires “sufficient” evidence of need and technical feasibility before the Regional Board can allow an exception to the mandate to use subsurface intakes. That sufficient evidence is missing, and consequently an adequate economic analysis is also missing. And importantly, an economic analysis of the life-cycle cost savings of slant wells for avoided construction and operation of full conventional pre-treatment would include the environmental benefits of avoided chemical discharges from unnecessary pre-treatment.

The Regional Board must not be distracted by citations to State Board Staff Reports taken out of context. Poseidon’s response to the CCKA letter and reports is largely irrelevant and self-serving.

Finally, R4RD has a somewhat different perspective on the economic feasibility of the proposed project than that provided in the Hanneman Report. We agree with the conclusions that an economic analysis must be objective and based on sound economic principles – not the desires or self-serving objections of the project proponents. But we would add that our participation in the project analyses since Poseidon first proposed the facility includes the observation that the estimated cost of the water has dramatically increased since 2000, and the value of a so-called “reliability premium” has dramatically decreased. Given that history, it is somewhat ironic that OCWD would refuse to consider an incremental increase in cost for the development and operation of subsurface intakes – especially given that more detailed technical and economic analyses for the Doheny and Monterey projects showed significant cost savings from eliminating the need for conventional pre-treatment required for the proposed screened open ocean intake.

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