City of Marina

City of Marina
211 HILLCREST AVENUE
MARINA, CA 93933
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www.ci.marina.ca.us

July 31, 2015

Ms. Linda G. McIntyre
Moss Landing Harbor District
c/o Aspen Environmental Group
235 Montgomery Street, Suite 935
San Francisco, CA 94104

Submitted via email: PeoplesDesal@aspeneg.com

RE: Notice of Preparation of an EIR for the People's Moss Landing Water Desalination Project

Dear Ms. McIntyre:

The City of Marina has reviewed the NOP for the People's Moss Landing Water Desalination Project (PMLWDP) and anticipates that it may have concerns similar to those identified in the City's comments on the Draft EIR for California American Water's Monterey Peninsula Water Supply Project (MPWSP). I have attached those comments for your reference.

The City believes the EIR should carefully consider potential environmental impacts related to:

- Groundwater resources, particularly given the uncertainty in groundwater modeling and analyses;
- Marine resources;
- Sensitive dune habitat;
- Aesthetic resources;
- Energy;
- Growth-inducing effects;
- Construction-related impacts on traffic, noise, dust, and downtown businesses;
- Cumulative impacts associated with all of the various desalination projects being proposed;
- Water rights;
- Project alternatives, including alternative desalination projects currently proposed and intake system alternatives; and
- Project consistency with the City's Local Coastal Program and other applicable plans, policies, and guidelines.

Sincerely,

Layne Long
City Manager
City of Marina

City of Marina

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July 7, 2015

Mr. Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Submitted via email to MPWSP-EIR@esassoc.com

RE: Supplemental Comments on Draft EIR for the Monterey Peninsula Water Supply Project

Dear Mr. Barnsdale,

The City understands that the California Coastal Commission has recently reviewed the information provided by Geoscience regarding the drawdown experienced in Monitoring Well #4 and the required shut down of the test slant well. Based on local media accounts, the Coastal Commission concluded that the drawdown was caused, at least in part, by the test well pumping.

Based on this new information, the City would like to supplement its previously submitted comments on the MPWSP DEIR as follows.

The City feels that this information substantiates and confirms the City's previous concerns regarding circulation of the DEIR prior to completion of test pumping. This is exactly the type of information the City and the public need to understand the full extent of project-related effects of the MPWSP. The Coastal Commission's conclusions prove to some extent that the information in the DEIR related to groundwater impacts is inaccurate and/or incomplete and confirms the uncertain nature of groundwater modeling. The effects of test pumping approaching permit limits and requirement that revised permits be obtained prior to continued operation of the test well indicate that project related effects on groundwater resources could be more severe than currently stated in the DEIR. The DEIR should be revised to incorporate the information developed through test well pumping and must be recirculated so that responsible agencies and interested parties have an opportunity to review and comment on that critical information.

Sincerely,

Layne P. Long
City Manager
City of Marina

Cc: Mayor Bruce Delgado
Theresa Szymanis, Acting Director, Community Development Dept.

City of Marina

City of Marina
211 HILLCREST AVENUE
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July 1, 2015

Mr. Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Submitted via email to MPWSP-EIR@esassoc.com

RE: Comments on Draft EIR for the Monterey Peninsula Water Supply Project

Dear Mr. Barnsdale,

Attached please find the City of Marina's comments on the Draft Environmental Impact Report prepared for the Monterey Peninsula Water Supply Project. The City believes the EIR needs additional information, analysis, and clarification to be adequate for its use as a responsible agency.

Attached are two sets of comments:

1) Review and Comments on the DEIR for the MPWSP prepared by SWCA Environmental Consultants (July 1, 2015), and;

2) Groundwater Model Review, CPUC Monterey Peninsula Water Supply Project DEIR prepared by Robert H. Abrams, Consulting Hydrogeologist (June 29, 2015).

Additionally, several citizens of Marina have expressed concerns regarding the potential costs of the MPWSP. The City understands that this is not typically a CEQA issue; however, any information you can provide regarding how the CPUC will consider costs of the project (including a comparison with other similar desalination projects currently proposed in the area) to the rate-payer would be appreciated. If the project results in any impacts on the quality and/or quantity of the City's groundwater resources, then the City could be put in the position of the ratepayer paying the additional costs of the MPWSP. This is a substantial concern that has been raised by several community members.

Sincerely,

Layne P. Long
City Manager
City of Marina

Cc: Mayor Bruce Delgado
Theresa Szymanis, Acting Director, CDD

Encl.

REVIEW AND COMMENTS ON THE DRAFT EIR FOR THE MONTEREY PENINSULA WATER SUPPLY PROJECT

June 2015

SUBMITTED TO

City of Marina
211 Hillcrest Avenue
Marina, CA 93933

SUBMITTED BY

SWCA Environmental Consultants
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401

Review and Comments on the Draft Environmental Impact Report for the Monterey Peninsula Water Supply Project Monterey County, California

Prepared for

City of Marina
211 Hillcrest Avenue
Marina, California 93933
Attn: Theresa Szymanis, AICP CTP
(831) 884-1289

Prepared by

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SWCA Project No. 32027

June 30, 2015

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1 INTRODUCTION

California American Water (Cal Am), a privately owned water utility provider, has submitted an application to the California Public Utilities Commission (CPUC) for construction and operation of the Monterey Peninsula Water Supply Project (MPWSP or project), a subsurface intake system and desalination plant to serve customers within its Monterey District. The CPUC has directed preparation of a Draft Environmental Impact Report (DEIR) pursuant to the provisions of the California Environmental Quality Act (CEQA) to analyze potential environmental impacts associated with the project.

SWCA Environmental Consultants (SWCA) has been retained by the City of Marina (City), as a responsible agency for the project, to review the Draft EIR for its adequacy for use by the City in its discretionary approval process and to provide written comments on the Draft EIR to the CPUC. The purpose of this memorandum is to provide the results of our review.

2 COMMENTS ON DRAFT EIR

The following sections contain our questions and comments on the Draft Environmental Impact Report for the MPWSP.

2.1 Executive Summary

Mitigation Monitoring and Reporting Program (MMRP)

The DEIR does not include a Mitigation Monitoring and Reporting Program (MMRP). The MMRP identifies the method, timing, and the party responsible for mitigation implementation and verification. The DEIR identified a wide range of potentially significant effects that could occur over an extended area and affect numerous agencies, jurisdictions, and other interested parties (i.e., impacts to the Salinas Valley Groundwater Basin) and established a complex mitigation program to reduce or avoid significant effects. The DEIR should have included the MMRP to provide responsible agencies and other interested parties the opportunity to comment on it. Because of the gravity of potential effects of the MPWSP, the DEIR should be revised to include the MMRP and recirculated to allow for responsible agency and stakeholder comment.

2.2 Water Demand, Supplies, and Water Rights

Sections 2.1 and 2.2

This section discusses numerous different service areas, groundwater basins, subareas, and existing wells, distribution facilities, and water systems. The DEIR should provide (or refer to) a graphic that depicts these areas in relation to each other.

Section 2.3.2.3

This section discloses that the demand assumption of 1,180 acre feet per year (afy) for growth and development of vacant legal lots of record in the service area may underestimate actual demand based on testimony from the Monterey Peninsula Water Management District (MPWMD). Does this indicate that the proposed project would not be adequate to meet anticipated demands? What would a more appropriate demand estimate be if vacant lots in the unincorporated areas of Monterey County were included? Why was Cal Am's demand estimate not adjusted to account for this apparent discrepancy?

The last paragraph of this section states that "the higher 2002 estimate did not account for vacant lots on improved parcels in the unincorporated areas…" What are "vacant lots on improved parcels"? Please define or explain to what this is referring so it is clear what type of lots are not included in Cal Am's demand estimate.

Section 2.3.3.2

What accounts for the difference in the 2010 total water use values listed for the Monterey District vs. the main distribution system and the Bishop, Hidden Hills, and Ryan Ranch satellite systems?

Section 2.4.3

This section states that the average annual yield from Phase I injection wells is 920 afy and Phase II will provide 1,000 afy of additional capacity, resulting in a total capacity of 1,920 afy for Phase I and II combined. This seems to indicate that average annual yield from the Phase I wells is the equivalent of their total capacity. The DEIR should clarify whether the 920 afy estimate for Phase I represents average yields or total capacity. If it represents average annual yields, actual total capacity for Phase I wells should be identified.

Section 2.5.2

This section indicates that under the highest monthly demand conditions, delivery of the Salinas Valley Groundwater Basin (SVGB) return water might be postponed. The DEIR should describe how often, and under what exact circumstances it is estimated this condition will occur. The DEIR should describe what other measures will be taken (if any) before SVGB returns are postponed. Or would this be the first supply component to be cut in the event of a deficit?

Section 2.6.1

The DEIR should clarify the baseline data used by Cal Am to estimate service area demand. A 5-year period from 2007 to 2011 is identified on page 2-22, whereas page 2-24 references a period from 2005 to 2011.

Section 2.6.2.2

What is the likelihood Table 13 water would be available to Cal Am in the future?

Section 2.6.3

The DEIR should explain why Cal Am did not assume growth consistent with General Plan estimates in planning and sizing the MPWSP. Are Cal Am's estimates for growth more or less conservative? What information did Cal Am rely on?

Section 2.6.3.1

How could the Pacific Grove Local Water Project possibly "detract from the resources Cal Am needs to implement the proposed project"?

Section 2.6.3.3

The DEIR should explain why "[t]he difference in system losses in 2012 and 2013 suggest the potential that additional system improvements would yield more consistent reductions in non-revenue water."

Section 2.6.4

The DEIR should explain what the Monterey Peninsula Regional Water Authority is and what its jurisdiction and/or role is regarding water services on the Peninsula.

Section 2.7.2

This section states that the DEIR effectively and meaningfully analyzed two of the three precise concepts of "injury" set forth in the State Water Resources Control Board (SWRCB) report. It then reports that the EIR "provides an answer" to the third concept of injury (a reduction in groundwater levels that requires

users to spend additional funds to extract water). What is the difference in the analysis provided between the two? Why is the analysis of the third concept of injury not considered effective and meaningful?

Water Rights and Project Feasibility Affected by Recent Shutdown

Chapter 2 of the DEIR generally discusses that Cal Am does not need a right to extract seawater, and because 93–96% of source water is expected to be seawater, the lack of a valid water rights in the Basin does not preclude project feasibility. Because the June 5, 2015, halting of test slant wells was due to the lowering of the groundwater levels by nearly 1.5 feet just 2 months after test pumping began, the City is concerned (notwithstanding the memo's assertion that this lowering is not a result of the test slant well) that lawful water users could be harmed by the proposed project and evidence based on actual test well data (beyond past groundwater modeling referred to repeatedly throughout Chapter 2 of the DEIR) would be needed to confirm recent groundwater lowering wasn't caused by the slant wells. Actual test well data is also needed to affirm that the project is feasible based upon a reasonable likelihood that Cal Am does or will hold legal rights to water supply in the proposed project area.

Because of the above concern and new information at Monitoring Well 4, full discussion and on-site empirical evidence from the test well data should be included in the impact analysis of the DEIR that clearly demonstrates that observed groundwater lowering as of June 5, 2015, isn't related to test slant well pumping before the DEIR analysis can be deemed adequate.

Supply and Demand Estimates

The DEIR's description of future demand estimates seems overinflated. Estimated future demands are approximately 2,000 acre feet more than current demand; this is a very substantial amount. The DEIR should very carefully examine the amount of water claimed to be necessary to meet all identified demands. Any flexibility or "wiggle room" in the amount of supply estimated as necessary to meet demands should be clearly identified. The DEIR should analyze whether any such "wiggle room" is actually necessary to meet projected future demands.

Consideration of Inadequate Supply

The DEIR should provide an analysis of what would happen should the MPWSP not produce adequate supplies to meet projected project demands. What demands would be the first to be cut? How would the CPUC and/or Cal Am balance competing demands when there is insufficient supply to go around? If the project directly or indirectly affected the City's groundwater resources, how would Cal Am replenish these sources? Where would the City's demand be prioritized among the list of project demands?

2.3 Project Description

Figure 3-1

This figure should be revised so that the entire boundary of Cal Am's Monterey District Service Area is shown.

Page 3-19: Permanent Slant Wells

The last paragraph on page 3-19 states that the slant wells would operate at approximately 2,100 gallons per minute (gpm). Per comments made at the Special Joint Meeting in front of the City of Marina Planning Commission and City Council on May 12, 2015, the test slant well is operating at an optimal level of approximately 2,000 gpm. What effect would this or other similar changes in pumping capacity have on project operations?

Figure 3-3

Why does the project area boundary (defined as "the area within which all construction related disturbance would occur") not include the length of the slant wells? These areas would be disturbed during drilling and construction of the wells. Does the DEIR make a distinction between surface and subsurface disturbance? CEQA requires consideration of surface and subsurface resources equally. Therefore, these areas should be identified as within the project area boundary and the DEIR should include these areas in its analysis.

Why does the project area boundary not include the location of the "Electrical Panel (Proposed)"?

Section 3.5.1

Table 3-4 indicates that 0 cubic yards (cy) of excess spoils and construction debris would be generated as a result of drilling and construction of the nine proposed slant wells, electrical conduit, and electrical control building. Instead, it is proposed that drilling spoils would be spread within the construction disturbance area. The DEIR should indicate the type and volume of spoils anticipated to be spread within the construction disturbance area and should identify those areas where spoils would be disposed.

How will the CPUC ensure all drilling spoils would be suitable for disposal within the construction disturbance area? What is proposed if any of the excavated materials are found to be unsuitable for disposal within the construction disturbance area?

Table 3-4

Table 3-4 indicates that "[s]lant well construction would require 24-hour construction activities." Why? Section 3.5.1 states that slant well construction would take approximately 18 months during anytime throughout the 2.5-year construction period. If not restricted by time, why would 24-hour operations be necessary?

Figure 3-11

What are the 500-foot measurement (on the top graphic) and the 100 to 250 feet measurement (on the bottom graphic) intended to show?

Figure 3-11 should be revised to show: (1) depth of the wells under the ocean floor; and (2) distance offshore.

Section 3.5.4

The DEIR must distinguish between open-trench and trenchless construction activities and identify areas where each are proposed.

Section 3.5.8

The DEIR must distinguish between underground and aboveground power lines and identify areas where each are proposed. Any aboveground power lines within the city of Marina should be subject to review by the City.

Table 3-8

The table fails to list the Monterey Regional Water Pollution Control Agency (MRWPCA) as an agency from which project approval would be required. The table should be revised to include any approvals needed from MRWPCA for use of the outfall (if any).

What additional approvals would be necessary for construction activities within the Monterey Peninsula Recreational Trail?

Pipeline Locations

The DEIR does not clearly describe the proposed location of the various project pipelines proposed throughout the city of Marina. Where would the pipeline along Del Monte Boulevard be located? Within the road right-of-way? Along the sidewalk? Identifying the exact location of the proposed pipeline is critical in understanding potential impacts. For example, would roadway construction affect traffic patterns? Would construction along the shoulder/sidewalk affect pedestrians and bicyclists? The DEIR must be amended to describe the location of proposed pipelines within the city of Marina with specificity.

Page 3-28 states that the desalinated water pipeline would "continue along the west side of Del Monte Boulevard, within +, for approximately 2.5 miles..." What does this mean? The exact location of all proposed pipelines must be specifically identified.

2.4 Geology, Soils, and Seismicity

Page 4.2-4

The discussion under *Dune Sand Deposits* appears to be inconsistent with the information in Table 4.2-1, which indicates that the subsurface slant wells would extent through terrace deposits. The DEIR should clarify whether the slant wells would be located entirely within dune sands or not.

Page 4.2-20

Are dune sands not considered a soil? If not, why? The DEIR should discuss the soil hazards characteristic of dune sands.

Section 4.2.1

The Setting section should include or reference a soils map.

Table 4.2-6

Table 4.2-6 identifies one of four objectives outlined in the Planning Guidelines, Geotechnical section of the City of Marina Local Coastal Program Land Use Plan (LCPLUP). The table should be revised to address and discuss project consistency with all four objectives.

Page 4.2-45 (first full paragraph)

This paragraph states that geotechnical investigations are required under the California Building Code for most structures intended for human occupancy and by the Monterey County Grading Ordinance. This discussion and the associated analysis should be revised to reflect the geotechnical requirements of the City of Marina Local Coastal Program Land Use Plan (LCPLUP). In particular, the LCLUP requires the following:

> *Before development is permitted in the Coastal Zone, a geotechnical report appropriate to the specific proposal shall be prepared for that development in the dunes or in the vicinity of any vernal pond. The report shall include at least geologic and seismic stability, liquefaction potential, identification of an appropriate hazard setback to protect the economic life of structures, and specific recommendations on drainage, irrigation and mitigation of identified problems.*

Page 4.2-47 (first full paragraph)

This discussion should be revised to reflect similar requirements for geotechnical study arising out of the City's LCPLUP.

Page 4.2-59

The discussion of subsurface slant wells confirms that the results of the aquifer pumping test of the test slant well will further inform the final angle of the slant wells. The final angle of the slant wells will affect the likelihood and extent to which coastal erosion and bluff retreat could expose these structures. Without knowing the angle of the slant well, and the corresponding risk of exposure, it is impossible to fully understand the degree of significance of this impact.

Page 4.2-64

Due to the level of uncertainty associated with estimating future levels of sea level rise and coastal erosion, Mitigation Measure 4.2-6a should be made applicable to all proposed slant wells and project infrastructure in proximity to the coast. If the southern well clusters or project pipelines never present a risk of future exposure, Cal Am would be under no obligation to abandon them. However, if actual erosion rates exceed those currently anticipated based on the analysis of the DEIR, there would be a measure in place to mitigate potential effects.

Page 4.2-68: All Other Project Components

The analysis assumes that subsidence could only occur as a result of groundwater extraction (namely, because other project components would not extract groundwater, no impact associated with subsidence would occur). However, subsidence can result from any subsurface movement of earth materials. According to the Monterey County General Plan (2007), the principal causes of subsidence in Monterey County are groundwater extraction, drainage of organic soils, underground mining, hydroconsolidation, and sinkholes. This impact analysis (for all project components) should be revised to analyze all potential causes of subsidence.

Page 4.2-70: Impact Conclusion

This section states that, should future geotechnical study identify the presence of corrosive soils, the geotechnical engineer would recommend avoidance, removal, or cathodic protection, and those recommendations would be implemented by Cal Am. This approach constitutes improper deferral of mitigation. The necessity for and type of measures that would need to be implemented to avoid impacts associated with corrosive soils should be discussed in the DEIR.

On-site Faults

The DEIR inadequately addresses the potential impacts caused by seismic activity of the Reliz (Blanco Section) Fault Zone that underlies much of the project area. A different intake location would reduce potential impacts in the event of a seismic activity or rupture. In the instance of a rupture of the proposed brine discharge pipeline, large amounts of brine discharge would be released into a concentrated area and could result in devastating impacts on sensitive biological resources. These potential impacts must be analyzed in the DEIR. Other potential impacts that would occur in the event of a ruptured pipe or spill due to seismic activity (i.e., hazardous materials spills) must be fully disclosed in the DEIR.

Subsidence

The DEIR does not adequately address the potential for subsidence to occur as a result of the project. Although the risk of subsidence at the coast may be reduced, it would nevertheless occur, albeit at a slower pace. The DEIR must be revised to more accurately identify the rate and extent of subsidence that could occur as a result of the project.

2.5 Surface Water Hydrology and Water Quality

Page 4.3-8 (last paragraph)

The list of project components within the flood zone fails to include the subsurface slant wells. The DEIR should disclose that the subsurface slant wells would be located in a flood zone. The analysis of impacts should be revised accordingly.

Source Water Quality Methodology

Water quality samples were taken from the CEMEX site during exploratory boring activities in September 2013 through April 2014 and are also now available from the test slant well. Why were these site-specific samples not used to represent the source water for the MPWSP? The DEIR should provide a comparison of these on-site water samples with the other data sets utilized in this section to confirm use of the off-site data sets accurately depicts on-site water quality.

Page 4.3-77

The discussion of secondary energy and greenhouse gas (GHG) effects of the advanced oxidation system and facility to treat the brine inappropriately refer to secondary effects of the GAC adsorption system.

Figures 4.3-5 and 4.3-6

These figures should be revised to reflect the zone of initial dilution (ZID).

Page 4.3-97

The discussion of impacts related to flood flows as a result of the proposed subsurface slant wells does not appear to accurately describe the location of Well Clusters #2 and #3 (refer to Figure 3-3). Associated analyses should be revised accordingly to accurately reflect the position of the wells.

2.6 Groundwater Resources

The EIR should be Recirculated at the Conclusion of the Test Slant Well Long-Term Pumping Program

Earlier this year, Cal Am successfully constructed a test slant well at the CEMEX property (the location of the proposed MPWSP subsurface intake system) and began conducting short- and long-term test pumping programs. A short-term (5 days) pumping test was completed on April 8, 2015 and a technical report on baseline conditions and short-term pumping was prepared on April 20, 2015. Did the DEIR, which was released 10 days later on April 30, 2015, incorporate the results of short-term pumping program? If so, to what extent those findings differ from previous modeling assumptions?

Long-term pumping began on April 22, 2015 and is expected to continue for 6 to 8 months (until approximately October-December 2015). The groundwater modeling contained in the DEIR does not incorporate any information obtained as a result of the long-term pumping program, which is currently ongoing.

The proposed project has a long history and has generated extremely high levels of public interest and interested stakeholder participation. The number one concern of interested parties and stakeholders has been whether and to what extent Cal Am's project will impact existing groundwater resources and the SVGB. The results of the ongoing long-term pumping program, when completed, will constitute the best available evidence of the types of impacts we can expect to see as a result of the MPWSP. Circulating the DEIR for public review and comment prior to the receipt of this information deprives the public of a meaningful opportunity to consider this best information and fully understand the project's potential impacts on the Basin.

State CEQA Guidelines Section 15088.5 provides for recirculation of an EIR prior to certification when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review but before certification. The term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement.

Recently, Cal Am was required to shut down the test slant well and halt test pumping due to the lowering of groundwater levels in nearby monitoring wells to levels dangerously close to exceeding its California Coastal Commission permit conditions. Cal Am has indicated that the lowering may be the result of regional agricultural pumping; however, this information has not been analyzed in the DEIR and the public has not had any opportunity to review it and comment on this change in circumstances.

If the pumping program shows that the MPWSP would capture more than the currently estimated 4% of water from the inland direction and the SVGB, this would skew not only the impact analysis, but also the alternatives analysis provided in the DEIR. Similar subsurface slant wells are considered at Potrero Road, which would significantly reduce impacts to sensitive dune habitat and biological resources. However, slant wells at this location are expected to draw larger amounts of water from the inland direction; therefore, impacts on the Basin associated with this alternative are identified as greater than those associated with the proposed project. This increased impact on the Basin is used, in part, to justify elimination of the Potrero Road alternative as the environmentally superior alternative.

If the pumping program shows an increased amount of water would be captured from the inland direction (over 4%), as is potentially indicated by the substantial amount of drawdown recently experienced in Monitoring Well 4 resulting in a shutdown of the test pumping, then the alternatives analysis should be reworked to correct the information regarding impacts to the Basin and to more accurately analyze how those impacts would compare to impacts associated with other project alternatives. Failure to properly identify the extent of impacts to the Basin prevents the public and responsible agencies a meaningful opportunity to balance impacts of the MPWSP with other identified feasible alternatives. As described above, recirculation of a Draft EIR is required when new information would deprive the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative).

The long-term pumping results would constitute new (additional) information, which the SWRCB has indicated is necessary to accurately estimate and model anticipated effects of the MPWSP and establish a water right for the MPWSP source water. Release of the DEIR has been delayed numerous times over the course of the last 2 years based on the asserted need for additional information related to groundwater modeling and hydrogeologic conditions to adequately support the DEIR's analysis. Why does the CPUC now feel that circulation of the DEIR at this time is appropriate, when long-term pumping results (the best such evidence of how the project will impact groundwater resources) is still outstanding?

It is understood that recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR (State CEQA Guidelines Section 15088.5). However, even minor inconsistencies with the groundwater modeling used to support the EIR could result in significant changes to the project, including the need for additional or different mitigation (which in turn could result in different or more severe environmental impacts), changes in project supply and demand estimates that provide the basis for project sizing and design, and uncertainty regarding the project's ability to provide adequate amounts of return water to the Basin.

Due to the gravity of potential significant effects on the Basin and the expansive area over which those impacts would potentially be felt, the failure to allow the public the opportunity to review the DEIR with this significant piece of information incorporated into and analyzed in it, and to provide informed comments on the DEIR accordingly, is a violation of CEQA's basic concept that an agency must fully disclose a project's potential environmental effects to the public prior to taking any discretionary action on it. The fact that this information is not yet available does not change the situation. Release of the Draft EIR has been delayed for over 2 years due to the need for additional hydrogeologic information; the failure to wait an additional 3 to 5 months to incorporate the long-term pumping data seems disingenuous.

In *North Coast Rivers Alliance v. Marin Municipal Water District Board* (216 Cal.App.4th 614 (2013)), the court found that further study in an EIR, even when helpful, might not always be necessary. Certainly, a project opponent could always imagine some additional study or analysis that might provide helpful information. The appropriate standard is "whether the agency relied on evidence that a reasonable mind might accept as sufficient to support the conclusion reached in the EIR."

There is a long history of instances in which Cal Am, the EIR preparers, and/or the SWRCB have independently determined or recommended that groundwater modeling would be inadequate to evaluate potential groundwater impacts of the project, support the EIR, and establish Cal Am's legal right to MPWSP supply water without substantial additional information (including test borings and wells; studies to determine the extent, water quality, and water quantity of affected aquifers; aquifer tests that mimic proposed pumping rates; aquifer testing to determine the effects of pumping on affected aquifers; and incorporation of new information gathered during the initial phases of the groundwater investigation into the groundwater modeling studies to ensure modeling provides the best assessment of the potential effects of the project).

It was understood during analysis of the test slant well that long-term pumping was necessary to accurately model the impacts of the project; this is why the test slant well had to be parceled out separately from the MPWSP and considered in a separate environmental analysis and permit application that predated the Draft EIR for the MPWSP. The long-term pumping information will be available in less than 6 months and must be included in the DEIR to fully disclose potential groundwater impacts of the project and allow a meaningful comparison of alternatives. Since responsible and stakeholder agencies have insisted upon aquifer testing (long-term pumping) in order to accurately model potential groundwater impacts, it is clear that "a reasonable mind" would not accept something less to support the conclusions reached in the EIR. This is made even more obvious by the recent need to shut down the test pumping program as a result of drawdown exceeding anticipated levels and nearly exceeding permit levels.

The City requests that Cal Am be allowed to finish its long-term pumping program and that the results of that program be made publicly available and incorporated into a recirculated DEIR, so that all interested agencies and parties can best inform themselves about the potential impacts of the MPWSP and provide comments on the adequacy of the recirculated DEIR accordingly. We understand that timing is of the essence due to the SWRCB's deadline for withdraws on the Carmel River. However, pushing the DEIR through public circulation without the results of the long-term pumping program is putting the cart before the horse; the SWRCB itself recognized in its report that test pumping would be necessary to adequately determine impacts on the Basin and/or water rights of Cal Am under the MPWSP. Circulating the DEIR prior to the availability of the soon-expected long-term pumping information deprives interested stakeholders the benefit of full disclosure and forces the CPUC to make conclusions about the adequacy of the DEIR's analysis of groundwater effects before having had a chance to review the most important and accurate information related to those effects.

Accordingly, the DEIR should be recirculated after the long-term pumping program results are available and have been incorporated into the EIR's analysis.

Review of Groundwater Modeling

The City hired a consulting hydrogeologist, Robert Abrams, Ph.D, P.G., C.Hg., to review the modeling completed by the CPUC and the groundwater analysis in the DEIR. Mr. Abrams concluded that, in general, the model appeared to be designed, implemented, and calibrated by experienced modelers and within industry standards. However, he also identified several principal aspects of the modeling effort that could have reasonably been approached differently and may have led to results with a higher degree of confidence.

We recognize that there are many different decisions and assumptions that can be used to create a reasonably sound groundwater model. However, the City is concerned that the model may not be as accurate or as conservative as possible. Would the different approaches identified in Mr. Abrams' report result in more accurate modeling results? How would the results and conclusions change if Mr. Abrams' approaches were used? Do the assumptions and approaches used in the DEIR represent an approach that is more or less conservative than what was identified in Mr. Abrams' report?

Electrical Resistivity Imaging

The City understands that a new methodology for assessing subsurface conditions and the extent of seawater intrusion is available and has been conducted throughout Monterey County. Electrical resistivity imaging of the entire region has been conducted by Stanford University, which has successfully plotted the seawater intrusion and fresh water substrates along the entire perimeter of the Monterey Bay coast, except at the CEMEX site and Moss Landing. The breadth and depth of the imaging provided by electrical resistivity imaging is superior to that provided by the boreholes completed by Cal Am and can include information regarding aquitard perforation within the project area.

Electrical resistivity imaging would provide better information regarding the presence and location of aquitards on the CEMEX parcel and accordingly improve accuracy of the groundwater model prepared for the project. Because impacts to the Basin and on-site aquifers at the CEMEX property could result in catastrophic effects, this imaging technique should be required before any approval of the proposed project. Cal Am and/or CEMEX should be required to participate in future data collection efforts of the Stanford University research of Monterey Bay, to provide a most accurate accounting of baseline conditions and project-related effects on the Basin and area aquifers as the project progresses. The City urges the CPUC to require this information be made available prior to certification of the Final EIR for this project.

Changes in Water Quantity Affecting Water Quality

This section identifies an anticipated change in groundwater levels in the vicinity of the slant wells (Cal Am's monitoring wells have depicted drawdown levels that exceed those originally anticipated for the test well). The change in water quantity would seem to implicate similar changes in water quality. The DEIR should explain any correlation between water quantity and water quality levels within the aquifers that would result from the proposed project. Any purported lack of correlation should be similarly supported with substantial information in the DEIR.

Page 4.4-11: 400-Foot and 900-Foot Aquifers

What is meant by the DEIR statement that "the 400-Foot Aquifer is directly influenced by seawater"?

Cal Am has recently asserted that the drop in groundwater levels experienced at Monitoring Well 4, resulting in the shutdown of the test well pumping, was the result of agricultural pumping. Is it inconsistent to claim that agricultural pumping can have this type of an effect on the 400-Foot Aquifer, when "the 400-Foot Aquifer is directly influenced by seawater"?

Page 2-40 of the DEIR states, "there is a dearth of active wells that could potentially be affected by the project" and then also states in a following paragraph that "there are no known active water supply wells

within the area where the project could decrease groundwater levels by 5 feet or more." This seems inconsistent.

If there are no wells within the area where the project could decrease groundwater levels by 5 feet or more, where are the agricultural wells that are purported to be the cause of the recent drop in groundwater levels in Monitoring Well 4?

Page 4.6-6 and 4.6-9

Pages 4.6-6 and 4.6-9 of the DEIR state, "water quality of the Dune Sand Aquifer is directly influenced and controlled by seawater." However, the June 10, 2015, Geoscience memorandum claims that the lowering of groundwater in the 180-FTE at Monitoring Well 4 is the result of regional agricultural pumping. If regional agricultural pumping can affect groundwater levels in the 180-FTE, then isn't it true that it could also have an effect of water quality and seawater intrusion in this aquifer?

180/400 Foot Aquitard

The DEIR identifies the presence of a 180/400 Foot Aquitard at the CEMEX site of approximately 10 feet in thickness. The City is concerned that this aquitard is not very thick and may be even thinner or absent in other portions of the CEMEX site. The EIR should substantiate adequately that this aquitard does exist in the proposed subsurface slant well location and is sufficiently consistent throughout the project area to ensure that extracting water from the 180 FTE would have no deleterious impacts on the 400- or 900-Foot Aquifers.

Section 4.4.2

The DEIR should include a section that describes all of the different regulatory agencies with oversight over the Basin and how those agencies work together to manage the resource when there is overlapping jurisdiction among different agencies.

Page 4.4-42: Groundwater Models

This section should discuss how the model accounted for the current drought situation and anticipated future drought conditions. How would this affect the analysis of groundwater impacts?

Section 4.4.2.1

This section should describe California's recent groundwater legislation enacted in response to recent drought conditions, and identify any implications of this legislation on the proposed project.

Figure 4.4-14

The figure should be revised to reflect the complete change in groundwater elevations for 9/2034 (Moderate Period). Although the 1-foot drawdown contour would not constitute a significant impact based on the thresholds of significance established in the DEIR, the extent of drawdown at this level is informative and should be fully disclosed in the figure.

Pages 4.4-65 and 66

The discussion of impacts associated with a depletion of supply on neighboring production wells maintains that pumping within the Dune Sand Aquifer and 180-Foot Equivalent Aquifer would not impact the 400-Foot Aquifer due to the presence of a separating aquitard. However, information presented in the Hydrogeologic Working Group's (HWG) Hydrogeologic Workplan (Geoscience 2013) indicated that the 180-Foot and 400-Foot Aquifers are hydrologically connected in the vicinity of the CEMEX plant. The DEIR should explain the extent of any hydrological connection between the two aquifers. Any effects of pumping activities in the Dune Sand and/or 180-Foot Equivalent Aquifer on the 400-Foot Aquifer as a

result of this hydrological connectivity should be clearly identified. Impacts on wells screened in the 400-Foot Aquifer should be revised accordingly to account for any depletion in groundwater supplies in the 400-Foot Aquifer. If it is now believed that there is no hydrologic connectivity between the 180-Foot Equivalent and 400-Foot Aquifers, the rationale for moving away from what was originally identified in the Workplan as hydrological connectivity between the two aquifers should be disclosed.

The DEIR describes a 10-foot aquitard at the CEMEX property between the 180-FTE and 400-Foot Aquifers. The City is concerned that the aquitard is not substantial enough to prove there will be no deleterious effects of pumping on the 400-Foot Aquifer. The extent of the correlation between the 180-FTE and 400-Foot Aquifer should be further examined in the DEIR (i.e., through the use of electrical resistivity imaging, described above).

This same level of analysis should also be completed for the 900-Foot Aquifer.

Page 4.4-76 through 4.4-78: Impacts on the Surface Water-Groundwater Interaction at CEMEX

This discussion appears to conclude that the large dredging pond has some surface water-groundwater interaction, but that the smaller wash water ponds do not, as water infiltrates into the shallow sand and migrates to the ocean. The DEIR should provide additional information that reflects why these similarly situated features have different surface water-groundwater interaction levels. What is the depth of the wash ponds? Why would infiltrated water from the wash ponds migrate to the ocean, whereas water in the dredging pond experiences some interaction with groundwater?

Page 4.4-78: First Paragraph

This section states that there is an indication that "as the pond is dredged, the water levels quickly recover with seawater seeping through the loose sand on the beach." However, historical aerial images on Google Earth show the size and shape of the dredge pond changing substantially over time. This indicates that the water levels do not always quickly recover with seawater seeping through the loose sand on the beach. The EIR should explain this apparent discrepancy and the analysis should be revised accordingly.

Impacts to Groundwater Quality Associated with the MRWPCA Outfall

It is anticipated that the large majority of source water would be ocean water percolating through the ocean floor. The DEIR should discuss the potential for treated wastewater, discharged from the MRWPCA outfall, to be drawn through the ocean floor and into the slant wells. Figure 4.4-16 should be revised to reflect the westernmost extent of anticipated particle flows.

Page 4.4-87: Maintenance of the ASR Wells

The DEIR should clarify whether and why (or why not) the slant wells would be subject to the same risk of well plugging and whether similar maintenance activities would be required.

Analysis of 900-Foot Aquifer

This section should include a more detailed discussion of the 900-Foot Aquifer and an analysis of the project's potential to have any effect on that aquifer. A portion of the City of Marina's water supply comes from wells in the 900-Foot Aquifer (the City also receives water from wells in the 400-Foot Aquifer east of Marina). A small amount of seawater intrusion into that aquifer caused by the proposed project could ruin and eliminate the City's entire water supply from the 900-Foot Aquifer. How would this potential effect be monitored by Cal Am? What is proposed if this impact were to occur and the City's water supplies were ruined? The DEIR must analyze the potential for significant effects on the 900-Foot Aquifer to occur as a result of the MPWSP, and the potential for seawater intrusion to occur in the 900-Foot Aquifer right along the coast, in particular, should be analyzed and disclosed.

The groundwater modeling prepared for the project does not include any assessment of the potential for seawater intrusion into the 900-Foot Aquifer. As this aquifer has not yet been degraded by seawater intrusion, even minor impacts to this basin could destroy valuable water resources (i.e., there is no "buffer" of already degraded brackish water in which the slant wells can operate without harm as with the 180- and 400-Foot Aquifers in the project vicinity).

Why did the model not include this information? If not included in the model, what does the CPUC rely on as substantial evidence that no impacts to water quality in the 900-Foot Aquifer would occur? If no modeling was completed because not a lot is known about the 900-Foot Aquifer, isn't that indicative of a lack of substantial evidence?

Marina Coast Water District's Proposed Project at CEMEX

The Marina Coast Water District has initiated the planning process for development and operation of a future water supply project consisting of several wells at the CEMEX location. This project is memorialized in a pre-existing plan, which was analyzed in an EIR that was completed by MCWD in 2006. The DEIR should fully analyze the project's potential effect on the operation of the MCWD's proposed project. If the MPWSP would prevent or inhibit implementation of the MCWD's project, this should be identified as a significant impact on the City's groundwater resources and appropriate mitigation measures should be identified. If mitigation to reduce the potential impact is not feasible, then a significant and unavoidable impact should be identified.

2.7 Terrestrial Biological Resources

Impacts on Snowy Plover

Figure 4.6-2a should be revised to include information regarding nesting plovers. Nesting behavior in this area is regularly monitored due to the importance of this area in providing plover habitat. The failure to include plover occurrences on Figure 4.6-2 tends to minimize the biological sensitivity of the project area. Many people may refer to the figures in the DEIR but not read the lengthy text associated with them. Showing a map that is based solely on California Natural Diversity Database occurrences, rather than a map of all documented occurrences and best available information, could lead to public thinking there are no plovers near the project site.

Figure 4.6-2 should be revised, or a new figure should be added, showing updated known plover nesting locations near the project site.

The discussion of snowy plover also fails to distinguish between known plover *nesting* habitat and *foraging or resting* habitat. These areas present different levels of sensitivity, and most would agree that identified nesting habitat is the most sensitive and most important to the plover. The DEIR should clearly identify nesting habitat, separate from other foraging or resting habitat, and establish that such nesting habitat areas would be fully protected from potential project-related impacts. This information should be shown on relevant graphics and reflected in Table 4.6-1.

Figure 4.6-1a through 4.6-1h

It is impossible to distinguish between non-native grassland and ruderal areas in the 4.6-1 figures, as both are shown in very similar shades of green.

The identification of habitat types also seems nonsensical in places. The discussion should clarify why areas within the city of Marina were classified the way they were. For example, why is the northern portion of Del Monte Boulevard identified as Central Dune Scrub, rather than ruderal or developed? Why does the habitat change to ruderal (or non-native grassland) south of Beach Road? Why does it change back to Central Dune Scrub south of Highway 1? Why are disturbed areas within the CEMEX site identified as

developed/landscaped, rather than ruderal? Why are the areas proposed for Well Clusters 2 and 3 identified as Central Dune Scrub, when the DEIR states that they would be developed in the "active mining area of the CEMEX sand mining facility"?

Were the habitat types confirmed by field inspection and mapping (i.e., through the use of a geographic information system) by a qualified biologist or some other method?

The DEIR should very clearly disclose what types and how much of a particular habitat would be disturbed as a result of project development and implementation. The information requested above should be added and Figures 4.6-1a through 4.6-1h and any associated discussion should be revised accordingly.

Rare and Endangered Species Habitat Evaluation

The City's LCLUP requires a project-specific rare and endangered species evaluation before any change in use. The evaluation must identify areas qualifying as Primary and Secondary Habitat, based on LCLUP definitions. The DEIR must include information that shows studies required by the Marina LCLUP have been completed and should identify all Primary and Secondary Habitat areas. The DEIR should include an analysis of whether the MPWSP would be consistent with LCLUP regulations related to development in Primary and Secondary Habitat areas.

Fully Protected Species

Are any of the special status species identified in the DEIR fully protected species? What is proposed if a fully protected species is identified within the proposed area of disturbance? The DEIR should clearly explain the limits on incidental "take" or disturbance of a fully protected species and identify feasible mitigation to avoid impacts. If avoidance is not feasible, the DEIR should identify a significant and unavoidable impact.

2.8 Hazards and Hazardous Materials

Figure 4.7-1

There is an open Geotracker site reflected on the graphic located just to the south of Sites 4 and 5, which is not identified by a site number or discussed in Table 4.7-1. This site must be identified and discussed consistent with all other identified open environmental cases.

Figure 4.7-2

Site number 18 appears to be mislabeled on this graphic. This should be corrected and the discussion of site 18 should be updated (if necessary).

Section 4.7.1.5

Schools identified within 0.25 mile of any project component should be identified on Figures 4.7-1 and 4.7-2 so that their proximity to sites of environmental concern can be assessed.

Potential for Frac-out

Drilling activities can create the potential for an inadvertent leak of drilling lubricants, known as frac-out. The section fails to identify the potential for and possible effects of frac-out. Section 3.5.4.2 indicates that various trenchless drilling technologies would be used in areas where traditional open-trench construction was not feasible or desirable; however, no more specific information is provided regarding the proposed location of trenchless drilling methods. These areas should be identified, and the potential for frac-out should be analyzed. Appropriate mitigation should be identified as necessary to reduce potentially significant impacts.

Section 4.7.3.3

Due to the long history of mining activities at the site, there is a potential for the inadvertent discovery of unknown subsurface materials and/or contamination during construction of the slant wells. The CEMEX site has been altered by almost 100 years of industrial mining uses, and disturbed dune habitat within the construction area contains tailings, equipment, and materials associated with past mining activities.

The DEIR should be revised to analyze potential impacts associated with the inadvertent disturbance of subsurface materials and/or contaminants and should include the following mitigation measure:

> *Prior to construction, the applicant shall prepare a Hazardous Material Spill Prevention, Control and Countermeasure Plan to minimize the potential for, and effects of, spills of hazardous or toxic substances or the inadvertent discovery of buried hazardous materials during construction or ongoing maintenance of the proposed subsurface slant wells. The plan shall be submitted for review and approval by the City of Marina, and shall include, at minimum, the following:*
>
> a. *A description of hazardous materials to be used, storage procedures and site maintenance and upkeep practices;*
>
> b. *Identification of a person or persons responsible for monitoring implementation of the plan and spill response;*
>
> c. *Identification of BMPs to be implemented to ensure minimal impacts to the environment occur, including but not limited to the use of containment devices for hazardous materials, training of construction staff regarding safety practices to reduce the chance for spills or accidents, and use of non-toxic substances where feasible;*
>
> d. *A description of proper procedures for containing, diverting, isolating, and cleaning up spills, hazardous substances and/or soils, in a manner that minimizes impacts on sensitive biological and coastal resources;*
>
> e. *A description of the actions required if a spill or inadvertent discovery of subsurface hazardous materials occurs, including which authorities to contact and proper clean-up procedures;*
>
> f. *Identification of any construction or maintenance staging and/or materials storage areas, which shall be located away from sensitive resources;*
>
> g. *A requirement that spill prevention and cleanup materials be kept on-site at all times, during construction and maintenance activities; and*
>
> h. *A requirement that all construction and maintenance personnel participate in an awareness training program conducted by qualified personnel approved by the City of Marina. The training must include a description of the Hazardous Materials Spill Prevention, Control and Countermeasure Plan, the plan's requirements for spill prevention, information regarding the importance of preventing spills, the appropriate measures to take should a spill or inadvertent discovery occur, and identification of the location of all clean-up materials and equipment.*

While compliance with existing regulations may be sufficient to reduce impacts associated with the accidental release of hazardous materials for other project components proposed in less sensitive areas (i.e., pipelines in disturbed road shoulders and rights-of-way), the highly sensitive nature of the dunes within the

CEMEX site require further mitigation to reduce potential impacts associated with the slant wells to less than significant.

2.9 Land Use, Land Use Planning, and Recreation

Land Use Designations

This section should list and describe land use and zoning designations on which the proposed project would be situated, along with any designated overlays. Land use categories, zoning designations, and overlays or combining designations serve an important purpose in minimizing or avoiding environmental impacts by siting different types of land uses and/or development in areas that have been preliminarily determined to be suitable for a particular use. The project's consistency with allowable uses in applicable land use and zoning designations should be analyzed specifically in the DEIR.

In Marina, the subsurface slant wells would be located on the CEMEX sand mining plant. The CEMEX plant is within the California Coastal Zone and has a General Plan land use designation of Habitat Reserve and Other Open Space and is within the Coastal Conservation and Development (C-D) zoning district with a Coastal Development Permit Combining District (CP) overlay. Coastal dependent industrial uses are conditionally allowed within this district, subject to first obtaining a coastal development permit. Similar information should be provided for other project components.

Section 4.8.4.1

This section indicates that "the proposed project does not propose to construct new homes or businesses and would not increase the number of residents in the project area… Thus, implementation of the proposed project would not increase the use of recreational parks or other recreational facilities in the area. Therefore, this significance criterion is not applicable to the proposed project and is not discussed further." The project would create a new industrial use and is expected to generate up to 400 short-term (30 months) construction jobs and 30 full time jobs consisting of facility operators and support personnel. The analysis of project-related impacts on recreational resources should account for this potential increase in population and analyze the capacity of existing recreational facilities to support any project-related increase in short- or long-term demand.

2.10 Traffic and Transportation

A Quantitative Analysis is Required

The Traffic and Transportation section of the DEIR inadequately analyzes potential traffic related impacts and does not provide the information necessary to determine the significance of impacts associated with project-generated traffic.

Section 4.9.1.3 provides general information related to LOS standards for roadways, but does not indicate what the existing levels of service are for affected roadways within the project area. The project would generate approximately 66 additional daily trips on area roadways as well as additional trips associated with project maintenance. Without adequate information regarding existing LOS on affected roadways, it is impossible to determine whether area roadways have the adequate capacity to support additional project-generated traffic.

The DEIR should identify existing and post-project LOS for all affected roadways that would serve the project. If LOS on any area roadway would be degraded to unacceptable levels (LOS E or worse) as a result of the project, then that should be identified as a significant environmental impact and appropriate mitigation should be identified. If project-generated trips would be added to roadways already operating at unacceptable levels, then that should be identified as a significant environmental impact and appropriate mitigation should be identified.

The city of Marina and other Peninsula cities are consistently faced with issues resulting from heavy traffic volumes and congestion. Even a minor increase in traffic trips on city roadways could create or exacerbate significant traffic issues. The addition of even a handful of trips to an intersection already operating at unacceptable levels can add significant delays in travel time (which, in turn, would also result in increased air quality impacts). The DEIR must be revised to provide a quantitative discussion of traffic impacts in order to properly disclose the level of impact that would be expected to result from the MPWSP.

The DEIR asserts that "[b]ecause implementation of the project would not result in substantial long-term, ongoing effects related to traffic and congestion, typical LOS calculations were not performed for this traffic analysis, and county LOS standards were not used to evaluate potential project impacts." Without utilizing some approved methodology for analyzing traffic impacts, what evidence is there that the "project would not result in substantial long-term ongoing effects related to traffic and congestion"? Sixty additional trips is not an insignificant number of trips, particularly in an area like the Peninsula, where traffic congestions is an ongoing problem.

Effects on Downtown Businesses

The Traffic section should discuss construction-related impacts and how they may impact downtown businesses in the city of Marina. The location, extent, and duration of any closures or detours should be identified. Whether access to any business would be impacted should be discussed. All available mitigation options should be implemented to avoid or reduce potential impacts on Marina businesses. The City recognizes that economic impacts are not typically discussed under CEQA; however, traffic congestion affecting downtown businesses would constitute a physical change in traffic patterns that would result in adverse effects related to circulation and access to these businesses. Therefore, these impacts should be fully analyzed and disclosed in the DEIR.

Bike Paths and Pedestrian Pathways

Bikeways and other recreational trails are an important resource in the city of Marina and elsewhere on the Peninsula. Project construction has substantial potential to impact these resources. The DEIR should identify all designated bikeways and pedestrian and/or recreational trails in the project area (preferably shown on a graphic), along with the proposed project components, so that it is easy to see which trails would likely be impacted by project construction. Table 4.9-1 does not include all bike lanes and provides no information on the overarching trail system and how circulation may be affected by localized construction impacts.

The DEIR should identify which bike, pedestrian, and recreational trails, specifically, would be impacted, how, and for what duration. Mitigation measures specific to each affected trail or pathway should be developed, as appropriate, to reduce impacts.

Section 4.9.3.2

What is the basis for assuming (1) workers would commute to and from the construction work areas earlier and/or later than project-related construction truck trips; (2) daily traffic volumes on public roads typically vary from day-to-day, and any increased traffic within the typical daily fluctuation would not be perceptible to the average motorist; and (3) although construction-related vehicle trips would increase traffic volumes on local, two-lane roadways in the project area, the increase would not substantially affect traffic flow if the traffic volumes remained within the carrying capacity of the roads?

How does the "carrying capacity of the roads" differ from LOS? What is the basis for using this as a significance threshold?

Mitigation Measure 4.9-1: Traffic Control and Safety Assurance Plan

This measure should be implemented for all project components within the city of Marina to reduce potential impacts to the greatest extent feasible.

Intersection Impact Analysis

The DEIR should specifically identify which intersections within the city of Marina would be impacted by project implementation (i.e., Reservation Road, Palm Avenue, Beach Road, Paul Davis Drive, and Reindollar Avenue). The extent and duration of potential construction-related impacts should be quantified and specifically described in the DEIR.

Traffic Mitigation Measures

The City of Marina is concerned about construction-related traffic impacts associated with the project. One way to reduce traffic-related impacts in commercial areas is to require nighttime construction. Any traffic plans prepared by Cal Am should be subject to review and approval by the City for those areas within the city limits. The City would require the following measures to be a part of any approved traffic plan:

- Cal Am should consider phasing construction activities to avoid impacts to the greatest extent feasible (i.e., nighttime construction in commercial and visitor-serving areas, daytime construction in residential areas);
- No more than one major intersection within the city would be under construction at a time;
- Large directional signage would be required;
- Signs providing direction to Highway 1 would be required;
- Nighttime reflectors would be required; and,
- Business open signs would be required.

2.11 Air Quality

Page 4.10-17: Second Paragraph

Why were fugitive dust emissions not calculated for all project components? In particular, why weren't they calculated for the subsurface slant wells, which would require earthwork and excavation of approximately 10 acres within the dunes, both during construction and every 5 years for maintenance? This project component could generate a substantial amount of fugitive dust and should be included in all calculations of the project's potential to generate fugitive dust. Failure to include these components indicates that identified impacts are underestimated. Any related impacts and analyses should be revised accordingly to accurately reflect the project's potential impacts associated with fugitive dust.

Page 4.10-17: Operational Emissions

Why were all operational emissions not included in long-term estimates for the project? Operational emissions should include all required maintenance activities and maintenance vehicle trips and heavy equipment, including the equipment that would be needed to maintain the subsurface slant wells. Failure to include these components indicates that identified impacts are understated. Any related impacts and analyses should be revised accordingly to accurately reflect the project's potential long-term operational emissions.

Naturally Occurring Asbestos

The DEIR does not discuss the likelihood of naturally occurring asbestos (NOA) to occur in the project area; therefore, it is unknown to what extent NOA could be disturbed by project earthmoving activities. If there is a potential for NOA to occur in the project area, a fugitive dust control plan would be inadequate

to mitigate impacts. The DEIR should be revised to address the potential for NOA to occur within the project area. If it is determined that NOA has the potential to occur in the project area, adequate mitigation should be identified to minimize potential effects. Such mitigation could include conformance with the California Air Resources Board's (ARB) Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations. The ATCM requires that, prior to any grading activities a geologic evaluation should be conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the APCD. If NOA is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD.

Impact 4.10-3

Although it may not be possible to determine the exact generation source of electricity on the power grid that would serve the proposed project, the DEIR should make reasonable assumptions about the indirect emissions of criteria pollutants associated with electricity uses. It should be assumed that these emissions would occur within the North Central Coast Air Basin to provide a conservative estimate of maximum emissions that could be caused by the project. This impact section also fails to include emission estimates associated with routine maintenance of project components, which in some instances would be substantial (i.e., excavation and mechanical cleaning of the slant wells for a period of up to 18 weeks).

Failure to include reasonable estimates for all project-related emissions, including those associated with electricity generation and routine maintenance activities, improperly minimizes project-related impacts. This section should be revised to include reasonable assumptions regarding all project-related emissions.

Impact 4.10-4

This impact does not appear to include emissions associated with long-term maintenance activities, including excavation and mechanical cleaning of the slant wells, which would require heavy equipment usage that would generate DPM emissions. This section should be revised to account for all required maintenance activities and DPM sources.

2.12 Greenhouse Gas Emissions

Page 4.11-10

This identified methodology for operational emissions does not appear to include vehicle trips associated with long-term maintenance activities, including excavation and mechanical cleaning of the slant wells, which would generate greenhouse gas (GHG) emissions. This section should be revised to account for all required maintenance activities in project emission calculations. Failure to include these components indicates that identified impacts are understated. Any related impacts and analyses should be revised accordingly to accurately reflect the project's potential impacts associated with GHG emissions.

Mitigation Measure 4.11-1(b)

Subpart (b) of this measure is unenforceable. How will the CPUC ensure Cal Am makes a "good faith effort" to obtain clean energy sources for the project? Cal Am should be required to utilize any available clean energy sources, particularly local sources, to service the MPWSP. This could be made enforceable through a mitigation requirement that Cal Am regularly report on the their efforts in securing clean energy, disclose the availability of such sources, and provide information sufficient to establish that Cal Am has utilized available clean energy sources to the greatest extent feasible.

Section 4.11-3: Impacts and Mitigation Measures

This section identifies significant and unavoidable impacts associated with GHG emissions. However, it does not appear to mitigate potential impacts to the extent feasible. Additional mitigation should be identified to further reduce GHG emissions (i.e., cap-and-trade). Alternatively, the DEIR should discuss why other ways of reducing GHG emissions are not proposed for the project or are not considered feasible for the project.

2.13 Noise and Vibration

Page 4.12-28

Footnote 3 improperly references a chapter analyzing potential impacts of the test slant well (Chapter 5, Impact Analysis for Test Slant Well and Pilot Program). As this analysis has been removed, the footnote and associated text should be updated accordingly. The DEIR should be revised to explain why this discussion was removed and why its removal, and the failure to discuss impacts associated with development of the test slant well (which was proposed solely to inform the MPWSP analysis), does not constitute CEQA piecemealing.

Pages 4.12-32 through 4.12-36

Strangely, the DEIR identifies several exceedances of identified thresholds yet ultimately concludes that impacts would be less than significant because the threshold would only be exceeded for less than 2 weeks. Construction noise (i.e., from development of the Desalinated Water Pipeline or trenchless construction techniques like jack and bore) that exceeds City thresholds for any period of time should constitute a significant impact. Appropriate mitigation to reduce these impacts on adjacent sensitive receptors should be identified (i.e., use of sound barriers to prevent exceedances). If mitigation is insufficient to bring all noise levels to acceptable levels, then a significant and unavoidable impact should be identified.

Conversely, exceedances associated with development of the Monterey Pipeline for "less than 2 weeks" are identified as significant and unavoidable (page 4.12-36). What is the justification for treating the two issues differently?

Page 4.12-59

These sections confirm that no nighttime construction of project components in the city of Marina (except the subsurface slant wells) would occur, consistent with the Marina Municipal Code. However, previous sections discussed the potential for these components to be constructed during nighttime hours. A mitigation measure should be included that prohibits nighttime construction activities on any project components within the city of Marina except the subsurface slant wells, without prior consent from the City. This prohibition would make clear that no unauthorized nighttime construction would occur in Marina, with the exception of the slant wells, which due to their distance from residential areas, would be consistent with City policies. Alternatively, the DEIR should be revised to consistently reflect that no nighttime construction of pipelines or other project components within the city of Marina would occur (except for potentially the slant wells).

2.14 Public Services and Utilities

Mitigation Measure 4.13-1e: Notify Local Fire Departments

This measure should be revised to require coordination with local fire departments any time work is proposed in close proximity to a gas utility line, regardless of whether any leak or damage has been detected.

Mitigation Measure 4.13-5a and 4.13-5b

These mitigation measures address the potential need for lining the MRWPCA outfall pipe to protect it against corrosion as a result of the proposed transfer of brine. These sections should include a discussion of potential secondary impacts related to proposed lining activities and any other repairs that may be necessary to maintain the condition of the outfall (i.e., additional construction-related impacts on air quality and traffic, increased use and handling of hazardous materials).

2.15 Aesthetic Resources

Impact 4.14-2

This section should be revised to clarify that no nighttime construction activity would occur within the city of Marina without approval from the City, except for development of the slant wells.

Page 4.14-39: Subsurface Slant Wells

This section indicates that the wellhead vaults would be constructed 1 to 2 feet below grade. Elsewhere in the DEIR, it is asserted that the vaults would be constructed 5 feet below grade. The DEIR should be revised to clarify and consistently describe the depth of the vaults. Due to the shifting nature of the dunes, elevation changes of 1 foot or more can occur at the CEMEX site. The Aesthetic Resources section of the DEIR should analyze the potential for any portion of the slant wells to become exposed in the future due to normal dune movement. If exposure of the vaults is possible, mitigation measures should be identified to avoid impacts. Similar discussions should be included in other related sections of the DEIR (i.e., Section 4.2, Geology, Soils, and Seismicity).

Page 4.14-40: MPWSP Desalination Plant

This section should provide a discussion of the anticipated height and bulk of various desalination plant components so that the reader can assess the plant's consistency with surrounding uses and/or the adequacy of identified screening vegetation. The location and size of the more prominent plant components should be identified to support the finding of less than significant impacts.

Mitigation Measures 4.14-3a and 4.14-3b

These mitigation measures, which would require facility design and screening to reduce impacts from visible project components, should be applied to all project components, including the electrical panel and building on the CEMEX parcel and the desalination plant. Ensuring all project components are designed to reduce visual impacts would mitigate potential significant effects to the greatest extent feasible and would help protect the important scenic values of the region.

Mitigation Measures 4.14-4

This mitigation measure, which would minimize outdoor and security lighting effects, should be applied to all project components, including the electrical panel and building on the CEMEX parcel and the desalination plant. Ensuring all project components are designed to reduce visual impacts would mitigate potential significant effects to the greatest extent feasible and would help protect the important scenic values of the region.

2.16 Agriculture and Forestry Resources

Quantification of Agricultural Resources to the Impacted

The amount of farmland, Williamson Act lands, and agriculturally zoned lands that would be converted as a result of the project should be positively identified and quantified. This section seems to lack certainty regarding where certain project components would be located, whether certain farmland areas would be

impacted, and to what extent. These issues should be discussed with certainty in the DEIR and accompanying impacts should be clearly identified and discussed.

Mitigation Measure 4.16-1: Minimize Disturbance to Farmland

This mitigation measure does not ensure potential impacts would be mitigated to a less than significant level. The measure requires Cal Am to avoid farmland "as much as feasible." If avoidance of agricultural resources proves to be infeasible at the time of construction, then no reduction in the impact would occur and a significant impact would remain. This section should be revised to ensure identified mitigation would be adequate in avoiding or reducing impacts, or if a certain reduction of the level of impact to less than significant is not possible, impact determinations should be revised as appropriate to identify a significant and unavoidable impact.

A similar approach is used in other mitigation measures throughout the document. These should be amended and/or the analysis and conclusion regarding the significance of the impact should similarly be amended.

2.17 Mineral Resources

Page 4.17-7

The analysis assumes that "no impacts would result from project operations." The analysis should be revised to specifically identify and account for potential impacts on mining activities that would result from ongoing maintenance activities associated with the project. The subsurface slant wells are located within the actively mined area of the CEMEX plant and would require excavation and maintenance for up to 18 weeks every 5 years. These activities could impact mining activities within the CEMEX plant and should be analyzed under this section.

Page 4.17-9

The impact analysis related to the ASR system assumes that impacts would be less than significant because of the "limited footprint"; however, 9 acres would appear to be adequate for mining purposes and is, in fact, similar in size to the actively mined area at CEMEX. Unlike proposed pipelines, which would generally be sited within existing rights-of-way unsuited for future mining uses, the proposed location of the ASR component may be more suitable for future mining activities. This section should include information on the suitability of and likelihood that future mining of this site would occur and, if 9 acres is inadequate to support mining activities at this location, information as to why should be included.

2.18 Population and Housing

Section 4.19.3.2

The project would result in up to 400 temporary construction jobs and 30 permanent facility operators and support personnel to construct and staff the project. The analysis of potential project-related impacts on population and housing should include a discussion of whether existing housing supplies (including short-term construction housing [i.e., hotels, motels]) in the project area are adequate to accommodate project-related demands.

2.19 Cumulative Impacts

The City would like to see a more fully developed analysis of cumulative impacts associated with the MPWSP and all other foreseeable water supply projects in the area. There are a lot of different proposals currently flying around and the DEIR needs to specifically discuss how these projects are likely to impact the Basin and other sensitive resources on the Peninsula. The discussion in the DEIR is too generalized to provide a clear picture of potential cumulative impacts.

2.20 MPWSP Variant

CPUC Lacks Authority to Approve the MPWSP Variant

Because the Groundwater Replenishment Project (GWR) portion of the MPWSP Variant is outside of the CPUC's jurisdiction, and has not yet been approved by the MRWPCA or constructed, it is unclear how the CPUC has any authority to approve the MPWSP Variant. As discussed in Section 1.3.1 of the DEIR, the CPUC does not have any jurisdiction over the MRWPCA, the lead agency for the GWR portion of the MPWSP Variant. So, how would the CPUC have the authority to approve that portion of the project as described in the DEIR?

The Inclusion of the MPWSP Variant in the DEIR is Confusing

It is not clear whether the MPWSP Variant is part of the proposed project (an alternate variation of the MPWSP that could be approved by the CPUC) or a project alternative or something else entirely. The MPWSP Variant is briefly discussed in Chapter 3 as part of the Project Description (Section 3.1). However, it is not fully fleshed out as an optional variation of the proposed project.

Chapter 6 states that the MPWSP Variant does not qualify as an alternative to the project "because it was not specifically designed for the purpose of lessening or avoiding the environmental impacts of the proposed project." Yet, it is included in the alternatives analysis for comparison against other project alternatives and is ultimately identified as the environmentally superior alternative (Section 7.12). There is no requirement under CEQA that project alternatives be "specifically designed for the purpose of lessening or avoiding the environmental impacts of the proposed project." No alternative outfall options and no alternative desalination plant alternatives were carried forward for review because those options did not avoid or minimize any potential impacts. Yet they were still analyzed as potential alternatives to the proposed project. Why is the MPWSP Variant not analyzed as a project alternative?

Because it is impossible to determine how and why the MPWSP Variant is included in the DEIR, its inclusion is confusing and indicates some ulterior motive for including it. The DEIR should be expanded to discuss the circumstances, timing, and regulatory authority that would permit the CPUC to authorize the MPWSP Variant. The DEIR should more clearly explain whether the MPWSP Variant is considered a part of the proposed project (and should therefore be included in the Project Description and Chapter 4 Impact Analysis) or a project alternative (which should therefore be set out separately in the Alternatives section and fully analyzed as an alternative to the MPWSP). If the MPWSP Variant is not considered to be either a part of the proposed project or a project alternative, then the reason for including it and providing lengthy analysis of it in the DEIR should be clearly disclosed.

Infeasibility of Mitigation Measures

Section 1.3.1 discusses the CPUC's lack of jurisdiction over the MRWPCA. If the CPUC lacks jurisdiction over the MRWPCA, then it also lacks jurisdiction to require implementation of identified mitigation measures that would ultimately be undertaken by the MRWPCA for the Groundwater Replenishment Project (GWR) component of the MPWSP Variant. If it is uncertain whether identified mitigation measures can be implemented by the lead agency, then those measures should be considered infeasible for the purposes of a CEQA analysis. The DEIR should describe how the CPUC's lack of jurisdiction over the MRWPCA and the GWR component of the MPWSP Variant will affect the CPUC's ability to mitigate potential significant impacts.

State CEQA Guidelines Section 15126.4(a)(2) states that mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments. Because the CPUC does not have any authority to require mitigation related to the GWR component (as that project is being proposed by the MRWPCA), all associated mitigation measures should be identified as infeasible. Associated

impacts, therefore, would not be mitigated and would remain significant and unavoidable if no comparable measures can be required by the CPUC.

Failure to Analyze Secondary and Residual Impacts

Chapter 6 of the DEIR, MPWSP Variant, does not include a discussion of secondary or residual impacts. The DEIR should be revised to provide a comprehensive analysis of potential secondary and residual impacts associated with the MPWSP Variant, including mitigation measures identified in the GWR Project DEIR, if the CPUC intends to rely on that document for CEQA coverage of this portion of the MPWSP Variant.

MPWSP Variant Requires Full CEQA Analysis

Section 2.4.5 indicates that if the GWR project is approved and has reached certain milestones by the time Cal Am is ready to construct the desalination plant, then Cal Am could purchase water from the GWR project and request authorization to reduce the size of the desalination plant. If it is intended that the MPWSP DEIR would provide CEQA coverage for this situation, then Chapters 4 and 6 must be revised to provide a complete environmental analysis of the MPWSP Variant.

Chapter 6 provides a cursory evaluation of the environmental effects of the MPWSP Variant in a tabular format, by comparing potential impacts and mitigation requirements with those of the proposed project. The impact analysis then asserts that "the discussion below expands on the information provided in Table 6-7 for those impacts that warrant more detailed discussion." No justification is provided to explain why certain impacts were determined to warrant a more detailed discussion while others were not.

Unlike the MPWSP, the impact discussion of the MPWSP Variant does not include any detailed discussion of geology, soils, and seismicity; terrestrial biological resources; hazards and hazardous materials; land use, land use planning, and recreation; traffic and transportation; noise and vibration; public services and utilities; aesthetic resources; cultural and paleontological resources; agricultural and forestry resources; mineral resources; energy conservation; or population and housing. Chapter 6 fails to provide a detailed analysis of these issue areas despite findings in the DEIR that substantial additional mitigation above that required for the proposed project would be necessary to mitigate impacts of the MPWSP Variant on these resources (citing the GWR Draft EIR).

The analysis of the MPWSP Variant cannot rely on the information provided in the Draft EIR for the GWR project (MRWPCA 2015). To split the analysis between two EIRs prepared for two separate projects would constitute improper CEQA piecemealing.

It is unclear whether the CPUC has the authority to approve the MPWSP Variant, due to the lack of jurisdiction over the MRWPCA and uncertainty regarding the ultimate disposition and timing of the GWR project application. However, the DEIR asserts that the CPUC could approve a future request by Cal Am to reduce the size of the desalination facility in the event the GWR project is approved and GWR water is available for Cal Am purchase prior to construction of the desalination plant. If this is the case, the DEIR must be revised to provide a complete analysis pursuant to CEQA. The DEIR should also clearly describe the timing, likelihood, and circumstances that would be required to be met for this situation to occur. For example, if the GWR is approved and constructed, how certain is it that Cal Am would pursue the MPWSP Variant over the MPWSP? What role would the CPUC have in weighing the two options?

2.21 Alternatives

The City would like to see several different alternatives discussed and analyzed in the alternatives section, as described in this section. There is a parcel approximately 1.5 miles north of the CEMEX parcel, just

south of the Salinas River, where subsurface intake could be possible. This would move the intake infrastructure off of the fault that underlies the CEMEX parcel, thereby reducing impacts.

Similar to the MPWSP Variant, the alternatives analysis should consider other options for Cal Am to purchase water from other proposed water supply projects being undertaken in the area (e.g., other desalination projects currently proposed at Moss Landing). The analysis should clearly describe Cal Am's options in purchasing water from other available resources before approval for the MPWSP can be given.

The City would like to see additional reduced capacity alternatives, where a smaller desalination plant is coupled with aggressive water conservation measures to meet supply and demand. For example, what water savings could be realized through a ban or limits on outdoor decorative plantings?

The City would like to see an analysis of a project alternative sized to only provide the amount of water needed by Cal Am to reduce illegal pumping on the Carmel River. These reduced capacity alternatives would result in fewer environmental impacts and less potential to impact the Basin.

An analysis of alternatives that include co-locating proposed desalination facilities with existing power plants should be included. How would this affect project operations? Would co-location reduce energy requirements of the project?

Balancing of Alternatives

The City's main concern related to the project is that it will cause damage to existing groundwater resources and the Basin. Some such impacts, although in some cases considered unlikely in the DEIR, could result in catastrophic injury to Basin users like the City. Due to the extremely catastrophic impacts that could occur if the project affects the Basin (i.e., through seawater intrusion of the 900-Foot Aquifer or higher withdrawals from the 400-Foot Aquifer), these potential impacts should be given heavier weight and consideration in the DEIR's balancing of project alternatives. A project that reduces the potential for impacts to the Basin (i.e., open ocean intake) should be identified as environmentally superior, even if other, less catastrophic impacts would be increased (e.g., impacts to marine species). The DEIR should clearly explain how it balanced the different effects of alternative projects and how impacts on certain resources were considered/weighed in the alternatives analysis.

Figures

Almost all of the figures contained in the DEIR fail to include the jurisdictional boundaries of affected cities. The City of Marina's city limits should be added to all DEIR graphics where appropriate, so that the public can easily see what components are proposed within the city and what conditions and impacts are expected to result within the city.

2.22 Miscellaneous

Conflicts of Interest

It has been indicated that Geoscience (Cal Am's representative) owns patent rights on slant well technology. If this is the case, the DEIR should disclose the extent of Geoscience's interest in slant well technology. Additionally, the potential for conflicts of interest due to their interest in subsurface slant well technology should be analyzed and disclosed in the DEIR. Does Geoscience have any financial interest in the project? Any conflicts of interest that should be disclosed?

Similarly, members of the public have expressed concern to the City that the CPUC may be conflicted in analyzing the MPWSP. The CPUC has a responsibility to protect the ratepayer. How will it weigh the costs/benefits of the MPWSP against other similar (and more cost effective) water supply projects in order to ensure the ratepayer is protected?

Impacts on Carmel River

The DEIR fails to identify changes that would occur as a result of Cal Am's reduced pumping on the Carmel River. Would river flows increase? Would riparian areas and habitat adjacent to the River be impacted? Would downstream areas be affected by increased capacity of the River?

Would infrastructure be removed from the Carmel River? What would that entail? What would the environmental effects of decommissioning these existing components be?

Impacts Related to Deconstruction

The MPWSP presents cutting edge technology, the success of which will be largely tested for the first time during initial operation of the project. The potential for one or more project components to fail to work as intended or to be determined to be infeasible is significant. The DEIR should consider the types of changes that may be necessary to account for one or more project components being determined to be no longer viable. Is it possible some project components would be deconstructed if the technology proposed by Cal Am proves to be no longer viable? What are the ramifications of scaling back or altering a partially constructed project (e.g., 45% constructed or 65% constructed)?

Because the technology proposed in the MPWSP is so untested, the DEIR should include an evaluation of its potential to fail. Any resulting environmental impacts associated with decommissioning of the project and/or alterations to the project should be fully disclosed.

Benefits to Marina

The public has raised the question of how the project would benefit the City of Marina. The City is being asked to approve the large industrial use within its sensitive dune habitat areas, yet it is unclear whether or how the project would provide any benefit to the City.

Comments from Interested Community Members

The City has received several comment letters from community members interested in the project. Recognizing the importance of being responsive and attentive to the citizens of Marina, the City has attached these comment letters to this report. The City further incorporates by reference the comments and concerns raised by its citizens in reviewing the DEIR, as stated in the attached letters.

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Consulting Hydrogeologist

Technical Memorandum

June 29, 2015

To: Theresa Szymanis
Community Development Director, City of Marina

From: Bob Abrams

Subject: Groundwater Model Review, CPUC Monterey Peninsula Water Supply Project DEIR

This Technical Memorandum provides an independent and unbiased technical review of groundwater modeling conducted for the CPUC Monterey Peninsula Water Supply Project (MPWSP) Draft Environmental Impact Report (DEIR) (ESA, 2015). Because of time constraints, this review focuses on broad aspects of model design, model implementation, and interpretation of results rather than a suite of specific details. Travel by air provides a good analogy for the depth of this review. This review was conducted at the 30,000-foot level as opposed to 5,000-foot or 1,000-foot level.

The groundwater modeling, conducted by Geosciences Support Services, Inc (GSS) and Luhdorff and Scalmanini Consulting Engineers (LSCE), is documented in Appendices E1 and E2 of the DEIR. Although the DEIR covers water supply issues in Salinas Valley Groundwater Basin (SVGB) and the Seaside Groundwater Basin (SGB), the groundwater modeling documented in Appendices E1 and E2 does not include the SGB. Hence, this review is relevant only to the SVGB in the MPWSP area.

In general, the groundwater modeling effort appears to have been conducted within industry standards. Alternative approaches to some aspects of the model design and calibration are presented in this Technical Memorandum. The model calibration is somewhat poor in the 900-Foot Aquifer in the vicinity of the City of Marina. This may be due to a lack of high-quality data available for model calibration purposes. Overall, the potential impact of MPWSP pumping on seawater intrusion in the 900-Foot Aquifer in or near the City of Marina, based on the groundwater modeling effort documented in Appendices E1 and E2 of the DEIR, was not reported.

Background

General information is given here regarding hydrogeology, the SVGB, and the basics of groundwater modeling to provide definitions and context for the remainder of the Technical Memorandum. Readers familiar with these topics may skip some or all of these subsections.

Aquifers and Aquitards

The SVGB consists of several *aquifers* and *aquitards*. An aquifer is a permeable subsurface layer (or body) of rock or sediment capable of transmitting economic amounts of groundwater. An aquitard is a subsurface layer (or body) of rock or sediment that inhibits the transmission of groundwater. As such, aquitards are generally much less permeable than aquifers. In the

SVGB, several aquifers, ranging from near-surface to not more than approximately 2,000 feet deep, occur in the layered geologic formations that comprise the basin. In general, these geologic formations are composed of unconsolidated to semi-consolidated sediments ranging in age from recent to approximately 5 million years before present. In the MPWSP area, the aquifers are separated by several aquitards. The aquitards are not continuous across their areas of occurrence. Holes or gaps occur in the aquitards, which can allow groundwater to flow from one aquifer to another (i.e., shallow aquifer to deeper aquifer or vice versa).

Occurrence and Movement of Groundwater

Groundwater is defined as water that exists in the saturated zone of the subsurface and is often thought of as occurring below the *water table*. Strictly speaking, the water table occurs in the shallowest *unconfined* aquifer of a groundwater system (i.e., an aquifer with no aquitard above it). More generally, the water table is one of several *potentiometric surfaces* (or pressure surfaces) that can exist in layered aquifer systems. The elevations (or depths) of these potentiometric surfaces, including the water table, are measured by noting the water level in monitoring wells that are isolated within a particular aquifer. In general, each aquifer in a layered system can have its own potentiometric surface, or depth to water. The reason this occurs is because *confined* aquifers can be isolated from shallower or deeper aquifers by intervening aquitards, which are sometimes referred to as confining layers.

Generally speaking, groundwater in aquifers is always flowing, albeit much more slowly than surface water in a stream or river. The flow of groundwater occurs from areas where the potentiometric surface is at higher elevations to areas where the potentiometric surface is at lower elevations. Because of this, the potentiometric surface is often referred to simply as the "groundwater elevation."

Groundwater Models

The groundwater models relevant to Appendices E1 and E2 of the DEIR fall into two basic classifications: models of groundwater flow and models of solute transport. Both the flow of groundwater and the transport of solutes in groundwater (such as chloride or total dissolved solids) can be described by partial differential equations. Site-specific groundwater models are constructed by using computer codes (i.e., programs) that solve these partial differential equations numerically, subject to particular boundary and initial conditions. The groundwater flow equation and the solute transport equation are sometimes solved within the same computer code, but often each equation is solved by separate computer codes that are linked in the sense that output from the groundwater flow code is used as part of the required input to the solute transport code.

The groundwater flow equation and the solute transport equation are continuous equations—when solved analytically they have solutions at every point in space and time within the model domain. Only the simplest, often hypothetical, problems can be solved analytically. For site-specific problems with complex geology and hydrogeology, such as in the SVGB, the equations must be solved numerically. When solved numerically, solutions can only be calculated at specific, or discrete, points in space and time. In both cases, the solution to the groundwater flow equation is a spatially and temporally distributed set of simulated groundwater elevations, also known as hydraulic heads, and the solution to the solute transport equation is a spatially and temporally distributed set of simulated concentrations.

Spatial discretization is accomplished by defining a grid of cells that covers the area to be modeled. The smaller the cell size, the more closely the numerical (discrete) solution matches the analytical solution, if it exists. The larger the cell size, the more approximate the solution becomes. However, the "computational cost" increases dramatically as cell size decreases and the grid becomes more finely discretized, eventually reaching a practical limit. Thus, grids must be designed considering the trade-offs between accuracy and practicality.

Temporal discretization is accomplished by dividing the period to be modeled into time steps, or groups of time steps known as stress periods. Computational/accuracy trade-offs also occur when defining time-step size.

MPWSP Groundwater Modeling

Model Code Selection

The first step in developing site-specific groundwater models is to (a) define the modeling objective(s) and (b) select appropriate computer codes that can achieve the objective(s). The stated modeling objectives of the MPWSP modeling effort are to (1) evaluate and predict the water level and water quality impacts in the area of the CEMEX site during the long-term pumping test (Appendix E1) and (2) assess the impacts of the proposed MPWSP on groundwater levels and seawater intrusion in the SVGB (Appendix E2).

The modeling approach for the MPWSP effort uses the concept of telescopic mesh (grid) refinement (TMR), in which nested grids are used and the smaller grid-within-a-grid (the "child" grid) has much finer spatial resolution than the "parent" grid. TMR was developed to reduce computational costs while allowing more accuracy in targeted areas. In TMR, the parent and child models are run separately and the parent model provides information to the child model, but the child model does not provide information or feedback to the parent model.

For the modeling efforts described in Appendices E1 and E2, two successively smaller nested grids were used within a larger regional-scale model. The "grandparent" model is the Salinas Valley Integrated Groundwater/Surface Water Model (SVIGSM), which was developed in the 1990s for the Monterey County Water Resources Agency (MCWRA). It should be noted that MCWRA considers this model to be obsolete and out of date, although LSCE did update the SVIGSM for the MPWSP modeling effort, to the extent practical. A new, modern groundwater flow model is currently under development by Monterey County, but it is not available at this time. SVIGSM probably represents the best source of regional-scale hydrogeological data at this time. For example, SVIGSM was recently used as a data source for *State of the Basin* report issued by MCWRA earlier this year.

The parent model is the North Marina Groundwater Model (NMGWM), which was developed by GSS in the 2000s using the industry-standard codes MODFLOW-2000 (groundwater flow) and MT3DMS (solute transport). The child model is the CEMEX Model (CM), which was developed by GSS in the 2010s using the code SEAWAT. SEAWAT was developed by the U.S. Geological Survey (USGS) by coupling MODFLOW-2000 and MT3DMS into a single computer code. It is not clear if GSS used SEAWAT-2000 or the more recent SEAWAT version 4. SEAWAT is not as widely used as the individual component codes, but it has been verified and is conceptually correct. SEAWAT's advantage over the individual codes is that it can simulate density-dependent groundwater flow, which is a factor in seawater intrusion.

Site-Specific Model Design

"Remember that all models are wrong; the practical question is how wrong do they have to be to not be useful."

--George E. P. Box and Norman R. Draper (1987), *Empirical Model Building and Response Surfaces*

All models are "wrong" because they are simplifications of reality, not because they provide incorrect information. Therefore, the goal of any modeling investigation is to capture the essence of the problem. That is, the model should be sufficiently detailed and calibrated to meet the modeling objectives by representing the major physical processes that describe the behavior of the system under investigation. In this sense, models can be very useful and are an essential part of many scientific investigations. One of the best uses of a model is for the investigator to pose "what-if" questions such as: What if slant wells were operating in the coastal area, would there be significant impacts to groundwater resources?

Many decisions and assumptions must be made in order to model a complex groundwater flow system like the SVGB. The availability of data and the experience of the modeler govern these decisions and assumptions. As a practical matter, modeling is an art as well as a science. The modeler must decide which of the many aspects of the system can be ignored or simplified, without losing the utility of the model. The saying, "there are many ways to skin a cat," is very relevant in this regard. For example, different model designs for the same area and time period may both be capable of achieving the stated modeling objective(s). Furthermore, even though a model reviewer may not agree with some or all of the decisions and assumptions made by the model developer, it may not be possible to determine if suggested changes would yield significantly different results and conclusions, without actually changing and re-running the model.

It is in this spirit that the MPWSP groundwater modeling effort is reviewed here. Alternatives to the decisions and assumptions made in the development of the MPWSP model are discussed herein, but these should not be construed as criticisms or statements that particular aspects of the MPWSP models are incorrect.

In general, the NMGWM and the CM appear to be designed, implemented, and calibrated by experienced modelers and within industry standards. Nevertheless, there are three principal aspects of the modeling effort that could have reasonably been approached differently and may have led to results with a higher degree of confidence. These aspects are (1) choice and implementation of boundary conditions, (2) estimation and distribution of aquifer parameters, and (3) model calibration. Additionally, alternatives to the predictive simulations are discussed.

Boundary Conditions

From a heuristic perspective, the natural boundaries of a groundwater flow system prevent the flow of groundwater in certain directions, provide groundwater to the system, or allow groundwater to leave the system. From a modeling perspective, boundary conditions are mathematical statements representing these three processes.

Partial differential equations like the groundwater flow equation and the solute transport equation are known as boundary-value problems. As implied by their mathematical classification, the solution to a boundary-value problem is highly dependent on the applied boundary conditions. The chosen boundary conditions essentially govern the outcomes, or

predictions, of a model. There are at least two aspects related to boundary conditions that could have reasonably been approached differently in the MPWSP modeling effort—the Monterey Bay boundary and the boundaries of the nested models (i.e., the parent and child models, for which the SVIGSM is the grandparent model).

Monterey Bay Boundary

As shown on Figures 17 and 18 of Appendix E2, Layer 1 is designed as a modeling convenience to represent the influence of Monterey Bay and does not function elsewhere in the model. Layer 1 is composed entirely of constant-head and no-flow boundary cells. The constant head boundary cells are fixed at sea level. That is, they are set to maintain a groundwater elevation of sea level and will allow unlimited amounts of water to flow in or out of the model domain to achieve this condition. This makes sense because, relative to the SVGB groundwater flow system, there is an unlimited amount of water in Monterey Bay and the water surface of the Bay is always at sea level.

The definition of the Monterey Bay boundary in deeper model layers is also relevant. As stated in Section 4.4 of the DEIR (main body), the SVGB is hydraulically connected to Monterey Bay by outcrops of the 180-Foot and 400-Foot Aquifers located a few miles offshore. It is these hydraulic connections that have provided the primary pathways for seawater intrusion in the 180-Foot and 400-Foot Aquifers. It is currently unknown by scientists if the 900-Foot Aquifer is connected to the Bay.[1]

Table 4.1 of Appendix E2 indicates that the 180-Foot/180-FTE aquifer is represented in the NMGWM by Layer 4 (Layers, 6, 7, and 8 in the CM), the 400-Foot Aquifer is represented in the NMGWM by Layer 6 (Layer 10 in the CM), and the 900-Foot Aquifer is represented in the NMGWM by Layer 8 (Layer 12 in the CM). Figure 18 of Appendix E2 appears to indicate that the Monterey Bay boundaries in Layers 4, 6, and 8 of the NMGWM have been designated as no-flow boundaries.[2]

It should be noted that these boundaries are not explicitly shown as no-flow cells (gray-colored areas on Figure 18), but the default in MODFLOW is that the outside edge of any active boundary cell is a no-flow boundary unless it is explicitly assigned a boundary condition. The nature of the Monterey Bay boundary in layers below Layer 1 is not discussed in the text of Appendix E1 or E2. If indeed this boundary acts as a no-flow boundary in the model, this does not seem to be conceptually correct because it is known that flow does occur across the Monterey Bay boundary of the 180-Foot and 400-Foot Aquifers.

As noted above, it is currently unknown if the 900-Foot Aquifer is hydraulically connected to Monterey Bay. Nevertheless, the impact on groundwater resources from a potential connection could be evaluated with the model by conducting "what-if" simulations.

Boundaries of Nested Models

The boundaries of the nested NMGWM and CM models are artificial. That is, the boundaries do not coincide with natural features of the SVGB that prevent groundwater flow, provide groundwater to the flow system, or allow groundwater to be removed from the flow system (other than the Monterey Bay boundary). The locations of the artificial boundaries were chosen

[1] Data are limited for the 900-Foot Aquifer.
[2] It is possible that Figure 18 contains drafting errors.

by the modeler to define the extent of the child model. This is the standard approach for models using TMR.

As noted above, boundary conditions have a profound impact on the solution to boundary-value problems, such as the one defined by the groundwater flow equation. Artificial boundaries are commonly used in groundwater flow models, even for models that do not use TMR. This is true because it is often impractical to extend a model's boundaries to natural boundaries, which can be considerably distant from the area of interest. Because boundary conditions greatly influence the simulation results from a groundwater flow model, the industry-standard is to place model boundaries sufficiently far from the area of interest such that the boundaries do not impart significant influence on the modeling results.

In TMR, the parent model provides (at least part of) the boundary conditions for the child model, usually in the form of simulated groundwater elevations and groundwater fluxes. A potential issue with TMR is that the parent model receives no direct feedback from the child model. For example, if pumping in the child model causes impacts to simulated groundwater elevations at or near one or more of the parent-child model boundaries, the simulation results could indicate that the impact should extend across the parent-child model boundary. Such a result may indicate the need to adjust the boundary conditions assigned to the child model. This situation, in which simulation results suggest an influence beyond a model boundary is a primary reason why it is desirable for model boundaries to be as far as practical from the area of interest, for both TMR and non-TMR models: to avoid such boundary effects.

In standard TMR modeling the parent model does not receive information from the child model such as described above, so it is the modeler who must check the simulated groundwater elevations on both sides of the parent-child model boundary to see if they are consistent. If they are not consistent, there would be an incorrect abrupt change in simulated groundwater elevations at the boundary, which could lead to erroneous results in the area of interest.

Figures 7 and 8 in Appendix E1 may indicate boundary effects in the 180-Foot/180-FTE Aquifer (Layers 7 and 8) in the CM. The contour lines closest to the northern and eastern boundaries do not appear as circular in nature as do contour lines further from the boundaries. In Figure 8, the contour line closest to the boundaries appears to become sub-parallel to the boundaries, which may indicate boundary effects. It should be noted that abrupt changes in aquifer parameters (e.g., hydraulic conductivity and storativity, see below) in the area of these contour lines could produce a similar effect, but Figures 31, 32, and 33 in Appendix E2 do not seem to indicate changes in aquifer parameters in this area. There is no discussion of a boundary-effect checking process in Appendix E1 or Appendix E2.

In response to the parent-child boundary issue, the USGS developed a version of MODFLOW-2005 called MODFLOW-LGR (Mehl and Hill, 2005), in which LGR stands for local grid refinement. LGR was implemented as part of the industry-standard MODFLOW code because, as stated in Mehl and Hill (2005), TMR methods generally lack numerical rigor and are prone to significant, often undetected errors. MODFLOW-LGR circumvents the TMR parent-child model boundary issue by using an iterative procedure to adjust the simulated groundwater elevations, using shared nodes, until there is consistency on both sides of the parent-child model boundary. MT3DMS can be used with MODFLOW-LGR, although for some situations MT3DMS must be run separately for the parent and child groundwater flow models (Mehl and Hill, 2005).

Aquifer Parameters

Aquifer parameters are used in groundwater models to represent aquifer properties such as hydraulic conductivity and storativity, which are measures of an aquifer's ability to transmit and store groundwater, respectively. In natural settings, these properties can vary by several orders of magnitude over relatively short distances, due to variability of the geologic processes that created the aquifer.

There are several ways to represent the spatial distribution of hydraulic conductivity in groundwater models. At one extreme, some or all model layers are assigned a single value for the entire layer or model. This is the so-called homogeneous approach. At the other extreme, a different value can be assigned to each model cell using one of several ways to distribute values (heterogeneous approach). Most models use an approach that is between these two extremes. Often, the decision on how much detail can reasonably be included in a model is dictated by data availability. The experience of the modeler and the modeling objective(s) also play a role.

The approach taken for the NMGWM and CM was to use layer-specific hydraulic conductivity zones. Figures 31 and 32 of Appendix E2 show the layer-by-layer distribution of zones. The decision to use zones and their extents and locations may be based on data availability or model calibration (see below), or a combination of both. When model calibration is used, as is usually the case, initial values for all aquifer parameters must be assigned *a priori*.

For the NMGWM and CM, the initial values were determined based on sediment texture, using an equation based on the fractions of coarse-grained and fine-grained sediments determined from well logs in the area. Use of this and similar equations is part of a general procedure frequently used by the USGS for their groundwater models (e.g., Phillips et al., 2007; Faunt, 2009; Phillips et al., 2015), including the proximal Pajaro Valley Hydrologic Model (Hanson et al., 2014). The roots of this methodology were described by the USGS at least as early as 1991 (Phillips and Belitz, 1991).

The equation used for the NMGWM and CM contains an empirical parameter related to ratio of horizontal to vertical hydraulic conductivity (p in the equation on page 23 of Appendix E2). Values of p for the NMGWM and CM were taken from a groundwater modeling effort for Conaway Ranch in Yolo County. It should be noted that values of p from the local Pajaro Valley Hydrologic Model, which includes at least some of the same geologic units present in the SVGB, were markedly different than the Conaway Ranch values in some cases.

The other part of the general USGS procedure described above is to use geostatistical techniques to distribute hydraulic conductivity values, which are determined from point locations, across the entire spatial domain of the model. It does not appear that this step of the USGS procedure was used for the NMGWM and CM. Although not a modeling requirement, use of this geostatistical step may provide insight into uncertain hydrostratigraphic relationships, such as the relationship between the 180-Foot Aquifer and the 180-FTE Aquifer (see Section 3.3.4 in Appendix E2).

Lastly, it should be noted that potential modeling uncertainties created by the change in hydraulic conductivity values across the TMR boundary from the grandparent SVIGSM to the values used in the calibrated NMGWM are not discussed in Appendices E1 and E2.

Model Calibration

Model calibration involves adjusting aquifer parameters and/or boundary conditions in such a way that simulation results match observed values to a particular level of certainty. In general, the level of certainty is dictated by the amount and quality of data and calibrated models provide simulation results that minimize some combination of the differences between simulated and observed values (i.e., residuals). Examples of model inputs that are commonly adjusted during calibration (i.e., calibration parameters) are hydraulic conductivity, storativity, porosity, groundwater elevations at constant or specified head boundaries, and estimated groundwater pumping. Examples of observed values used to calibrate simulated values (i.e., calibration targets) include groundwater elevations, drawdown, and concentration.

From a qualitative perspective, groundwater flow model calibration usually involves "history matching", in which simulated groundwater elevations at multiple locations (e.g., wells) over a specific time period are matched as closely as possible to observed values over the same time period. Ideally, a second set of observed values from a different time period with similar hydrologic conditions is available to verify the calibration, although such a second data set is not always available.

Detailed procedures for calibrating groundwater flow models can be found in several references, e.g., ASTM-D5981 (2008) and Hill and Tiedeman (2007). Briefly, recommended procedures include conducting a parameter sensitivity analysis, trial-and error (manual) adjustment of calibration parameters, automated parameter estimation to improve initial calibration, and conducting an uncertainty analysis (e.g., see Phillips et al., 2007; Faunt, 2009; Hanson et al., 2014). The evaluation of calibration results (i.e., the "goodness of fit" between observed and simulated values) occurs through the use of various graphical and statistical techniques.

The NMGWM/CM was calibrated to groundwater elevations by the trial-and-error method (i.e., manually) by adjusting horizontal hydraulic conductivity, vertical hydraulic conductivity, effective porosity, and the storage coefficient within ranges of reasonable values. Sensitivity analyses, automated parameter estimation, or uncertainty analyses were not reported in Appendices E1 and E2 of the DEIR. In addition, reported graphical and statistical evaluation of the calibration results could be considered minimal.

On the other hand, the number and distribution of available calibration targets in the MPWSP area could also be considered minimal. For example, Figure 36 in Appendix E2 shows that the closest two (out of a total of four) calibration targets for the groundwater flow model in the 180-Foot/180-FTE Aquifer are nearly five miles away from the CEMEX site and almost six miles from the City of Marina. The four calibration targets in the 900-Foot Aquifer are approximately three to six miles away from the CEMEX site and the City of Marina. The overall degree of calibration across the entire model domain may be acceptable, but it is worth noting that the calibration is rather poor in the 900-Foot Aquifer post-1998. It is not known to this reviewer if additional calibration targets were available to the model developer.

The calibration targets for the solute transport portion of the NMGWM/CM are total dissolved solids (TDS) concentrations at various wells. The calibration results for the solute transport modeling were not evaluated as rigorously as the flow-model calibration. Most of the observed data at the calibration targets show little change of TDS concentration over time (Figure 43-45 in Appendix E2). For the targets that do show changes with time, the data are either too sparse for reasonable evaluation or the calibration is quite poor. For the targets in all three aquifers that do

show changes in TDS concentrations post-1988 (a total of three wells), one shows a good calibration (i.e., the well furthest from the CEMEX site and the City of Marina in the 900-Foot Aquifer, Figure 45 in Appendix E2).

Three calibration targets (out of six) for TDS in the 900-Foot Aquifer are located in the City of Marina (Figure 42 in Appendix E2). Data are very sparse for these 900-Foot Aquifer targets, but the calibration could be considered poor. For example, simulation results show a general increasing trend in TDS concentrations not seen in the observed values and the simulation results are several hundred milligrams per liter greater than the observed values.

Model Results

Results of the MPWSP groundwater modeling effort, as documented in Appendices E1 an E2 of the DEIR, are discussed here relative to potential seawater intrusion impacts in the 900-Foot Aquifer in the vicinity of the City of Marina caused by proposed MPWSP slant well pumping. The reported results related to seawater intrusion appear to be based primarily on particle-tracking simulations, which are founded on the simulated direction and rate of groundwater flow determined by groundwater flow modeling.

Results of solute transport simulations from the MPWSP groundwater modeling effort were not reported beyond the calibration period for the 180-Foot/180-FTE Aquifer, the 400-Foot Aquifer, or the 900-Foot Aquifer. Reporting of the solute transport simulation results seems to be limited to predicted TDS concentrations in the slant wells. In addition, particle-tracking simulations, in which groundwater flow paths are predicted, were not reported for the 400-Foot or 900-Foot Aquifers.

Thus, the potential impact of MPWSP pumping on seawater intrusion in the 900-Foot Aquifer in or near the City of Marina, based on the groundwater modeling effort documented in Appendices E1 and E2 of the DEIR, was not reported. Furthermore, the statements on pages 3 and 40 of Appendix E2, that the slant wells may provide protection from seawater intrusion, are not described adequately enough to determine if they are based on evaluations reported in Appendices E1 and E2 of the DEIR.

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Joint session Cal-Am EIR June 23, 2015
Cal-Am Deepwater Desal

It would seem, prior to spending money for an Environmental Impact Report, that a prudent decision making process might determine how much a given project is going to cost, and if excessive, what alternatives are available.

A 2011 preliminary project analysis by the Ratepayer Advocates (a subsidiary of the Public Utilities Commission) estimated the rate-payer cost between $7,000 to $7,900 per acre foot for the slant well facility being discussed tonight. More recent Herald articles indicated ratepayer cost from the Cal Am project could be $3,300 to $3,750 or more per acre foot. It is doubtful anyone knows how much the ratepayer will have to pay if Cal Am is allowed to proceed with this project.

Alternative sites in Moss Landing are the Deep Water Desal facility or the People's Desal Project. Both of these projects share one thing in common with the Poseidon project located in Carlsbad, California and that is they utilize the water intake and outfall pipe lines of a power plant and they offer water at a $2,000 plus-or-minus per acre foot cost. Production costs, accordingly, are far less than the "Slant Well" technique.

For those who might not recall, Poseidon Resources LLC entered into a contract with San Diego County Water Authority to provide desal water at a cost between $2,042 to $2,290 per acre foot; moreover, they would assume all expenses involved in the permitting process, construction and financing and, at the end of 30 years they would deed over the plant to San Diego Water Authority for $1.00

I contacted Poseidon to see if they were able to provide water in accordance to their contract. They said yes and that their costs also included fighting 14 separate legal challenges over the water intake structure of which they were either successful or had the litigation thrown out. They anticipate being in production long before the 2020 target date at the agreed per acre foot cost.

No one is questioning whether Cal Am customers should have another source of new water. The real question is whether this is the best alternative as it certainly is does not provide ***"Just and Reasonable rates"*** for the Cal Am customer base.

I simply cannot support this EIR because I feel this is the wrong location and the cost to ratepayers cannot be justified with respect to other alternatives.

ss Virgil M. Piper

Anita Sheperd-Sharp

From:	PAULA PELOT <pfpelot@sbcglobal.net>
Sent:	Tuesday, June 23, 2015 9:13 AM
To:	Layne Long
Cc:	Anita Sheperd-Sharp
Subject:	Comments on the CalAm Monterey Peninsula Water Supply Project DEIR Review

Dear City Manager,

Please see the below comments I would like entered into the record for tonight's joint City Council/Planning Commission meeting, relative to the CalAm Monterey Peninsula Water Supply Project DEIR Review:

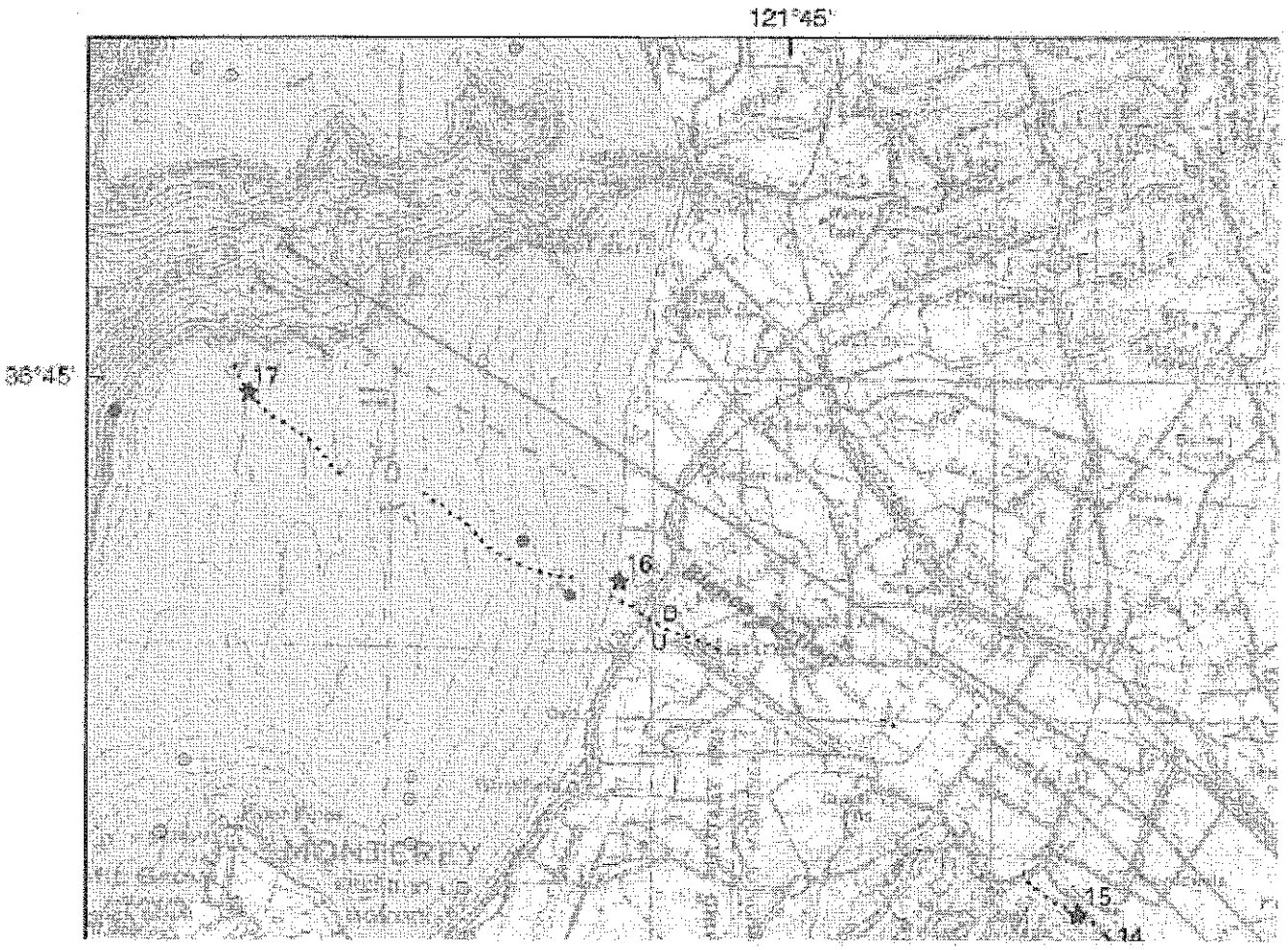
(1) The DEIR does not address, or inadequately addresses, the potential impacts caused by seismic activity of the Reliz (Blanco Section) Fault Zone that underlies much of the project area and could cause rupture and/or displacement of the subsurface slant wells, source water pipeline, desalinated water pipeline, proposed brine discharge pipeline, transmission main and transfer pipelines. If the project were to move further north of the current proposed location, toward Moss Landing, it could avoid the Reliz (Blanco Section) Fault Zone that underlies the proposed location. In the instance of a rupture of the proposed brine discharge pipeline, large amounts of brine discharge would be released into a concentrated area and could be devastating to the biology of the immediate and adjacent areas of the bay. Compromised pipelines could also have negative impacts to local agricultural lands.

(2) The DEIR does not address, or inadequately addresses, the potential of subsidence due to all 10 wells pumping. Although the well design at this proposed site has been amended from that of Dana Point with the anticipated result being there will be less subsidence at the top of the well, subsidence will inevitably occur, albeit at a slower pace.

(3) The issue of subsidence, in conjunction with the seismic activity from the Reliz (Blanco Section) Fault Zone that underlies much of the project, have not been modeled to evaluate the cumulative impacts.

USGS
science for a changing world

U.S. Department of the Interior
U.S. Geological Survey



Thank you,

Paula F. Pelot
728 Landrum Court
Marina, CA 93933

June 23, 2015

Dictated by Tom Moore to Anita Flanagan, Deputy City Clerk

Comment from Tom Moore regarding June 23, 2015 City Council/Planning Commission meeting - Agenda Item 4a

Speaking as a single director without authorization from the Marina Coast Water District (MCWD) Board:

> *I urge the city to request that the EIR include an explicit analysis of the possible impact that the Cal Am well field on the CEMEX property will have on MCWD's pre existing plan, analyzed in MCWD's EIR that was done in 2006 and which calls for source water wells on MCWD's property at the western end of Reservation Road, a mere 1700 yards south of where Cal Am proposed to extract more than 27,000 acre feet each year.*

Desalination EIR Comments by Kathy and Harvey Biala

Important points arising out of Dr. Carol Reeb's presentation at the Monterey Unitarian Universalist Church 5/19/15 with relevance to the CalAm desalination project as summarized by Kathy Biala, resident of Marina.

Dr. Reeb from Stanford University presented technical issues related to desalination plants in such a clear manner that a layperson such as myself could understand even complex concepts. She is to be commended for her community contributions on this subject of great import to us.

1. Waste water from our three current small Monterey County desalination plants comprise only 1% of the wastewater that will be produced by the proposed CalAm slant well in Marina. This slant well will create 40-50 million gallons of wastewater per day...most being discharged to the current sewer system. **Can our current sewer system, in the short and long term, sustain such a huge volume of additional wastewater?**

2. Current coil membranes used for reverse osmosis desalination have been deemed "safe" against pathogens, pharmaceuticals, and most common contaminants in seawater (boron), mercury, etc. IF incoming source water is monitored and appropriately treated and the facility is adequately maintained AND IF the water is filtered 1 ½ to 2 times to remove boron. **Is the maintenance plan in place and accounted for in the cost of the project long term? How does this maintenance plan compare to other plants?**

Here is a link to the World Health Organization's document on safe drinking water from desalination. For boron, go to pg 5, Section 4:
http://www.who.int/water_sanitation_health/publications/2011/desalination_guidance_en.pdf

3. Brine is a waste byproduct of the desalination process. It has a high concentration of salt and therefore is denser, and if not properly diluted and mixed, it will sink to the bottom of the ocean floor where it can accumulate and persist through time. Brine accumulating on the seafloor can also create hypoxia, whereby oxygen is depleted beneath the brine layer. This is deadly to marine life.

As is often said by the experts, "Solution to pollution is dilution". On the seafloor, there is very little energy to mix brine. Most of the energy for mixing in the ocean occurs at the surface with the wind and waves, not on the seafloor. If a desalination plant uses an offshore sewer outflow, it has been determined that a high pressure discharge pump can disperse and dilute the brine in the ocean better than low pressure (velocity) discharges. In fact, the new regulatory policies adopted by the State Water Resources Control Board encourage high velocity (pressure) diffuser modifications on discharge outflows when there is inadequate wastewater to dilute the brine. Using high velocity diffusers will allow brine to be significantly diluted.

Is such a pressure diffuser pump being considered and if not, how can we ensure that this will be part of the mitigation plan?

4. Since brine returned to the ocean has the potential to layer on the seafloor and persist over time in the outflow area, monitoring of salinity and dissolved oxygen are critical steps. There are many ways marine scientists can monitor the outflow area: take direct samples, use of sonar to gauge water density, or use aquatic submersible "drones" to patrol and measure water quality parameters (oxygen and salinity). In addition, there are many research studies currently underway in which electronic tags housing salinity meters have been deployed on fish and marine mammals in Monterey Bay. These tags record and relay water quality data to the lab for analysis. Over time, any change in water quality in regions where tagged animals swim will be detected and reported. **What are the current proposed monitors for ocean salinity and the monitoring schedules?**

5. Brine layers act as a "plastic saran wrap" and cut off oxygen exchange with the upper water column. As a result, respiration by bacteria and other organisms beneath the brine layer will quickly deplete the water of oxygen and cause animals on the seafloor to essentially suffocate. In addition, when marine life is exposed to these denser layers of salt water, animals will begin to dehydrate – embryos and eggs of marine species are especially vulnerable, as are marine invertebrates like squid, mollusks, sand dollars, and others. This is because water within the cells of animals is drawn from their bodies into the saltier sea around them – in other words, in the brine, animals start to dehydrate. Dr. Reeb's lab has shown that squid embryos have less resiliency in slightly elevated concentrations of salt water. Because the California market squid uses the seafloor for its egg nurseries, brine discharge into these nurseries could negatively affect squid populations over the long-term. If these effects are severe enough, there could not only be economic impacts to the squid industry, but there might be ecologic affects to the food chain because squid are an important food source for a multitude of species of marine life, including endangered species like steelhead trout. **There is no mention of the impact to squid in the EIR, except quoting a 1998 study that showed "no squids" in the study area. The EIR did not include a more recent survey of marine life inhabiting the proposed brine outflow area. The EIR must have a thorough study of the food chain and the impact of squid in the project areas.**

6. It has been shown that Red Tides are a recurring phenomenon in Monterey Bay. These harmful algal blooms (HABs) occur when colonies of algae grow out of control. Sometimes, they produce harmful toxins that can accumulate in seafood (fish, shellfish). These toxins can harm marine mammals, birds, and people too (NOAA).

Here is a link for HABs in the Marine Sanctuary:
http://coastalscience.noaa.gov/news/coastal-pollution/monterey-bay-national-marine-sanctuary-seeks-advice-harmful-algal-bloom-threat/

The EIR does include this impact. This is why subsurface wells are a benefit to the CalAm plant design because they can mitigate the effects of algal blooms much more successfully than open ocean intakes used in other desalination plant designs currently proposed for Monterey Bay. Large, persistent Red Tides have been shown to clog the intake pipes in desalination plants even for as long as 8 months as in one desal plant in Saudi Arabia; there is also the issue of algal blooms that can harbor cyanobacteria. In our area, Red Tides are absolutely present in Monterey Bay. Fortunately, the EIR proposed to use subsurface (slant wells) to mitigate the affects of Red Tides. **However, if these slant wells are found to be "not feasible," for example because of cost, then the EIR does not mention how algal toxins will be mitigated if CalAm needs to use open ocean intakes instead. Will there be another opportunity for additional EIR considerations if direct ocean intake is considered?**

NOTE: According to Dr. Reeb, as long as CalAm uses subsurface wells, they should have little problem with Red Tides. It is only if these wells are considered too expensive or not feasible that there would be the need to add more information to the EIR that would mitigate clogs and toxins.

7. With the currently 21 proposed desalination plants in California, only 1.2 % of our current water needs can be met via these plants. Once built, for whatever reasons, plants should not be "turned off" as it is tremendously expensive to restart the system (rebooting costs one-third of original costs to build the plant).

NOTE: Dr. Reeb reports that in the case of Santa Barbara, a desalination plant was built about 20 years ago. Because it started raining shortly thereafter, the facility was never used. Eventually, they gutted the valuable parts and sold them. Now those parts must be replaced. The cost is around $40M. If Reverse Osmosis facilities are not used regularly, the components will become "fouled," clogged and will need to be replaced. These plants cannot simply be turned on and off as needed. Once on, they should stay on. Otherwise, there will be the cost of replacing the filtration components, which can be expensive.

We must fully debate the taxpayer burdens committed to one very expensive water method over commitments to several less costly methods that can be used simultaneously (diversification). Can we not consider the impact of ALL planned water system projects and the contributions of the desal plant as one of several operating initiatives?

8. If there is 24.1 million gallons of ocean water taken in, 9.5 M gallons can become potable (drinking) water, 14.6 M gallons will be brine that must be safely dispersed or distributed. These are not good proportions, by any means! In addition, 40% of the cost of desalination is for electricity to run the plants. Desalination is not a clear

cut, "final" solution to the water shortage. Dr. Reeb recommends a diversity of methods that can generate reliable availability of continuous potable water.

NOTE: According to Dr. Reeb, a diversified water portfolio includes: Wastewater and stormwater recycling and purification (using reverse osmosis desalination technologies – which require 1/3 less than seawater desalination); Aquifer storage and recovery, grey water recycling, and of course, more conservation (do we need lawns and water features?). Seawater desalination should be a supplement to our water supply; it should be used as a last resort.

Does CalAm have a full understanding of the other system water sources and are plans in place to connect and collaborate for the greater water needs of our local communities, rather than propose a single project that in and of itself cannot guarantee uninterrupted or continual adequacy of potable water supplies?

9. Currently available technologies must be developed, tested, and adopted to current desalination methodologies e.g. adding forward osmosis component to reverse osmosis plant to create a hybrid facility; or including electrodialysis or using the newer graphene (nanoporous single-layer) membranes, which can use less energy. We need serious focus on science not just on business enterprises.

What role does our community/CalAm/university/public officials have in ensuring that we continue to invest in research and development for future improvements so that this new slant well technology evolves and can be viable for our long term future?

10. Issue of what to do with resultant brine is a critical problem. The CalAm project will rely on using our current sewage systems or following the recommendations of the State Water Board, diluting the brine with waste water; BUT waste water is currently being used to irrigate farming fields, especially in the summer. **Will there be enough unused wastewater to dilute the brine?**

Furthermore, converting wastewater to potable water uses only one third the amount of electricity it would take to dilute brine water to an acceptable level to put it back into the ocean. Does it make sense to choose dilution of brine with wastewater when purifying wastewater is a more efficient way to create potable water? **What alternatives are in place for unavailability of adequate volume of wastewater for brine dilution? Are there any current plans to convert more wastewater to potable water?**

We need to be firm on the stance that no brine should be dumped back into the ocean undiluted and/or without adequate outflow distribution methods. This has a real potential to alter our marine eco-system in ways we cannot fully imagine now. If we invest heavily in seawater desalination, we must do it right. **Is there an**

absolute guarantee in the proposal, that no brine will be dumped back into the ocean undiluted and/or without adequate distribution methods?

11. In the future, we should find ways, and perhaps develop research funding to recover salt from the brine, harvest minerals/metals present in brine, and/or producing energy/electricity from brine. All this may be possible if we are committed to research and development and are committed to developing ocean-friendly seawater desalination for the future. **Is there added funding allocated and/or any efforts aimed at promoting allied technologies/methodologies for continued research and development connected to the current slant well project?**

12. The EIR presented by CalAm did not include the results from the slant well pilot (only in operation 20 days at the time of the EIR presentation). This appears to be a rather brief testing period by any scientific study standards. Any timetable of approvals must be delayed until the EIR is properly documented with public comment. **What do the scientists say is a proper amount of "test time" for a pilot slant well (Dana Point ran for 2 years) given the unique geographies and marine life at each location?**

13. Note: This comment is separate from Dr. Reeb's presentation and expresses an additional concern of Kathy Biala. The EIR sections 4.6-2 (Result in substantial adverse effects on riparian habitat, critical habitat, or sensitive natural communities during construction) is labeled LSM (less than significant impact with mitigation). Among the mitigation actions listed is providing a lead biologist who "oversees implementation of protective measures". This would be a very key person to protect the interests of our community. **How will this biologist be chosen? Who will pay the salary? If CalAm pays the salary for this position, what are the safeguards for conflict of interest, transparency, and accountability? Can this position report to a responsible public board as opposed to reporting to a CalAm employee? Does this position have only data reporting capabilities or will this position have direct authority to stop or revise operations that are out of compliance? Who will write the plan/standards for "protective measures" that this position will "oversee"?**

Thank you for considering our concerns about the slant well desalination project and its corresponding EIR.

May 25, 2015
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Comments regarding CalAm Desalination EIR:

From: Kathy and Harvey Biala
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Under section 4.4.1 and 4.4.2 the current DEIR does not mention the recent (2015), electrical resistivity imaging of this entire region conducted by Stanford University under the auspices of Dr. Margaret Knight and Dr. Adam Pidlisecky.

We recently attended the May 26, 2015 presentation by Dr. Knight and Dr. Pidlisecky at the Hopkins Marine Laboratory in Monterey on saltwater intrusion in the Monterey Bay area. They have successfully plotted the salt intrusion and fresh water subsurfaces using electrical resistivity imaging. This technique has been used by the oil and gas industries and now, thanks to Dr. Knight and her team of geophysicists, this has been applied to the mapping of water resources and saltwater intrusion. The imaging of the Monterey Bay subsurface by this technique is superior to drilling sentinel wells for data collection because of the breadth and depth of the imaging. It can track regional impacts of localized water extractions and water migration patterns.

Along the entire perimeter of Monterey Bay coast, two notable exclusions of data were from Moss Landing and the Cemex area. At both locations, approvals were not granted. As the property of Cemex is the precise location of a proposed massive desalination plant, it is unacceptable to not have electrical resistivity imaging for this site when it has been made available to us.

Furthermore, there is apparently a significant possibility that the clay aquatard may have multiple fracture lines in the location of the Cemex plant. Fractures allow seepage of saltwater that may increase the intrusion rates and can be monitored by the electrical resistivity imaging techniques.

The imaging produced by the Stanford team helps us understand the changes to an *entire* region from water extractions of localized wells and desalination efforts. This information is vital to the EIR for monitoring and verification of changes within the subsurface region for future impacts. Association with Stanford University is highly beneficial from an impartial, science based monitoring approach as we move towards the development of desalination plants, the long term effects of which cannot be accurately predicted.

CPUC must do all it can to insist that the electrical resistivity imaging data be collected at the Cemex site with mandatory participation at future data collection points of the Stanford research for Monterey Bay. The Stanford researchers have confirmed that collecting imaging data from the approximate 8 kilometers of the Cemex coast property is quite possible if funding is provided. The next date for restudy of the coast may be in October of this year. It would be advisable to have Cemex property surveyed as soon as possible so that it may be included in the next anticipated data collection point. If CalAm is serious about transparency and maximizing the long term success of their plant, this data should be mandatory.

Comments for the Marina City Council Letter
Re: CalAm Slant Well Desalination Project
Submitted by: Kathy Biala, Resident of Marina, CA
Date: June 22, 2015

In addition to the four minute commentary regarding the EIR that I have submitted prior to the June 23 City Council meeting (I will be out of state at that time), I wish to also give some other comments of a more general nature that are perhaps even more important than specifics of the EIR. It is easy for us to get lost in these technical details, but not see the bigger picture.

The region of Marina and Moss Landing, together, is an extremely unique habitat that supports, against all odds, an incredible variety of marine and coastal wildlife, including some endearing endangered species such as otters, snowy plovers and pelicans. From our pristine beaches, we observe whales, dolphins and in our sloughs and wetlands, we can regularly see tall, stately birds such as stilts, American avocets, herons, egrets, we delight in seeing terns dive bomb for fish, see curlews and gotwits congregating in harmony together, and catching the glimpse of a black bat ray splash at the water's surface. These natural wonders still exist in our area because we have preserved nesting areas, protected food sources, allowed nature to have primacy over the short term or selfish needs of man. It is astounding to me that once again, a huge industrial project such as the $250 million desalination plant may be allowed to be constructed on such a site! It is ironic that we, in Marina, do not have the final and overriding voice to stop this destruction of our land, only because a small section of land happened to have maintained rights to the coastal beachfront (Cemex) from decades past. CalAm has capitalized on this and two profit seeking enterprises joined forces to propose a massive project that would put a significant dent in this natural habitat.

Further, this desalination project is not meant to meet water needs of the very city (Marina) it proposes to compromise! This plant compensates, as a "last resort", for the over expansion and lack of long term planning of the cities of Carmel, Monterey, Pacific Grove, and Seaside who have critical water shortages in their near future. These cities have not managed their regional water issues collaboratively, proactively, nor seriously engaged in enough major water conservation efforts of their industries or residential uses. Marina and Moss Landing's natural habitats should not pay the price for this. It is outrageous that the Peninsula should have the power and right to destroy our environment for ***their*** water needs. As beautiful as the Carmel beaches and the Asilomar boardwalks are, there are few signs of wildlife except gulls, squirrels, sparrows and pigeons. Marina and Moss Landing have something extraordinary...we beseech those who have the authority to influence a decision on the CalAm project to consider what we are doing to our precious area, not only for our Marina residents but also for the tourists who will come here for our open spaces and wildlife. I would extend a personal wildlife viewing tour to any who have decision making authority on this project, and would like to take short

hikes on our beaches and marshlands to see for yourselves. It would be my privilege to do so.

There are always sacrifices to any development on valued land. If the peninsula had exhausted all the alternatives such as mandating severe water restrictions (which they have not), and if they then decided to enact a last resort option, they must be willing to sacrifice one of their own public or private lands for a desalination plant for their own uses. Why is there no appreciation for the value of our wildlife to be sacrificed in Marina, but not consider their own sacrifices? How is it that Monterey Downs is seeking approvals for developing a race track with hotels, restaurants, and two "ponds" at the very time that we are being asked to compromise our natural habitat and dwindling wildlife? The logic in all this defies comprehension. The areas that will benefit from the desalination plant have obviously not embraced radical water conservation before asking us to sacrifice our most precious assets.

Recent calculations suggest that the peninsula's water needs can almost be met without having to look to desalination methods by reducing more residential and household water consumptions. Additionally, examination of agricultural usage, and mandating curtailing of certain crops, and alternative irrigation methods can further reduce water needs. Doesn't this seem more prudent than to jump to a new technology of a $300 million desalination project that requires miles of construction of pipes for both potable water and the outflow of 40 million gallons of brine as a contaminant re-introduced back into the ocean? We need to exhaust all doable alternatives before we endanger our natural environment once again.

Our community is known for its efforts in environmental preservation and we share this commitment with CA State University, Monterey Bay. This is a rare phenomenon. We are the model of conservation and protection of wildlife as a community. We have painstakingly guarded the dunes during snowy plover nesting seasons, have engaged in native plant restoration, supported land use for natural habitats and promoted community education on our fragile eco-systems. I have regularly observed nesting snowy plovers right at the mouth of the Cemex plant on the dunes. The EIR states that all construction operations will cease if plovers are observed. If plovers are nesting, the operation must necessarily cease from March to October *not* just when "a plover is spotted". Do not let CalAm disregard what has been carefully planned for a threatened species...the snowy plovers, much like the otters, are making a tenuous "come-back" and perhaps someday, snowy plovers will populate our beaches again, scampering to and fro with the waves. The CalAm-Cemex site is a wholly inappropriate location. No one can guarantee a longer term "less than significant" impact on our precious environment.

Summary Points:

1) Marina/Moss Landing site is a truly special environment that supports unique wildlife, including endangered/threatened species.
2) It is widely thought that desalination plants should be the option of last resort for water, but we question whether the Peninsula has truly engaged in serious conservation efforts that will need to be mandated and monitored by some higher authority. Optional conservation is not good enough as justification for jumping to a last resort method!
3) The consequences of water shortages should be born principally by the cities that have allowed this to occur, including sacrifice of their own resources, if need be. They can choose to sacrifice a golf course, for example, rather than asking Marina to sacrifice our wildlife.
4) A massive desalination operation and its resultant brine outfall present too radical a challenge to our fragile and rare natural habitat.
5) Snowy plovers currently occupy the site at the Cemex property where the proposed slant well operations will be built; there will be no reliable way to have construction there that will *not* impact either the nesting or the presence of this species.
6) We must not succumb to the pressures of profiteers or demands from others who have yet to prove their commitment to conserve water as a fundamental precursor to actions that risk our natural habitats.

Emily Creel

From: Bruce Delgado <bdelgado62@gmail.com>
Sent: Saturday, June 20, 2015 5:04 PM
To: Emily Creel
Cc: Layne Long
Subject: Fwd: Comments on Cal Am DEIR

FYI Emily,
some comments from Peter Le who is emailing as an individual but happens to be a MCWD boardmember.

How would you propose we include these comments in our City's letter if at all?

thank you,
Bruce

---------- Forwarded message ----------
From: **Peter** <peter381@sbcglobal.net>
Date: Sat, Jun 20, 2015 at 4:58 PM
Subject: Comments on Cal Am DEIR
To: Bruce Delgado <bdelgado62@gmail.com>, PAULA PELOT <pfpelot@sbcglobal.net>, Margaret Davis <attnmargaret@gmail.com>, Frank O'Connell <frank@oconnell4us.com>, David Burnett <david.burnett454@sbcglobal.net>, Greg Furey <gefurey@aim.com>, Gene Doherty <dohertygm@sbcglobal.net>, Kathy Biala <kbiala@milestonemma.net>
Cc: llong@ci.marina.ca.us

Hello,

My comments are as follows:

1. Cal Am does NOT have any right to pump water from the Salinas Valley Groundwater Basin. CPUC, SWRCB, MCWRA or any other agency can grant Cal Am any water right. Only the Court can grant Cal Am any water right to pump water from the SVG Basin.

2. The groundwater model use is NOT valid nor accurate. Proof: the model predicted 0.5 foot groundwater level dropped at Monitoring Well number 4 as shown in the DEIR with 10 permanent wells pumping at the same time. However, the only ONE test slant well has caused the groundwater level to drop more than 1 foot last month and Cal Am has decided to shut down the test slant well.

3. The groundwater model assumed that all remaining permanent wells are in line with the test well i.e. all the wells are at the same distance from the ocean. But the DEIR shows that only 2 wells are at the same location of the test well. All the remaining wells have been moved inland several hundred feet.

The impacts of moving 8 to 10 permanent wells several hundred feet inland from the test well are :
a) These 8 to 10 permanent wells will cause more impacts to the basin such as lower the groundwater level more, taking more brackish water, pumping less seawater, exacerbate more seawater intrusion, etc.

b) You cannot use the test data from the test well such as TDS, groundwater level drop and percentage of fresh water and apply to the remaining permanent wells several hundred feet inland.

Peter

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-------- Original message --------
From: Bruce Delgado <bdelgado62@gmail.com>
Date: 06/20/2015 4:14 PM (GMT-08:00)
To: PAULA PELOT <pfpelot@sbcglobal.net>, Tom Moore <tpmoore@redshift.com>, Peter Le <peter381@sbcglobal.net>, Margaret Davis <attnmargaret@gmail.com>, Jan Shriner <shrinerforsure@gmail.com>, Frank O'Connell <frank@oconnell4us.com>, David Burnett <david.burnett454@sbcglobal.net>, Greg Furey <gefurey@aim.com>, Gene Doherty <dohertygm@sbcglobal.net>, Kathy Biala <kbiala@milestonemma.net>
Subject: This Tuesday City Council meeting on

Hello everyone,

This Tues. 630pm is the City Council meeting to finalize the City letter of comments on the CPUC DEIR for CalAm's desal.

Just want to be sure you all know so you can be sure to get any comments on the DEIR you may have to the City for inclusion in City's letter to CPUC. I've sent some comments to the City's consultant whose draft comment letter is in this Tuesday's agenda packet. Below are a couple of my more recent suggestions for the City's comments.

As always, email your comments b4 Tuesday's meeting or show up to deliver them and hard copy is best in this case to back up your verbal comments so all your input can be included in the City's letter as you have written it.

thank you,
Bruce
277-7690

---------- Forwarded message ----------
From: **Bruce Delgado** <bdelgado62@gmail.com>
Date: Sat, Jun 20, 2015 at 4:05 PM
Subject: question and comment on DEIR
To: Emily Creel <ecreel@swca.com>
Cc: Gail Morton <gmorton@montereyfamilylaw.com>, Layne Long <llong@ci.marina.ca.us>

Virgil M. Piper
3010 Eddy St., Marina, CA. 93933
(831) 384-9595 (fax 384-6059)
pipersvc@sbcglobal.net

June 25, 2015

City of Marina
Community Development Department
211 Hillcrest Ave.
Marina, CA. 93933
ATTN: Theresa Szymanis Acting Director

TO WHOM IT MAY CONCERN:

I would like to submit this for attachment to the Cal-Am EIR under that section entitled: ***"ALTERNATIVES."*** (If not – throw it in somewhere)

Cal-Am EIR "Alternatives"

I have been informed that any mention of actual project ***"cost"*** cannot be included as comments/criticisms of the Cal-Am EIR. This rather obtuse statement has been extended to include the section entitled "Alternatives."

1. **I argue** that "cost" of a project involving public funds or rate payer fees is just as important as any environmental issue. Why, in fact, would any responsible "Lead Agent" approve an EIR if the project being studied will be two to three times more expensive than alternative competing projects which offer the same product at a much cheaper price?
2. In the case of the Cal-Am EIR, because the CPUC is acting as the *Lead Agent*, **I argue**: it is, in fact, the **duty** of the CPUC to consider any and all costs of this project, **BECAUSE:** ***California, in an effort to restrict a public utility from excessive fees, rate increases or other potential abuses to their customer base, created the Public Utilities Commission (CPUC) as an advocate for the rate payer. That, in fact, the failure to protect the rate payer, in this case, can be considered a "Conflict of Interest!"***

The CPUC as well as Cal-Am were fully aware – well before this EIR was started – that costs of this Slant Well project were excessive compared to other similar projects in the area. The Ratepayer Advocates (back in 2011) had estimated the cost of this Slant Well technique at between $7,000 and $7,900 per acre foot.

Moreover, ***as a cost comparison***, Poseidon Resources LLC (Prior to 2011) entered into a contract with San Diego County Water Authority to provide desal water at a cost between $2,042 to $2,290 per acre foot (which includes ten miles of pipe to the San Diego plant); **AND** they would assume all expenses involved in

the permitting process, construction and financing and, at the end of 30 years, they would deed over the plant to San Diego Water Authority for $1.00

The cost alternatives are sites in Moss Landing: the Deep Water Desal facility or the People's Desal Project. Both of these projects, which are within reasonable distance from Cal Am's water facilities, share one thing in common with the Poseidon project located in Carlsbad, California, and that is, they utilize the water intake and outfall pipe lines of a power plant and they offer water at a $2,000 plus-or-minus per acre foot cost. Production costs, accordingly, are far less than the "Slant Well" technique.

The point is that the CPUC – if they were really acting in behalf of ratepayers – **should be making some effort to protect ratepayer interests!** At the very least, the CPUC could have established a maximum ratepayer cost per acre foot – let's say $2,100 per acre foot – any cost above and beyond this rate would have to be Cal Am's responsibility – that would offer some protection for the ratepayer.

ss: Virgil M. Piper