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Tu15a

October 5, 2015

To: Coastal Commissioners and Interested Parties

From: Alison Dettmer, Deputy Director
Tom Luster, Senior Environmental Scientist

Subject: **Addendum to A-3-MRA-14-0050 and 9-14-1735 – California American Water Company Test Well**

This addendum provides proposed revisions to the staff report, correspondence received, and *ex parte* submittals. These revisions do not change staff's recommendation that the Commission conditionally **approve** the coastal development permits.

Correspondence Received
Commission staff received the following documents:

- October 5, 2015 (date of receipt) letter from Senator William Monning.
- October 5, 2015 letter from Shute, Mihaly & Weinberger, LLP (representing Surfrider Foundation).
- October 4, 2015 letter from Michael Baer.
- October 2, 2015 letter from Hydrogeologic Working Group re: Data Supporting the Threshold Monitoring Values for Compliance with Special Condition 11 of Coastal Development Permits A-3-MRA-14-0050 and 9-14-1735.
- October 2, 2015 letter from: AIA – Monterey Bay Chapter, Carmel River Steelhead Association, Carmel River Watershed Conservancy, Coalition of Peninsula Businesses, Latino Seaside Merchants Association, Monterey Bay Aquarium, Monterey Bay Central Labor Council, Monterey County Association of Realtors, Monterey County Farm Bureau, Monterey County Hospitality Association, Dave Potter, Monterey Peninsula Chamber of Commerce, Pacific Grove Chamber of Commerce, Pebble Beach Company, Planning and Conservation League.
- October 2, 2015 letter from Latham & Watkins representing California-American Water (Cal-Am).
- October 2, 2015 email and attached letter from David Beech.
- October 1, 2015 letter from Mitchell Chadwick (representing CEMEX).
- October 1, 2015 comment letter from Michael Baer.
- September 29, 2015 comment letter from Michael Baer.
- September 25, 2015 comment letter from Remy Moose Manley (representing Marina Coast Water District ("MCWD")).
- September 22, 2015 email from Marc J. Del Piero.

***Ex Parte* Submittals**
Commission staff received the following *ex parte* submittal:

- September 29, 2015 Cal-Am presentation on Test Slant Well Project Permit Amendment.
- September 23, 2015 letter from Latham & Watkins re: test well project.

Proposed Revisions to the Staff Report
The proposed revisions below are recommended findings and will be incorporated into relevant portions of the staff report as adopted findings. Additions are shown below in underline and deletions in ~~strikethrough~~.

Page 9, first full paragraph:

> "While there is an aquitard between the two aquifers further inland, exploratory borings taken at the project site indicate that there is little or no separation between the two near the test well. The Dune Sand Aquifer is not regionally extensive and is not considered a viable water source for agricultural users due to its poor water quality. Regional water users draw from the 180-Foot and 400-Foot Aquifers, though they are seawater-intruded for some distance inland of the test well (for example, as shown in Exhibit 3). Further, as described below, monitoring data shows that Cal-Am's pumping test has no measurable effect on the 400-Foot Aquifer and its area of influence is well within the area of seawater intrusion for both aquifers."

Page 10, first full paragraph, first sentence:

> "The requirements of the existing Special Condition 11 were based largely on pre-test slant well baseline data and modeling ~~data~~ provided by Cal-Am and the HWG showing the expected hydrogeologic characteristics within the Basin aquifers and the expected effects of Cal-Am's pumping tests."

Page 10, last paragraph

> "In early 2015, Cal-Am installed the approved test well and associated infrastructure, including three new onsite monitoring well clusters and equipment, as well as new monitoring equipment in an existing onsite CEMEX well. The monitoring well clusters each comprise three wells – a shallow, middle, and deep well – to monitor the shallow Dune Sands Aquifer, the middle 180-Foot Aquifer, and the deep 400-Foot Aquifer. These wells are designated S, M, and D, respectively. For example, at the Monitoring Well 4 location, the three wells are named MW-4S, MW-4M, and MW-4D."

Page 11, third full paragraph:

> "The proposed condition modifications specifically acknowledge these regional influences and direct the HWG and the Executive Director to consider them in their analyses. The 1.5-foot and 2000 ppm thresholds remain the same and are measured at the same location in MW-4, but the proposed condition provides that they are now to be compared to observed regional trends in increases or decreases in groundwater or TDS levels. For example, if the MW-4 groundwater levels were to decrease in concert with a

similar decrease observed as a regional trend, the MW-4 decrease would not be caused by the pumping test. If the MW-4 decrease was at least 1.5 feet more than the observed regional trend, it would suggest the pumping test was causing the additional decrease, and the pumping test would be stopped to more closely observe the data and determine what portion of the decrease exceeded the regional trend and was attributable to the pump test. In addition, the monitoring data collected this year show that any measurable changes at MW-4 due to the pumping test are in the shallow or middle aquifers and there were no changes in the deep aquifer, which is the aquifer from which the closest wells (e.g., the CEMEX well about 1,500 feet away and the Ag Land Trust "Big Well," about 5,000 feet away) draw groundwater. Therefore, the proposed modification compares the 1.5-foot decrease and 2000 ppm increase thresholds to regional trends using data from MW-4S and MW-4M only."

Page 11, last paragraph, first sentence:

"The several months of monitoring data collected earlier this year also allow the HWG to identify regional trends and distinguish them from changes resulting from the pumping test, and, as confirmed by the Commission's independent hydrogeologic review, will be used to more precisely calibrate the model for additional modeling exercises."

Page 13, after last paragraph:

"On October 2, 2015, Commission staff received a technical memorandum from the HWG providing data and analyses in support of the threshold monitoring values contained in the proposed Special Condition 11. In that memorandum, the HWG describes, for example, that pumping test data show no effects to deep groundwater levels (i.e., the 400-Foot Aquifer) at MW-1D, MW-3D, or the CEMEX well, located about 1,500 feet from the test well, that those data show only 0.1 foot of drawdown at MW-4S, 0.25 foot at MW-4M, and no effect at MW-4D or any of the MW-5 wells, and that the radius of influence of the pumping test extends to the vicinity of MW-4, with negligible drawdown beyond. It states that the 1.5-foot threshold value may, in fact, be overly conservative (i.e., protective), as there are no active wells in the 180-Foot Aquifer within 6,000 feet of the test well. It similarly describes the selection of the salinity threshold – i.e., a 2000 ppm increase – in relation to regional characteristics and natural variability and states that this threshold is conservative and protective of nearby wells. The Commission's independent hydrogeological review evaluated the memorandum and agrees with the HWG's evaluation, including its conclusions that the two thresholds are protective of other groundwater uses.

Summation

The Commission's prior findings in November 2014 were based largely on groundwater modeling done before the current network of monitoring wells was installed. Evaluation of the additional monitoring data collected this year and the analyses conducted by the HWG allows for several determinations, which are supported by the Commission's independent hydrogeologic review:

- The Commission's previous conclusions that there were no significant impacts to agricultural groundwater users were supported by the modeling and are further

supported by the monitoring data. In fact, the monitoring data show that the modeling had been conservative, in that the modeling had predicted slightly greater drawdown effects due to the pumping test than have been exhibited in the monitoring data.

- Based on the available monitoring data, no measurable effects of the pumping test are expected to extend beyond about 2500 feet from the test well within the shallow and middle aquifers or to the deep aquifer (which is used by the CEMEX well and is closest to the test well). As a result, the pumping test is not expected to significantly affect other groundwater uses in the area or region, in part due to the evidence provided by the monitoring data and in part due to other groundwater users drawing from the 180-Foot Aquifer well outside the pumping test area of influence or drawing from the 400-Foot Aquifer, which is not being affected by the pumping test.
- The modified requirements of **Special Condition 11** provide protective thresholds to ensure the pumping test is stopped before it has any potential adverse effects on other groundwater uses."

Appendix A – Substantive File Documents – add the following:

"In addition to the Substantive File Documents that were part of the Commission's Final Adopted Findings for coastal development permits A-3-MRA-14, 0050 and 9-14-1735, the following were also reviewed by Commission staff and used to inform the staff recommendation:

- October 2, 2015 letter from Hydrogeologic Working Group re: Data Supporting the Threshold Monitoring Values for Compliance with Special Condition 11 of Coastal Development Permits A-3-MRA-14-0050 and 9-14-1735.
- October 2, 2015 letter from: AIA – Monterey Bay Chapter, Carmel River Steelhead Association, Carmel River Watershed Conservancy, Coalition of Peninsula Businesses, Latino Seaside Merchants Association, Monterey Bay Aquarium, Monterey Bay Central Labor Council, Monterey County Association of Realtors, Monterey County Farm Bureau, Monterey County Hospitality Association, Dave Potter, Monterey Peninsula Chamber of Commerce, Pacific Grove Chamber of Commerce, Pebble Beach Company, Planning and Conservation League.
- October 2, 2015 letter from Latham & Watkins representing California-American Water (Cal-Am), with exhibits to the letter:
  - Exhibit A: April 20, 2015 Technical Memorandum – Monterey Peninsula Water Supply Project Baseline Water and Total Dissolved Solids Levels, Test Slant Well Area Geoscience Support Services, Inc.
  - Exhibit B: April 29, 2015 Supplemental Declaration of Martin Feeney In Support of Cal-Am's Opposition to Motion for Stay and Preliminary Injunction and Surreply, Case No. CV180839 Santa Cruz County Superior Court.
  - Exhibit C: April 20, 2015, Declaration of Martin Feeney in Support of Cal-Am's Opposition to Motion for Stay and Preliminary Injunction, Case No. CV180839 Santa Cruz County Superior Court.
  - Exhibit D: February 16, 2010, Marina Coast Water District Regional Water Supply Project Presentation to State Water Resources Control Board.

  - Exhibit E: January 20, 2015, Declaration of Martin Feeney in Support of Real Party in Interest's Opposition to Ex Parte Application, Case No. CISCV180839 Santa Cruz County Superior Court.
  - Exhibit F: March 13, 2015, Declaration of Martin Feeney in Support of Real Party in Interest's Opposition to Ex Parte Application, Case No. CV180839 Santa Cruz County Superior Court.
  - Exhibit G: April 20, 2015, Declaration of Ian C. Crooks in Support of Cal-Am's Opposition to Motion for Stay and Preliminary Injunction, Case No. CV180839 Santa Cruz County Superior Court.
  - Exhibit H: March 12, 2015 Declaration of Ian C. Crooks in Support of Real Party in Interest's Opposition to Ex Parte Application, Case No. CV180839 Santa Cruz County Superior Court.
  - Exhibit I: May 1, 2015 Declaration of Robert Johnson in Support of Real Party in Interest's Opposition to Motion for Preliminary Injunction, Case No. CV180839 Santa Cruz County Superior Court.
  - Exhibit J: March 12, 2015 email from Christopher Garret to William Parkin re: Monitoring of AG Land Trust "Big Well" referenced by Mr. Del Piero In Declaration Submitted to Judge Marigonda regarding ongoing irrigation of agricultural crops
  - Exhibit K: July 9, 2015, California Public Utilities Commission, Application 12-04-019, Administrative Law Judge's Ruling Extending Briefing Schedule.
- October 2, 2015 email and attached letter from David Beech.
- October 1, 2015 letter from Mitchell Chadwick (representing CEMEX).
- October 1, 2015 comment letter from Michael Baer.
- September 29, 2015 comment letter from Michael Baer.
- September 25, 2015 comment letter from Remy Moose Manley (representing Marina Coast Water District ("MCWD")) with exhibits:
  - Exhibit A: September 23, 2015 letter from Hopkins Groundwater Consultants, Inc., with four exhibits:
    - Exhibit 1: January 16, 2015, Salinas River Groundwater Basin Report.
    - Exhibit 2: CASGEM Groundwater Basin Prioritization Results.
    - Exhibit 3: April 20, 2015 Technical Memorandum – Monterey Peninsula Water Supply Project Baseline Water and Total Dissolved Solids Levels, Test Slant Well Area.
    - Exhibit 4: February 2015, Operable Unit Carbon Tetrachloride Plume Fourth Quarter 2014 Groundwater Monitoring Report, Former Fort Ord, California, prepared for Department of Army by Ahtna Environmental, Inc.
  - Exhibit A1: May 6, 2015 MCWD Opening Brief, Case No. CV180839 Santa Cruz County Superior Court.
  - Exhibit A2: June 18, 2015 MCWD Reply Brief, Case No. CV180839 Santa Cruz County Superior Court.
  - Exhibit B: November 3, 2014 Marina Coast Water District Water Shortage Contingency Plan.
  - Exhibit C: March 1996 Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands.
  - Exhibit D: Monterey County Water Resources Agency Act.
  - Exhibit E: Monterey County Water Resources Agency Ordinance 3709.
- September 22, 2015 email from Marc J. Del Piero with exhibits:

- Exhibit 1: Ag Land Trust Board of Director Biographies.
- Exhibit 2: Ag Land Trust Maps.
- November 12, 2104 letter to Coastal Commission.
- Exhibit 3: Ag Land Trust opposition correspondence 2006-present.
- Ag Land Trust Well Logs.

The Substantive File Documents also include the full permit record of the City of Marina, including these five documents initially not provided by the City:

- August 28, 2013 letter from Monterey Peninsula Water Management District to City of Marina re: Project Referral – Temporary Slant Test Well Project, Marina, CA.
- April 30, 2013 letter from Monterey County Resource Management Agency to City of Marina re: Project Referral for Cal Am Temporary Test Well Project, Marina, CA.
- March 12, 2014 email from Brandon Sanderson, California Department of Fish and Wildlife to City of Marina re: Cal Am Temporary Slant Test Well Project – Agency Referral.
- July 2, 2014 Cal-Am test well application to City of Marina.
- July 10, 2014 Agenda – Planning Commission Regular Meeting, City of Marina."

TU 15a 9-14-1735-A1 / A-3-MRA-14-0050-A1

California-American Water Company

CORRESPONDENCE

COMMITTEES
CHAIR: LEGISLATIVE ETHICS
BUDGET & FISCAL REVIEW
BUDGET SUBCOMMITTEE 3
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September 30, 2015

Steve Kinsey, Chairman
California Coastal Commission
725 Front Street, Suite 300
Santa Cruz, CA 95060

Dear Chairman Kinsey:

This letter is to express my support for California American Water Company's (CalAm's) request to amend its Coastal Development Permit, as it pertains to the test well component of the Monterey Peninsula Water Supply Project.

As you know, last November CalAm was issued a Coastal Development Permit to complete and operate a test well as part of the Monterey Peninsula Water Supply Project. The original permit called for Cal Am to turn off the well if nearby groundwater levels dropped by more than a foot and a half. A groundwater level drop of more than this was observed during the operation of the test well this summer, although the drop was not due to the test well but rather attributed to pumping in the area. The permit amendment will allow pumping to continue under draw-down conditions unrelated to operation of the test well.

The Monterey Peninsula Water Supply Project is a critical project that protects the Carmel River; threatened species, such as the South Central Coast Steelhead and California-Red Legged Frog; and the future water supply for the Monterey Peninsula. The Project is reliant on the operation of a test well to study the feasibility of subsurface intakes and I ask that the California Coastal Commission give all due consideration to the California American Water Company's request for an amendment to its Coastal Development Permit.

Thank you for your time.

Sincerely,

WILLIAM W. MONNING
Senator, 17th District

WWM:nc

cc: Commissioners, California Coastal Commission

October 4, 2015

Executive Director & Commissioners
California Coastal Commission
Public Comment by Michael Baer on MPWSP

Final addendum to September 29 comments

Last November, at the permit hearing at Half Moon Bay, it was revealed that CalAm and Carmel Mayor Jason Burnett of the "Mayors' Authority," had numerous ex-parte communications with nearly every Commissioner of the CCC, and none with anybody else, such as the aggrieved parties MCWD and AgLand Trust. As Commissioners repeatedly noted, Mr Burnett explained the situation and background for the MPWSP. As I noted during my two minutes of public comment, Commissioners were getting less than half of the real story. If my September 29, 2015, written comments were somewhat intemperate, it was in frustration about how the hearing process kept the story one-sided, and that the decision was made not by an actual vote, but by the Director, "seeing no objection to unanimous consent," approved the permit. You didn't even have to raise your hand or voice.

In the intervening 11 months, many revelations have come to light; issues that are not in the staff report. Issues that, if Mr. Burnett has informed you about them this time around, I am sure they are once again, less than half the story. On the Peninsula, we live this story every week.

On July 9, the CPUC ALJ extended public comment period by 11 weeks on the DEIR until September 30. Two of the reasons were "the unusual step" to make the modeling data available for public scrutiny, and to further investigate the conflict of interest allegations of Dennis Williams. Before you decide to resume the test pumping, a test that by itself will do substantial harm to the groundwater, which will in itself exacerbate seawater intrusion into the Salinas Valley Groundwater Basin, there are some unknowns which need to be made known before your decision to re-permit.

What are the results of the CPUC investigation into Dennis Williams conflict of interests? Does his conflict of interests completely corrupt the validity of the work of the HWG?

Are Mr. Ron Weitzmann's allegations of data tampering valid? Can they be verified by truly independent outside expert statisticians?

Mr. Weitzmann did not spring these allegations last minute (9/27/15) as a tactical move. After the July 9 ruling, Mr. Weitzmann made four separate requests for the data and waited roughly two months to receive the information to begin his analysis. Why did it take HWG, or GeoSciences, or CalAM, or whoever held that data, so long to honor those requests mandated by the ALJ? If one had something to hide, or something to fix (as in tamper), that would help explain it. The responsible parties need to be questioned vigorously on this subject. The tampering allegations need to be scrutinized by truly independent expert statisticians.

I suggest a continuance, until these questions can be answered.

Michael Baer - Monterey District.

October 2, 2015

Charles Lester
Executive Director
c/o Tom Luster
California Coastal Commission
45 Freemont, Suite 2000
San Francisco, CA 94105-2219

Delivered By E-mail

Subject: Data Supporting the Threshold Monitoring Values for Compliance with Special Condition 11 of Coastal Development Permits (CDPs) A-3-MRA-14-0050 and 9-14-1735.

Dear Mr. Luster:

The purpose of this letter is to briefly summarize the hydrogeologic conditions that support the use of the thresholds values called for in Special Condition 11 of Coastal Development Permits (CDPs) A-3-MRA-14-0050 and 9-14-1735 for California-American Water Company's test slant well (TSW) on the CEMEX site in the City of Marina. The California Coastal Commission issued Coastal Development Permits (CDPs) A-3-MRA-14-0050 and 9-14-1735 for the TSW on December 8, 2014. The Language of Special Condition 11 - Protection of Nearby Well is reproduced below:

> *PRIOR TO STARTING PROJECT-RELATED PUMP TESTS, the Permittee shall install monitoring devices at a minimum of four wells on the CEMEX site, within 2000 feet of the test well, and one or more offsite wells to record water and salinity levels within the wells and shall provide to the Executive Director the baseline water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well. The Hydrogeology Working Group shall establish the baseline water and TDS levels for the monitoring wells. During the project pump tests, the Permittee shall, at least once per day, monitor water and TDS levels within those wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request. If water levels drop more than one-and-one-half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions, the Permittee shall immediately stop the pump test and inform the Executive Director. The Hydrogeology Working Group shall examine the data from*

Monitoring Well 4 if the test well is shut down due to either of these causes. The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS is from a cause or causes other than the test well, and it will submit its determination to the Executive Director. If the Executive Director agrees with the Hydrogeology Working Group that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then the Permittee shall not re-start the pump test until receiving an amendment to this permit.

Special Condition 11 contains seven distinct directives as outlined below. The TSW program has maintained compliance with all component directives.

1) Install monitoring devices a minimum of four wells on the CEMEX site, within 2,000 feet of the test well, and one or more offsite wells to record water and salinity levels within the wells.

   IN COMPLIANCE: Three monitoring well clusters consisting of three monitoring wells each for a total of nine wells were installed on the CEMEX property prior to operation of the TSW. In addition, the CEMEX North well was added to the monitoring network along with monitoring of the test slant well for a total of eleven (11) monitoring points within 2,000 feet of the TSW. A new offsite monitoring well cluster including three wells (MW-5) was constructed near the entrance of the Monterey Peninsula Landfill. A Monterey County Pollution Control Agency well was added to the monitoring network. Monitoring Wells MW-6, MW-7, MW-8, and MW-9 with three monitoring wells each, have also been added to monitoring network for a total of 16 off-site monitoring wells.

2) Provide to the Executive Director the baseline water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well.

   IN COMPLIANCE: Data was collected from the monitoring wells and reported in seven consecutive weekly reports. At the end of this period, a summary report was prepared outlining the construction of the Special Condition 11 monitoring well network and providing groundwater level and groundwater quality data from February 19, 2015 through April 15, 2015.

3) During the project pump tests, the Permittee shall, at least once per day, monitor water and TDS levels within those wells in person and/or with electronic logging devices.

IN COMPLIANCE: Electronic data logging devices have been installed in the monitoring well network since each monitoring well was constructed. The electronic devices record both electrical conductance and water levels (via changes in pressure). In addition, daily hand levels were collected to validate electronic water level data before, during, and after the pumping period. Weekly hand level data have been collected since August of 2015.

4) The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request.

IN COMPLIANCE: Data has been continuously collected from the Special Condition monitoring well network and uploaded weekly to the publicly available CalAm website since the commencement of pumping on April 22, 2015. The first weekly report was uploaded within one week of the start of pumping from the TSW and has continued on a weekly basis. A total of twenty-two (22) weekly monitoring reports have been made public. Weekly reports have continued to be uploaded after the TSW was turned off on June 5, 2015.

5) If water levels drop more than one-and-one-half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions, the Permittee shall immediately stop the pump test and inform the Executive Director.

IN COMPLIANCE: The TSW was voluntarily shut off prior to reaching the established threshold of a decrease in water levels of more than one-and-one-half foot, or in an increase in TDS levels of more than two thousand parts per million from pre-pump test conditions.

6) The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the test well is shut down due to either of these causes. The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS is from a cause or causes other than the test well, and it will submit its determination to the Executive Director.

IN COMPLIANCE: The HWG reviewed the data and issued an analysis of the TSW data on July 22, 2015.

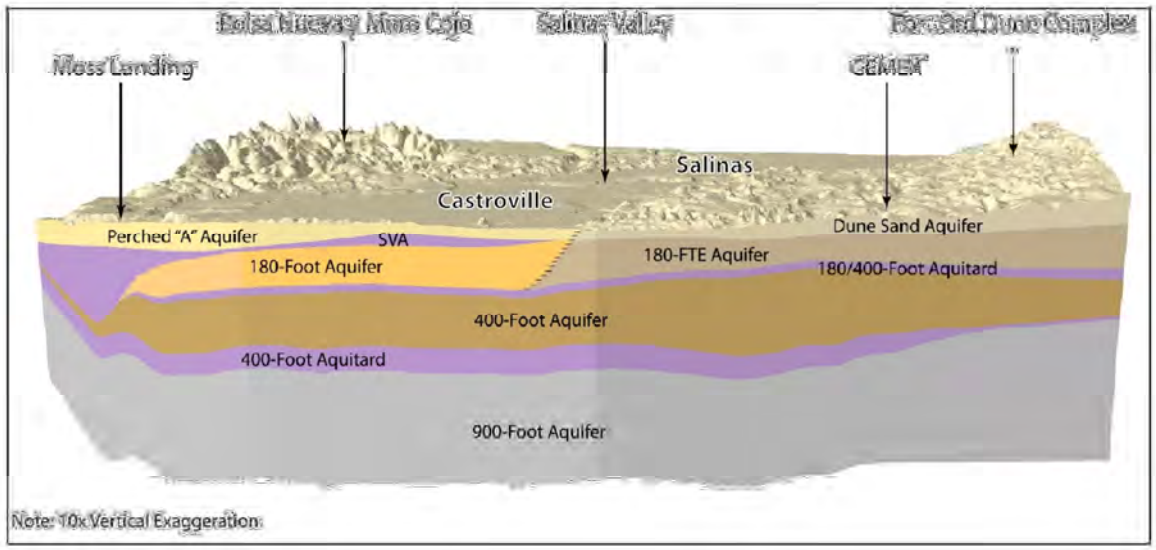
7) If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then the Permittee shall not re-start the pump test until receiving an amendment to this permit.

IN COMPLIANCE: The TSW has remained shut off, while the CCC goes through the investigation and analysis of the data in order to determine the appropriate amendment to the CDPs, which will continue to be protective of near-by wells.

Background of Special Condition 11 Threshold Changes in Groundwater levels

The Hydrogeology Working Group (HWG) was formed as a result of the 2013 Settlement Agreement. The HWG is composed of hydrogeologic experts that represent key stakeholders for groundwater use and management in the Salinas Valley and Monterey Peninsula area of central California. The group has been actively involved through all stages of the project including: the project hydrogeologic investigation planning, monitoring well construction, groundwater model construction, and currently in the analysis of monitoring data. By being involved in all stages of the project's hydrogeologic analysis, the HWG can ensure that hydrogeologic conditions in the vicinity of the project area have been accurately characterized so that the groundwater model created from the field data represents an assessment tool for evaluating impacts from the TSW.

The data collected from the hydrogeologic field investigations completed in 2013 was used to prepare the interpretations of hydrostratigraphic relationships from Moss Landing and CEMEX areas. A conceptual model of the hydrostratigraphic units from the Moss Landing to CEMEX area as interpreted from data is shown below:



During the review of the investigation data, the HWG recommended that a focused groundwater model of the CEMEX area be constructed using the detailed lithologic and water quality data collected from the CEMEX site lithologic and water quality borings. The previously constructed North Marina Groundwater Model (NMGWM) is an 8-Layer model with a 200 ft x 200 ft cell size. The Focused CEMEX model (CM) was constructed with 14-Layers and a cell size of 20 ft x 20 ft. The detailed data collected from the boreholes at the CEMEX site was used for model input parameters (i.e., model layer thickness, hydraulic conductivity, storativity, and initial groundwater levels). The newly constructed CM was used to predict the response of the proposed TSW pumping at the locations of the proposed monitoring wells and in the vicinity of the CEMEX site. A draft report entitled "Results of Test Slant Well Predictive Scenarios Using the Focused CEMEX Area Model" was issued on July 8, 2014. The report provides a prediction of drawdown in the Dune Sand aquifer and 180-FTE aquifer in the vicinity of the CEMEX site. Two scenarios were considered: 1) A TSW constructed at an angle 19 degrees below the horizontal with a total screen length of 588 lineal feet along the angle of the well in both the Dune Sand and 180-FT aquifers, and 2) A TSW constructed at an angle of 10 degrees with a total screen length of 830 lineal feet. Both scenarios assumed pumping at a rate of 2,500 gallons per minute (gpm) for a period of eight months. The table below provides a summary of the predictive scenarios for the TSW pumping

Layer	Aquifer/ Aquitard	Scenario 1 (19 Degrees Below Horizontal)				Scenario 2 (10 Degrees Below Horizontal)			
		MW-1	MW-2	MW-3	MW-4	MW-1	MW-2	MW-3	MW-4
Layer 1	**Benthic Zone**								
Layer 2	Dune Sand	-2.7	-2.0	-1.5	-1.0	-4.0	-2.0	-1.2	-0.8
Layer 3	Dune Sand	-2.9	-2.0	-1.5	-1.0	-4.2	-2.0	-1.1	-0.8
Layer 4	Dune Sand	-3.4	-2.0	-1.5	-1.0	-4.1	-2.0	-1.2	-0.8
Average Dune Sand		**-3.0**	**-2.0**	**-1.5**	**-1.0**	**-4.1**	**-2.0**	**-1.2**	**-0.8**
Layer 5	SVA	Not Present in CEMEX area							
Layer 6	180-FTE	-6.2	-3.1	-1.9	-1.2	-3.4	-2.1	-1.4	-0.8
Layer 7	180-FTE	-5.7	-3.7	-2.4	-1.3	-2.2	-1.7	-1.2	-0.8
Layer 8	180-FTE	-4.9	-3.5	-2.5	-1.3	-1.3	-1.1	-1.0	-0.7
Average 180-FTE		**-5.6**	**-3.4**	**-2.3**	**-1.2**	**-2.3**	**-1.6**	**-1.2**	**-0.8**

During the preparation of Special Condition 11 for Coastal Development Permits (CDPs) A-3-MRA-14-0050 and 9-14-1735 which addresses "Protection of Nearby Wells", the potential impacts to nearby wells from the proposed TSW pumping were considered by determining a drawdown threshold that could be measured in a monitoring well near the limit of the CEMEX property (Monitoring Well 4-series, located about 1,900 feet from the TSW) that would ensure that off-site wells would not be adversely impacted by the TSW. The modeling indicated the anticipated average drawdown of 1-Foot in the Dune Sand aquifer at the MW-4 location. The drawdown in the Dune Sand aquifer would be assessed by groundwater level measurements collected from the Dune Sand aquifer completion (MW-1S) at the MW-4 site. An average drawdown of 1.2-FT drawdown was anticipated in the 180-FTE aquifer at the MW-4 series location to be measured by drawdown measurements in the 180-FTE (MW-1M).

Using a distance drawdown relationship from the average values shown in the table above, a threshold value of 1.5 feet was selected for MW-4. It was predicted that a drawdown off-site of 0.5 feet might occur at a distance of about 4,000 feet and negligible drawdown would be anticipated at a distance of about 6,000 feet in the 180-FTE aquifer. The threshold value is overly conservative in that there are no active pumping wells screened in 180-FT aquifer within 6,000 feet of the TSW and an additional drawdown of 0.5 feet or 1.5 feet in a pumping well screened at the depth of the 180-FTE aquifer would have a negligible impact on the operation of the well.

Results of Field Monitoring During TSW Pumping Period

In reviewing groundwater level trends from the period before and during TSW pumping, the HWG members agreed on the following:

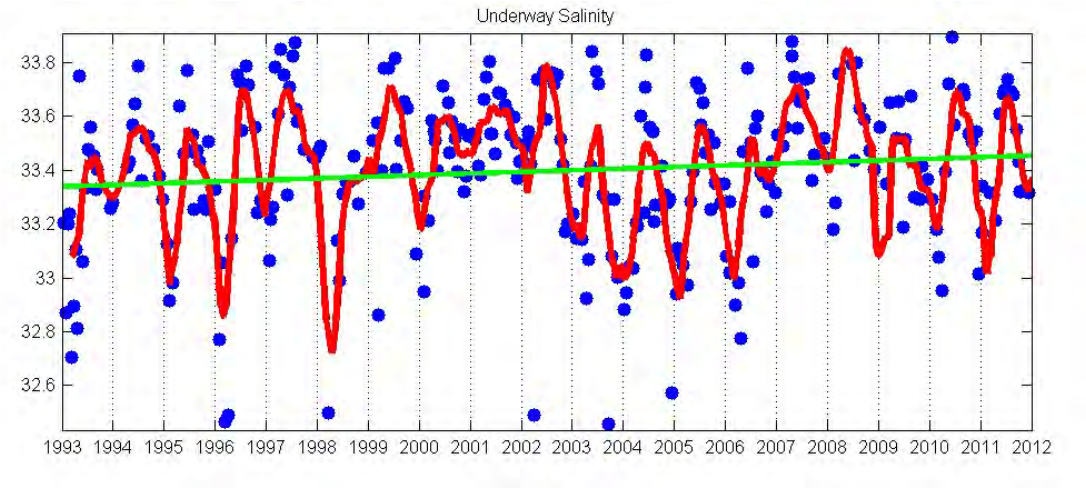
1) TSW pumping data indicates that changes to groundwater levels only to the shallow (Dune Sand aquifer) and middle (180FTE aquifer) occurred in MW-1 and MW-3.
2) TSW pumping data indicates no effects on or impacts to deep groundwater levels in the CEMEX North Well, MW-1D and MW-3D.
3) TSW pumping data indicates there may be up to 0.25 feet of drawdown in MW-4M, up to 0.1 feet of drawdown in MW-4S and no impact in the MW-4D, and MW-5 monitoring wells (deep, middle, shallow).
4) As such, the radius of influence of the TSW pumping (at an average discharge rate of 2,000 gpm), is in the vicinity of MW-4, with negligible drawdown beyond MW-4 series.

The CM model predicted an average drawdown in the Dune Sand aquifer and the 180-FTE aquifer at MW-4 to be 1.0 FT and 1.2 FT respectively, at the end of eight months of pumping, while

pumping at a rate of 2,500 gpm. The model was programmed to simulate equal production from the Dune Sand aquifer and 180-FTE aquifer. The TSW was pumped at a rate of 2,000 gpm for six weeks. Preliminary analysis indicates that approximately 80% of the flow was from the Dune Sand aquifer and 20% from the 180-FTE aquifer. The TSW, pumping at a rate of 2,000 gpm may have resulted in 0.25 feet drawdown from TSW pumping in MW-4M after six weeks of pumping in either aquifer. The field responses in the aquifers from TSW pumping confirm that the predictive modeling accurately represent the anticipated responses of the aquifers to TSW pumping. Therefore, the Special Condition 11 drawdown threshold is protective of off-site wells.

Background of Special Condition 11 Threshold Changes in Groundwater Total Dissolved Solids

The Monterey Bay Aquarium Research Institute (MBARI) started a program of semi-monthly time series cruises to several stations within and off-shore of Monterey Bay. In 2012, MBARI published time series parameters at stations in central Monterey Bay from the 23 years, 1989-2012, of sampling at the station. The figure below was published by MBARI in 2012 as Figure 3(b) of their paper entitled "Monterey Bay Time-Series: 23 Years of Measuring Physical, Chemical, and Biological Variables," presented at the International Time-Series Methods Workshop in Bermuda in November, 2012. The units on the left hand axis are practical salinity units (psu) which are equivalent to parts per thousand. Multiplying these values by 1,000 will provide salinity parts per million (ppm).



The data in the figure above shows that seawater averaged over depth in Monterey Bay showed a variation from approximately 32,400 ppm to approximately 34,000 ppm or about 1,600 ppm.

In addition, natural variations in salinity could also occur from seasonal changes in ground water levels. The test well is located in an area known for seawater intrusion in the 180-FTE aquifer

and the 400-FT aquifer. Historical movement of seawater due to landward pumping of municipal and agricultural wells have occurred at rates which vary based on the ability of different subsurface geologic layers to transmit water (i.e. variations with depth of the hydraulic conductivity). Since the geologic units are stratified, the salinity at different depths can also show variations. The water quality samples collected from the CEMEX borings showed vertical stratification in total dissolved solids. Monitoring wells screened over intervals which contain water with varying salinity may show a change in some changes in salinity simply from mixing of water when sampling. Therefore, the TDS threshold change of 2,000 ppm necessarily includes consideration for the complexity of near shore subsurface salinity.

The Special Condition 11 TDS threshold of 2,000 ppm was selected to ensure that potential increases in salinity at the monitoring well would not, at a minimum, be due to natural salinity variations in seawater nor be caused by simple mixing of vertically TDS stratified groundwater.

Results of Field Monitoring for TDS at MW-4 During TSW Pumping Period

Prior to and after the initiation of the long-term pumping test, the TDS level in MW-4 monitoring well series were monitored daily by dedicated down hole transducers with electrical conductivity probes. The electrical conductivity in MW-4S showed a slightly decreasing trend of approximately 1,000 us/cm or about 640 mg/L[1]. The electrical conductivity in MW-4M has increased approximately 900 us/cm or about 576 mg/L. The electrical conductivity in MW-4D has remained the same.

Groundwater level data collected from monitoring wells before initiation of the test (March 20, 2015) and approximately one month after the test commenced showed that groundwater levels in MW-4M were higher at the coast than inland. The data validates the reported historical seawater intrusion identified in the 180-FTE by others. These conditions suggest that the slight increase in electrical conductivity in MW-4M is not associated with TSW pumping but rather from ongoing inland pumping. Therefore, further increases in TDS are anticipated from regional inland groundwater production and apart from TSW pumping.

The Special Condition 11 threshold of an increase of 2,000 ppm at MW-4 is conservative and protective of nearby wells.

[1] An Electrical Conductivity to TDS ratio of 0.64 was used to calculate TDS from electrical conductivity. The TDS:EC ratio was calculated from water quality data collected in the regional borehole study in 2013/2014. The TDS:EC ratio will be refined from water quality data from each monitoring well when sufficient data becomes available

Sincerely,

The Hydrogeologic Working Group

Dennis Williams, Tim Durbin, Martin Feeney, Peter Leffler

Dennis Williams

ABSENT

Tim Durbin,

Martin Feeney

Peter Leffler

LETTER TO THE CALIFORNIA COASTAL COMMISSION

Agenda Item: Tu 15a

Hon. Steve Kinsey, Chair and Commissioners
California Coastal Commission
Attn: Mike Watson
725 Front Street, Suite 300
Santa Cruz, CA 95060

October 2, 2015

Re: Permit Amendment No. 9-14-1735-A1 and A-3-MRA-14-005-A1

Hon. Chair Kinsey and Commissioners:

We submit this letter to ask you to accept your staff's recommendation and approve California American Water's request to amend its test well permit. We are a broad coalition of businesses, environmental, labor and community organizations. As such, our very livelihoods rest on the success or failure of this project. We believe this is a minor but prudent amendment to the permit that will enable test well operations to restart, with appropriate standards to ensure there are no impacts. We ask that you approve this amendment so we can continue the process of developing a sustainable water supply for our community.

Yours sincerely,

AIA MONTEREY BAY CHAPTER
Board of Directors

CARMEL RIVER STEELHEAD ASSOCIATION
Brian LeNeve
President

CARMEL RIVER WATERSHED CONSERVANCY
Lorin Letendre
Executive Director

COALITION OF PENINSULA BUSINESSES
John Narigi
Co-chair

LATINO SEASIDE MERCHANTS ASSOCIATION
Veronica Morales
Chair, Government Affairs Committee

MONTEREY BAY AQUARIUM
Barbara Meister
Public Affairs Director

MONTEREY BAY CENTRAL LABOR COUNCIL
Cesar Lara
Executive Director

MONTEREY COUNTY ASSOCIATION OF REALTORS
Kevin Stone
CEO

MONTEREY COUNTY FARM BUREAU
Norm Groot
Executive Director

MONTEREY COUNTY HOSPITALITY ASSOCIATION
Board of Directors

DAVE POTTER
Monterey County Board of Supervisors
5th District

MONTEREY PENINSULA CHAMBER OF COMMERCE
Jody Hansen
President and CEO

PACIFIC GROVE CHAMBER OF COMMERCE
Moe Ammar
President

PEBBLE BEACH COMPANY
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Agenda Item
Tu15a

October 2, 2015

File No. 055604-0002

VIA EMAIL AND FEDEX

Chair Kinsey and Honorable Commissioners
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105

Re: Permit Amendment Nos. A-3-MRA-14-0050-A1 and 9-14-1735-A1: (California-American Water Company Test Slant Well Project)

Dear Chair Kinsey and Honorable Commissioners:

On behalf of California-American Water Company ("Cal-Am"), we write regarding the Commission's consideration of Cal-Am's application to amend Coastal Development Permit ("CDP") No. A-3-MRA-14-0050 (issued December 8, 2014) and CDP No. 9-14-1735 (issued January 28, 2015) (collectively, the "Permits") to construct, operate, and decommission a temporary test slant well at the CEMEX sand mining facility (the "Project"). The Project's purpose, among other things, is to gather technical data about the feasibility of subsurface intakes in the Monterey Bay region over an approximately 18-month period. The Commission will consider the proposed amendment ("Permit Amendment") at its October 6, 2015, meeting.

The proposed Permit Amendment is very narrow, as it only proposes changes to one of the Special Conditions imposed by the Commission on the Project when it unanimously approved the Project in November 2014. Cal-Am fully supports Commission staff's recommendations in the Staff Report, and appreciates the detailed analysis of the Permit Amendment that the Staff Report presents, including the technical memorandum by the Commission's independent certified hydrogeologist, Weiss Associates. **Consistent with Commission staff's recommendation, the Permit Amendment will be consistent with applicable Coastal Act and City of Marina Local Coastal Program ("LCP") policies.**

Cal-Am has reviewed opposition letters that have been submitted to the Commission regarding the Project. Attached as **Attachment A** is a detailed response to submittals from the Marina Coast Water District and Ag Land Trust, who previously sued the Commission and Cal-Am over the Commission's 2014 approval of the Project. As explained in Attachment A:

- The **Santa Cruz County Superior Court denied each of these opponents' prior claims and fully upheld the Commission's approval of the Project,**

These materials have been provided to the Coastal Commission Staff

confirming that the Commission's findings complied with the California Environmental Quality Act and the Coastal Act;

- The Commission has **appropriately identified the "baseline" groundwater conditions in the vicinity of the Project**;
- The Commission has not engaged in **improper project piecemealing under CEQA**;
- The Commission has **adequately analyzed Project alternatives, and is not required to analyze additional Project alternatives** for this Permit Amendment;
- The State Board has concluded that **Cal-Am may develop appropriative water rights to contaminated brackish groundwater** in the Salinas Valley Groundwater Basin ("SVGB");
- The **Project will not increase seawater intrusion** in the SVGB;
- The Project **is fully consistent with Coastal Act policies requiring that development not impair agricultural viability;**
- The Commission has jurisdiction to amend Commission-issued CDPs;
- **The Permit Amendment is consistent with applicable state, regional, and local regulations**;
- The proposed revision to Special Condition 11 is **appropriate for identifying and preventing potential impacts to inland groundwater users**; and
- As revised, **Special Condition 11 will not result in new significant impacts under the California Environmental Quality Act nor conflict with any Coastal Act policies**.

We appreciate the opportunity to respond to the comments submitted by Project opponents, and we look forward to the Commission's consideration of Cal-Am's Permit Amendment at the October 6, 2015, meeting.

Very truly yours,

Duncan Joseph Moore
of LATHAM & WATKINS LLP

cc: Tom Luster, California Coastal Commission
Andrew Homer, California-American Water Company

Attachment

These materials have been provided to the Coastal Commission Staff

ATTACHMENT A

CALIFORNIA-AMERICAN WATER COMPANY
RESPONSES TO OPPOSITION COMMENTS
Coastal Development Permits A-3-MRA-14-0050 and 9-14-1735
Agenda Item Tu15a (October 6, 2015 meeting)

California American Water Company ("Cal-Am") submits the following responses to comments received from Marina Coast Water District ("MCWD") and Ag Land Trust ("ALT") in advance of the California Coastal Commission's ("Commission") consideration of Cal-Am's application to amend Coastal Development Permit Nos. A-3-MRA-14-0050 (issued December 8, 2014) and. 9-14-1735 (issued January 28, 2015) (collectively, the "Permits") to construct, operate, and decommission a temporary test slant well at the CEMEX sand mining facility (the "Project"). Cal-Am's requested amendment to the Permits is referred to herein as the "Permit Amendment."

RESPONSES TO MCWD'S SEPTEMBER 25, 2015, LETTER

I. INTRODUCTION

MCWD's September 25, 2015, letter ("MCWD Letter") repeats many of the same arguments that MCWD raised in November 2014 when the Commission originally considered and approved the Project. MCWD essentially seeks to re-litigate the Commission's approval of the entire Project, including the November 12, 2014 Staff Report and addenda (collectively, "2014 Staff Report") and the Commission's final adopted findings on the Permits ("2014 Findings"). MCWD's relentless claims about the Commission's prior approvals of the Permits are wrong, improper and barred by well-established legal principles.[1] As the Commission is well-aware, MCWD sued the Commission and Cal-Am to halt the Project (Santa Cruz County Superior Court Case No. CISCV180839), and ***the court rejected all of MCWD's arguments and upheld the Permits and the Commission's 2014 Findings***. Regardless, MCWD improperly seeks to rehash many of the points that the Court soundly overruled, and has incorporated those claims into its new opposition letter. Accordingly, Cal-Am responds to those points (again) here.

It is important to note that the narrow Permit Amendment that Cal-Am is requesting concerns a single Special Condition within the Permits and how certain performance standards should be applied to the Project. Accordingly, the Permit Amendment does not re-open the Commission's evaluation of other aspects of the Project the Commission already approved, and that have been upheld in court. *See* Cal. Code Regs., tit. 14, § 13166; *Carstens v. Cal. Coastal Comm'n*, 182 Cal.App.3d 277, 292 (1986). Thus, the Commission should consider only that information necessary to make its required determination of whether "the development as amended conforms with the policies of Chapter 3 of the Coastal Act or with a certified local coastal program if applicable." Cal. Code Regs., tit. 14, § 13166(c).

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[1] For example, the doctrine of *res judicata* prohibits the relitigation of the same issues already decided between the same parties in an earlier lawsuit. *Busick v. WCAB*, 7 Cal.3d 967 (1972). Likewise, collateral estoppel, or issue preclusion, precludes relitigation of issues argued and decided in prior proceedings. *Mycogen Corp. v. Monsanto Co*., 28 Cal. 4th 888, 896 (2002); *Branson v. Sun-Diamond Growers of Cal*., 24 Cal. App. 4th 327, 346 (1994).

Although MCWD claims that it is not "fundamentally opposed" to the operation of a test slant well for the Monterey Peninsula Water Supply Project ("MPWSP"), MCWD's staunch opposition to the Project at every stage belies its claims of neutrality. MCWD is a competitor seeking funding and approval for its own subsurface intake wells in close proximity to the location of Cal-Am's test slant well. In reality, MCWD fears that the data obtained from the Project will demonstrate the feasibility and *de minimis* impacts associated with Cal-Am's test slant well, and support Cal-Am's development of its own future full-scale desalination facility before MCWD can move forward with a separate facility using similar technology in the immediate vicinity.

Nonetheless, the assertions in the MCWD Letter are all without merit. First, MCWD's California Environmental Quality Act ("CEQA") and Coastal Act claims were all rejected by the Santa Cruz County Superior Court, and are outside the scope of this narrow Permit Amendment. Second, MCWD's and its' consultant Hopkins Groundwater Consultants, Inc.'s ("HGC") arguments regarding new groundwater monitoring data consist of strained interpretations and cherry-picking information to arrive at misleading assertions that are not supported by the evidence in the Commission's record. Third, the September 24, 2015, Staff Report ("Permit Amendment Staff Report") and the Technical Memorandum by the Commission's independent licensed hydrogeologist, Weiss Associates ("Weiss Memorandum") demonstrate that, with the proposed amendments to Special Condition 11, the Project will not result in any adverse impacts to groundwater resources.

II. THE COMMISSION HAS ADEQUATELY ANALYZED POTENTIAL GROUNDWATER IMPACTS

MCWD claims that the Commission has failed to adequately analyze potential groundwater impacts from the Project. These claims misrepresent years of groundwater data, were largely rejected by the Santa Cruz County Superior Court, and otherwise lack merit.

A. The Commission Has Established the "Baseline" Groundwater Conditions

First, MCWD attempts to re-argue its prior claim that the Commission has not established the "baseline" groundwater conditions for the Project. This claim was wholly rejected by the Santa Cruz County Superior Court. The Court found that, in approving the Project in 2014, the Commission adequately disclosed the baseline hydrological conditions of the Salinas Valley Groundwater Basin ("SVGB"). *See* Court Reporter's Transcript of Proceedings, Case No. CISCV180839 (July 23, 2015) ("*MCWD v. CCC*, July 23, 2015, Transcript")[2] at 187:20 to 188:1. Based on this substantial evidence, the Court concluded:

> [T]he Court believes that the baseline as used as a term of art in the case law shows that there was significant scientific evidence before the Commission to determine that the groundwater aquifers from which the project was going to draw were greatly intruded by

[2] A copy of the *MCWD v. CCC*, July 23, 2015, Transcript was submitted to Commission staff as an attachment to Cal-Am's September 23, 2015, letter to the Commission.

> seawater and could not be used for agricultural irrigation or human consumption.

MCWD v. CCC, July 23, 2015, Transcript at 190:8-14.

As the Commission recognized in its 2014 Findings, groundwater in the Project vicinity is already severely contaminated by seawater intrusion, and these conditions are extremely well understood and documented in reports to and by government agencies. The Commission's findings cite to such reports, describe the existing conditions, and note that the underlying basin is subject to seawater intrusion that extends several miles inland from the coast where the Project is located. 2014 Findings at 51. The Commission also summarized groundwater conditions in the vicinity of the Project by describing the SVGB, past groundwater pumping quantities, the degree of seawater intrusion, groundwater storage capacity, and the proximity of groundwater wells to the Project site. *Id*. at 51-52. Accordingly, the Court agreed with the Commission and Cal-Am that a multitude of evidence in the record established the baseline groundwater conditions, including the City of Marina's ("City") draft Mitigated Negative Declaration ("MND"), the Monterey Bay National Marine Sanctuary's ("MBNMS") Environmental Assessment, the State Water Resources Control Board's Final Review of California American Water Company's Monterey Peninsula Water Supply Project (July 31, 2013) ("State Board Report") and Geoscience's Monterey Peninsula Water Supply Project Hydrogeologic Investigation Technical Memorandum, Summary of Results – Exploratory Boreholes (July 8, 2014) ("Borehole Report"). *See MCWD v. CCC*, July 23, 2015, Transcript at 188:1-12.

Now, MCWD alleges that post-approval monitoring data shows that the baseline water quality information in the 2014 Staff Report was incorrect. MCWD relies on a memorandum from HGC ("HGC Memorandum"), signed by Mr. Curtis Hopkins, who testified on behalf of MCWD during the *MCWD v. CCC* litigation. Specifically, MCWD claims that the monitoring data demonstrates that the Dune Sand and the 180 Foot Aquifers contain fresh water near the Project site, and argues that this data shows that wells in the Marina subarea of the SVGB are not subject to seawater intrusion. ***This assertion relies on a blatant misinterpretation of data from a single monitoring well and ignores decades of reports and data that reach the opposite conclusion***.

It is well understood and documented that seawater has intruded into the aquifers underlying the Project site, extending approximately 5 miles inland. 2014 Staff Report at 18. This seawater intrusion has resulted in the degradation of groundwater supplies, such that salinity and total dissolved solids ("TDS") concentrations in nearby areas of the aquifers exceed levels that are suitable for agricultural crop production. *Id*. Indeed, the City's draft MND for the Project noted that "[w]ater samples taken from the exploratory borings at the CEMEX site indicate that both the Dune Sand Aquifer and the 180-FTE Aquifer contain saline (salt) water and are substantially influenced by the sea." Draft Initial Study and MND for the California American Water Slant Test Well Project at 113 (May 2014). Exploratory boreholes drilled at the CEMEX site also document TDS levels in surrounding areas of the aquifers ranging from 16,122 to 35,600 parts per million. Borehole Report at Table 5-3. That report shows TDS levels far above levels appropriate for human consumption or irrigation. More recent data confirms these results. For example, the Geoscience Technical Memorandum entitled "Monterey Peninsula Water Supply Project Baseline Water and Total Dissolved Solids Levels Test Slant Well Area,"

(April 20, 2015) (attached hereto as Exhibit A) shows TDS concentrations above the Monterey County Environmental Health Department's 500 mg/l standard for TDS for public water systems in Monterey County. *See also* Declaration of Martin Feeney, dated April 29, 2015 ("4/29/15 Feeney Decl."), ¶ 12 (attached hereto as Exhibit B).

Seawater intrusion, as mapped by Monterey County Water Resources Agency and as defined by 500 mg/l, in the 180-Foot and 400-Foot Aquifers extends an average distance of six and two miles, respectively, inland from the Project site. 4/29/15 Feeney Decl., ¶ 11. In the Dune Sand and 180-Foot Aquifers, from where the Project is pumping, it is well understood that seawater intrusion extends essentially to City of Salinas. *Id*. The Project does not produce from the 400-Foot Aquifer, is isolated from the 400-Foot Aquifer by a demonstrated aquitard, and based on data from monitoring wells completed in the 400-Foot Aquifer,[3] shows no response to Project pumping.

MCWD's claim that fresh water has suddenly appeared in the aquifers seem to be premised entirely on cherry-picked monitoring data from a single one of the Project's monitoring wells, MW-5M, which is over two miles inland from the Project.[4] While the average TDS concentrations at MW-5M (560 mg/l) meet the second tier of the 3-tiered (500, 1000, 1500 mg/l) water quality secondary standard set by the State Board's Division of Drinking Water of 1,000 mg/l, the concentrations are above the Monterey County Health Department's standard of 500 mg/l for TDS for public water systems in Monterey County. 4/29/15 Feeney Decl., ¶ 12. In addition, MCWD fails to mention that the water at this location at an average concentration of 67 mg/l for nitrates exceeds the ***primary*** drinking standard of 45 mg/l as a result of contamination by agricultural practices, and is therefore not suitable for any potable supply. *Id*. This water can hardly be characterized as "fresh."

More importantly, MCWD has provided no evidence that Project pumping has had any adverse effect at MW-5. Instead, the data shows that MW-5 has been unaffected by Project pumping. ***MCWD's consultant Curtis Hopkins even admitted this in testimony before the Santa Cruz County Superior Court***:

> "Q. And that's the area where you testified on direct contained this fresh water that you didn't know was there before until you got the results from the test well?

[3] The Hydrogeologic Working Group ("HWG") has conducted on-going monitoring of water levels, salinity, and TDS levels during the operation of the test slant well. Groundwater monitoring reports containing this data are available at http://www.watersupplyproject.org/#!test-well/c1f1l.

[4] The Santa Cruz County Superior Court heard MCWD's arguments about data from MW-5 during the hearing on MCWD's motion for stay and a preliminary injunction to halt the Project, but denied MCWD's motion. The Court also heard testimony from Dr. Dennis Williams, a member of the HWG, who clarified that MW-5 is located two miles inland from the Project site. *See* Reporter's Transcript of Proceedings, Case No. CISCV180839 (May 1, 2015) at 182:18-23.

A. That is correct.

Q. So this shows that, for the five-day test, there was absolutely no change in the depth water level in dune sand in monitoring well five; correct?

A. At this location; that's correct."

Reporter's Transcript of Proceedings, Case No. CISCV180839 (May 1, 2015) at 156:13-20 (emphasis added).

Accordingly, the Commission has already disclosed the baseline groundwater conditions in the vicinity of the Project site, and MCWD has not shown that the baseline conditions reported by the Commission are incorrect. No further analysis is required for this narrow Permit Amendment.

1. The 2014 Staff Report Appropriately Characterized the Understanding of Existing Groundwater Conditions

MCWD also claims that the 2014 Staff Report incorrectly suggested that existing groundwater conditions are well understood, and suggests that years of additional data will be required to establish the baseline conditions. Yet, MCWD's submittal wholly undercuts its claim, as HGC's memorandum contains pages of background information on the local groundwater conditions, including reports dating back to the 1970s. In addition, the Santa Cruz County Superior Court agreed with the 2014 Staff Report's characterization of the existing groundwater conditions:

> The Commission's findings cite to reports that indicate that the groundwater in the project's general area is already severely contaminated by seawater intrusion and that these conditions are well understood and documented; that the reports describe the conditions and note that underlying basin is subject to seawater intrusion that extends several miles inland from the coast where the project is located.

MCWD v. CCC, July 23, 2015, Transcript at 188:1-9.

Further, the entire purpose of the Project is to gather technical data as part of a ***test*** slant well that is intended to operate for a limited duration. CEQA requires the Coastal Commission to analyze the potential environmental impacts of the "whole of an action" (CEQA Guidelines § 15378(a)); accordingly, the Commission analyzed the Project as a whole, including the test slant well plus associated monitoring wells. MCWD objected to this Project as a whole. Now that the Project has been constructed, MCWD seeks to use the monitoring wells to collect years of data while simultaneously preventing the test slant well from operating. MCWD lost its case against the Project as a whole, and now it is essentially asking the Coastal Commission to proceed with the only component of the Project that could benefit MCWD's own desalination project proposal in the vicinity – Cal-Am's monitoring wells. Such obvious gamesmanship has no support. The

Santa Cruz County Superior Court confirmed that the Commission adequately disclosed baseline conditions in the 2014 Findings, and nothing in MCWD's submittal undercuts that determination.

2. The 2014 Staff Report Correctly Reported the Groundwater Gradient in the Vicinity of the Project

MCWD further claims that flows in the Dune Sand Aquifer are toward the ocean and thus protective of seawater intrusion. Substantial evidence, however, demonstrates that the Project will slow seawater intrusion. The Project's test slant well will create a cone of depression and capture zone of seawater. Martin Feeney, a certified hydrogeologist and member of the HWG, explained in the *MCWD v. CCC* litigation that rather than increase seawater intrusion in the SVGB, the Project would likely pull seawater back toward the coast. Operation of the test well will lower groundwater levels in the immediate vicinity of the well. Declaration of Martin Feeney, dated April 20, 2015 ("4/20/15 Feeney Decl."), ¶ 24 (attached hereto as Exhibit C). Given this localized water level depression, on the ocean side of the test slant well, saline groundwater will move from the ocean to the low point created by the test slant well's pumping. *Id*. On the landward side of the well, the depression caused by pumping the well will locally reverse the existing groundwater flow direction, pulling degraded inland groundwater westerly toward the test slant well. *Id*. Accordingly, "[n]o seawater induced by the pumping of the wells moves inland because water level elevations are lower at the well than points inland. In this way, the wells intercept seawater intrusion before it can reach wells further inland." 4/20/15 Feeney Decl., ¶ 27.

The State Board Report's analysis of the slant well pumping reaches similar conclusions. *See* State Board Report at 27 ("Currently, the predominant groundwater flow direction in the 180-Foot Aquifer is toward the northeast. Project pumping would likely change the flow direction to more of a southwest to westerly direction within the zone of influence. Outside the zone of influence there would be little if any change to groundwater flow direction; however, the rate of flow in the original direction (northeast) would be reduced. Therefore, the MPWSP would slow the rate of seawater intrusion in a landward direction from the wells.").

In addition, when it served its interests to do so, MCWD previously touted the effect of reducing seawater intrusion as a benefit of siting subsurface desalination intakes in this location, but ignores that fact now. In a presentation on the failed Regional Desalination Project, ***MCWD represented to the State Board that a subsurface intake would create a "[l]ocalized effect in groundwater elevations immediately surrounding [the] wells" and "help[] restore [the] basin."***[5] Further, MCWD is proposing *its own desalination facility with subsurface vertical wells (i.e., that would not even extend beneath the sea floor)* in close proximity to the Project.[6]

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[5] *See* MCWD Regional Water Supply Project Presentation to State Water Resources Control Board (Feb. 16, 2010), attached hereto as Exhibit D.

[6] *See* Board Report for Agenda Number 9e (Subject: Consider Marina Coast Water District Proposed Regional Urban Water Augmentation Project), from the March 13, 2015, Regular Meeting of the FORA Board of Directors, available at http://www.fora.org/Board/2015/Packet/031315BrdPacket.pdf (pp. 61 to 68); *see also* Board

MCWD's convenient argument that Cal-Am's test well pumping from an overdrafted aquifer will result in further seawater intrusion and groundwater impacts cannot be reconciled with MCWD's own desire to develop its own subsurface wells nearby to pump water from the same aquifer MCWD alleges the Project is impacting.

3. The Test Slant Well Monitoring Data Demonstrates That Cal-Am's Groundwater Modeling Assumptions Were Conservative

MCWD also asserts that the recent monitoring data does not validate Cal-Am's groundwater modeling assumptions. MCWD is incorrect. The Commission's independent licensed hydrogeologist reviewed the monitoring well data from the test slant well and determined that Cal-Am's and the HWG's modeling was "conservative in that it had predicted larger drawdown levels from the pumping test than have been identified through monitoring":

> For example, the model had predicted a drawdown of about one to 1.5 feet at MW-4 whereas monitoring at MW-4 shows no drawdown from the pump test in the Dune Sand Aquifer and just a 0.25-foot drawdown in the 180-Foot Aquifer. Similarly, the model had predicted a much larger capture area than is indicated by the monitoring, indicating that the areas inland of the test well that are influenced by the pump test are smaller than predicted.

Permit Amendment Staff Report at 13.

Weiss Associates ("Weiss"), the Commission's independent licensed hydrogeologist, also determined that the monitoring results from MW-4 during April, May, and June indicate that more water is entering the test slant well from beneath the Monterey Bay sea floor and shoreline, and less from inland, than anticipated. Weiss Memorandum at 1. Weiss concluded that these results "indicate negligible impact to the SVGB inland of monitoring well MW-4, with the probability of potential impacts decreasing with distance inland from that well." *Id*.

Accordingly, substantial evidence in the record demonstrates that the monitoring data shows that Cal-Am's groundwater modeling assumptions were conservative.[7]

4. The Project Will Not Disrupt "Hydrologic Balance" in the SVGB

Finally, MCWD argues that its own conservation efforts are restoring "hydrologic balance" within the Marina subarea of the SVGB, and that this balance would be thrown off by pumping from the Project. This claim has been refuted by the Commission's independent licensed hydrogeologist. Weiss specifically considered whether Cal-Am's pumping would

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Report for Agenda Number 8b (Subject: Ord Community Water Augmentation), from the April 10, 2015, Regular Meeting of the FORA Board of Directors, available at http://www.fora.org/Board/2015/Packet/041015BrdPacket.pdf (pp. 37 to 47).

[7] In addition, this letter hereby incorporates by reference the HWG's October 2, 2015, letter to the Commission's Executive Director discussing the data that supports the threshold monitoring values for compliance with Special Condition 11.

"eliminate or reduce the expected benefits of the lower coastal pumping rates being used in the SVGB to managed [sic] seawater intrusion?" Weiss Memorandum at 5. Weiss concluded that "it is unlikely there will be any impact to the SVGB inland of MW-4, and potential impacts decrease with distance inland from that well. Therefore we would not foresee any reduction in the expected benefits of the seawater intrusion management program." *Id*.

Weiss also addressed potential water quality impacts from the Project. Weiss concluded "to the extent that the TSW captures any of the brackish groundwater currently present in the area landward of the TSW, the salt water/fresh water interface will migrate seaward. This should result in improvements to water quality in the areas of the SVGB that are influenced by the TSW, due to seaward migration of fresher water." Weiss Memorandum at 5.[8] Regarding cumulative impacts, Weiss concluded that modeling results "indicate no cumulative adverse impacts to the SVGB" from the test slant well. Weiss Memorandum at 5.

In addition, the 2014 Staff Report noted that the total water withdrawal for the test well would be approximately 4,000 acre-feet per year over the two-year test period, most of which is expected to be seawater or seawater-intruded groundwater from the subseafloor. This amount of extraction represents only about 0.1 percent of the 180/400-Foot Sub-Basin's groundwater storage. 2014 Staff Report at 50-51. Based on this evidence and other evidence in the record, the Santa Cruz County Superior Court found that "the administrative record supported the Commission's finding that no seawater intrusion impact would occur in the Salinas Valley groundwater basin as a result of the project." *MCWD v. CCC*, July 23, 2015, Transcript at 194:13-16.

MCWD also makes further baseless allegations that the current drought will cause alleged Project impacts to be exacerbated. HGC Memorandum at 12-13. As described in the *MCWD v. CCC* proceedings, drought conditions impact the general rate of seawater intrusion, because drought can result in lowering inland groundwater levels and increase the gradient from the ocean. 4/20/15 Feeney Decl., ¶ 29. Lower groundwater tables, however, will not cause the test slant well to have an impact on groundwater supplies. *Id*. As described above, Project pumping will cause the well to intercept intruding seawater and pull back inland contaminated water through a reverse gradient regardless of the lowering of inland groundwater levels due to the drought. *See also id*., ¶ 22-29. MCWD's claim is yet another attempt to introduce unrelated facts without any evidence of causal linkage to actual harm. Moreover, the ongoing drought actually shows that it is even more urgent to determine the feasibility of slant wells for desalination purposes in the Monterey region.

Further, to the extent that MCWD claims that the Project will exacerbate seawater intrusion, such a claim ignores basic hydrogeologic principles and substantial evidence in the Commission's record. *See* 2014 Findings at 51-53; MND at 120-21; 4/20/15 Feeney Decl., ¶¶ 24-27. In addition, even if the Project were to result in seawater intrusion – which substantial evidence demonstrates it will not – because groundwater to be used for irrigation or human consumption in the vicinity of the Project must be drawn from the 900/1500-foot aquifer (also referred to as the Deep Aquifers), any seawater intrusion into the 180-Foot Aquifer from which

[8] The Weiss Memorandum uses the term "TSW" to refer to the Project's test slant well.

the Project's test slant well is pumping would not impact any water source for irrigation or human consumption in the vicinity of the Project. Declaration of Martin Feeney, dated January 20, 2015 ("1/20/15 Feeney Decl."), ¶ 17 (attached hereto as Exhibit E).

B. The Commission Has Not Improperly Deferred Establishment of the Baseline

MCWD also attempts to re-argue its claim that the Commission improperly deferred the establishment of the Project's "environmental baseline" to the HWG. This argument has been wholly rejected by the Santa Cruz County Superior Court. In sum, the HWG's role under Special Condition 11 in the Permits is to monitor groundwater conditions before and during Project pumping to ensure that the Project does not exceed performance standards that the Commission designed to ensure groundwater supplies are protected. This role is not the establishment of an environmental baseline under CEQA,[9] which the Commission established in its 2014 Staff Report. On these issues, the Court specifically stated:

> I don't believe that the Commission deferred the determination of the environmental baseline. I don't believe that is what the purpose of Special Condition 11 is; Special Condition 11, which requires Cal-Am to conduct ongoing water monitoring during the project operations. And basically, Special Condition 11 does refer -- does require that the hydrology working group, which is a team representing the interests of various stakeholders concerning groundwater use and management in the region, that they're tasked with determining whether the project would cause changes that meet the threshold levels that are set forth in Special Condition 11.

MCWD v. CCC, July 23, 2015, Transcript at 190:15 to 191:2. The Court went on to say:

> I agree that the evidence supports that those measures are used to establish monitoring parameters. And I think that the record establishes that determining the exact level and salinity levels at the project's monitoring wells was impossible to achieve prior to the Commission's review because the monitoring wells are, in fact, a component of the project, and that was analyzed and approved in the CDPs. The Commission staff report provided the detailed discussion of the existing groundwater conditions in the [SVGB] and the two aquifers from which the project will draw water. That discussion was based on technical documents in the record; and that the Commission did not defer in assessing or neglect to study the baseline conditions. And I do find the record adequately establishes the Commission appropriately determined the baseline environmental conditions prior to moving forward.

[9] CEQA Guidelines § 15125(a) (defining environmental baseline under CEQA).

MCWD v. CCC, July 23, 2015, Transcript at 191:7-24. Because MCWD's convoluted CEQA theory was rejected by the Court when it upheld the Permits, it is improper for MCWD to re-litigate an issue that is not before the Commission in the current, narrow amendment to those Permits.

MCWD also asserts that the Technical Memorandum – Monterey Peninsula Water Supply Project Baseline Water and Total Dissolved Solids Test Slant Well Area (April 2015) ("April Technical Memorandum") should not be used to establish the baseline groundwater conditions. As described above, however, the Commission had already adequately described the baseline groundwater conditions in the vicinity of the Project in the 2014 Staff Report, and the 2014 Staff Report cited to and referenced many additional technical reports, including the draft MND and Borehole Report.[10] The April Technical Memorandum is therefore related to establishing monitoring parameters under Special Condition 11, not the environmental baseline under CEQA. Further, MCWD's demand that the Commission "identify the baseline water levels" and "identify the baseline TDS levels" demonstrates MCWD's basic misunderstanding of groundwater science in the area, as the evidence submitted to the Commission by the HWG clearly demonstrates that groundwater levels and TDS levels fluctuate over time due to regional trends. *See* Letter from HWG to Charles Lester, Executive Director, California Coastal Commission (July 23, 2015).

The whole purpose of the proposed Permit Amendment is to provide a mechanism to identify those fluctuating groundwater levels and TDS levels so that the Commission's performance standards from Special Condition 11 can be appropriately applied to ensure that the Project will have no impact to groundwater. In any event, in approving the Project, the Commission noted that the Project would access water that vary from 16,000 ppm TDS to 26,000 ppm TDS, and that even seawater fluctuates from about 30,000 ppm TDS to 33,000 ppm TDS. 2014 Findings at 52. Given this natural fluctuation, it is impossible to pinpoint one precise "baseline" measurement that will remain the same over time, as MCWD demands. *See, e.g.*, *MCWD v. CCC*, July 23, 2015, Transcript at 189:23 to 190:2 ("And the record also discusses how groundwater conditions fluctuate over time, and that it has a high degree of fluctuation. . . And so that was significant to the Court.").

[10] By citing to those reports, the Commission's findings expressly incorporate them as part of the Commission's administrative record, and the reports provide substantial evidence of baseline conditions that were relied upon by the Commission. *McMillan v. Am. Gen. Fin. Corp*., 60 Cal.App.3d 175, 183-84 (1976) ("reference to portions of a report in administrative findings incorporates that part of said report into the findings."); *see also Sierra Club v. Cal. Coastal Comm'n*, 35 Cal.4th 839, 864 (2005); *Towards Responsibility in Planning v. City Council*, 200 Cal.App.3d 671, 683-84 (1988) ("it is difficult to take seriously an argument which posits that there is no evidence to support a finding" where the findings refer to studies and reports in the administrative record).

C. The Commission Established Standards of Significance for Groundwater Impacts

MCWD continues to assert that the Commission has not established adequate thresholds of significance to assess groundwater impacts. However, the measures contained in Special Condition 11 provide a reasoned performance standard for measuring the Project's potential impacts. The Commission appropriately exercised its judgment in selecting a standard of significance, which was upheld by the Santa Cruz County Superior Court:

> I also find that in adopting Special Condition 11, that the Commission was acting as the lead agency, and it was appropriate for them to exercise its own judgment in selecting its standard of significance on that, and that was set forward in Condition 11.

MCWD v. CCC, July 23, 2015, Transcript at 191:25 to 192:4.

Nonetheless, MCWD suggests that the Commission should use Appendix G's threshold of "net deficit in aquifer volume or a lowering of the local groundwater table" as the threshold.[11] But MCWD is not tasked with selecting the standard of significance. Rather, a lead agency may exercise its own judgment in selecting a standard of significance. *Clover Valley Found. v. City of Rocklin*, 197 Cal.App.4th 200, 243 (2011) (upholding determination that aesthetic impacts were insignificant within context of existing development); *Sierra Club v. City of Orange*, 163 Cal.App.4th 523, 541 (2008) (upholding significance standards for traffic based on performance standards adopted by local jurisdictions). The lead agency has discretion to accept expert opinions on the appropriateness of the significance standard. *Mount Shasta Bioregional Ecology Ctr. v. County of Siskiyou*, 210 Cal.App.4th 184, 204 (2010). Significance standards may be tailored to the specific project and contrary to MCWD's implications, do not need be based on the significance questions set forth in CEQA Guidelines Appendix G. *Save Cuyama Valley v. County of Santa Barbara*, 213 Cal.App.4th 1059, 1068 (2013) (upholding project-specific standard for hydrological impacts).

Here, the Commission developed Special Condition 11's standards based on data from a technical report prepared by Geoscience, which was referenced during the Commission's 2014 proceedings and is included in the Commission's record. *See* Geoscience, Monterey Peninsula Water Supply Project – Results of Test Slant Well Predictive Scenarios Using the Focused CEMEX Area Model (July 18, 2014) at 2 (describing model results showing one foot decline in groundwater levels at a distance of approximately 2,500 to 1,800 feet from the test slant well). Commission staff incorporated a discussion of the rationale for the standards into an addendum to the 2014 Staff Report, which was ultimately included in the Commission's findings on the Project. 2014 Findings at 52-53. The 2014 Findings explain that the standard of 1.5 feet above

[11] MCWD also argues that the Commission should state a threshold for impacts from increased seawater intrusion. The Commission has already done so by establishing a standard for TDS levels to ensure that salinity levels in local groundwater do not increase as a result of the Project. Moreover, the Court has already determined that "no seawater intrusion impact would occur in the [SVGB] as a result of the project." *MCWD v. CCC*, July 23, 2015, Transcript at 194:13-16.

natural fluctuations would account for changes in barometric pressure, tidal changes, offsite pumping, and rainfall events. 2014 Findings at 53.

In addition, the Commission noted that 2,000 ppm was selected as a conservative standard for TDS, because seawater has approximately 3,000 ppm natural variability from 30,000 ppm to 33,000 ppm. 2014 Findings at 52, n. 34. The salinity standard for Project shut down is therefore below the natural level of fluctuation, and was appropriately selected as the threshold "for when the monitoring wells may begin to detect an adverse effect." *Id*.

These standards are not proposed to be changed as part of the modifications to Special Condition 11 in the Permit Amendment, and the Commission's independent hydrogeologist concurs in the selection of Special Condition 11's standards. The Weiss Memorandum states that "[a] reasonable scientific basis for setting the trigger drawdown level can be developed from the drawdown maps generated by groundwater modeling and through observations made during the operation of the TSW." Weiss Memorandum at 3. In addition, "[g]iven that a 1.5-foot decrease in water levels at monitoring well MW-4 will equate to progressively smaller decreases inland, of magnitudes that are only a small fraction of the regional water level fluctuations that are on the order of several feet," Weiss concluded that "this parameter appears to be a reasonable threshold to prevent potential impacts to agricultural or groundwater resources further inland." Weiss Memorandum at 4. Accordingly, the Commission, the Santa Cruz County Superior Court and the Commission's independent hydrogeologist have each separately confirmed that the performance standards of 1.5 feet of groundwater drawdown above natural fluctuations and 2,000 ppm of TDS increase are appropriate thresholds based on the evidence in the record to ensure that the Project will not cause adverse impacts to groundwater. MCWD's arguments that different thresholds should be applied have no basis under the law or the evidence in the record.

D. The Project Does Not Violate the Lonestar Annexation Agreement

MCWD continues to suggest that the Project violates a 1996 Annexation Agreement between the Monterey County Water Resources Agency ("MCWRA"), MCWD, owners of Armstrong Ranch, and owners of the CEMEX property (formerly the "Lonestar Property") ("Annexation Agreement"). Again, this issue was litigated in *MCWD v. CCC*, and the arguments regarding the Annexation Agreement were rejected by the Santa Cruz County Superior Court. The Court concluded: "I don't believe that the Commission was required to consider the annexation agreement because that was a potential contract dispute and certainly exceeded the Commission's jurisdiction." *MCWD v. CCC*, July 23, 2015, Transcript at 197:13-17. Nevertheless, for the reasons set forth below, the Project does not violate the Annexation Agreement.

The Annexation Agreement establishes certain terms and conditions associated with the potential future annexation of certain properties in the Marina area into the MCWRA. Among other things, the Annexation Agreement addresses the potential annexation of the Lonestar Property (now owned by CEMEX and containing the Project site) into Zone 2 and 2A of the MCWRA. Significantly, the annexation of the Lonestar Property into Zone 2 and 2A has not occurred. As the MCWRA's General Manager has indicated, multiple conditions precedent to annexation are unfulfilled. See Declaration of David E. Chardavone, dated October 15, 2014 (on file with the Commission and in the Commission's record for the Project). For instance, neither

Lonestar nor CEMEX has (1) requested annexation to MCWRA, or (2) paid required annexation fees to MCWRA. *Id.* In addition, the MCWRA Board of Supervisors has not approved the Annexation Agreement as required by its own terms, and CEMEX has not indicated that it intends to request annexation under the Annexation Agreement.

Even if annexation had occurred, which it has not, MCWD's claims that the Project would violate provisions in the Annexation Agreement limiting groundwater pumping on the CEMEX property are wrong. Specifically, the commitment in the Annexation Agreement by Lonestar/CEMEX to limit groundwater pumping applies only as a limit on groundwater extracted by the Lonestar Property owner to be used on the Lonestar Property itself. The Annexation Agreement does not purport to limit the otherwise lawful development of seawater and contaminated brackish groundwater from the Lonestar Property. In fact, the Annexation Agreement only limits the owner's withdrawal and use of groundwater on the Lonestar Property or MCWD's in-lieu withdrawal which "shall be used only to provide water to the Lonestar property." MCWD Letter, Ex. C at 7. Here, however, Cal-Am's temporary test slant well Project will extract seawater and potentially small amounts of brackish groundwater, which cannot be put to beneficial use by other users, and will extract the water from the Monterey Bay by way of the Lonestar Property, not for use on the Lonestar Property.

Since the Annexation Agreement only establishes the contractual rights of the parties to complete annexation of the specified lands, the limit on groundwater extraction on the Lonestar Property simply establishes the water use demand on that property so that the MCWRA and MCWD can plan for and agree to serve that property upon annexation. The groundwater extraction limit was not intended to be a limitation on the rights or ability of third parties to access the property for purposes of developing seawater and incidental pumping of brackish, contaminated waters that are not suitable for agricultural, industrial or other beneficial uses without significant desalination treatment.

Cal-Am does not propose to receive water service from the relevant agencies on the property or to exercise the water rights of the Lonestar Property landowner. Therefore, even if the Annexation Agreement applied, which it does not, it would not affect the Project.

E. The Project Will Not Impact MCWD's Wells or Operations

Finally, MCWD suggests that the Project is taking water from the SVGB, which it asserts is the "sole source of water" for MCWD's residents. One certainly hopes that MCWD is not using the same water as the Project as a municipal supply for its residents, as the Project pumps degraded water that has been confirmed by the Project's monitoring wells to be highly contaminated by seawater intrusion. 1/20/15 Feeney Decl., ¶ 10; Declaration of Martin Feeney dated March 13, 2015 ("3/13/15 Feeney Decl."), ¶ 10 (attached hereto as Exhibit F); 4/20/15 Feeney Decl., ¶ 19; 4/29/15 Feeney Decl., ¶¶ 11, 12.

The Commission's record is replete with evidence that the Project's test slant well will not draw water that could be used for irrigation or human consumption. See, e.g., 2014 Findings at 18-19; State Board Report at 14-15; 4/20/15 Feeney Decl., ¶¶ 16, 19, 39. Water produced from the test slant well will be derived from the both the Dune Sand Aquifer and the 180-foot Aquifer. *Id.*, ¶ 19. Indeed, initial data from the test well shows that the well is pulling

approximately 80% of its source water from the Dune Sand Aquifer, and that this water is very close in salinity to seawater. *Id*., ¶ 24 & Ex. B, Figure 8; *see also* Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 6 (June 22, 2015) ("The Test Slant Well is physically located and likely producing primarily from the Dune Sand aquifer with a lesser amount from the 180-FTE aquifer, which is confirmed by the monitoring well data in the shallow and middle monitoring wells at MW-1 and MW-3.") Groundwater used for irrigation or human consumption in the Project vicinity must come from deeper aquifers due to the water contamination in the Dune Sand and 180-foot Aquifers. *Id*., ¶ 19. Thus, the Project will not deplete any potable groundwater supplies.

The Santa Cruz County Superior Court agreed that "the record supports that the test wells are not pumping water that would otherwise be put to beneficial use. And the record supports that the water that would be drawn by the test well is substantially degraded by seawater intrusion and other natural factors." *MCWD v. CCC*, July 23, 2015, Transcript at 195:3-8. In addition, the Court noted that "water quality data collected from the area shows that the aquifers exist at relatively high salinity levels. And that they exceed the levels that are suitable for agricultural crop production." *MCWD v. CCC*, July 23, 2015, Transcript at 189:3-7.

Further, Cal-Am understands that MCWD has not produced water from the 180-foot aquifer from wells in their service area for several decades, with the exception of a minor amount of water extracted from MCWD's Fort Ord Wells 30 and 32, which are located at least three miles inland from the Project's test slant well. 4/20/15 Feeney Decl., ¶ 16. Instead, MCWD pumps potable water from the Deep Aquifers near the coast and from the 400-Foot Aquifer. *Id*., ¶ 17. However, MCWD's pumping from the 400-Foot Aquifer is also extremely limited and again confined only to wells located in the MCWD's Ord Community service area, which is over three miles inland from the CEMEX site. *Id*. As described above, the Project will pump degraded water from the shallow Dune Sand Aquifer and the 180-foot Aquifer that have been confirmed by recently completed monitoring wells to be highly contaminated by seawater intrusion. The Project does not extend into the 400-Foot Aquifer or other Deep Aquifers. 4/20/15 Feeney Decl., ¶ 19. This has been further confirmed by the Project's monitoring wells, which demonstrate no effect from Project pumping on the 400-Foot Aquifer. *See* Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 7-8 (July 23, 2015). Therefore, the Project will not cause adverse groundwater impacts to any of MCWD's groundwater wells in the vicinity of the Project that draw water for irrigation or human consumption.

MCWD also suggests that the Project could exacerbate seawater intrusion in the Marina subarea of the SVGB. As discussed above, the Commission's record contains substantial evidence that the Project will not result in seawater intrusion. *See* 2014 Findings at 51-53; MND at 120-21; *see also* 4/20/15 Feeney Decl., ¶¶ 24-27. Further, this claim has been rejected by the Santa Cruz County Superior Court, which concluded that "the administrative record supported the Commission's finding that no seawater intrusion impact would occur in the [SVGB] as a result of the project." *MCWD v. CCC*, July 23, 2015, Transcript at 194:13-16.

Indeed, it is expected that the Project will have a benign to beneficial impact on seawater intrusion. As described above, the operation of the test well will (a) intercept the flow of seawater flowing inland under existing conditions; (b) capture any and all seawater intrusion it

causes; and (c) possibly pull a minor amount of seawater-intrusion degraded groundwater existing inland of the test well and westward and capture it in its pumping operations. MND at 120-21; 4/20/15 Feeney Decl., ¶ 41; *see also* State Board Report at 27. Therefore, the Project will not have a negative impact on MCWD's groundwater supplies or the SVGB.

The Commission's independent hydrogeologist also concluded that the test well will not cause significant effects on the groundwater basin inland of Monitoring Well 4. The Weiss Memorandum noted that monitoring results indicate that the test well is drawing more water than predicted from beneath the Monterey Bay seafloor and shoreline than from inland, and that the potential for impacts decreases as the distance to inland groundwater users increases. Permit Amendment Staff Report at 13.

Finally, to the extent that MCWD is concerned about a drop in groundwater levels in the vicinity of the Project, the data collected by the HWG demonstrates that the drop in groundwater levels measured in the Project's monitoring wells was caused virtually entirely by the seasonal decline in water levels and not by pumping of the test slant well. *See* Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 1 (June 22, 2015) ("The general consensus of the HWG based on examination of fluctuations and trends in water levels, was that the observed fluctuations and downward trends were not due to Test Slant Well pumping, but rather the result of irrigation pumping cycles and/or regional seasonal fluctuations."). The HWG determined that, even under a "worst case scenario," the test slant well monitoring data shows that "if there is any drawdown at MW-4S and/or MW-4M – it is less than 0.5 feet and probably closer to 0.2 to 0.3 feet." Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 6 (June 22, 2015). This amount of drawdown is negligible as compared to the observed drawdown from regional groundwater pumping described in the HWG's July 23, 2015 letter to the Commission. Moreover, as the Commission's own independent hydrogeologist confirmed, even the negligible amount of drawdown from the Project's test slant well would decrease with distance inland from the test well. Weiss Memorandum at 5. Accordingly, the record supports that the negligible draw down from the Project's test slant well will have no impact on inland groundwater users.

Nonetheless, out of an abundance of caution and in accordance with Special Condition 11, Cal-Am halted well operations on June 5, 2015, when the water level trends at MW-4 were declining and approached the maximum allowable water level decrease. And, as required by Special Condition 11, Cal-Am is seeking a permit amendment before re-commencing well operations. It is critical to note that even after stopping pumping, MW-4 continues to show a steady decline in response to regional pumping inland, further demonstrating that observed declines in groundwater levels are unrelated to the test slant well. Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 4 (June 22, 2015). Further, the Commission's independent hydrogeologist has confirmed that, with the requested modifications to Special Condition 11, the Project has been conditioned to "prevent potential impacts to agricultural or groundwater resources further inland." Weiss Memorandum at 4. Accordingly, there is simply no support for MCWD's claim that it or any of its groundwater wells would be harmed by the Project or the proposed Permit Amendment.

III. THE COMMISSION HAS NOT ENGAGED IN IMPROPER PROJECT PIECEMEALING

MCWD re-asserts its prior allegations that the Project must be evaluated with the MPWSP. MCWD is incorrect. The Commission's 2014 Findings confirmed that the Project had independent utility from the MPWSP. 2014 Findings at 16. Further, this same claim has been heard and rejected by the Santa Cruz County Superior Court:

> I believe that here it was appropriate for the Commission to analyze this project for a temporary slant well separately from any larger desalination project because it had independent utility.

MCWD v. CCC, July 23, 2015, Transcript at 186:21-25.

It is well-settled under CEQA that two projects may properly undergo separate environmental review when the projects have independent utility and can be implemented independently. *Del Mar Terrace Conservancy, Inc. v. City Council*, 10 Cal.App.4th 712, 736 (1992); *Communities for a Better Environment v. City of Richmond*, 184 Cal.App.4th 70, 99 (2010); *Banning Ranch Conservancy v. City of Newport Beach*, 211 Cal.App.4th 1209, 1224 (2012). The courts have long recognized that conducting separate CEQA analyses for related projects does not constitute unlawful piecemealing where the projects have independent utility.

Here, it was entirely appropriate under CEQA for the Project to be analyzed in a separate CEQA document from the larger MPWSP because the test well Project has independent utility. The 2014 Findings explain that the purpose of the Project is to "obtain data regarding the geologic, hydrogeologic, and water quality characteristics in aquifers underlying the project area" to help determine the feasibility of slant wells for water production in the area of the Monterey Bay. 2014 Findings at 16; 2015 Staff Report at 1-2. The data produced is publicly available and could be used by the MPWSP or any other desalination facility proposed for the area to determine if this type of well design in this general location would provide the necessary amount of water for a desalination facility without causing adverse effects. The information that will be learned from the Project will have value to the public, desalination proponents, environmental groups, and California water agencies, regardless of whether the MPWSP is ever approved or constructed.[12]

[12] In addition, any project requiring Monterey Bay National Marine Sanctuary ("MBNMS") approval will benefit from information generated by the Project. The MBNMS Guidelines state that desalination project proponents "should investigate the feasibility of using subsurface intakes [including slant wells] as an alternative to traditional [i.e., open ocean] intake methods." *See* MBNMS, Guidelines for Desalination Plants in the Monterey Bay National Marine Sanctuary (May 2010) at 6 (on file with the Commission and in the Commission's record for the Project). This Project investigates whether a slant well intake system is feasible at the CEMEX property; therefore, it will benefit any desalination project that must satisfy the MBNMS Guidelines. This is one of the main purposes of the Project.

As mentioned above, based on the Commission's record for the Permits, the Court agreed that that the Project has utility independent of the MPWSP:

> And further, I find that it could be implemented independently. I think that the administrative record shows that the purpose of the project is to gather technical data regarding the feasibility of slant wells for desalinated water projects in the Monterey Bay, and that the data is produced publicly and it can be used by any potential desalination facilities to comply with their environmental requirements in applying for a permit. Also, I think that the information will have great value to the public; environmental groups, people who are in favor of desalination, people who are against desalination, and California water agencies, regardless of whether or not the desalination project that is currently under review by the California Public Utilities Commission by way of the application.

MCWD v. CCC, July 23, 2015, Transcript at 186:25 to 187:15.

Finally, because the CPUC and MBNMS are currently in the process of reviewing the environmental impacts of the MPWSP, the review of the MPWSP has not been compromised. As the Commission noted when it originally approved the Project in November 2014, its "approval of this proposed test well would not authorize any additional activities that may be associated with a larger or more permanent facility." 2014 Findings at 2. As such, the MPWSP or any other future desalination project will be subject to an entirely separate, independent and rigorous analysis before the Commission.

IV. THE PERMIT AMENDMENT IS CONSISTENT WITH APPLICABLE STATE, REGIONAL, AND LOCAL REGULATIONS

MCWD asserts that the Permit Amendment Staff Report should analyze the Project's consistency with certain state, regional, and local groundwater regulations that MCWD claims are applicable to the Project. These issues are outside the scope of the narrow, proposed Permit Amendment. Instead, MCWD's assertions that the Project does not comply with certain regulations go to the Commission's prior analysis of the Project as a whole. The majority of regulations cited by MCWD were in effect when the Commission approved the Project's Permits in 2014, and MCWD failed to raise these arguments at that time. Such arguments are improper under the legal doctrine of *res judicata,* and also under CEQA. First, the doctrine of *res judicata* precludes "piecemeal" litigation that would result if a single cause of action were split or the same cause of action were relitigated on a different legal theory or for different relief. *Ballona Wetlands Land Trust v. City of Los Angeles*, 201 Cal.App.4th 455, 480 (2011) ("After considering the petitioner's challenges to an EIR . . . and rendering a final judgment and peremptory writ of mandate, a trial court evaluating a return to the writ may not consider any newly asserted challenges arising from the same material facts in existence at the time of the judgment.") ; *see also Citizens for Open Gov. v. City of Lodi*, 205 Cal.App.4th 296, 324 (2012) ("Res judicata bars the litigation not only of issues that were actually litigated but also issues that could have been litigated."). This doctrine bars Petitioners' arguments.

Second, under CEQA, supplemental environmental analysis is required for "[n]ew information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete…" (CEQA Guidelines § 15162(a)(3).) The majority of the regulations cited by MCWD do not constitute "new information," because they were in place when the Commission approved the Project's Permits in 2014.

Accordingly, MCWD waived its rights to make arguments concerning those regulations by failing to make them when the Commission approved the Permits or in the ensuing litigation. Nevertheless, as demonstrated below, the Project is consistent with each of the regulations raised in the MCWD Letter.

A. The Project Does Not Violate the Monterey County Water Resources Agency Act

The Monterey County Water Resources Agency Act ("Agency Act") provides that no groundwater from the SVGB may be exported for use outside the basin. Here, the Project will not result in the export of groundwater outside of the SVGB in violation of the Agency Act. Any limitations imposed by the Agency Act are "for the purpose of preserving [the] balance [in the SVGB resulting from the MCWRA's projects to balance extraction and recharge]." Agency Act, § 21. Although the Project extracts small quantities of contaminated brackish water from the SVGB, as described in detail above, there is no credible evidence that such pumping negatively affects the balance of recharge and extraction of basin groundwater.

Moreover, the Agency Act vests authority only in the MCWRA to pursue appropriate remedies in the event of a violation of the Agency Act. In other words, the statute does not operate as an affirmative bar to the export of SVGB groundwater that may be enforced by third parties. Even assuming the conditions for an injunction existed (i.e., a proposed export of groundwater upsetting the balance of recharge and extraction resulting from the Agency's projects), the MCWRA has not exercised its authority to bring an action for injunctive relief. Indeed, the MCWRA has not raised any concerns or objections that the Project violates the Agency Act, and was an advocate for the Project before the Commission and City of Marina. *See* Letter from Jason Burnett, President, Monterey Peninsula Regional Water Authority, et al. to Commissioners, California Coastal Commission (Nov. 6, 2014) (on file with the Commission).

B. The Project Is Consistent With Monterey County Water Resources Agency Ordinance 3709

MCWRA Ordinance 3709 prohibits groundwater extractions from a groundwater extraction facility located in "Territory A" (Ordinance 3709, § 1.01.10), and prohibits construction of groundwater extraction facilities within "Territory B" with perforations between zero feet mean sea level and negative two-hundred and fifty feet. *Id*. at § 1.01.11. The Project is located outside of Territory A and Territory B; thus the Ordinance does not apply to the Project's test slant well. *See id*. at §§ 1.01.03(D), (E); Ordinance 3709 Boundary Delineation. As with the Agency Act, the MCWRA has not raised any concerns or objections that the test slant well testing or the operation of the MPWSP would violate the ordinance. As discussed above, the MCWRA supported the Project in the Commission's 2014 proceedings. *See* Letter from Jason

Burnett, President, Monterey Peninsula Regional Water Authority, et al. to Commissioners, California Coastal Commission (Nov. 6, 2014) (on file with the Commission).

C. The Project Does Not Violate the Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act ("SGMA") went into effect on January 1, 2015, and applies to groundwater in basins identified by the Department of Water Resources in its report Bulletin 118, which includes the SVGB. The primary function of SGMA is to require groundwater sustainability agencies to adopt and implement groundwater sustainability plans ("GSP") for all imperiled basins in the state. See Wat. Code §§ 10720.7, 10727. GSPs will be developed to meet a "sustainability goal," which "means the existence and implementation of one or more groundwater sustainability plans that achieve sustainable groundwater management by identifying and causing the implementation of measures targeted to ensure that the applicable basin is operated within its sustainable yield." *Id*. at §§ 10721(t), 10727(a). "Sustainable groundwater management" "means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results," which include significant and unreasonable depletion of groundwater supply, reduction in groundwater storage, seawater intrusion, degraded water quality, land subsidence, and surface water depletions. *Id*. at § 10721(u). "Sustainable yield" is "the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result." *Id*. at § 10721(v).

Here, there is no credible evidence that operation of the Project will prevent the SVGB from reaching SGMA's sustainability goal over the *twenty-plus year* implementation horizon that SGMA provides. *See id*. at § 10727.2(b)(1). Further, the conditions in Cal-Am's Permits, including Revised Special Condition 11, ensure that the Project will not negatively impact the SVGB in a manner that would prevent it from reaching SGMA's sustainability goal. Finally, the MCWRA, charged with implementing the SGMA in the SVGB, has not raised any objections to the test slant well or the proposed Permit Amendment.

D. The Project Does Not Violate the Central Coast Regional Water Quality Control Board Basin Plan

MCWD claims that the Project violates the water quality objectives in the Water Quality Control Plan for the Central Coast Basin ("Basin Plan") and State Board Resolution No. 88-63, which is incorporated into the Basin Plan. The Basin Plan is focused on discharge and disposal activities, not groundwater pumping activities. "The Regional Board implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges can affect water quality." Basin Plan, Ch. 1, § 1, p. I-1 (emphasis added). Similarly, the introductory paragraph to the Basin Plan chapter addressing beneficial uses explains that:

> State policy for water quality control in California is directed toward achieving the highest water quality consistent with maximum benefit to the people of the State. Therefore, all water

> resources must be protected from pollution and nuisance that may occur as a result of waste discharges.

Id. at Ch. 2, II-1 (emphasis added). Accordingly, the primary means for achieving the water quality objectives are focused on discharges.

> Water quality objectives are considered to be necessary to protect those present and probable future beneficial uses enumerated in Chapter Two of this plan and to protect existing high quality waters of the State. These objectives will be achieved primarily through the establishment of waste discharge requirements and through implementation of this water quality control plan.
>
> In setting waste discharge requirements, the Regional Board will consider the potential impact on beneficial uses within the area of influence of the discharge, the existing quality of receiving waters, and the appropriate water quality objectives. The Regional Board will make a finding of beneficial uses to be protected and establish waste discharge requirements to protect those uses and to meet water quality objectives.

Id. at Ch. 3, § II, p. III-2 (emphasis added). The Basin Plan's discussion of the Regional Board's goals similarly demonstrates a focus on discharges.

> To insure that the water resources of the Central Coastal Basin are preserved for future generations of Californians, the California Regional Water Quality Control Board, Central Coast Region, determined it was desirable to establish certain planning goals.
>
> These goals pertain to utilization of the basin's water resources and guidelines for control of waste discharges . . .

Id. at Ch. 4, § I, p. IV-2 (emphasis added); *see also id*. at § V, pp. IV-3 to IV-8 (discussing actions under the Regional Board's authority that focus on waste discharge restrictions).

Resolution No. 88-63 is not a directive or regulation that directly applies to (or can be violated by) persons or entities that may impact water quality. Resolution No. 88-63 simply adopts a policy addressing which water sources in the State are considered suitable, or potentially suitable, for municipal or domestic water supply, and it directs the regional water boards to appropriately designate the sources and to revise their Water Quality Control Plans to incorporate the policy. Basin Plan, Appendix A-9 (Sources of Drinking Water Policy). Thus, Resolution No. 88-63 does not provide any directive that the Project could directly violate. Further, to the extent that the policy set forth in Resolution No. 88-63 is incorporated into the Basin Plan and serves as the basis for a water quality objective therein, this objective (like all objectives in the Basin Plan) is focused on waste discharges and does not apply to the Project, which does not result in discharges to the SVGB.

Finally, if the Regional Board thought that the Project violated the water quality objectives in the Basin Plan, presumably it would not have authorized the discharge of the Project's water through the Monterey Regional Water Pollution Control Agency's ("MRWPCA") existing outfall under MRWPCA's National Pollutant Discharge Elimination System ("NPDES") permit. Upon the completion of well development, the initial water pumped from the test well was stored in Baker tanks on the Project site, pending the Regional Board's approval that the to-be discharged water met the applicable NPDES permit requirements. Declaration of Ian Crooks dated April 20, 2015 ("4/20/15 Crooks Decl."), ¶ 15 (attached hereto as Exhibit G). On March 23, 2015, results of laboratory samples of the Project's water were circulated to the Regional Board staff, who ***approved the discharge of the Project's water to the MRWPCA outfall***. *Id.*, ¶ 16. Accordingly, MCWD's allegations have no merit.

V. THE COMMISSION HAS ADEQUATELY ANALYZED PROJECT ALTERNATIVES

A. The Commission Adequately Analyzed Project Alternatives in 2014

MCWD attempts to re-argue that the Commission's 2014 Findings regarding Project alternatives were not supported by substantial evidence. The Santa Cruz County Superior Court has already rejected MCWD's argument and confirmed that the 2014 Findings adequately analyzed Project alternatives under CEQA:

> I find that the Commission analyzed a reasonable range of alternative locations for the project. And I find that its location is critical in this circumstance. I find that it is significant that the [MBNMS] has stated its preference for subsurface intakes where feasible to provide water for desalination, that that is -- was significant in analyzing alternative project locations because it was looking for areas that were favorable for subsurface intakes.

MCWD v. CCC, July 23, 2015, Hearing Transcript at 195:15-24.

Under CEQA, a lead agency must consider a "reasonable range" of alternatives to a project, or to the project's location, "which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." CEQA Guidelines § 15126.6(a); *see also id.*, § 13053.5(a). An agency need not consider "every conceivable alternative" and may determine how many is a reasonable range. *Id.*, § 15126.6(a); *Citizens of Goleta Valley v. Bd. of Supervisors*, 52 Cal.3d 553, 566 (1990). Sometimes, no feasible alternative locations exist. CEQA Guidelines § 15126.6(f)(2)(B).

Here, the Commission analyzed a reasonable range of alternative locations for the Project—a project for which location is critical. *See* 2014 Findings at 54-56. Due to the State's and MBNMS' preferences for using subsurface intakes, where feasible, to provide water for desalination, the Commission's prior analysis of alternative Project locations focused on sites in the region that are potentially favorable for subsurface intakes. The availability of such sites is limited. 2014 Findings at 55. Nonetheless, a group of stakeholders identified a number of potential sites between Marina and the Moss Landing Power Plant, conducted a hydrogeologic

investigation to determine potential locations for a subsurface intake and concluded that slant wells may be feasible at two locations at the CEMEX property (where the Project site is located) and at a site eight miles north, near Moss Landing. *Id*. One location was initially considered at the northern end of the CEMEX facility, but consultation with wildlife agencies revealed that locating a test well in that area would significantly impact nesting Snowy Plover, require more excavation and shoreline protective devises, and be subject to greater erosion and coastal hazards. 2014 Findings at 56. Therefore, the current site at the south end of the CEMEX facility, which is within an already disturbed area, is further from the shoreline, and would avoid significant impacts to Plover through mitigation, was identified as a preferable location. *Id*.

The alternative site near Moss Landing is not a disturbed location like the CEMEX site and would require miles of additional pipeline, including through potentially sensitive ecosystems (a State park), increasing environmental impacts. 2014 Findings at 55. Thus, the Commission concluded that the Moss Landing site would cause greater impacts than the Project site and excluded that site from further consideration. 2014 Findings at 3; CEQA Guidelines § 15126.6(f)(2)(A).

The Commission also considered a fourth, "No Action" alternative. 2014 Findings at 56. This could result in greater adverse impacts than the Project because not completing or delaying the Project would deprive Cal-Am and the public of data on the feasibility of slant wells in the Monterey Bay, delaying future water supply projects in the region, which could have drastic economic consequences. *Id*. This alternative could extend withdrawals from the Carmel River, exacerbating ongoing impacts on fish and habitat. *Id*.

Further, MCWD's arguments that the Commission failed to adequately assess Project alternatives wholly lack credibility. MCWD has conceded that the CEMEX site is the preferred alternative for a subsurface seawater intake well—because it is pursuing its own well ***at this exact same location.*** In fact, on March 13, 2015, MCWD went before the Fort Ord Reuse Authority ("FORA") Board requesting preliminary design processing of a 2,700 acre feet/year desalination plant using an intake consisting of "vertical wells close to the beach," which would be near the Project site at the CEMEX facility.[13] MCWD cannot credibly claim that the CEMEX site is inappropriate for Cal-Am's Project but acceptable for its own.

B. The Commission Is Not Required to Analyze Additional Project Alternatives For This Permit Amendment

MCWD also alleges that the Staff Report for the Permit Amendment should analyze the Potrero Road site discussed in the MPWSP draft EIR as an alternative to the Project. However, no further analysis of the Potrero Road site is required for two reasons. First, there are no

[13] *See* Board Report for Agenda Number 9e (Subject: Consider Marina Coast Water District Proposed Regional Urban Water Augmentation Project), from the March 13, 2015, Regular Meeting of the FORA Board of Directors, available at http://www.fora.org/Board/2015/Packet/031315BrdPacket.pdf (pp. 61 to 68); *see also* Board Report for Agenda Number 8b (Subject: Ord Community Water Augmentation), from the April 10, 2015, Regular Meeting of the FORA Board of Directors, available at http://www.fora.org/Board/2015/Packet/041015BrdPacket.pdf (pp. 37 to 47).

significant impacts associated with the proposed Permit Amendment that require a new alternatives analysis. Second, the Potrero Road site has already been considered and rejected by the Commission.

California Public Resources Code Sections 21001(g), 21002.1(a), and 21061 require that an EIR identify alternatives to a proposed project. CEQA Guidelines Section 15126.6(a) expands on the statute by stating that an EIR must include a "reasonable range" of alternatives to the project "which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the ***significant effects*** of the project." (emphasis added.) Likewise, CEQA Guidelines Section 15126.6(f)(2)(A) further clarifies that an EIR is not required to analyze alternatives that would not eliminate or substantially reduce ***significant adverse effects***.

Here, Commission staff has confirmed that "[t]he Commission's review of the project showed that it will not have any significant or potentially significant effects on the environment and therefore no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment." Permit Amendment Staff Report at 16. Therefore, because there are no significant adverse impacts from the Project with the proposed Permit Amendment, no further analysis of alternatives is required. It is important to note that the narrow Permit Amendment that Cal-Am is requesting concerns a single Special Condition within the Permits and how certain performance standards should be applied to the Project. Accordingly, the Permit Amendment does not re-open the thorough evaluation of potential alternatives to the Project as a whole set forth in the 2014 Findings. *See* Cal. Code Regs., tit. 14, § 13166; *Carstens v. Cal. Coastal Comm'n*, 182 Cal.App.3d 277, 292 (1986).[14] The proposed changes to Special Condition 11 do not implicate Project siting or location in any way. Instead, the changes are narrowly focused to ensure that performance standards applied to the Project on the approved Project Site are implemented in a manner that takes regional groundwater trends into consideration and avoids any adverse groundwater impacts. There is no justifiable basis for updating an alternatives analysis for the entire Project when only a revision to a condition is before the Commission and there are no other changes to the location, construction, or operational characteristics of the Project. Accordingly, no new alternatives analysis is needed or necessary.

Moreover, the 2014 Findings addressed the Potrero Road site in detail. The Potrero Road site is very similar to the Moss Landing site analyzed in the initial Staff Report. 2014 Findings at 55. The 2014 Findings concluded the Potrero Road site would be inferior to the CEMEX site in several ways, including less aquifer depth, proximity to a wildlife refuge, and distance from other water infrastructure, and impacts to public beach parking. *Id*. Accordingly, the addendum concluded that the Potrero Road site would result in higher adverse impacts on public access and recreation as compared to the CEMEX site, and could also adversely affect areas of sensitive habitat and coastal agriculture. *Id*. The analysis of the Potrero Road site did not alter the

[14] See also *Benton v. Board of Supervisors*, 226 Cal.App.3d 1467, 1482 (1991) (county's review of project modification did not require the reconsideration of impacts already approved as part of the project's initial CEQA review).

Commission's finding that the CEMEX site is the preferred alternative for a subsurface seawater intake well. *See* 2014 Findings at 56. Therefore, no further analysis of this site is required.

Further, while the Draft EIR for the MPWSP does analyze the possibility of locating a test slant well or multiple slant wells for the full-scale MPWSP at the Potrero Road site, contrary to MCWD's assertions, the Alternatives analysis in that Draft EIR (which is being revised and recirculated as a joint DEIR/DEIS in conjunction with the MBNMS) does not demonstrate that the Potrero Road site was potentially feasible.[15] In fact, the analysis shows that the Potrero Road site faces feasibility issues due to site control. MPWSP Draft EIR at 7-203. Moreover, the analysis shows that the Potrero Road alternative would result in a higher percentage of inland water withdrawal; thus, the analysis suggests that there may be greater groundwater impacts associated with a test slant well located on the Potrero Road site. *Id.*

In upholding the Commission's alternatives analysis, the Santa Cruz County Superior Court agreed that the Commission appropriately rejected the Potrero Road site as infeasible. Nothing in MCWD's letter supports a finding that the Permit Amendment would result in a significant environment effect that would be mitigated by moving the entire Project to the Potrero Road site, or any other alternative site. Accordingly, no further analysis of alternatives is required.

C. No Adverse Impacts to ESHA Have Occurred From Project Implementation

MCWD also claims that the Staff Report should address the Project's impacts to ESHA, including Cal-Am's alleged "lack of compliance with the ESHA mitigation," in evaluating alternative sites. As described above, however, no additional alternatives analysis is required for this narrow Permit Amendment that will not result in new significant environmental impacts. *See* CEQA Guidelines Section 15126.6(a) (CEQA requires analysis of alternatives that "avoid or substantially lessen any of the significant effects of the project"). Further, construction of the test slant well has been completed, and courts have held that the Commission is not required to conduct a *post-hoc* review of a project's implementation when considering a permit amendment. *See Carstens*, 182 Cal.App.3d at 292 ("Nowhere is the Commission required to treat amendments in the same manner as new permit applications. . . Where a development is still "proposed" and substantial construction has not taken place, review of the entire development may be appropriate. However, where . . . construction is virtually complete, no purpose is served in reviewing the completed project.")

Even if a review of the Project's impacts to ESHA were warranted, which it is not, such review would demonstrate that no adverse impacts to ESHA have occurred from Project implementation. Project construction began December 9, 2014, and finished March 16, 2015. 4/20/15 Crooks Decl., ¶13. All major construction was done by February 28, to avoid any potential impacts to the threatened Snowy Plover and as required by the MBNMS' federal approvals for the Project. *Id*. at 13.

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[15] The Draft EIR for the MPWSP is available at http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir_toc.html.

At the end of February, some minor finishing work remained to be completed. The remaining work consisted of work inside the test slant well shaft and connecting the outfall pipe to the well head. *Id*. at 14. This work did not involve ground disturbance, but needed to be completed before Cal-Am could commence pumping from the test slant well. *Id*. In addition, this work was fully consistent with Special Condition 14, which the Commission adopted in the 2014 Staff Report.

In light of the negative impact that delay of the test well could have on Cal-Am and the public, Cal-Am sought and received authorization from the MBNMS to continue limited construction activities after February 28 to complete the remaining finishing tasks. *See* Declaration of Ian Crooks dated March 12, 2015 ("3/12/15 Crooks Decl."), ¶¶ 17-19 (attached hereto as Exhibit H).[16] MBNMS granted the authorization after conducting two site visits with the Service and on-site biological consultants. *Id*., ¶¶ 17-18. During the first site visit, Cal-Am proposed a mitigation plan to be implemented during the continued limited construction work. *Id*., ¶ 18. At the second site visit, the federal agencies confirmed that Cal-Am had completed the measures discussed at the first visit. *Id*., ¶ 19. Following the second site visit, MBNMS and the Service agreed that, with implementation of the proposed mitigation plan, the proposed limited construction activities would not likely adversely affect listed species. *Id*., ¶ 18. Accordingly, on March 2, 2015, MBNMS issued a letter to the Commission and the Service memorializing its authorization of continuing construction activities through the close of business on March 16, 2015, because the completion of remaining construction activities on the test well site "would not likely adversely affect the listed species – Snowy Plover, Monterey Spineflower and Smith's Blue Butterfly." *Id*., ¶ 20. None of this finishing work caused ground disturbance that was more than *de minimis* in nature. Accordingly, no adverse impacts to ESHA occurred as a result of Project implementation. MCWD has provided no evidence of any impacts other than baseless allegations, which the Commission should reject.

VI. MCWD'S OTHER CEQA AND COASTAL ACT ARGUMENTS HAVE ALL BEEN HEARD AND REJECTED BY THE SANTA CRUZ COUNTY SUPERIOR COURT

MCWD's letter incorporates MCWD's prior comment letters to the Commission asserting various alleged CEQA and Coastal Act violations. MCWD Letter at 2, n. 1. Rather than burden the Commission by re-hashing these arguments, we have prepared the below chart listing the claims raised by MCWD in its prior letters and reincorporated in its September 25, 2015 Letter, and the Court's disposition of those claims.

[16] The Crooks Declaration was filed in opposition to MCWD's *ex parte* application to halt Project construction due to alleged impacts to Snowy Plover—one of several *ex parte* temporary restraining order requests that MCWD filed during the course of the *MCWD v. CCC* litigation. All of MCWD's requests were denied by the Santa Cruz County Superior Court.

Argument/Alleged Issue[17]	***Disposition in MCWD v. CCC***
"[T]he Commission's obligation to circulate its CEQA-equivalent document for 30-days as required by CEQA;"[18]	"I do not believe that the Commission was required to comply with CEQA's 30-day notice permit." *MCWD v. CCC*, July 23, 2015, Transcript at 184:7-9. "And I believe that because this is a certified regulatory program, that when the Commission released its project staff report for public review 13 days prior to the hearing, and that would have been on October 31st, prior to the hearing on November 12, 2004 [sic], that that was a reasonable time before the hearing. And under [*Ross v. Cal. Coastal Comm'n*, 199 Cal.App.4th 900, 935 (2011)] it is acceptable that it differ from the 30-day review period." *MCWD v. CCC*, July 23, 2015, Transcript at 184:17-25.
"[T]he Commission's obligation to respond to comments in its CEQA-equivalent document as required by CEQA;"	"I also believe that the Commission was only required to comply with its own regulations, which don't have the same response and comment requirement imposed on agencies that prepare draft EIRs. The Coastal Act regulations have specific provisions that address responses to comments. And I find that the Commission complied with those. And specifically, I'm referring to the Coastal Act regulation Section 13057(c)(3). And I find that it doesn't require a comment-by-comment response to comments raised after the release of the staff report." *MCWD v. CCC*, July 23, 2015, Transcript at 185:9-19.

[17] Each of these alleged issues are raised in MCWD's letter at page 2, note 1.

[18] MCWD also requests that the Commission provide MCWD with 30 days to respond to the Staff Report. MCWD's requested extension is unwarranted for such a narrow Permit Amendment. Moreover, the Permit Amendment Staff Report is essentially the equivalent of an addendum to an environmental impact report, where only minor changes to a project are proposed. CEQA Guidelines § 15164(a). Under CEQA, no public review is required for an addendum. CEQA Guidelines § 15164(c) ("An addendum need not be circulated for public review.").

Argument/Alleged Issue[17]	***Disposition in MCWD v. CCC***
"[T]he lack of a "substantial issue" to provide Commission jurisdiction over the test slant well;"	"I believe the Commission's determination as to whether or not it met those five factors is subject to substantial deference. And I believe that there was substantial evidence in the record that supported that substantial issues existed." *MCWD v. CCC*, July 23, 2015, Transcript at 182:16-20.
"[T]he City of Marina's jurisdiction over the land-side portions of the test slant well;"	"So with respect to whether or not the Coastal Commission exceeded its jurisdiction, I have indicated that I do not believe that the Commission did. I believe that the denial, the City's denial of the local CDP, was a final action, and that when on September 4, 2014, the City denied the local CDP and declined to approve the mitigated negative declaration. . . and then subsequently on September 11, issued its FLAN notice, that at that time the plain language of the FLAN and the City's submission of it to the Commission demonstrate that the City actually took final action denying the CDP. I don't believe anything more is necessary." *MCWD v. CCC*, July 23, 2015, Transcript at 180:14 to 181:1.
"[T]he Commission's ESHA analysis."	The Court determined that the Commission's findings regarding ESHA and biological impacts were supported by substantial evidence. *MCWD v. CCC*, July 23, 2015, Transcript at 197:22 to 198:3.

VII. THE COMMISSION IS AUTHORIZED TO CONSIDER THE PERMIT AMENDMENT

MCWD also suggests that the Commission lacks the authority to approve the amendment "prior to the City of Marina's consideration." This argument is unfounded. The Santa Cruz County Superior Court confirmed that the Commission had jurisdiction to act on the initial Permits (*MCWD v. CCC*, July 23, 2015, Transcript at 180:14 to 181:1). Under the Coastal Act Regulations and the explicit provisions of the Permits, the Coastal Commission is vested with the full authority to consider Cal-Am's proposed Permit Amendment.

Amendments to Commission-issued permits are addressed in Coastal Act Regulations section 13166. This section provides that the Commission shall approve an amendment to a Commission-issued permit "if it finds, by a majority vote of the membership present, that the

development as amended conforms with the policies of Chapter 3 of the Coastal Act or with a certified local coastal program if applicable." Cal. Code Regs., tit. 14, § 13166(c). Section 13166 does not require the Commission to send a proposed amendment to a Commission-issued permit to a local jurisdiction for consideration before the Commission may act.

Further, Special Condition 11 of the Commission's Permits expressly provides that the Commission's Executive Director will decide whether a permit amendment is required—not the local agency. Once the Executive Director determines that an amendment is required, the appropriate process for that amendment is the process specifically set forth in the Coastal Act Regulations, section 13166. All of those procedures have been followed here.

MCWD also argues that the Commission must obtain the complete Project record from the City of Marina before it may act on the amendment. But MCWD raised this argument before the Santa Cruz County Superior Court, and the Court still determined that the Commission had jurisdiction over the Permits—even if the City did not provide the Commission with every single piece of paper in its files concerning the Project. *See MCWD v. CCC*, July 23, 2015, Transcript at 197:13-17. MCWD's argument that the Commission somehow lacks jurisdiction over the Project or the proposed Permit Amendment remains unfounded.

VIII. THE PROPOSED MODIFICATIONS TO SPECIAL CONDITION 11 ARE JUSTIFIED AND SUPPORTED BY SUBSTANTIAL EVIDENCE

Given MCWD's opposition to the Project as a whole, it is not surprising that MCWD is similarly opposed to the proposed modifications to Special Condition 11. MCWD's objections to the modifications, however, have been addressed in the Permit Amendment Staff Report, lack legal and scientific basis, and should be rejected.

First, MCWD alleges that the proposed modifications would not be protective of groundwater resources and would not alert the public to adverse groundwater impacts until after they occur, if ever. This assertion seems to be based on a belief that the HWG and the Commission's Executive Director will be unable to distinguish changes in water levels from background conditions due to fluctuations, such as seasonal variations. That is incorrect, and MCWD's assertions to the contrary lack support. Drawdown impacts from the test well would be readily discernable from the tidal fluctuations and the drawdown signature would be superimposed on the continuous water level record from the monitoring wells. 4/20/15 Feeney Decl., ¶ 33. As explained by an expert hydrogeologist with years of experience in the region, and who also is part of the HWG, any seasonal variation could be expressed as a superposition on the accumulated record. *Id.*, ¶¶ 33-36. Because of the principals of superposition, seasonal or tidal variations in water level do not pose an obstacle to HWG's analysis of the Project's impacts. *Id.*, ¶ 36.

In addition, as part of its review of the proposed modifications to Special Condition 11, Commission staff obtained the services of an independent licensed hydrogeologist to evaluate the relevant modeling and monitoring data and to review Cal-Am's proposed modification. As explained in the Permit Amendment Staff Report, the Commission's hydrogeologist concluded that Special Condition 11's threshold values and monitoring approach are appropriate for preventing impacts to agricultural groundwater users further inland and that the Project is not

expected to cause any measurable effect on local groundwater users. Permit Amendment Staff Report at 2. Specifically, Weiss concluded that the main proposed revision to Special Condition 11 – comparing the change in groundwater levels and TDS concentrations to the change in regional trends instead of using fixed values – is appropriate for identifying and preventing potential impacts to inland groundwater users. Weiss Memorandum at 4.

The Permit Amendment Staff Report explains:

> The proposed condition modifications specifically acknowledge these regional influences and direct the HWG and the Executive Director to consider them in their analyses. The 1.5-foot and 2000 ppm thresholds remain the same and are measured at the same location in MW-4, but the proposed condition provides that they are now to be compared to observed regional trends in increases or decreases in groundwater or TDS levels. For example, if the MW-4 groundwater levels were to decrease in concert with a similar decrease observed as a regional trend, the MW- 4 decrease would not be caused by the pumping test. If the MW-4 decrease was at least 1.5 feet more than the observed regional trend, it would suggest the pumping test was causing the additional decrease, and the pumping test would be stopped to more closely observe the data and determine what portion of the decrease exceeded the regional trend and was attributable to the pump test.

Permit Amendment Staff Report at 11.

The Permit Amendment Staff Report goes on to explain that Special Condition 11, as modified, would require that if a decrease in groundwater levels were observed, the test slant well must stop pumping and the monitoring data must be evaluated. Permit Amendment Staff Report at 12. The Permit Amendment Staff Report also explains that this requirement provides an additional safeguard because the ongoing monitoring at MW-4 would show whether there is a "rebound" of groundwater levels after the pumping test stops, indicating whether pumping from the test slant well is influencing those levels. On the other hand, if there is little or no change in the observed downward trend at MW-4 after the pumping test stops, the data would indicate that the groundwater levels are being affected by regional influences other than the test slant well. Permit Amendment Staff Report at 12.

Second, MCWD argues that Commission should evaluate additional mitigation options and alternatives to address groundwater impacts. However, as described in detail above, no significant adverse groundwater impacts would occur as a result of the Project with the proposed Permit Amendment, so no further mitigation or alternatives are required. *See* CEQA Guidelines § 15126.6(f)(2)(A) (no requirement to analyze alternatives that would not eliminate or substantially reduce significant adverse effects).

As described above, it is well known and documented that the SVGB has been impacted by seawater intrusion for decades, and the Project will not perforate any aquifers that are used for irrigation or human consumption. In addition, there is ample evidence in the record showing that

the Project would not result in significant drawdown of local groundwater levels in the SVGB. For example, the City of Marina's draft MND for the Project stated that "[a]nalytical modeling indicates that no significant drawdown of groundwater wells would occur as a result of the test pumping activities." MND at 44; *see also* Geoscience, Monterey Peninsula Water Supply Project – Results of Test Slant Well Predictive Scenarios Using the Focused CEMEX Area Model (July 18, 2014) at 15. In addition, the Weiss Memorandum concludes that, with the proposed modifications to Special Condition 11, "the monitoring data indicate that it is unlikely there will be any impact to the SVGB inland of MW-4." Weiss Memorandum at 5. Nonetheless, to ensure that an early avoidance system is in place, the Commission has imposed Special Condition 11, requiring Cal-Am to monitor both the quantity and quality of water in areas that may affected by operation of the Project's test slant well. These standards ensure the Project, as conditioned by modified Special Condition 11, will have no significant adverse impact on area water quantity or quality. Permit Amendment Staff Report at 12.

Third, MCWD wrongly claims that the proposed modifications to Special Condition 11 would be inconsistent with statements the Commission and Cal-Am made to the Santa Cruz County Superior Court concerning how Special Condition 11 (as originally approved) would prevent groundwater impacts. MCWD has cherry-picked a handful of statements made by Cal-Am and the Commission that if specified groundwater drawdowns or increases in TDS levels are caused at least in part by the Project, Cal-Am must stop pumping. These statements reflected Special Condition 11 as it existed at the time, and do not in any way preclude future amendments to Special Condition 11. Indeed, Special Condition 11 expressly contemplated a future amendment to the Permits if one of the established performance standards was met.

Further, as previously drafted, Special Condition 11 was overprotective in that it did not fully take into consideration regional groundwater trends. As described in the HWG's July 23, 2015, letter to the Commission, the selection of 1.5 feet for the drawdown standard was intended to refer to a drawdown caused solely by the Project, not a regional decline in groundwater levels due to other factors. Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 4 (July 23, 2015). Thus, in order for Special Condition 11's drawdown and TDS standards to work in practice, they must be applied against regional trends. *Id*. at 5. As such, the language in Special Condition 11 needs to be modified to reflect the Commission's intent that the Project not be the *cause* of a drawdown of more than 1.5 feet or a TDS level increase of more than 2,000 mg/l without further Commission review and technical analysis. *Id*. The HWG has provided substantial evidence demonstrating that the proposed modifications to Special Condition 11 will not result in adverse groundwater impacts. *See, e.g.,* Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 6 (June 22, 2015). The requested Permit Amendment is therefore wholly consistent with the original meaning of Special Condition 11, which specifically called for further evaluation through an amendment process. That evaluation has been conducted, and the Commission's independent hydrogeologist has found that the proposed revisions to Special Condition 11 "are appropriate for preventing potential impacts to agricultural groundwater resources further inland." Weiss Memorandum at 1.

Fourth, MCWD attempts to re-argue its claim that Special Condition 11 results in an improper delegation of the Commission's duty to assess potential environmental impacts. This argument was heard and rejected by the Santa Cruz County Superior Court:

> I think it was appropriate for the Commission to utilize HWG's technical expertise to implement Special Condition 11. And I also think that given that the groundwater levels and salinity fluctuate naturally, that it was appropriate for the Commission to set objective performance criteria and to delegate to the Commission's executive director to work with the scientific experts to determine whether or not the project was violating those criteria.

MCWD v. CCC, July 23, 2015, Transcript at 193:19-194:2.

The data needed to implement Special Condition 11 will be overseen by the HWG, a team of hydrogeologic and modeling experts representing the interests of various stakeholders of groundwater use and management in the region. Contrary to MCWD's allegations, enlisting the HWG's technical expertise in implementing Special Condition does not constitute an improper delegation of the Commission's authority. In fact, under CEQA, an agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity that accepts the delegation. CEQA Guidelines § 15097(a). The HWG's expertise makes it an appropriate body to analyze the data and provide it to the Commission so that the Commission may enforce the established standards in Special Condition 11. In addition, Special Condition 11 requires that the test well monitoring data be made public, and none of the HWG's determinations or recommendations will be final without oversight, review and approval by the Commission's Executive Director. It is well recognized that the Commission may delegate authority to implement Project conditions to the Executive Director. E.g., CEQA Guidelines § 15025; *Cal. Clean Energy Comm'n v. City of Woodland*, 225 Cal.App.4th 173, 195 (2014).

Finally, MCWD claims that the Commission should move the location of the test slant well due to monitoring well data showing fresh water in close proximity to the Project site. As described above, however, MCWD's claims of "fresh" water are flawed, and there is no evidence demonstrating that the Project has had any effect on TDS levels at MW-5 where MCWD wrongly claims "fresh" water exists. Accordingly, there is no need or justifiable basis to move the location of the test well.

RESPONSES TO AG LAND TRUST'S SEPTEMBER 22, 2015, EMAIL

IX. INTRODUCTION

Aside from a few unsupported accusations and lay opinions, ALT's comments (part of a September 22, 2015, email from Marc Del Piero to Tom Luster at the Commission) simply re-assert its prior objections to the Project, claiming that its comments were given insufficient consideration in the Commission's prior proceedings. ALT essentially seeks to re-litigate the Commission's approval of the entire Project, including the 2014 Staff Report and the Commission's 2014 Findings. The majority of ALT's arguments about the Commission's prior approval of the Permits are wholly outside of the scope of this narrow Permit Amendment.

ALT's allegations that the Commission ignored its prior objections are patently untrue. The locations of ALT's wells were discussed during the Commission's November 12, 2014, hearing on the Project. *See* Coastal Commission November 12, 2014 Hearing Transcript at 113:3 to 114:5. In addition, Cal-Am submitted a detailed response to ALT's claims on November 11, 2014, which was part of the administrative record for the Commission's approval of the Project.

Moreover, ALT sued the Commission and Cal-Am in an attempt to halt the Project (Santa Cruz County Superior Court Case No. CISCV180887), and ***the Court rejected all of ALT's arguments***. We specifically note that nowhere in ALT's briefs on the merits in support of its petition for writ of mandate did ALT argue that the Commission ignored its purported "Big Well." Cal-Am can only presume that ALT abandoned this argument because it is patently unfounded. Nevertheless, under the well-established doctrine of *res judicata*, ALT's failure to raise these claims acts as a bar to ALT's raising such claims in the future. *Boccardo v. Safeway Stores, Inc*., 134 Cal.App.3d 1037, 1043 (1982). Finally, the Permit Amendment Staff Report further supports the Commission's and Court's prior conclusions that pumping from the Project's test slant well does not impact ALT's wells. In any event, Cal-Am responds (again) to ALT's re-incorporated objections here.

X. CAL-AM CAN DEVELOP WATER RIGHTS TO PUMP GROUNDWATER FROM THE SITE

A. Cal-Am Can Pump Seawater and Brackish Water at the Project Site Without Impacting Water Rights of Other Groundwater Users in the SVGB

ALT continues to argue that Cal-Am lacks water rights for the Project, even though ALT's claims have been wholly rejected by the Commission, the State Water Resources Board ("State Board"), and the Santa Cruz County Superior Court.

The Commission disposed of this argument in its addendum prior to the November 12, 2014 hearing, stating that Cal-Am's water rights are not within the purview of the Commission. Nov. 11, 2014 Addendum at 15. The authority to adjudicate a groundwater basin exists primarily in the courts, and in other circumstances, with the State Board. *See Los Angeles v. Pomeroy*, 124 Cal. 597 (1899); Water Code § 174; State Water Resources Control Board, Final Review of California American Water Company's Monterey Peninsula Water Supply Project, at 58-59 (July 31, 2013) ("State Board Report") (on file with the Commission and part of the Commission's record for the Project). As such, ALT's decision to re-assert its groundwater rights argument is of no moment in this Permit Amendment proceeding before the Commission. In fact, nothing in Cal-Am's proposed Permit Amendment modifies or in any way changes or touches upon the Commission's prior analysis of this issue.

Further, the State Board has concluded that Cal-Am could develop water rights for the MPWSP. State Board Report at 47. Specifically, the State Board concluded that Cal-Am may develop appropriative water rights to contaminated brackish groundwater, as "surplus" or "developed" groundwater, if Cal-Am establishes that the Project will not cause injury to other users. *Id*. at 42. Regarding the vicinity of the Project, the State Board found: "Since seawater intrusion occurs in this area, this water developed. . . is likely new water that is 'surplus' to the

current needs of other users in the Basin. Based on the information available, it is unlikely any injury would occur by the lowering of the groundwater levels in this region." *Id*. at 48. Notably, ALT did not challenge the State Board's determination.

The Santa Cruz County Court agreed with the State Board's conclusions: "I believe that the evidence in this state board report found that seawater intrusion occurs. This water developed as [sic] like water that is a surplus to the current needs of other users in the basin. And based on information available, it is unlikely any injury would occur by lowering the groundwater levels in this region." *MCWD v. CCC*, July 23, 2015, Transcript at 194:20 to 195:1.[19]

Based on the foregoing, including the State Board's determination, Cal-Am may develop water rights to the contaminated brackish groundwater being pumped by the Project, and further analysis of this issue by the Commission is not required.[20]

B. The Project Does Not Constitute a "Waste" of Water

ALT also argues that the test well constitutes a "waste" of water. ALT ignores the fact that the test well does not draw water that would otherwise be put to beneficial use. As described in the State Board Report, "if, after excluding all present and potential reasonable beneficial uses, there is water wasted or unused or not put to any beneficial uses, 'the supply. . . may be said to be ample for all, a surplus or excess exists. . . and the appropriator may take the surplus or excess. . .'" State Board Report at 35 (citations omitted).

ALT continues to assert that the test well would be using "fresh" water. But the Commission's record and the test well monitoring data show that the water drawn by the test wells "is substantially degraded by seawater intrusion and other natural factors." State Board Report at 35; 4/20/15 Feeney Decl., ¶¶ 19, 40; Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at Attachment D, No. 19 (July 23, 2015). The Commission's findings show that, based on groundwater samples taken near the Project site,

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[19] Because the Santa Cruz County Superior Court heard arguments on *ALT v. CCC* (Case No. CISCV180887) at the same time it heard *MCWD v. CCC* (Case No. CISCV180839) on July 23, 2015. The transcript for the two cases, therefore, is identical. For ease of reference, we will refer to the transcript only as *MCWD v. CCC*, July 23, 2015, Transcript.

[20] Moreover, the Coastal Act prohibits the Commission from taking a position inconsistent with the State Water Board regarding the administration of water rights. Pub. Res. Code § 30412(b) ("The State Water Resources Control Board and the California regional water quality control boards are the state agencies with primary responsibility for the coordination and control of water quality. *The State Water Resources Control Board has primary responsibility for the administration of water rights pursuant to applicable law. The commission shall assure that proposed development and local coastal programs shall not frustrate this section*. The commission shall not, except provided in subdivision (c), modify, adopt conditions, or take any action in conflict with any determination by the State Water Resources Control Board or any California regional water quality control board *in matters relating to water quality or the administration of water rights*.") (emphasis added).

levels of total dissolved solids ("TDS") in area groundwater exceed federal agricultural standards by *more than eight to seventeen times even what those standards consider a "severe" hazard.* 2014 Findings at 18-19. In addition, the City's draft MND for the Project also noted that "[w]ater samples taken from the exploratory borings at the CEMEX site indicate that both the Dune Sand Aquifer and the 180-FTE Aquifer contain saline (salt) water and are substantially influenced by the sea." MND at 113.

Exploratory boreholes drilled at the CEMEX site also document TDS levels in surrounding areas of the aquifers ranging from 16,122 to 35,600 parts per million. Borehole Report at Table 5-3. The HWG conducted on-going monitoring of water levels, salinity, and TDS levels during the operation of the test slant well. Groundwater monitoring reports containing this data are available at http://www.watersupplyproject.org/#!test-well/c1f1l. As discussed above in Section II.A of Cal-Am's response to MCWD's comments, these reports confirm that the monitoring well data shows TDS levels far above levels appropriate for human consumption or irrigation.

The Permit Amendment Staff Report further confirms that the water drawn by the Project would not be put to any other beneficial use. Permit Amendment Staff Report at 8-9 ("The slant test well is designed to intercept water from the seaward extension of the Dune Sand and 180-Foot Aquifers. Water quality data collected over the past several years show that these aquifers exhibit relatively high salinity levels, with concentrations of total dissolved solids ranging from about 24,000 to 32,000 parts per million. . . . [The test well] would pump . . . what is expected to be almost entirely intruded seawater from the landward areas of the two aquifers."). In addition, the Commission's independent hydrogeologist conducted a hydrogeologic review of the proposed Permit Amendment for the Commission. Weiss indicates that the Project is drawing a greater proportion of its water than expected from the more saline seaward side of the test slant well, thus further limiting any possibility that such water could be put to beneficial use. *See* Weiss Memorandum at 4.

In contrast to allegations that Cal-Am is improperly "wasting" water, the Project provides valuable information to support the State's policy that water resources be put to beneficial use to the greatest extent possible by investigating whether brackish, contaminated waters could be extracted without harming other water users and treated for future, potable use. Here, the Project is expected to produce additional technical information to confirm that Cal-Am can legally extract water from the SVGB near or beneath Monterey Bay without violating groundwater rights or injuring other groundwater users. State Board Report at 47 ("So long as overlying users are protected from injury, appropriation of water. . . should be possible."), 49 ("Cal-Am could legally pump from the Basin by developing a new water supply through desalination and showing the developed water is surplus to the existing supply.").

The Santa Cruz County Superior Court agreed that the Project would not result in a "waste" of water in rejecting ALT's claims on this issue. Specifically, the Court found that the "record supports that the test wells are not pumping water that would otherwise be put to beneficial use. And the record supports that the water that would be drawn by the test well is substantially degraded by seawater intrusion and other natural factors . . ." *MCWD v. CCC*, July 23, 2015, Transcript at 195:3-8.

The issue of Cal-Am's groundwater rights has already been considered and decided by the Commission, the State Board, and the Santa Cruz County Superior Court. ALT's argument that Cal-Am lacks water rights for the Project continues to lack merit.

XI. THE TEST WELL DOES NOT SIGNIFICANTLY IMPACT GROUNDWATER SUPPLIES OR AGRICULTURAL LANDS

A. The Project Will Not Adversely Impact Groundwater Elevations at Other Well Locations in the SVGB

ALT argues that the Project is impacting groundwater supply and surrounding farmland. To the contrary, the technical data in the Commission's record shows that the Project does not have significant effects on groundwater elevation and conditions in the SVGB, and does not adversely affect any nearby operating wells.

The Commission found that the amount of water that the Project would withdraw would result in an insignificant effect on coastal agriculture. The total water withdrawal for the test well would be approximately 4,000 acre-feet per year over the two-year test period, most of which is expected to be seawater or seawater-intruded groundwater from the subsea floor. This amount of extraction represents only about 0.1 percent of the 180/400-Foot Sub-Basin's groundwater storage. 2014 Findings at 51.

Cal-Am has modeled the expected "cone of depression," which is the area in which groundwater levels may be lowered due to the Project's water withdrawal, to extend only to approximately 2,500 feet from the proposed test well. 2014 Findings at 51-52. The Commission found that at 2,500 feet estimated drawdown would be approximately 4 inches. *Id.*; *see also* Permit Amendment Staff Report at 10. The City's draft MND made similar findings. MND at 117 ("At a distance of 2,500 feet from the well, drawdown is estimated to be approximately 0.3 feet (4 inches). Drawdown is not expected to extend beyond the CEMEX parcel in any significant amount and significant impacts at any off-site wells in the project vicinity are not anticipated."). The closest operational agricultural wells are approximately 5,000 feet from the test well, and are therefore not expected to be significantly affected by the test well. 2014 Findings at 52; *see also* Permit Amendment Staff Report at 10; Weiss Memorandum at 2.

The Permit Amendment Staff Report further supports the Commission's 2014 Findings, and concludes that previously used models to determine the Project's potential groundwater impacts were conservative. Permit Amendment Staff Report at 13; Weiss Memorandum at 4. Specifically, after reviewing the Project's monitoring data, the Commission's independent hydrogeologist determined drawdown was less than anticipated by the model, and that the Project's capture area is smaller than that predicted by the model. Permit Amendment Staff Report at 13; Weiss Memorandum at 4.

Moreover, Special Condition 11 ensures that no impacts to groundwater will occur. Special Condition 11 requires Cal-Am to conduct ongoing water quality monitoring during Project operations, and, if MW-4 shows a reduction in water quantity of 1.5 feet above natural fluctuations or a 2,000 ppm increase in TDS, Cal-Am must stop pumping. 2014 Findings at 11-12. If MW-4 reaches one of these specific, pre-determined levels, the HWG, a team of

hydrogeologic and modeling experts representing the interests of various stakeholders of groundwater use and management in the region, and the Commission's Executive Director are tasked with determining whether the Project caused such changes. *Id*. If the Project causes the decrease in elevation or increase in TDS levels, Cal-Am must obtain a CDP amendment before resuming pumping. *Id*.

Cal-Am has applied to revise Special Condition 11 to account for observed regional trends in groundwater elevations and TDS concentrations. The HWG indicates that the previous iteration of Special Condition required an unnecessary shutdown of the test slant well due to observed regional trends that are unrelated to the Project. Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 4-5 (July 23, 2015). After reviewing the available technical data from the Project's monitoring wells, the Commission's independent hydrogeologist found that the proposed revisions to Special Condition 11 "are appropriate for preventing potential impacts to agricultural groundwater resources further inland." Weiss Memorandum at 1. Therefore, Special Condition 11, as amended, will continue to ensure no significant groundwater impacts occur in the SVGB.

B. The Project Will Not Impact Water Quality in the SVGB

ALT also argues that the test slant well has induced seawater intrusion and pollution into protected groundwater supplies. This claim is unfounded and was already rejected by the Santa Cruz County Superior Court.

1. The Project Pumps Water That Is Already Degraded

As discussed above in response to MCWD's comments, seawater intrusion in the SVGB, extending approximately 5 miles inland, has resulted in the degradation of groundwater supplies, resulting in levels that are unsuitable for agricultural production. Seawater intrusion in the SVGB occurs at a rate of approximately 14,000 acre-feet per year. Permit Amendment Staff Report at 8. "Although the Basin's groundwater management programs are attempting to reduce this rate, seawater intrusion has both reduced the quality of groundwater for agricultural use in this area and reduced the amount of groundwater pumped from nearby wells, with wells within two miles of the test slant well having already experienced seawater intrusion." *Id*. The Commission has already extensively documented the degree of seawater intrusion in the SVGB. 2014 Findings at 18 ("The known area of seawater intrusion extends along about ten miles of the Bay shoreline and up to about five miles inland, with all known existing wells within two miles of this test well site having already experienced seawater intrusion."); *id*. ("Water quality data collected from nearby areas over the past several years show that both aquifers exhibit relatively high salinity levels and that there is not an aquitard separating the two. . . . . Those data show that salinity and Total Dissolved Solids ("TDS") concentrations in nearby areas of the aquifers already exceed levels that are suitable for agricultural crop production.").

"The project area is underlain by three main aquifers – the relatively shallow Dune Sand Aquifer, and the 180-Foot Aquifer and 400-Foot Aquifer, which are named for their approximate depth below the ground surface." 2014 Findings at 18. "[T]he Dune Sand and 180-FTE Aquifers are heavily contaminated in the project area due to decades of seawater intrusion." MND at 44; *see also id*. at 113 ("Water samples taken from the exploratory borings at the

CEMEX site indicate that both the Dune Sand Aquifer and the 180-FTE Aquifer contain saline (salt) water and are substantially influenced by the sea.").

Because groundwater used for irrigation or human consumption in the Project's vicinity must be drawn from the Deep Aquifers, any seawater intrusion into the Dune Sand Aquifer or 180-Foot Aquifer would not impact any water source for irrigation or human consumption. 1/20/15 Feeney Decl., ¶ 17. The Project perforates only the Dune Sand Aquifer and the 180-Foot Aquifer, and does not affect the Deep Aquifers. Permit Amendment Staff Report at 8; Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 6 (June 22, 2015); 1/20/15 Feeney Decl., ¶ 17; 4/20/15 Feeney Decl., ¶ 19. The Project, therefore, will not impact groundwater aquifers used or suitable for irrigation or human consumption.

As further described in Section X.B above, the Project will only pump water that has already been significantly degraded by seawater intrusion. This conclusion has been confirmed by recent monitoring well reports. *See* 1/20/15 Feeney Decl., ¶ 10; 3/13/15 Feeney Decl., ¶ 10; 4/20/15 Feeney Decl., ¶ 19; 4/29/15 Feeney Decl., ¶¶ 11, 12. Because the test slant well will only draw degraded water, it will not impact groundwater supplies in the SVGB that could otherwise be used for irrigation or human consumption.

2. The Project Will Not Exacerbate Seawater Intrusion in the SVGB

ALT's claim that the Project will exacerbate seawater intrusion in the SVGB ignores basic hydrogeologic principles and substantial evidence in the Commission's record. As discussed in Section II.A.2 above, the SVGB generally has a landward gradient causing seawater intrusion, and the test slant well will create a cone of depression and capture zone that pulls in saline seawater for the seaward side and contaminated brackish water from the landward side.

Here, rather than exacerbating seawater intrusion, the Project would actually pull seawater back toward the coast. Operation of the test well will locally lower groundwater levels near the well to elevations of 35 feet below sea level. This localized water level depression will locally reverse the existing groundwater flow direction, pulling degraded inland groundwater westerly toward the test slant well. 4/20/15 Feeney Decl., ¶ 24. "No seawater induced by the pumping of the wells moves inland because water level elevations are lower at the well than points inland, In this way, the wells intercept seawater intrusion before it can reach wells further inland." *Id.*, ¶ 27.

This hydrogeological effect is supported by ample evidence. The Commission's independent hydrogeologist states that any capture of brackish groundwater from the landward side of the test slant well would result in the "salt water/fresh water interface" moving seaward. Weiss Memorandum at 5. "This should result in ***improvements to water quality*** in the areas of the SVGB that are influenced by the [Project], due to seaward migration of fresher water." *Id.* (emphasis added). The City's draft MND also states that the test well "would equate to a slowing of seawater intrusion." MND at 120-21.[21]

[21] The State Board Report's analysis of the MPWSP pumping reaches similar conclusions. *See* State Board Report at 27 ("Currently, the predominant groundwater flow direction in the 180-

Based the substantial evidence in the Commission's record for the approval of the Project in 2014, the Santa Cruz County Superior Court found that "the administrative record supported the Commission's finding that no seawater intrusion impact would occur in the Salinas Valley groundwater basin as a result of the project." *MCWD v. CCC*, July 23, 2015, Transcript at 194:13-16. Again, this issue has been considered and decided. ALT's efforts to resurrect its failing arguments in this proceeding on a narrow Permit Amendment are improper and have no basis.

XII. THE TEST WELL DOES NOT ADVERSELY AFFECT AG LAND TRUST'S WELLS

ALT asserts that the Project has resulted in a wrongful drawdown of 12 inches of groundwater at ALT's purported "Big Well." This assertion is unsubstantiated and provided without any evidentiary support other than a bald assertion. ALT now also references a purported "Small Well" in the Project Site vicinity, despite making no previous mention of any issues pertaining to the "Small Well." Further, in its present comments, ALT provides no evidence and makes no substantive claims regarding potential impacts to the "Small Well."

As a preliminary matter, we note that this is the first time that ALT has provided well logs for either of these wells. ALT had ample opportunity to present these well logs during the November 2014 proceedings, but chose not to do so. Further, the well logs submitted by ALT disclose neither the type nor frequency of use for either of the alleged wells. In fact, the information on the well logs appears to be dated from the 1970s. It is unclear why ALT is submitting well logs from the 1970s in this Permit Amendment proceeding, as they are entirely irrelevant and provide no evidence of any recent conditions in the SVGB.

In addition, ALT's claim that Cal-Am made misstatements to the Commission regarding the locations of ALT's wells "so that Cal-Am would not have to bear the environmental and financial responsibility" for well impacts is simply wrong. In assessing the potential environmental impacts of the Project, the City's CEQA consultant disclosed the locations of all known wells in the area. The City selected its own consultant to conduct an Initial Study of the Project and prepare the draft MND. Cal-Am had no ability to control that consultant or the CEQA review process and therefore did not fail to identify or disclose anything. In any event, the City's CEQA consultant conducted a thorough review of wells in the area, and ALT's alleged "Big Well" was never identified. Cal-Am, nevertheless, conferred with MCWRA, which is responsible for permitting water wells in Monterey County, and confirmed that MCWRA has no record of an active agricultural well at the location claimed by ALT to be the "Big Well." Neither can any well infrastructure (electrical feed, well header, control panels, piping, etc.) be seen from the latest (April 13, 2015) Google Earth satellite imagery anywhere in the vicinity of the area claimed by ALT as the location of the "Big Well."

Foot Aquifer is toward the northeast. Project pumping would likely change the flow direction to more of a southwest to westerly direction within the zone of influence. Outside the zone of influence there would be little if any change to groundwater flow direction; however, the rate of flow in the original direction (northeast) would be reduced. Therefore, the MPWSP would slow the rate of seawater intrusion in a landward direction from the wells.").

Even if ALT's purported "Big Well" does exist, there is no evidence that it is being used for irrigation or human consumption. The "Big Well" is within the areas of seawater intrusion depicted on the MCWRA's 180-Foot Aquifer and 400-Foot Aquifer seawater intrusion maps. 1/20/15 Feeney Decl., ¶ 16. As described in Section III.B.1 above, the Project perforates only the Dune Sand and 180-Foot Aquifers. In addition, any well in the vicinity of ALT's claimed well must perforate an aquifer with a depth of approximately 900 or 1,500 feet to draw potable water. 1/20/15 Feeney Decl., ¶ 16. Water samples from wells in the immediate vicinity of the purported "Big Well" show that the "Big Well" is not currently, nor could it be capable of, being used for agricultural irrigation due to the severity of seawater intrusion in the aquifers in which it is located. Declaration of Robert Johnson at ¶ 9 (May 1, 2015) ("Johnson Decl.") (attached hereto as Exhibit I).

Further, ALT offers no evidence that any water drawn from the "Big Well" is being used for irrigation or human consumption. Cal-Am is informed that a well in the approximate location of the purported "Small Well"—not the "Big Well"—is not currently connected to ALT's irrigation system, but is configured for overhead fill of a watering truck. 1/20/15 Feeney Decl., ¶ 16. A recent inspection of the ALT property conducted by representatives of MCWRA staff also confirmed that the purported "Big Well" is not currently operational or connected to any irrigation system. Johnson Decl., ¶ 7.

ALT claims that it has been drawing water from the purported "Big Well" for "dune restoration," but does not specify what these activities are. Based on MCWRA reports, there has been no pumping of water for any purpose reported from the "Big Well," or any other well on the ALT property, as required by MCWRA's 1997 contract with the landowner. Johnson Decl., ¶ 8. In March 2015, Cal-Am's counsel interviewed the representative of the tenant on ALT's property where the purported "Big Well" is located, Dale Huss, who confirmed that there is no well located on this property which is capable of being used for irrigation because the groundwater underneath the property is already highly contaminated with salt water. Mr. Huss confirmed also that the wells located on the property have been completely disconnected from the irrigation systems for almost 20 years. Mr. Huss did state that approximately a year ago ALT connected a pipe to one of the abandoned wells so that they could turn it on and make water run onto the ground. He also confirmed that ALT's tenant has never reported any water use from any well on the property during their tenancy and that no water use from any well has occurred during their tenancy.

Cal-Am is also informed that irrigation needs on ALT's property are likely served by the MCWRA's Castroville Seawater Intrusion Project ("CSIP"), not from the "Big Well." 1/20/15 Feeney Decl., ¶ 16. CSIP is a water distribution system that distributes recycled water to approximately 12,000 acres of farmland in Northern Monterey County. *See id*.; Johnson Decl., ¶ 3.[22] MCWRA records show that for the last 16 years, the ALT property where the purported "Big Well" is located has been delivered the full allocation of CSIP irrigation water necessary to meet all of the irrigation needs for the parcel without the use of any groundwater. Johnson Decl.,

[22] Additional information regarding the CSIP can be found online at http://www.mrwpca.org/about_facilities_water_recycling.php and http://www.mcwra.co.monterey.ca.us/csip_svrp/csip_svrp.php.

¶ 10. To the extent ALT draws water for the property where the purported "Big Well" is located other that supplied by the CSIP, such water must be drawn from the Deep Aquifers, because the 180-Foot Aquifer and 400-Foot Aquifer are contaminated by seawater intrusion in that area. 1/20/15 Feeney Decl., ¶ 16.

ALT also fails to present evidence that any alleged impacts to the purported "Big Well" are a result of the Project's test slant well, or any evidence to support its claims that a drop in water levels at the purported "Big Well" has occurred. The purported "Big Well" is not located within the Project's anticipated cone of depression. 1/20/15 Feeney Decl., ¶ 16. The well location depicted in ALT's submittal is over 3,500 feet from the test slant well. To the extent that there has been any drop in water levels in wells in the vicinity of the Project, the data collected by the HWG demonstrates that such drops were caused virtually entirely by the seasonal decline in water levels and not by pumping of the test well:

- "The general consensus of the HWG based on examination of fluctuations and trends in water levels, was that the observed fluctuations and downward trends were not due to Test Slant Well pumping, but rather the result of irrigation pumping cycles and/or regional seasonal fluctuations." Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 1 (June 22, 2015).

- "Even under a 'worst case scenario' relating to factors/causes of the regional water level declines and slight changes in the downward trend of those declines (i.e. not caused by changes in inland pumping or outside influences), it seems clear from the data collected so far that if there is any drawdown at MW-4S and/or MW-4M – it is less than 0.5 feet and probably closer to 0.2 to 0.3 feet." *Id*. at 6.

- "After reviewing water levels in MW-4, the general consensus of the HWG was that the observed fluctuations and downward trends of water levels in MW-4 were not due to Test Slant Well pumping. . . . Additional analysis by HWG members has clearly correlated the continuous decline in water levels with irrigation cycles in regional aquifer pumping . . . ." Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 1 (June 10, 2015).

The Permit Amendment Staff Report and Weiss Memorandum further support these findings that the Project did not cause any significant drop in the SVGB's groundwater levels. Permit Amendment Staff Report at 11 ("As shown through the ongoing monitoring Cal-Am has conducted this year, other wells in the Basin and Sub-Basin and some distance outside the area influenced by the test well exhibit substantial changes due to regional influences, such as municipal groundwater pumping, seasonal agricultural uses, changes in rainfall and streamflow, and others. . . . [T]he more distant wells, including MW-4, show a response to the generally downward regional trend in groundwater levels during the monitoring period but a *de minimis* or no response to the pump testing."); Weiss Memorandum at 1 ("These results indicate negligible impact to the SVGB inland of monitoring well MW-4, with the probability of potential impacts decreasing with distance inland from that well."), 5 ("[Data from test slant well pumping]

indicates that the Dune Sand Aquifer is responding more to regional influences than it is to pumping at the [test slant well].").

Cal-Am, nonetheless, halted test well operations on June 5, 2015, and is seeking a Permit Amendment before re-commencing well operations. Even after stopping pumping, Cal-Am's monitoring well MW-4 continues to show a decline in response to regional pumping inland, further demonstrating that any drop in nearby groundwater levels are wholly unrelated to the test slant well. Letter from HWG to Charles Lester, Executive Director, California Coastal Commission at 4 (June 22, 2015). In addition, the Santa Cruz County Superior Court found that "the record supports that the project will not impact any nearby wells because it only extracts water from the dunes and [sic] from the 180-foot aquifers." *MCWD v. CCC*, July 23, 2015, Transcript at 194:6-9.

Despite the large body of evidence demonstrating that the Project would have no adverse impact on groundwater or groundwater wells in the Project Site vicinity, Cal-Am offered to monitor water levels and salinity and TDS levels in the purported "Big Well" for ALT. *See* Email from Christopher Garrett to William Parkin (March 12, 2015) (attached hereto as Exhibit J). ALT never responded to Cal-Am's offer, and as a result, there is no verifiable data from this alleged well in the Commission's record. As such, the self-serving and unsubstantiated evidence offered by ALT is further discredited.

ALT has offered no credible evidence that the Project results in any impacts to ALT's groundwater wells. To the contrary, substantial evidence in the record indicates the Project does not impact the groundwater quality of ALT's wells or any others in the vicinity.

XIII. ALT'S OTHER ASSERTIONS LACK MERIT

A. The North Monterey County Local Coastal Plan Does Not Apply to the Project

ALT's claim that the Project somehow violates the North Monterey County Local Coastal Plan ("LCP") continues to lack merit. ALT has already raised this issue before the Commission and before the Santa Cruz County Superior Court. The Commission dismissed this argument in an addendum to its 2014 Staff Report stating that the North Monterey County LCP was irrelevant to the Commission's consideration of the Project because no aspect of the Project would occur in areas governed by the North Monterey County LCP. Nov. 11, 2014 Addendum at 15. The North Monterey County LCP applies only to properties in unincorporated Monterey County and does not apply to any properties in the City. *Id*. The Santa Cruz County Superior Court upheld the Commission's position. Specifically, the Court found: "I don't believe that the Commission was required to conduct an analysis under the North Monterey County Local Coastal Program." *MCWD v. CCC*, July 23, 2015, Transcript at 197:9-12.

B. Independent Review Has Validated the Commission's Consideration of Groundwater Impacts

ALT asserts that the CPUC has "abandoned all past environmental work" conducted by Cal-Am's hydrogeologist consultant, such that any testimony from this consultant in the original

proceedings now lacks credibility. The consultant referenced by ALT is Geoscience Support Services, Inc. ("Geoscience"), which conducted various analyses for the Project on behalf of Cal-Am and Cal-Am's consultant RBF, and also worked as a sub-consultant to a consultant for the CPUC in its consideration of the MPWSP. Earlier this year, the CPUC extended the EIR comment period for Cal-Am's MPWSP application due, in part, to concerns that Geoscience's work for the CPUC could not be considered independent. *See* Administrative Law Judge's Ruling Extending Briefing Schedule, California Public Utilities Commission, Application 12-04-019, at Attachment pp. 1-2 (July 9, 2015) (attached hereto as Exhibit K). The CPUC determined work performed by Geoscience relating to the EIR should be treated as if it had been submitted by the proponent, rather than as independent work performed by the CPUC. *Id*.

In the Commission's proceedings, however, there is no prohibition on a project proponent hiring its own technical consultants to prepare and submit evidence to the Commission. Further, all interested parties in the Commission's proceedings for the Project have been aware of Geoscience's role as Cal-Am's consultant for some time. Geoscience's work has been discussed in various record document throughout the administrative process for the Project, including the City's MND, the MBNMS Environmental Assessment, and the Commission's 2014 Staff Report. Those documents in the Commission's record make clear that Geoscience was one of Cal-Am's consultants in evaluating the Project and its potential impacts. ALT provides no evidence nor legal basis that Geoscience's work for Cal-Am related to the test slant well was improper.

In addition, Geoscience's role working for Cal-Am on the Project as well as for the CPUC was specifically disclosed on the record by Geoscience's president, Dennis Williams, at a May 1, 2015 hearing in the Santa Cruz County Superior Court. Reporter's Transcript of Proceedings, Case No. CISCV180839 (May 1, 2015) at 173:10-13 ("I'm founder president [sic] of Geoscience. We have two contracts. One's with ESA, who is contracted with the PUC; and the second contract is with RBF, who is contracted with Cal-American."). Neither counsel[23] nor the Court raised any issues as to Mr. Williams' or Geoscience's credibility at any point during the proceedings.

Further, any concern regarding the credibility of the previously performed environmental work is rendered moot by the consistent findings of the Commission's independent hydrogeologist. As noted above in Section II.B, Weiss conducted an independent hydrogeologic review of the proposed Permit Amendment. At the Commission's behest, Weiss independently evaluated the "relevant modeling and monitoring data and to review Cal-Am's proposed modification." Permit Amendment Staff Report at 2. This independent review validated the "threshold values and monitoring approach" for preventing impacts to SVGB groundwater users, and, in fact, found the previously used models to be conservative. Permit Amendment Staff Report at 2; *see also id*. at 13; Weiss Memorandum at 4. Accordingly, there is no support for ALT's baseless claims that work performed by Geoscience related to the Project is somehow tainted or inaccurate.

[23] Counsel for MCWD cross-examined Mr. Williams at the May 1, 2015 hearing.

C. No Criminal Investigations Related to Conflicts of Interest Impact the Commission's Consideration of the Permit Amendment

ALT also claims that (unnamed) parties have requested criminal investigations into Cal-Am, its management, consultant, the HWG, and state and county employees for conflicts of interest. While ALT offers no proof to support this allegation, it is also meaningless even if true. The fact that someone that opposes a project may "request" or even "demand" a criminal investigation does not mean that any criminal activity has occurred. Indeed, as evidenced by the conduct of ALT and MCWD in proceedings before the City of Marina, the Commission, and the Santa Cruz County Superior Court regarding this Project, project proponents can and do make wild and unsubstantiated assertions at will in order to serve their own purposes. Cal-Am has received no notice of any type of criminal investigation into its conduct or the conduct of any others related to the Project or the larger MPWSP.

XIV. CONCLUSION

In summary, MCWD's and ALT's arguments are tired, unfounded, and do not undercut the substantial evidence supporting Cal-Am's requested Permit Amendment application. The Commission should approve the Permit Amendment over MCWD's and ALT's unsupported objections.

LA\4287959.8

From:	David Beech
To:	Luster, Tom@Coastal
Subject:	Opposition to revised permit for Cal Am testing
Date:	Friday, October 02, 2015 12:18:27 PM
Attachments:	DEIRComments150928.doc

Dear Mr Luster,

Please accept this as a public comment to be forwarded with attachment to the executive director and commissioners of CCC. Unfortunately I shall not be able to attend the meeting to make these points personally on agenda item 15a..

I know that Mr. Ron Weitzman previously forwarded the attachment to you as a courtesy when I submitted it to CPUC as a DEIR comment, but I want to add the following comments to CCC, directly opposing the proposal on the Long Beach agenda to approve a revised permit for the resumption of slant well testing.

1. Please accept the attached CPUC comments as submitted also to the CCC. The apparent conflict of interest and mismanagement may already be sufficient reason to terminate the project.

2. In particular, the fact that the test well ends at the shoreline, and is not truly subsurface, renders the results from any continued testing for a short period totally inadequate as a basis for extrapolation to a billion-dollar subsurface project. Why did the test well not replicate the intended production wells?

3. The argument that the permit has to be renewed in order to avoid further delays is fallacious, since anyone experienced in large projects in competitive industries can see that the project is already doomed to failure, for technical and legal reasons. If Cal Am believe otherwise, let us see if they would invest their own money to become the owners of the eventual plant, rather than receiving it as a risk-free gift at the ratepayers' expense.

In fact, renewal of the permit would introduce further delay (and expense) before serious work begins on evaluation of alternatives such as the two Moss Landing projects.

4. Please note also, as of special CCC concern, the comments in the attachment on the burgeoning good health of the food chain in the Monterey Bay, despite the Dynegy power station having employed open-ocean intake for many years on a scale that is vast compared to the intake that would be necessary for a desalination plant. Why continue to test an approximation to a subsurface slant well when that technology is unlikely to be feasible overall anyway?

Respectfully submitted,

David Beech
Monterey

dbeech@comcast.net

PUBLIC COMMENT
TO CALIFORNIA PUBLIC UTILITIES COMMISSION

Re

Cal Am DEIR
Monterey Peninsula Water Supply Project
(Application A.12-04-019, filed April 23, 2012)

29 September, 2015

I am submitting these timely comments on the original DEIR, even though it is about to be replaced. This is in line with the encouragement given by Judge Weatherford in his memo and attachment A.12-04-019 GW2/ek4 dated July 9, 2015.

The sooner the CPUC is fully aware of the strength of well-informed public opinion on the Monterey Peninsula, the better. There is a determination here to see a speedy and cost-efficient solution to our water supply problems, and that requires a rapid change of direction at this point.

Here are my brief comments on the issues emphasized by Judge Weatherford.

1. Apparent conflict of interest

I am glad to see the immediate seriousness with which the evidence was treated, but would urge you to act, not merely on the narrow problem of objective data evaluation, but on the wider implications of these desperate efforts to justify slant well technology at this particular location.

1.1 Intent to mislead

Any undisclosed awareness by Cal Am that the same person employed as a consultant in the design of the slant wells for them was also chosen by CPUC as an objective evaluator might be construed as a violation of CPUC Rule 2.1. Are you considering it from that angle, among others?

1.2 Mismanagement of the testing

Whether due to incompetence or lack of commitment to the seriousness of testing to determine whether slant wells at the Cemex site would truly provide a long-term sustainable and legitimate source of desalinated water, Cal Am has made numerous errors of planning and execution.

One of the most serious is that the test slant well is much shorter than the intended production wells, ending at the shoreline instead of being truly subsurface under the Bay. Why was this done, introducing an unnecessary additional level of uncertainty and optimistic estimating into a test that needs to make very sure that it is not raising false hopes for the success of a gigantic long-term project? Add to this the great difference of inclination in the test slant well from the 19 degrees of the intended production wells that has been noted by Mr Michael Baer. Do these unexplained differences alone disqualify the present testing from being an adequate evaluation of such an unproven technology, possibly indicating a lack of confidence by the proponents in testing the actual production design?

Other errors that call in question the bone fide intentions of Cal Am include the failure to establish a baseline in neighboring wells at the start of testing, the assumption that landowners (Ag Land Trust) did not have any nearby operational wells without even asking them for information, the major failure of their long-term predictive model within 60 days of testing (serious enough to cause them to cease testing), the publicized finger-pointing blaming the farmers for unexpected pumping without apparently contacting the farmers to obtain real data, and the intention to continue using the same model with a minor tweak to make "relative" rather than "absolute" comparisons. These are not the actions of a company serious about discovering the truth. Rather, they are consistent with a belief that shortage of time will be accepted as rendering the testing and a true prognosis as irrelevant to a political decision.

In my thirty-eight years of experience in working for successful corporations, all much larger than the whole of American Water, I have never seen such a casual approach to justifying a project under tight time constraints, and likely to cost on the order of $1 billion. Indeed, if Cal Am were investing their own money, their approach would be very different, and a project in such deep trouble would already have been redirected into exploring more promising alternatives such as purchasing water from one of the Moss Landing projects. The People's Project, for example, is within sight of issuing its Draft EIR, and owns the property, water rights, and existing infrastructure needed. The longer the present testing at the Cemex site is continued, the more expense and delay is introduced before a genuine and cost-effective solution is pursued.

Please, Commissioners, do what the management of a competitive company would be forced to do, and stop this throwing of good money after bad. Terminate this testing, tarnished as it is by apparent conflict of interest and mismanagement, and thus accelerate progress towards a successful solution.

2. Data availability

Thank you for making available more of the base data underlying the DEIR. As a result, you have received comments from Mr Ron Weitzman, a professionally qualified statistician, questioning some of the optimistic conclusions drawn, particularly regarding the crucial 140-ft fresh water aquifer. Please consider whether this is further evidence of intent to mislead in the DEIR.

3. Proposed joint DEIR/NEPA

I strongly support the NEPA direction, taking wider issues into account, such as costs to ratepayers, and alternative projects at Moss Landing. However, I would like to add two observations.

First, as argued above, there may be good reason not to waste further time and money on reissuing the existing DEIR with only minor tweaks. I believe you have the option to disqualify the current testing and terminate that project for reasons given above and in other comments submitted to you. A reissued DEIR should concentrate on the alternatives to this exorbitantly expensive, failing, and litigation-prone project.

Second, I believe it would be premature to bless the Monterey Bay National Marine Sanctuary as the Lead Agency for the NEPA, despite their volunteering for this position of influence. We need to know what is their position on the wider issues – how much do they care for the well-being of hard-pressed water-conserving Monterey Peninsula ratepayers compared to that of the burgeoning marine life of Monterey Bay as evidenced by the feasting of the whales? Is their position an extreme environmental one of “Slant wells or bust”? Are they qualified and motivated to give due weight to water shortages and billion dollar cost considerations affecting land dwellers?

Respectfully submitted,

David Beech

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Monterey CA 93940

dbeech@comcast.net

MITCHELL CHADWICK

Patrick G. Mitchell
pmitchell@mitchellchadwick.com
916-462-8887
916-788-0290 Fax

October 1, 2015

VIA U.S. MAIL AND FAX AND EMAIL

Energy, Ocean Resources, and Federal Consistency Division
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Re: California American Water Company – Test Well Application No. 9-14-1735-A1 and A-3-MRA-14-0050-A1 (CCC Hearing on October 6, 2015)

Dear Coastal Commission Staff:

The proposed revised Special Condition 11 and related Staff Report appear to focus on regional groundwater impacts, and discuss agricultural wells thousands of feet from the test well area. Special Condition 11 which is entitled "Protection of Nearby Wells" appears to fail to protect the closet production wells, *i.e.*, those of CEMEX located on the property where the test well and related maximum dewatering would occur. In fact, the closest production wells to the test slant well are all CEMEX wells. (See Figure 1-1 by Geoscience.)

Thus, for the Special Condition 11 revisions to use as an excusing event regional trends apparently including a focus on agricultural wells 5,000 feet away (See CCC Staff Report, p. 2, para. 2 and p. 3, para. 4.) could lead to missing or ignoring a non-regional, localized drawdown in the immediate vicinity of the slant test well, which would most impact CEMEX's wells which are only 1,500 feet away from the slant test well.

Therefore, we propose that the California Coastal Commission adopt the proposed revisions to the draft Special Condition 11 language. (See "Attachment 1".)

Respectfully submitted,

MITCHELL CHADWICK LLP

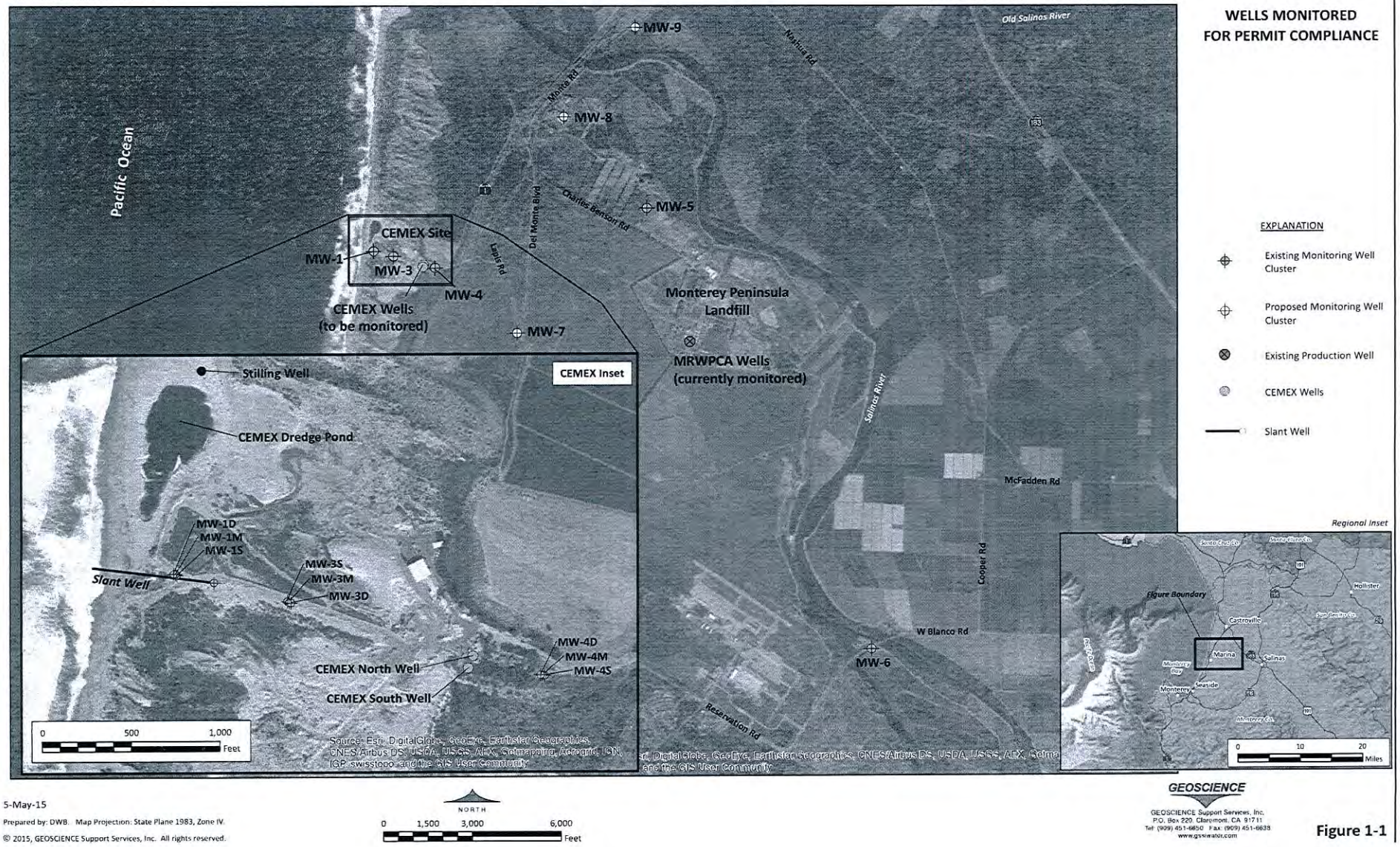
Patrick G. Mitchell

cc: Jerae Carlson

FIGURE 1-1

CALIFORNIA AMERICAN WATER

MONTEREY PENINSULA WATER SUPPLY PROJECT



5-May-15

Prepared by: DWB. Map Projection: State Plane 1983, Zone IV.

NORTH

0 1,500 3,000 6,000 Feet

GEOSCIENCE

GEOSCIENCE Support Services, Inc.
P.O. Box 220, Claremont, CA 91711
Tel: (909) 451-6650 Fax: (909) 451-6638
www.gsweater.com

Figure 1-1

ATTACHMENT 1

Draft Special Condition 11:

Protection of Nearby Wells. PRIOR TO STARTING PROJECT-RELATED PUMP**ING** TESTS, the Permittee shall install monitoring devices at a minimum of four wells on the CEMEX site, including the CEMEX production wells, within 2000 feet of the test well, and one or more offsite wells to record **ground**water and salinity levels within the wells and shall provide to the Executive Director the baseline **ground**water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well.

The **Permittee, in coordination with the** Hydrogeology Working Group**,** shall ~~establish the baseline water and TDS levels for the monitoring wells~~**identify groundwater elevation trends and TDS level trends in the groundwater basin resulting from regional influences such as groundwater withdrawals, rainfall events, increases or decreases in streamflow contributions, and other influences**. During the project pump**ing** tests, the Permittee shall, at least once per day, monitor **ground**water and TDS levels within ~~those~~**the monitoring** wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request.

The Hydrogeology Working Group shall review data from the monitoring wells and prepare a monthly report that shall be submitted to the Executive Director that documents the groundwater elevation trends and TDS level trends resulting from regional influences, to the extent that any regional trend is applicable to the CEMEX site. If ~~water levels drop more than one and one half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions~~ **during the pumping tests, data collected from Monitoring Well-4S ("MW4-S") or Monitoring Well-4M ("MW-4M") during any weekly monitoring period show either a decrease in groundwater levels that exceeds an identified decrease in regional groundwater level trends by 1.5 feet or more or show an increase in TDS levels that exceeds an identified increase in regional TDS level trends by two thousand parts per million or more, to the extent that any regional trend is applicable to the CEMEX site,** the Permittee shall immediately stop the pump**ing** test and inform the Executive Director. The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the **pumping** test ~~well~~ is ~~shut down~~ **stopped** due to either of these causes.

If, based on the above review of monitoring data, ~~The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS levels from a cause or causes other than the test well, and it will submit its determination to the Executive Director. If the Executive Director agrees with the Hydrogeology Working Group that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then the~~**the Executive Director or the Hydrogeology Working Group determines that the pumping test caused, at MW-4S or MW4-M, either a decrease in groundwater level of 1.5 feet or more or caused an increase in TDS levels of two thousand parts per million or more (in excess of identified regional trends, to the extent that such regional trends apply to the CEMEX site),** then the Permittee shall not re-start the pump**ing** test until receiving an amendment to this permit.

October 1, 2015

Executive Director & Commissioners
California Coastal Commission
Public Comment by Michael Baer on MWPSP
Monterey District

Addendum to my September 29 comments

Figure 3 in staff report.
I want to make sure the Commissioners are clear about what figure 3 represents, because it may be misleading. You will note a blue line around the perimeter of the seawater intruded area and that the figure key notes that it represents the 2013 threshold of 500 milligrams of Chloride per liter (mg/L). That is a level which is twice the standard for drinking water. Chloride (CL) is a component of Sodium Chloride or table salt, NaCL. However, seawater itself has a Chloride component of roughly 18,000mg/L (ref. MPWSP DEIR Sec 4-4 page 22 by GeoSciences). So when we talk about the threshold for seawater intrusion from the figure, we are talking about water that has been contaminated to a level of 2.8% of seawater. It may be unsuitable for drinking, but clearly it is far from just seawater. The water closer to shore will have a greater concentration of Chloride. At the Cemex site right at the shore that concentration was about 70% seawater when the pumping began in April. As you go inland, in general, freshwater percentages will increase; water, incidentally, that is prohibited to leave the basin.

Calculations of groundwater impacts are for the test well only
I just want to remind the Commission that the impacts being studied are for the test slant well only. This is a single pump operating around the clock at about 2000 gallons per minute (gpm). The proposed desal plant will have *eight wells* operating at the same rate, with eight times the volume and potentially eight times the impact (Figure 4 assumptions, notwithstanding). What will be the impact on neighboring wells then? Will the new threshold to terminate be 8 times as high? (i.e allowing for a 12 foot drop within 2500 feet of the wells?)

Drought or Deluge, either way is a problem for the MPWSP
Here are excerpted comments I sent to the CPUC before their September 30 deadline. They are pertinent for your consideration. They begin with a quote from the 9/29/15 edition of the Monterey Herald newspaper about the CCC's staff report.

"In issuing its recommendation, commission staff noted that Cal Am's monitoring had shown other basin and sub-basin wells exhibiting "substantial changes" due to regional influences, such as municipal groundwater pumping, seasonal agricultural uses, and changes in rainfall and streamflow."

I don't dispute that regional influences and rainfall changes (i.e., no significant rain to speak of here since December) have influenced the results at the test well. But let's look at the big picture. The groundwater has substantially dropped in the Basin due to the drought. This will continue and probably accelerate as long as we are in these severe drought conditions. Does pulling 2.88 million gallons a day (mgd) during the test well, or 24.1 mgd if the proposed project were built make sense in this scenario? It can only exacerbate a dire situation.

But conversely, if el Nino swoops in with a deluge all winter long, it won't resolve the problem either, or more accurately, will create a different problem. Large rains will begin to fill empty reservoirs, expand streamflows, and recharge aquifers. As it does so, the water at the pump will naturally increase it's freshwater component. Now, by virtue of the Agency Act and the agreements being negotiated to keep the fresh component in the Basin, more water will have to be diverted from the Peninsula to honor that agreement. That means the water that is delivered will become less available and even more expensive per unit for Peninsula residents.

The bottom line is that this Cemex location is unsuitable, with too many convoluted variables and unknowns, significant legal obstacles that to date have not been adequately embraced by regulators, and too sensitive an environment to support a regional source water intake. The ocean is a location for source water that makes all of those variables disappear. Entrainment and Impingement seem like quite modest obstacles in comparison, and the technology is coming on line to significantly reduce those impacts. Please end the folly at your earliest, or make CalAM shareholders pay for all stranded costs on this nightmare.

I thank the Commission for your time and consideration of these arguments.

Michael Baer
Monterey, California

September 29, 2015

Executive Director & Commissioners
California Coastal Commission
Public Comment by Michael Baer on MWPSP
Monterey District

Introduction
I am no hydrologist, and neither are you, yet that does not mean we should not scrutinize the staff report and WEISS Associates analysis for the re-permitting of the Cal Am test slant well. The stakes are too high, the project may reach a billion dollars including financing charges, and the Monterey Peninsula will rely on the proposed MPWSP to provide 62% of all its water needs.

I recognize that you have a voluminous agenda of work to conduct at the monthly meetings and of necessity must essentially rely on staff recommendations, particularly as they apply to technical analysis. Cursory review of the staff report and independent analysis by Weiss Associates would lend itself to your support for staff recommendations.

Further scrutiny by interested public such as myself raises questions you must consider if you are to execute your duties responsibly. That is all that we, the public who will pay the bills and rely on the water, can do, and frankly, it feels pretty disempowering, because if past performance is any indication of future outcome, the Commission has neither the inclination, nor time, nor expertise to scrutinize what they are presented. Rather than be the courageous entity to stop the project in the face of the impending CDO, regulators and courts have been content to pass it up the chain, let someone else make the hard decisions. Cover your Gluteus and get out of the way. Does the buck stop here and now?

Let's begin with a simple editing correction. Page 2, paragraph 3 of the summary material from staff states that the pumping began in February of 2015. It was actually April 22, 2015, that it began. Later in the report, the correct date is used. To summarize what actually happened: The pump ran continuously for 44 days until June 5, and tossed approximately 126 million gallons of brackish water, that Cal Am has no legal rights to except by means of your permit, carelessly out to sea. I use that adverb intentionally and will amplify on that at the end of this document.

Moving on to Exhibit 2. Fig 1-3 which shows a schematic of the test slant well. Throughout all the documentation in the staff report, Weiss analysis, dEIR and elsewhere, the well is said to be positioned at a slant of 19 degrees from horizontal. Yet a simple calculation of slope - rise over run - shows a slope of approximately 0.38 which translates to a slant of between 34 and 35 degrees. How this impacts the efficiency or durability of the pump I have no idea, perhaps it is insignificant, but what is significant is the degree to which the schematic is misrepresented from the stated angle; it is off the mark by about 79%. Neither GeoSciences (creator of the schematic), Environmental Sciences Associates (ESA - creator of the EIR) or Weiss Associates (creator of the CCC independent analysis) noticed this error. It raises a question of what else did they not notice, what other calculations are wildly off the mark and not being noticed?

Unsubstantiated Claims
The answers remain unknown, and cannot be known, for the simple reason that unlike the schematic above, many claims in this report, as well as the DEIR, are unsubstantiated by data.

To begin with a simple example:

-The report mentions a Salinas Valley Groundwater Basin (SVGB) well that has groundwater drops of up to 20 feet in the last few months. But the report fails to provide a location or data to support that claim. Where is this well? Does its location shed any light on the issues at hand?

Now, more substantially:

-The HWG, backed by Weiss Associates, claim that seasonal fluctuations, agricultural and municipal usage, are responsible for the groundwater drops. Where is the evidence for that? The tables show that MW4, the key monitoring well, showed a drop of roughly 4.7 feet throughout the time interval of the graph, from March 9 to August 24, 2015. So what happened in 2014, 2013, and 2012, etc., during those spring and summer months? With no historical data provided about the Coastal Sub Basin, how can anyone, including Weiss Associates, evaluate those claims? Recall that 126 million gallons of water was taken in the area by the slant well.

-Exhibit 4, may be the most essential graph to require substantiation and corroboration, because wouldn't it be just totally awesome if it were true! The image on the right side of the figure shows a model for the impressive sounding "reverse particle tracking." It claims to model where the water in the ocean and ground originate for the source water of the intake wells. Some droplets of ocean water are shown taking 6 years to get to the pump, and some particles of groundwater, two to three miles inland, are shown taking as much as 19 years to reach the pump. That seems truly remarkable: How can they figure that out? So . . . how DO they figure that out? No one knows. Who came up with this stuff and how? The "how" remains a total mystery. There is no appendix with data in the DEIR about it, and Weiss Associates provides nothing on it either, although they accept it, and rely on it's findings in the report. The "who" however is known. It's GeoSciences, and its president, Dennis Williams. I assume you are aware of this man and his company, and the conflicts that surround him. Williams has a direct financial interest in providing this rosy scenario. Still he remains the lead expert in the HWG who collect the data and evaluate the results of his patented slant well technology. His remaining presence completely corrupts the its credibility of the HWG.

******Exhibit 4*** *is used to claim that the pump will eventually reverse seawater intrusion because the cone of depression created by the pump will get so big, so broad and so deep, that the intruded seawater from further up the valley will start to flow seaward because of a gravity gradient. Except GeoSciences, corroborated by Weiss Associates, already said that the pump would only draw the seawater down 4 inches a half mile inland from the pump and not effect groundwater levels for the neighboring farmers. Which is it? I postulate the whole of Exhibit 4 is a creation of Dennis Williams' imagination and I challenge GeoSciences to prove otherwise with actual data that can be evaluated, and I challenge you, the Commission, to scrutinize their case.*

Now, here comes Ron Weitzmann of WaterPlus, a life long, award winning, professional statistician and water advocate claiming (on Sept 27, 2015) that the books are cooked, the data has been tampered, intentionally fixed! The guy has the expertise to make such a claim. Outside expert statisticians should review it, and see if it has merit. Given what I just argued about Exhibit 4, I would not be the least surprised if he were correct in his claims.

Finally, I now include below comments I sent to the CPUC earlier this week, about what is more likely actually going to happen to the groundwater, instead of the modeling from Figure 4.

September 25, 2015

California Public Utilities Commission
Public Comment on CalAM's MPWSP
Submitted by Michael Baer, Monterey District

Comments on intake reliability and risks

Introduction

There are many complex factors which make up a successful desal plant. But it is safe to say that without a consistent, dependable, RELIABLE water intake source, the rest doesn't really matter, because without that, you got nothing. This project calls for source intake in excess of 8 billion gallons a year for decades. If the location cannot provide it, the project is a failure; a very, very expensive failure.

CalAM's intake system for the MPWSP can most accurately be described as questionable. The slant well technology is unproven, and is operating nowhere in the world. The water is drawn from an aquifer that is in an overdraft basin and seawater intruded. The hydro-stratigraphy models for the DEIR were developed by GeoSciences and its president Dennis Williams, now revealed to have serious conflicts of interest, with a keen interest in making slant wells work at this location, come hell and low water. Yet he remains on the HydroGeologic Working Group (HWG) apparently changing hats from representing the CPUC to representing CalAM. I find that situation unconscionable, but there it is. Later today we may learn from the California Coastal Commission what Weiss Associates and CCC staff think of the HWG analysis. The following piece was penned by me last month in an effort to clear up a common misperception. Parties to this project conflate groundwater and usable water, and/or misperceive "unusable water" as valueless water. It is critical that regulators do not make that same mistake.

Source Water Intake within Aquifer Regions

Conventional wisdom says that the California government agencies responsible for water desalination applications have determined that subsurface intake systems are the preferred and superior method of intake, such that they need to be proven infeasible before other source water intake systems, such as open ocean, can be entertained.

What I envision the intent of the subsurface preference to be, is that the policy makers are imagining that the water would be taken at a depth below a sandy stretch of seabed and that the water coming in would be 100% seawater. The substrate (particles of sand and mud making the seabed) would act as an effective and natural filter, keeping living organisms and detritus from being sucked into the intake pipe. This would offer a layer of protection for both the biome, and for the pipes, keeping living things living and separate from gumming up the works of the intake.

However all subsurface intake systems are not equal; far from it.

For the Monterey District, CalAM has chosen the Cemex site in Marina for its subsurface intake system using novel slant wells which nudge out towards the ocean. It is open to debate about whether the terminus of the current test slant well actually extends beyond the mean high tide line as the defining border of the ocean, but in practical terms it makes no difference. The

reason is that the slant well is pumping its source intake water from an aquifer, or a series of “unconfined” aquifers, known as the shallow Sand Dunes, the 180 foot and possibly impacting the 400 foot aquifer. These aquifers extend well beyond the mean high tide line under the seabed. These aquifers are defined as unconfined because they do not have a complete layer of impermeable clay between them (know as aquitards), and so the water flows between (and can be sucked out from) the loosely defined layers of aquifers.

Because this water is so near the ocean it is brackish, a mixing of freshwater from further inland and the seawater pushing in from the ocean. When the initial testing was done here, the salinity represented a value that was roughly 2-3 parts ocean to 1 part fresh. This is a level of salinity far from potable, and also too salty for agricultural purposes. For some involved in the debate, they conceive that the water is essentially useless, and hold little concern for what happens to it. The fact that it has a fresh component means that it will require less energy to desalt, so that is of some benefit. But it also comes with a legal caveat. Fresh water in the over-drafted Salinas Valley basin is protected by the Agency Act and so this “useless” resource has been, and will continue to be, a source of litigation between CalAm and senior water rights holders in the Basin.

But from an environmental standpoint this brackish water is far from useless; it is essential. You can imagine these aquifers which bring freshwater down to the sea as a large slow moving underground river. Where-ever it encounters the seawater it will mix with it. This is also true above land, where the freshwater meets the sea we call it an estuary or a slough. The mixing between salty and fresh will always occur when these two types of water meet. Together they create the third type, the brackish water.

The brackish water is a buffer between the seawater and the freshwater. It is a transitional zone. There are many factors which determine how large an area make up this transitional buffer zone, which is beyond the scope of this document.

The slant well intake system for the proposed MPWSP desal plant will be taking this brackish buffer zone water at a rate of roughly 23 million gallons per day which is over 8.4 billion gallons per year. As you remove this buffer zone, the sea will tend to move in faster than the fresh (even more so during a drought). Therefore the buffer zone will be re-created further inland and so this is the definition of seawater intrusion.

No one knows exactly how this will play out, but generally you can count on unanticipated negative consequences beyond the anticipated ones, what a former Secretary of Defense referred to as the unknown unknowns.

For these reasons, the test slant well should be terminated, and the intake system declared infeasible, and the legislation or policies broadened to prohibit any intake system that draws its water from California aquifers for a desal plant of a regional scope.

REMY | MOOSE | MANLEY LLP

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September 25, 2015

Via E-Mail (c/o Tom.Luster@coastal.ca.gov):

Charles Lester, Executive Director
c/o Tom Luster
California Coastal Commission
45 Freemont, Suite 2000
San Francisco, CA 94105-2219

Subject: California-American Water Company's application for an amendment to Monterey Peninsula Water Supply Project – Test Slant Well Long Term Pumping Test and Coastal Development Permits #A-3-MRA-14-0050 and 9-14-1735

Dear Mr. Lester:

On behalf of our client, Marina Coast Water District ("MCWD"), we submit the following comments on California-American Water Company's (Cal-Am's) application for an amendment to the Monterey Peninsula Water Supply Project ("MPWSP") – Test Slant Well Long Term Pumping Test and Coastal Development Permit #A-3-MRA-14-0050 and 9-14-1735 (hereafter "Cal-Am's Amendment Application"). These comments are informed by MCWD's knowledge of the Salinas Valley Groundwater Basin ("SVGB") and the attached letter from the District's hydrogeological experts Hopkins Groundwater Consultants, Inc. ("HGC"). While this letter references HGC's comments, it does not repeat them; the CCC should respond separately to the environmental issues raised by HGC as required by CEQA. We note that our comments and the HGC comments are limited to the Cal-Am's July 23, 2015 Amendment Application materials, the Coastal Commission 2014 Staff Report and Findings, and the "MONTEREY PENINSULA WATER SUPPLY PROJECT Test Slant Well Long Term Pumping Monitoring Reports" available at http://www.watersupplyproject.org/#!test-well/c1f1l (as of September 23, 2015). We understand that additional materials have been submitted by Cal-Am, but they have not yet been made publicly available or provided to MCWD despite our weekly requests for such information. Given MCWD's strong interest in ensuring the CCC's Staff Report (which we presume will serve as the CCC's CEQA-equivalent document) adequately addresses the MPWSP slant test well project's ("TSW's) potential environmental impacts, we are submitting these comments now without the benefit of Cal-Am's complete application materials. MCWD intends to update these comments when Cal-Am's additional materials are provided.

As the CCC is aware, MCWD opposed Cal-Am's original MPWSP TSW and is currently engaged in litigation over that approval, *MCWD v. CCC*, Santa Cruz County Superior Court Case No. CV180839, Sixth District Court of Appeal Case No. H042742. Contrary to Cal-Am's representations during that litigation, MCWD is not fundamentally opposed to the construction

or operation of a slant test well(s) for the MPWSP. Rather MCWD continues to oppose the MPWSP TSW (as well as Cal-Am's proposed Amendment Application and continued operation of the TSW) ***without adequate assurance—based on sound science and the most current available data—that the Salinas Valley Groundwater Basin ("SVGB"), including MCWD's existing vested rights to extract and use SVGB water for the current and future needs of its residents, will not be harmed.*** MCWD further believes the TSW must be subjected to the same environmental review and mitigation requirements under the California Environmental Quality Act ("CEQA") that the District must comply with when it considers projects. MCWD continues to believe that California Coastal Act expands on CEQA's environmental protections and public participation requirements; rather than diminishing them.[1]

Please note that MCWD supports continuing the MPWSP monitoring program (including the installation of MW-2 or an equivalent monitoring well) to establish baseline conditions in the Project area ***without pumping***. As explained in MCWD's comments following the TSW shutdown and further below, the continued shutdown of the TSW —until there is sufficient monitoring to establish baseline conditions—is critical to assessing the adequacy of the test well modeling and to understanding the TSW's (as well as the larger MPWSP's) potential impacts to the SVGB. This baseline data must be used to update the MPWSP TSW modeling before the CCC considers Cal-Am's proposed amendment application. Without this baseline information and updated modeling it is impossible for experts, much less the public, to understand the potential impacts of the MPSWP TSW (or the later phases of MPWSP) on the SVGB.

The need for careful scrutiny of the MPWSP TSW, alternatives, and cumulative impacts is particularly important in this situation in which the TSW is the first phase of the MPWSP, which is designed to contribute significantly to the restoration of one severely overtaxed groundwater basin (the Carmel River Basin) by drawing on another even more overtaxed groundwater basin (the SVGB, in particular the SVGB sub-basin aquifers that underlie the Marina area). Of note, the entire SVGB, including the aquifers underling the Marina area, lie outside of Cal-Am's service area on the Monterey Peninsula. While Cal-Am's service area would receive the benefit of water provided by the MPWSP, its source of water would be the SVGB, which is the only source of water supplies for MCWD's residents.

For these reasons and the reasons expressed below and in our prior comments, MCWD continues to oppose piecemealed environmental review of the MPWSP TSW from the MPWSP as a whole.

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[1] / Rather that reiterating our prior comments on: (a) the CCC's obligation to circulate its CEQA-equivalent document for 30-days as required by CEQA; (b) the CCC's obligation to respond to comments in its CEQA-equivalent document as required by CEQA; (c) the lack of a "substantial issue" to provide CCC jurisdiction over the TSW; (d) the City of Marina's jurisdiction over the land-side portions of the TSW; and (e) the CCC's ESHA analysis, we incorporate our prior comment letters to the CCC and have attached relevant pleadings in the *MCWD v. CCC* case as Exhibit A to this comment letter, which we also incorporate by reference.

I. Preliminary Statement.

MCWD is located on the coast of the Monterey Bay at the northwest end of the Salinas Valley. Formed by a citizens group in 1958, MCWD is a County Water District organized and operating under section 3000 of the California Water Code servicing residents, businesses and organizations throughout Marina and the former Fort Ord Army Base, known as the Ord Community. The District supplies water to over 8,250 water connections, maintains and operates 105 miles of pipeline, 8 reservoirs, 5 booster pump stations and 8 wells. It is also responsible for maintaining the service area's sewer system, which includes 20 lift stations and 110 miles of pipeline. MCWD, as the sole provider of municipal water service for over 33,000 residents in the Marina/Ord community, has a particular concern with the integrity and thoroughness of the CCC's environmental review of MPWSP TSW in order to protect the sole source of water for its residents as well as its efforts (and others) in restoring the groundwater aquifers in the Marina subarea (SVGB Pressure Subarea south of the Salinas River) of the from historical seawater intrusion.

MCWD and the entire Marina area is within what is referred to as the Marina subarea of the SVGB. Both Central Marina and the Ord Community Service areas have relied upon this source of supply since the areas were initially developed. The District owns and operates its production wells, and does not purchase wholesale water supply. Historically, MCWD supplied its Marina service area with water screened in the 180-Foot and 400-Foot aquifers. Between 1960 and 1992, some of those wells indicated varying degrees of seawater intrusion and were replaced, first moving from the 180-Foot aquifer to the 400-Foot aquifer, and later moving to the Deep Aquifer. The District currently operates wells that draw from the 180-Foot, 400-Foot, and Deep Aquifers within the Marina subarea of the SVGB.

Historically, the District operated a desalination plant located at its main office adjacent to Marina State Beach. This plant draws water from a shallow beach well screened above the 180-foot Aquifer. The plant remained in service for several years before a sudden rise in electricity costs made the plant uneconomical to continue operating. While the facility is not currently in use, it has a design capacity of producing 300 acre-feet per year to supplement MCWD' water supply.

The Salinas Valley Groundwater Basin is not adjudicated, and it supplies water to a number of existing municipal, industrial, and agricultural users, including the MCWD's 30,000 customers dependent on the basin for their domestic water. MCWD and others have been taking steps to eliminate the long term overdraft condition and to respond to the serious existing drought conditions. Between 1985 and 2000, the District constructed both the seawater desalination plant mentioned above and a wastewater recycling facility their existing wastewater treatment plant. The recycling facility was retried when the District connected to the Monterey Regional Water Pollution Control Agency system.

Additionally, in 2002, MCWD, in cooperation with Fort Ord Reuse Authority ("FORA"), initiated the Regional Urban Water Augmentation Project ("RUWAP") to explore water supply alternatives to provide the additional 2,400 AFY of water supply needed for the Reuse Plan. MCWD as the CEQA lead agency prepared a DEIR for RUWAP consisting of two primary alternatives: a 3,000 AFY Recycled Water Alternative and a 3,000 AFY Seawater Desalination Alternative. Additional alternatives analyzed included a Hybrid Alternative consisting of a 1,500 AFY of Recycled Water (allocating 1,200 AFY to the Ord Community and 300 AFY to the Monterey Peninsula) and 1,500 AFY of Seawater Desalination (allocating 1,200 AFY to the Ord Community and 300 AFY to replace MCWD's existing desalination plant). MCWD certified the EIR for RUWAP in 2004 with Addendum No. 1 to the EIR was adopted in 2006 and Addendum No. 2 was adopted in February 2007. Addendum No. 2 designated a modified Hybrid Alternative as the preferred alternative. MCWD is currently implementing RUWAP as funding becomes available.

MCWD has also implemented numerous water conservation programs in recent years. These programs include, among others, (1) the Water Conservation Commission; (2) a conservation rate structure; (3) an AMR meter reading system with leak detection; (4) the California State University Monterey Bay student learning partnership and student internship programs; (5) free conservation devices (showerheads, faucet aerators, leak detection tablets, etc.); (6) free water conservation education materials (e-flyers, newsletter, magnets and stickers, Restaurant and commercial business placards, water conservation website, etc.); (7) a landscape demonstration garden; (8) high-efficiency clothes washer and toilet rebates; (9) leak and high water use and detection notification procedures; (10) free property surveys; (11) landscape walk-throughs and irrigation system checks; (12) water use investigations, water use data logs, and water use charts and tables; (13) property certification on resale; (14) in-school water education classes and assemblies; (15) landscape building standards and plan check procedures; (16) water-wise landscape incentives for turf removal, conversion from sprinkler to drip irrigation, "smart" controller replacement, rail and soil moisture shut-off switches, etc.; and (17) regional participation in Water Awareness Committee of Monterey County Inc. MCWD has also adopted a Water Shortage Contingency Plan that calls for staged voluntary and mandatory conservation efforts, attached as Exhibit B. MCWD is 6 currently implementing stage 1 efforts. A significant portion of MCWD's budget is allocated to water conservation programs. MCWD will spend approximately $465,000 on its conservation programs over the next year alone. MCWD estimates that its conservation programs save between 520- and 600-acre feet of water per year.

As part of an effort to protect the groundwater for the 33,000 plus residents that depend on water from MCWD, MCWD entered into a recorded annexation agreement with the Monterey County Water Resources Agency, the City of Marina, the J.G. Armstrong Family, and RMC Lonestar (owner of the "Lonestar" property at issue here and referred to subsequently as "CEMEX") entitled the Annexation Agreement and Groundwater Mitigation Framework for Marina Area Land, dated March 1996 ("Annexation Agreement"). The Project site is subject to the restrictions set out in that agreement. While MCWD provided a copy of this document to the City of Marina as part of its environmental review, a complete copy of the document was not

included in the Coastal Commission's record. [2] Therefore, MCWD is providing a complete copy of the document as Exhibit C. The Annexation Agreement binds CEMEX and anyone seeking to obtain property from CEMEX. As stated in the agreement, CEMEX has historically pumped 500 acre/feet per year for use on its property, and thus may be pumping the full allotment under the Annexation Agreement already.

MCWD has serious concerns that the MPWSP TSW (and later phases of the MPWSP) will significantly impact its ability to provide water to its residents in a sustainable manner consistent with the recently enacted Sustainable Groundwater Management Act ("SGMA"). MCWD offer the following comments in light of the concerns.

II. Preliminary Comments on Environmental Review for Amendment to TSW Permit.

A. CCC's Analysis of Groundwater Impacts Must Be Revised to Comply with CEQA.

1. The 2014 Staff Report's Baseline Description Must Be Updated.

CEQA requires the CCC's CEQA-equivalent document "delineate environmental conditions prevailing absent the project, defining a 'baseline' against which predicted effects can be described and quantified." (See *Neighbors for Smart Rail v. Exposition Metro Line Construction Auth.* (2013) 57 Cal.4th 439, 447.) The baseline is normally the "existing conditions" in the vicinity of the project. (*Id.* at p. 448.) "Knowledge of the regional setting is critical to the assessment of environmental impacts." (Guidelines, § 15125, subd. (c).) Thus, CEQA Guidelines section 15125 provides that EIRs "must include a description of the physical environmental conditions in the vicinity of the project . . . from both a local and *regional* perspective." (*Id.* at subd. (a), emphasis added.) Furthermore, "[s]pecial emphasis should be placed on environmental resources that are rare or unique to that region and *would be affected by the project*." (*Ibid*, emphasis added.)

The description of a project's environmental setting plays a critical role because it provides "the baseline physical conditions by which a Lead Agency determines whether an impact is significant." (Guidelines, § 15125, subd. (a).) Longstanding case law upholds this fundamental principle by recognizing that "[a]n EIR must focus on impacts to the *existing environment*, not hypothetical situations." (*County of Amador* v. *El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 955, emphasis added.) **"If the description of the environmental setting of the project site and surrounding area is inaccurate, incomplete or**

[2] / MCWD discovered during the *MCWD v. CCC* litigation that the CCC did not obtain the City of Marina's complete record before approving the TSW as required under the CCC's regulations. (Cal. Code Regs., tit. 14, §§ 13118, 13112). Before approving any Amendment to the TSW, the CCC must obtain the complete record before the City of Marina. As noted above, MCWD incorporates its prior comments and pleadings regarding the City's authority over the TSW. MCWD further requests the Staff Report explain what Coastal Act provision(s) provide the CCC with authority to approve the proposed TSW Amendments prior to the City of Marina's consideration.

misleading, the EIR does not comply with CEQA." (*Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 87 (*Cadiz*).)

Here, the CCC's 2014 Staff Report and Findings deferred and delegated establishment of the environmental baseline to the Cal-Am's Hydrology Working Group ("HWG"). (See CCC's 2014 Findings, p. 54 ["Special Condition 11 requires that if water levels drop one foot below ***a baseline established prior to the commencement of pumping***, then the test well will be shut down. The baseline will be established by the Hydrogeology Working Group using established scientific protocols, laid out in a technical memo submitted by Cal-Am, that take into account factors such as changes in barometric pressure, tidal changes, offsite pumping, and rainfall events."].) During the *MCWD v. CCC* litigation, the CCC and Cal-Am argued the use of the term "baseline" in Special Condition 11 was unfortunate and that the CCC disclosed existing baseline conditions in evaluating the project's potential impacts, stating:

> **As the Commission recognized, groundwater in the Project vicinity is already severely contaminated by seawater intrusion, and these conditions are extremely well understood and documented in reports to and by government agencies.** The **Commission's findings cite to such reports, describe the existing conditions, and note that the underlying basin is subject to seawater intrusion that extends several miles inland from the coast where the Project is located. AR2708, 4158, 4191. As such, these reports are part of the Commission's record and provide substantial evidence of baseline conditions…. [¶]**
>
> The Commission also summarized groundwater conditions in the vicinity of the Project by describing the SVGB, past groundwater pumping quantities, the degree of seawater intrusion, groundwater storage capacity and the proximity of groundwater wells to the Project site. AR4191. For instance, the Commission noted:
> • "The known area of seawater intrusion extends along about ten miles of the Bay shoreline and up to about five miles inland, with all known existing wells within two miles of this test well site having already experienced seawater intrusion." AR4158.
> • "Water quality data collected from nearby areas over the past several years show that both aquifers exhibit relatively high salinity levels and that there is not an aquitard separating the two. . . . . Those data show that salinity and Total Dissolved Solids ("TDS") concentrations in nearby areas of the aquifers already exceed levels that are suitable for agricultural crop production." *Id.* (emphasis added).
> • "Seawater intrusion has been estimated to occur at a baseline rate of about 10,000 acre-feet (equal to about three billion gallons) per

> year, though the Basin's groundwater management programs are attempting to significantly reduce this rate." AR4191 (footnote omitted).
>
> The City's MND also described the severity of seawater intrusion in the aquifers from which the Project will pump. AR2098 **("the Dune Sand and 180-FTE Aquifers are heavily contaminated in the project area due to decades of seawater intrusion"**); AR2166-2167 (discussing seawater intrusion due to agricultural pumping); AR2167 ("Water samples taken from the exploratory borings at the CEMEX site indicate that both the Dune Sand Aquifer and the 180-FTE Aquifer contain saline (salt) water and are substantially influenced by the sea."); AR2168-2169 (historic seawater intrusion maps for 180-Foot and 400-Foot Aquifers); AR2170 (groundwater quality data collected at the CEMEX site). Additional information about existing conditions is provided in a hydrogeologic technical memorandum prepared by Geoscience, regarding exploratory boreholes drilled at the CEMEX site (the "Borehole Memorandum"). AR483-650. The Borehole Memorandum described existing conditions in detail, including seawater intrusion, groundwater subbasins, groundwater quality and levels, and other subsurface conditions. AR522-566.

(Cal-Am's Opposition to Marina Coast Water District's Opening Brief, p. 21-23 [the CCC joined these arguments], previously provided to CCC, emphasis added.)

Cal-Am's own monitoring data, which the trial court did not consider in ruling on the merits of the *MCWD v. CCC* litigation, demonstrates that the alleged baseline information provided in the CCC's 2014 Staff Report and Finding is not accurate and must be revised before the CCC can consider Cal-Am's proposed Amendments to the TSW for at least the following reasons.

First, the CCC Finding's and Cal-Am's statements that the Dune Sand and 180-Foot Aquifers in the project area are severely contaminated by seawater intrusion that extends several miles inland are inaccurate. As explained in the attached HGC Comments, the Dune Sand and 180-Foot Aquifers contain freshwater in the Marina Subarea less than a mile from the Project site. (HGC comments, pp. 6-11.) The HGC comments further explain that the Dune Sand Aquifer plays an important role in recharging the underlying aquifers and preventing seawater intrusion. (*Ibid.*) In light of this information, the baseline discussion and analysis from the CCC's 2014 Staff Report must be updated to correct all misleading statements and to evaluate the TWS's potentially significant impacts to groundwater.

Second, the CCC's and Cal-Am's suggestion that hydrogeological baseline conditions in the vicinity of the project are extremely well understood and documented is similarly without

support and contradicted by the State Water Resources Control Board (SWRCB), Final Review of California American Water Company's MPWSP, date July 31, 2013, available at http://www.swrcb.ca.gov/waterrights/water_issues/programs/hearings/caw_mpws/docs/cal_am_final_report.pdf. (SWRCB, Final Review of California American Water Company's MPWSP, date July 31, 2013, p. 50.) In fact, there is very little information available regarding the water quality, quantity, or the extent of seawater intrusion into the Dune Sand Aquifer in the Marina Subarea. As the SWRCB concluded "[s]tudies are needed to determine the extent of the Dune Sand Aquifer, the water quality and water quantity of the Dune Sand Aquifer, the extent and thickness of the Salinas Valley Aquitard.…" (*Ibid.*) The CCC's CEQA equivalent document (presumably the Staff Report for the TSW Amendment) must disclose the volume of groundwater in the Dune Sand, 180-Foot and 400-Foot Aquifers that could be extracted by the TSW in addition to the volume of groundwater in these aquifers that is potentially subject to seawater contamination. Without such information an informed decision cannot be made whether the limited benefits of the TSW are worth subjecting the groundwater in the Marina subarea to contamination. This a fundamental CEQA requirement. (See *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 86 [holding EIR was not in compliance with CEQA because the EIR does not discuss the volume of the aquifer groundwater, particularly potable water, that could be impacted by project].) As the Court explained in *Cadiz*:

> Despite the [Project] EIR's enormity and the length of time devoted to preparing it, the EIR is not in compliance with subdivision (c) of CEQA Guidelines section 15125 because the EIR does not discuss the volume of the aquifer groundwater, particularly potable water, which is a valuable and relatively scarce resource in the region. The EIR does not provide a sufficient description of the environmental setting or adequate information for the public and governmental agencies to evaluate whether the [Project] presents a significant adverse impact on the groundwater contained in the aquifer**. In order to weigh and evaluate the risk of groundwater contamination, the volume of water subject to contamination is required…** In turn, an informed decision cannot be made as to whether it is worth taking the risk of subjecting a valuable water source to contamination."

(83 Cal.App.4th at p. 92.) The same is true here. If the CCC cannot provide this information, MCWD request the CCC explain why.

Third, the CCC's reliance on Cal-Am's modeling (admitted to the record at the November 2014 hearing without any public review) that incorrectly assumes the groundwater gradient (flow) is onshore (inland or away from the coast) in the entire Marina subarea that will be impacted by the MPWSP TSW. (Geoscience July 2014 Draft: Monterey Peninsula Water Supply Project Results of Test Slant Well Predictive Scenarios Using the CEMEX Area Model, Prepared for Cal-Am; see also the uncertified CPUC DEIR for the MPWSP available at: http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir/4-4_groundwater_resources.pdf and ;

and appendix E2 to MPSWSP DEIR showing same assumptions regarding flows, available at http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir/AppendixE2.pdf .) [3] As explained in the attached HGC comments, groundwater data demonstrate that flows in the Dune Sand Aquifer are towards the ocean and thus protective of seawater intrusion. (HGC comments, pp. 20-24; see Figures 7-10 attached to same.) Flows within the 180-foot aquifer in the Marina subarea must also be addressed in the Staff Report. (*Ibid.*) Most importantly, the limited exploration and testing to date do not validate the assumptions in Cal-Am's groundwater model(s) used to simulate impacts of the slant test well. (See HGC comments, pp. 17-20.) Therefore, the MPWSP TSW modeling must be revised to reflect actual baseline conditions, including flows, in order to disclose the potential groundwater impacts in the Marina subarea. This updated modeling must be made available for public review prior to the hearing on the TSW Amendments to allow the public a meaningful opportunity to comment on the modeling assumptions and conclusions.

Fourth, the 2014 Staff Report's suggestion that efforts to abate seawater intrusion have had little to no effect on restoring coastal conditions in the project are not accurate. Cal-Am's monitoring data shows that MCWD's conservation efforts (Lonestar Annexation Agreement, conservation programs discussed above, etc.), in conjunction with other efforts to reduce groundwater pumping (MCWRA's Ordinance 3709, CSIP), are beginning to restore hydrologic balance within the Marina subarea. (HGC comments, pp. 5, 17, 20, 24.) The Staff Report for the TSW Amendment must address conservation efforts in the Marina subarea and the impact of the TSW on these efforts.

Fifth, the Staff Report for the TSW Amendment must be revised to address the misleading MCWRA maps depicting the entire Marina subarea as seawater intruded. As explained in the attached HGC comments, these maps are inconsistent with monitoring data that show numerous wells within areas shown to be seawater intruded, in fact, are not. (See HGC comments, pp. 6-11; see also Figures 1-4 attached to same.) An accurate map of seawater intrusion, particularly within the area affected by the MPWSP's proposed slant wells is needed to understand the project's impacts. Recent fieldwork and laboratory testing must also be used in the Staff Report for the TSW Amendment to evaluate and disclosure the project's potential groundwater impacts and evaluate of project alternatives. In addition, the suggestion that where water in monitoring and production wells exceed 500 mg/L there are no beneficial uses must be

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3 / Please note that MCWD's citations to the MPWSP DEIR CPUC in these (or any) comments should not be construed to suggest its analysis is accurate or supported by substantial evidence. In fact, the CPCUC is subjecting this analysis to independent review as the CPUC determined that Geoscience/HWG member Dennis Williams may have one or more conflicts of interest. (See CPCU Notice of Recirculation available at: http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/pdf/DEIR_recirc_notice_150909.pdf. If the CCC would like us to send copies of any of the documents that we provide webpage links to in this document, please notify us at your earliest convenience. Otherwise, we will assume the referenced documents will be included in the record. (See *Consolidated Irr. Dist. v. Superior Court (2012) 205 Cal.App.4th 697, 724* [document with citation to the specific webpage/URL containing the document are part of the administrative record].)

clarified. (See HGC comments, pp. 14-16.) The Staff Report must clearly articulate what TDS levels are used in its analysis to assess whether water has beneficial uses.

Finally, the Staff Report for the TSW Amendment must clarify the use of the term "baseline" in Special Condition 11. As written, the Special Condition implies (based on CEQA) that the environmental setting from which the CCC is evaluating impacts will be established after the project's approval. As noted above the CCC has argued this is not the case. If this is true, the language in the condition should be changed to avoid confusing the public. Notably, Cal-Am's proposed modifications to Special Condition 11 appear to continue to defer establishment of baseline conditions to the HWG. The Staff Report must clarify whether the Technical Memorandum - Monterey Peninsula Water Supply Project Baseline Water and Total Dissolved Solids Levels Test Slant Well Area, dated April 20, 2015 ("MPWSP Baseline Report") actually establishes baseline condition in the project area as the HWG has argued. (See MPWSP DEIR, p. 4.4-68.) MCWD continues to assert it does not for the following reasons.

As addressed in the HGC Comments, the MPWSP Baseline Report does not establish baseline water or TDS levels in the project area, much less the required baseline levels for Monitoring Well No. 4 (MW-4) and three other monitoring wells within 2,000 feet of the test well as required by Special Condition 11. (See HGC Comments, pp. 25-30; see also MPWSP Baseline Report, p. 14, available at http://www.mpwsp.org/Websites/coastalwater/files/Content/4985953/HWG_BASELINE_TM-20-Apr-15_1_1_.pdf.) Rather, the Report includes a cursory discussion of water levels at some of the monitoring wells over a period of weeks (*id.*, pp. 11-12) and then provides a section entitled "Recommended Monitoring of Baseline and TDS Levels," which suggests a method for evaluating impacts without actually establishing baseline water levels. (*Id.*, p. 14.) Specifically, the MPWSP Baseline Report states that in order to determine impacts to water levels at MW-4:

> If ground water levels at MW-4 show a continuing downward trend but prior to reaching the threshold prescribed by CDP Condition 11, the test slant well will be voluntarily shut off. If the test slant well is the cause of the downward trend in groundwater levels at MW-4, then groundwater levels will show a recovering trend. If the groundwater levels do not recover, then this is indicative of regional and climatic impacts. The data will be reviewed by the HWG for confirmation and the test slant well will resume pumping. If the ground water levels continue to decline after start up, then the data indicative of impacts other the slant well will be submitted to the Coastal Commission Executive Director, prior to reaching the threshold.

(MPWSP Baseline Report, p. 14.)

Based on the CCC's determination that the MPWSP Baseline Report satisfied Special Condition 11, please identify the baseline water levels established in the Report. Please also

confirm whether the CCC is utilizing the MPWSP Baseline Report in evaluating water level impacts for Cal-Am's proposed amendments to the TSW. Does the CCC intend to rely on the Technical Memorandum's methodology for assessing impacts in lieu of establishing baseline water levels for continued operations of the TSW?

Similarly, the MPWSP Baseline Report does not provide TDS levels in the project area, at MW-4, or at the other monitoring well locations. Instead the memo provides three different methods for conducting TDS sampling and states:

> Each method prescribed above will be compared with the data collected by that method to determine whether TDS concentrations remain within acceptable levels or show an increasing trend. Seasonal changes in TDS may result from potential seasonal changes in ground water levels aside from changes potentially induced by groundwater extraction from the test slant well. Changes in TDS will also be compared to changes in groundwater levels to evaluate whether TDS changes represent seasonal water quality change in the underlying aquifers.
>
> If two of the three methods used indicate a rising trend in the MW-4 series monitoring wells, the data will be submitted to the HWG for review prior to reaching the threshold prescribed by CDP Condition. The HWG will evaluate the data to determine whether rising TDS, should it occur, is a result of TSW pumping or from some other cause.

(See HWG's Technical Memorandum, p. 14-15.) Again, as addressed in the HGC Comments, no baseline information is provided in the MPWSP Baseline Report to evaluate whether TDS changes result from test well operations or represent seasonal water quality change in the underlying aquifers, only a method for monitoring impacts at MW-4. (See HGC Comments, pp. 25-30.)

Based on the CCC's determination that the MPWSP Baseline Report satisfied Special Condition 11, please identify the baseline TDS levels established Report. Please also confirm whether the CCC is utilizing the MPWSP Baseline Report in evaluating impacts for Cal-Am's proposed amendments to the TSW. Does the CCCC intend to rely on the Technical Memorandum's methodology for assessing TDS impacts in lieu of establishing baseline for continued operations of the TSW?

In summary, the 2014 Staff Report does not provide an accurate or complete description of existing groundwater conditions in the Marina subarea. Therefore, the Staff Report for the TSW Amendment must correct its prior erroneous statements and address: (1) how much groundwater in the Marina subarea aquifers is potentially impacted by the TSW; (2) the range of water levels in the aquifers near the project site and the Marina subarea aquifers impacted by the

TSW; and (3) the water quality (percentage that is seawater, brackish, or fresh) in the Marina subarea aquifers impacted by the TSW. The Staff Report for the TSW Amendment must also address the importance of the Dune Sand Aquifer as a recharge source for lower aquifers in this part of the Basin (e.g., 180-foot aquifer) and its beneficial use as a protective layer against seawater intrusion. Without disclosing this critical baseline information, the public and decisionmakers will likely be misled into believing that all the groundwater in the Marina subarea that is potentially impacted by the TSW has no value or beneficial uses. Moreover, without this information, the CCC's CEQA-equivalent document cannot fully evaluate and mitigate the TSW's potential groundwater impacts to the Marina Subarea.

2. The Staff Report for the TSW Amendment Must Establish Thresholds of Significance to Measure the Project's Impacts Groundwater Level and Water Quality.

The main purpose of an EIR (or CEQA functional equivalent document) is to allow agencies and the public to consider whether a project will result in any significant environmental impacts and to evaluate alternatives and mitigation measures that could reduce or avoid those impacts. (Pub. Resources Code, §§ 21002; 21002.1, subd. (a).) To serve this important function, CCC's CEQA-equivalent document must establish a "threshold of significance" for evaluating the severity of each potential environmental impact. "A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant." (Guidelines, § 15064.7.)

The CCC's 2014 Staff Report did not describe a threshold of significance to measure the severity of the TSW's impacts to groundwater in the Marina subarea. (See e.g. CEQA Guidelines, Appendix "G" [Would the project "deplete groundwater supplies or interfere substantially with groundwater recharge *such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level* …"].) Rather, the Staff Report only discusses whether the Project would have a significant effect on coastal agriculture. There is no threshold for gauging impacts to the groundwater aquifers in the Marina Subarea or the larger SVGB. As a result, it was impossible for the CCC or the public to determine whether the Project would have a significant impact to the aquifers in the project area.

Instead, the 2014 Staff Report seems to rely on a mitigation measure proposed by Cal-Am (which was rejected by the City of Marina) to establish a threshold of significance. The Staff Report states that if a drawdown of one foot "above natural fluctuations" occurs at an adjacent well, this "shall be considered a significant adverse effect on water supply." (2014 Staff Report, p. 51.) As explained in the attached HGC comments, using a one-foot drawdown at adjacent well cannot serve as an adequate threshold because the 2014 Staff Report doesn't identify any groundwater wells that pump from the Dune Sand and 180-Foot aquifers (the aquifers the TSW will pump from) in the Marina subarea. (See HGC Comments, pp. 16-24.) The lack of wells that pump from these aquifers in the Marina subarea does not mean groundwater within the project area has no beneficial uses or value as the 2014 Staff Report and Cal-Am suggest. (2014 Staff

Report, pp. 50-51.) Quite to the contrary, as the HGC comments explain, the MCWRA, MCWD and others have made a concerted effort to reduce pumping from these aquifers for the purpose of restoring water quality in the project area and protecting groundwater further inland. (See HGC Comments, p. 16-24.) These efforts are beginning to restore hydrologic balance within the Marina Subarea based on recent monitoring and investigations. (*Ibid.*) The MPWSP TSW, however, will likely diminish, if not erase, these significant environmental gains. As a result, and for the additional reasons explained in the HGC comments, the threshold established in Cal-Am's proposed mitigation does not, and will not, evaluate potential impacts to the Dune Sand and 180-Foot Aquifers in the Marina Subarea that will be impacted by the project. (*Ibid.*)

Given the importance of maintaining and improving the groundwater head in the Marina subarea to prevent further seawater intrusion, the CEQA Guidelines threshold of a "*net deficit in aquifer volume or a lowering of the local groundwater table*" should be used to evaluate the TSW's groundwater impacts. If the CCC does not agree that a net deficit in the Marina Subarea groundwater is the appropriate threshold, please explain why? This explanation should take into account applicable State, regional, and local regulations, including those addressed below. Please also explain what level of increased seawater intrusion for the TSW project the CCC considers significant. As explained in *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1111, "the fact that a particular environmental effect meets a particular threshold cannot be used as an automatic determinant that the effect is or is not significant." The agency must explain *why* the threshold is appropriate and *why* there will be no impacts based on the threshold." (*Ibid*.) In sum, the Staff Report must explain how the thresholds for impacts to groundwater will ensure there are no adverse impacts to the aquifers in the Marina subarea.

3. CCC's Staff Report Must Address TSW's Inconsistencies with Applicable State, Regional, and Local Regulations.

The Staff Report for the TSW amendment must also address whether the TSW Project is consistent with State, regional, and local laws and regulations adopted for the protection of groundwater, including the Central Coast RWQCB Basin Plan, the Monterey County Water Resources Agency Act ("Agency Act"), MCWRA Ordinance 3709, and SGMA. As discussed below, the laws and regulations are directly relevant not only to the legality of the TSW, but also its potential environmental impacts.

Central Coast RWQCB Basin Plan. The Staff Report must address whether the TSW would violate the Central Coast RWQCB Basin Plan's water quality objectives (available at http://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/) and the TSW's consistency with Resolution No. 88-63 (incorporated by reference into the existing 2011 Water Quality Control Plan for the Central Coastal Basin). Resolution No. 88-63 is Appendix A-9 of the Basin Plan, and is applicable to the proposed project. Resolution No. 88-63 sets forth the following policy regarding surface and ground water within the project area and protects "groundwater considered to be suitable, or potentially suitable, for municipal or

domestic water supply and should be so designated by the Regional Boards with the exception of:

> 1. Surface and ground waters where:
> a. The total dissolved solids (TDS) exceed 3,000 mg/L (5,000 uS/cm, electrical conductivity) and it is not reasonably expected by Regional Boards to supply a public water system, or
> b. There is contamination, either by natural processes or by human activity (unrelated to the specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices, or
> c. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day."

(http://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/docs/basin_plan_2011_appendices.pdf.) The 2014 Staff Report suggests that groundwater that currently does not meet Basin Plan objectives does not have value and cannot be significantly impacted. This is inaccurate. The Staff Report for the TSW must discuss the amount of water within the project area that is suitable, or potentially suitable, for municipal or domestic water supply and how the Project will impact these supplies. Without this information, it is impossible for the public and decisionmakers to understand whether the project, as proposed, would violate the Basin Plan. The criteria set forth in Resolution No. 88-63 must be included in this discussion.

Monterey County Water Resources Agency Act ("Agency Act"). Section 52-21 of the Agency Act states:

> The Legislature finds and determines that the Agency is developing a project which will establish a substantial balance between extraction and recharge within the Salinas River Groundwater Basin. ***For the purpose of preserving that balance, no groundwater from that basin may be exported for any use outside the basin,*** except that use of water from the basin on any part of Fort Ord shall not be deemed such an export. If any export of water from the basin is attempted, the Agency may obtain from the superior court, and the court shall grant, injunctive relief prohibiting that exportation of groundwater.

(Agency Act, attached as Exhibit D, emphasis added.) Here, Cal-Am's own monitoring reports demonstrate the TSW has violated the Agency Act's export prohibition by extracting SVGB groundwater and removing it from the SVGB. (See HGC comments, pp. 14-16.) The CCC's staff report for the amendment must address whether the TSW violates the Agency Act.

MCWRA Ordinance 3709. The economic development of the SVGB is based upon a balance between a predominantly agricultural economy and urban development. Therefore, to achieve

this balance, the MCWRA has developed a number of groundwater stabilization and conservation projects (in collaboration with other stakeholders in the SVGB, including MCWD) to restore the Basin and prevent seawater intrusion as directed by the Agency Act. To meet the Agency Act's directives, MCWRA also adopted Ordinance 3709, "prohibiting groundwater extraction within the northern Salinas Valley between the depths of 0 mean sea level and -250 mean sea level." (See Ordinance 3709 attached as Exhibit E.) The CCC's staff report for the amendment must address the proposed TSW's consistency with MCWRA Ordinance 3709.[4]

Sustainable Groundwater Management Act (SGMA). The Staff report must also address the TSW's consistency with the SGMA which was signed into law on September 16, 2014, and became effective January 1, 2015. The SGMA defines "basin" as either a subbasin or a basin. (Water Code, § 10721, subd. (b).) Water Code Section 113, which was adopted as a part of the SGMA, declares, "It is the policy of the state that groundwater resources be managed sustainably for long-term [water supply] reliability and multiple economic, social, and environmental benefits for current and future beneficial uses. Sustainable groundwater management is best achieved locally through the development, implementation, and updating of plans and programs based on the best available science."

The SGMA imposes significant responsibilities and obligations on SVGB water agencies to ensure that the Basin or applicable subbasin (like the Marina Subarea) are operated within its sustainable yield." The SGMA requires the creation of groundwater sustainability agencies (GSAs) by the local agencies and the GSAs are in turn required to develop and implement local groundwater sustainability plans to achieve groundwater sustainability. The "sustainability goal" is defined as "the existence and implementation of one or more groundwater sustainability plans that achieve sustainable groundwater management by identifying and causing implementation of measures targeted to ensure that the applicable basin [or subbasin] is operated within its sustainable yield." (Water Code, § 10721, subd. (t).) "Sustainable yield" is defined as "the maximum quantity of water, calculated over a **base period** representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply **without causing an undesirable result**." (Water Code, § 10721, subd. (v), emphasis added.) Given the current extended drought conditions and the overdrafted status of the Marina subarea, it would not appear the TSW is consistent with SGMA.

4. CCC's Staff Report Analysis of Alternatives Must Be Updated.

The CCC 2014 findings state "the test well is necessary to assess whether a subsurface intake is a feasible source of water for Cal-Am's proposed desalination facility and that the proposed location for the test well is the environmentally preferred alternative." (See 2014

[4] / MCWD points out that neither the Agency Act nor MCWRA Ordinance 3709 differentiate between "brackish groundwater" and "groundwater." Moreover, as discussed in the attached HGC comments, removing "brackish groundwater" from this area will result in the aquifers in the Marina Subarea of the SVGB becoming more saline, which will make "fresh" groundwater further inland "brackish."

Findings, p. 56.) As the CCC is aware, MCWD asserts that the CCC's findings on alternatives are not supported by substantial evidence. MCWD does not repeat these arguments here, but incorporates by reference its prior comments on alternatives and its briefing in the *MCWD v. CCC* lawsuit (attached as Exhibit A). MCWD further notes that the CPUC's MPWSP DEIR includes an analysis of a Test Slant Well at Potrero Road demonstrating a test slant well at that location is at least potentially feasible and needs to be adequately investigated by the CCC. (See MPWSP DEIR, Alternatives analysis available at http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir/7_alternatives.pdf, pp 7-246 - 7-282.) The MPWSP included multiple alternatives to the CEMEX TSW, including Ranney collectors at the CEMEX site, which should be investigated before the CCC considers approving the Cal-Am's proposed TSW amendment. (See *id.*, pp. 7-1 - 7-245.) MCWD further notes that inclusion of the Test Slant Well at Potrero Road in the MPWSP DEIR provides further evidence that this project is being improperly segmented/piecemealed. Finally, the Staff Report should address impacts to ESHA from the TSW to date, including Cal-Am's lack of compliance with the ESHA mitigation (e.g., restoration requirements), in evaluating alternative sites.

III. Comments on Cal-Am's Proposed Changes to Special Condition No. 11

As explained in the attached letter from MCWD's hydrogeological exerts, Special Condition 11 does not meaningfully address, and will not prevent, harm to the critical groundwater resources in the Marina Subarea. That said, Cal-Am's proposed modifications to Special Condition 11, would eliminate any protections provided by the condition. Notably, without the MW-2 monitoring well cluster, or any equivalent replacement well along the coast, the TSW will in effect have no monitoring for the likely seawater intrusion. (See HGC comments, p. 30.) Rather than repeating the remainder of the HGC comments regarding Cal-Am's proposed changes to Special Condition 11, MCWD incorporates these comments by reference. (See HGC comments, pp. 29-39.) MCWD further notes that Cal-Am's Opposition to MCWD's Opening Brief, which the Coastal Commission also joined, states:

> Special Condition 11's performance standards for groundwater drawdown (1.5 feet) and salinity increase (2,000 ppm TDS) are already established. AR4151. If MW-4 reaches one of these pre-determined levels, the HWG and the Executive Director are tasked with determining whether the Project caused such changes. AR4151-4152. **If causation is at least in part due to the Project, Cal-Am must obtain a CDP amendment before resuming pumping.** *Id.* **Neither the levels of drawdown or salinity increases, nor the consequences if those levels are reached, are discretionary.**

(Cal-Am's Opposition to Marina Coast Water District's Opening Brief, p. 26 [the CCC joined these arguments], previously provided to CCC, emphasis added.) Modifying Special Condition 11 to require all or even most of drawdown from pre-pumping conditions be caused by the slant well would be inconsistent with representations the Coastal Commission has made to the Court regarding alleged protections. It would also improperly delegate the CCC's duty to assess potential environmental impacts to a group of experts controlled by the project's proponents.

It would also provide Cal-Am's HWG with significant discretion in evaluating whether Special Condition 11 was triggered in violation of CEQA.

Finally, as Staff noted at the November 2014 hearing, the purpose of Special Condition 11 was that "... if more freshwater shows up then -- you know that would use that to either redesign the well, move it to a different location." (See Transcript of Proceedings, November 12, 2014, p. 10.) Given the monitoring well data showing significantly more freshwater in close proximity to the TSW and the substantial increase in the amount of groundwater pumped by the TSW compared to the Cal-Am's proposed modeling (more than 3X), the CCC should consider a different location for the slant well as Special Condition 11 envisioned.

IV. Conclusion.

For the foregoing reasons and the reasons explained in MCWD's prior comments to the CCC, we urge the Commission to decline Cal-Am's Amendment application until adequate environmental review can be performed on the full MPWSP in compliance with CEQA. Given the TSW is proposed to be converted into a permanent MPWSP source well and to be one of ten wells pumping 24.1 mgd or 27,000 AFY of water (MPWSP DEIR Project Description available at http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir/3-project_description.pdf), the TSW must be examined within the context of MPWSP, not just the pumping of the single slant test well over a 2 year-period. MCWD further requests the CCC provide at least 30 days for MCWD and public to review and comment on the CCC's CEQA-equivalent document unless and until an adequate EIR has been certified that addresses the TSW impacts.

Thank you in advance for your consideration of our comments. Please contact me if you have any questions.

Very truly yours,

Howard "Chip" Wilkins III

Attachments: HGC Comments
Exhibits to HGC Comments
Exhibits A-E to this letter

cc: Keith Van Der Maaten,
MCWD General Manager

HOPKINS
GROUNDWATER
CONSULTANTS, INC.
THE WATER RESOURCE SPECIALISTS

September 23, 2015
Project No. 15-004-01

Marina Coast Water District
11 Reservation Road
Marina, California 93933

Attention: Mr. Keith Van Der Maaten
General Manager

Subject: California-American Water Company's July 23, 2015 application for amendment to Coastal Development Permits A-3-MRA-14-14-0050 and 9-14-1735.

Dear Mr. Van Der Maaten:

Hopkins Groundwater Consultants, Inc. (HGC) has reviewed California-American Water Company's (Cal-Am's) July 23, 2015, application to the California Coastal Commission (CCC) proposing an amendment to Special Condition 11 of Coastal Development Permits A-3-MRA-14-14-0050 and 9-14-1735 for Cal-Am's test slant well project (referred to in this letter as the "slant well project" or "TSW"), including the attached Hydrogeological Working Group (HWG) letter with the same date. It is our understanding that the application and monitoring reports posted at http://www.watersupplyproject.org/#!test-well/c1f1l is the only information the CCC has made available to the public and Marina Coast Water District (MCWD) to evaluate the proposed amendment to date. In light of the lack of any new analysis of potential impacts to the Salinas Valley Groundwater Basin (also referred to as the "Salinas River Groundwater Basin" and "SVGB") in Cal-Am's amendment application and the extremely limited discussion in the CCC's 2014 Staff Report and Findings, this letter first provides background information that is critical to understanding the TSW's potential impacts in the Marina Subarea of the SVGB. This letter then addresses the proposed amendments to Special Condition 11. As discussed herein, the proposed monitoring under Special Condition 11 will not alert the CCC or the public to adverse groundwater impacts until after they occur, if ever. More importantly, Special Condition 11 does not mitigate the project's groundwater impacts to the Marina Subarea of the SVGB.[1] Therefore, the CCC will need to evaluate mitigation options (e.g. return water, reduction in pumping, etc.) and alternatives (e.g. different locations) that address the TSW's groundwater impacts.

[1] / For purposes of these comments, we refer to the portion of the Pressure Subarea located south of the Salinas River as the Marina Groundwater Subarea of the Pressure Subarea, or the Marina Subarea. The Marina Subarea is the coastal subarea of the SVGB that would be directly impacted by the TSW's pumping and contains highly complex hydrogeological conditions that are very different for the portion of the Pressure Subarea north of the Salinas River as explained herein.

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Comments on Impacts of Cal-Am Test Slant Well on Marina Subarea of the SVGB

The CCC's Staff Report included the following background information regarding baseline water:

> The test slant well would remove up to about 3.6 million gallons per day of primarily seawater from a sub-seafloor extension of the 180-Foot Aquifer of the Salinas Valley Groundwater Basin. The Basin is a relatively long and narrow groundwater structure extending about 140 miles from the coast to the southeast along the Salinas River valley. Past groundwater pumping in nearby portions of the Basin for agriculture have exceeded 100,000 acre-feet per year, and have resulted in seawater intrusion that extends several miles inland. This has both reduced the quality of groundwater for agricultural use and reduced the amount of groundwater pumped from sites close to the CEMEX facility. Seawater intrusion has been estimated to occur at a baseline rate of about 10,000 acre-feet (equal to about three billion gallons) per year [See 2001 Salinas Valley Water Project Environmental Impact Report, published by Monterey County Water Resources Agency], though the Basin's groundwater management programs are attempting to significantly reduce this rate. The Basin is divided into eight sub-regions, with the project area within what is known as the 180/400-Foot Sub-Basin, which has an estimated groundwater storage capacity of about 6.8 million acre-feet. Due in part to the aquifer being seawater-intruded near the site, the closest active off-site wells in the Sub-Basin are about 5,000 feet from the proposed test well.

(2014 Staff Report, p. 50.) This limited discussion of seawater intrusion does not provide sufficient information to assess the slant well project's impacts to water supplies or water quality. Notably, it does not contain an adequate description of existing conditions at the TSW site, explain the differing conditions in the Dune Sand, 180-Foot, and 400-Foot Aquifers, or identify which aquifers the nearest wells produce groundwater. A summary of publicly available information is provided below to demonstrate the complexity of the Marina Subarea and need for additional analysis regarding the TSW's groundwater impacts.

Background Information on the SVGB and Pressure Subarea of the Basin

The SVGB lies within the southern Coast Ranges between the San Joaquin Valley and the Pacific Ocean, and is drained by the Salinas River. The valley extends approximately 150 miles from the La Panza Range north-northwest to its mouth at Monterey Bay. The valley is bounded on the west by the Santa Lucia Range and Sierra de Salinas and on the east by the Gabilan and Diablo Ranges.

The SVGB is divided into four hydrologically linked subareas (or subbasins): Pressure, East Side, Forebay and Upper Valley. A map of the four subareas is located at Figure ES-1 of the State of the Salinas River Groundwater Basin Report, dated January 16, 2015, Monterey County Water Resources Agency (MCWRA), which is attached as Exhibit 1, see p. ES-2). The slant well project is located in the Pressure Subarea.

The Pressure and East Side Subareas of the SVGB were identified as "high" priority in the California Statewide Groundwater Elevation Monitoring (CASGEM) Groundwater Basin Prioritization final results released June 10, 2014. This means these subbasins are in critical condition because of long-term overdraft from pumping that has induced seawater intrusion and affected local water supplies. The consequence of the adverse basin conditions was scored by the State based on a consideration of factors that include population, irrigated acreage, total number of wells, and the overall reliance on groundwater to sustain the overlying beneficial land uses. Notably, the SVGB Pressure Subarea East Side Aquifer is the No. 1, top ranked groundwater subbasin in the state while SVGB 180 Foot/400 Foot aquifer system was ranked No. 12 out of 515 subbasins. (See CASGEM Groundwater Basin Prioritization final results attached as Exhibit 2.) This underscores how critical additional impacts to the SVGB in the vicinity of the TSW project area will be.

Our comments focus on the SVGB Pressure Subarea because it is where the TSW is located and where all of MCWD's wells for its Marina and Ord Community service areas are located. Aquifers in the Pressure Subarea are vertically separated by aquitards. An aquitard is a unit of sediments that presents a partial barrier to groundwater flow, such that groundwater movement through an aquitard is slow relative to that through an aquifer. Aquitards should not be confused with aquicludes, which virtually transmit no groundwater because of the extremely fine-grained nature of the sediments they contain.

The Pressure Subarea has the most complex hydrostratigraphy of the subareas in the SVGB which is comprised of multiple aquifer and aquitard layers that include:

- A shallow aquifer;
- Salinas Valley Aquitard;
- Pressure 180-Foot Aquifer;
- Pressure 180/400-Foot Aquitard;
- Pressure 400-Foot Aquifer;
- Pressure 400-Foot/Deep Aquitard; and
- Pressure Deep Aquifer.

A conceptual hydrostratigraphic section of the Pressure Subarea is shown on Figure 3-6 of the State of the Salinas River Groundwater Basin Report, dated January 16, 2015, MCWRA (Exhibit 1, State of the Salinas River Groundwater Basin Report, p. 3-8). A further description of these aquifers is provided below.

In parts of the Pressure Subarea, a shallow groundwater aquifer (i.e. Dune Sand Aquifer) has been observed perched above or within the Salinas Valley Aquitard. The Salinas Valley Aquitard typically extends from the ground surface to approximately -100 to -150 feet below mean sea level (msl) but thins out near the Pressure Subarea/East Side Subarea boundary. (Exhibit 1, State of the Salinas River Groundwater Basin Report, p. 3-8 [citing MCWRA, 2006]).

Beneath the Salinas Valley Aquitard is the Pressure-180 Aquifer (P-180 Aquifer or 180-Foot Aquifer), which is predominantly made up of sand and gravel deposits with some interbedded sand/clay and gravel/clay layers. Groundwater in this system is predominantly confined, except where the overlying aquitard is absent. Individual sand bodies within the aquifer are typically 100 to 150 feet thick, although they range from less than 50 feet thick to greater than 200 feet thick where the P-180 Aquifer and Pressure-400 Aquifer (P-400 Aquifer or 400-Foot Aquifer) appear to be hydraulically connected. (See Exhibit 1, State of the Salinas River Groundwater Basin Report, p. 3-2)

The clay aquitard separating the P-180 Aquifer and P-400 Aquifer (the Pressure 180/400-Foot Aquitard) varies in composition, depth, and thickness, and is absent in some areas. The Pressure 180/400-Foot Aquitard is typically 50 to 100 feet thick. Where the Pressure 180/400-Foot Aquitard is thin or absent, the P-180 Aquifer and P-400 Aquifer are in direct communication (Kennedy/Jenks, 2004). (See Exhibit 1, State of the Salinas River Groundwater Basin Report, p. 3-9) As a result, water can move between the aquifers.

The P-400 Aquifer consists mainly of sand and gravel with a moderate amount of interbedded sand and clay or gravel and clay layers. Groundwater in this system is under confined conditions. In general, the P-400 Aquifer has a larger component of sand and clay or gravel and clay mixtures compared to the P-180 Aquifer. The top of the P-400 Aquifer is typically encountered at about –300 to –350 feet below msl. The thickness of this aquifer is variable, but typical sand beds are 50 to 100 feet thick and can be more than 200 feet thick. The sand beds are especially thick in areas where the Pressure 180/400-Foot Aquitard is absent. (See Exhibit 1, State of the Salinas River Groundwater Basin Report, p. 3-9)

The Pressure 400/Deep Aquitard is made up of clay layers approximately 100 to 120 feet thick separating the P-400 Aquifer and the Pressure Deep Aquifer. The Pressure Deep Aquifer includes distinct aquifer zones located at approximate depths of 800, 900, 1,000, and 1,500 feet below ground surface. (See Exhibit 1, State of the Salinas River Groundwater Basin Report, p. 3-9)

The SVGB, Including the Pressure Subarea, Are Out of Hydrologic Balance

The Salinas River Groundwater Basin, including the Pressure Subarea of the basin, is out of hydrologic balance (or overdrafted). (See Exhibit 1, State of the Salinas River Groundwater Basin Report, p. 4-15.) Neither the CCC's 2014 Staff Report and Findings nor Cal-Am's Amendment Application materials provide adequate information regarding the hydrologic balance of the SVGB or the Pressure Subarea to evaluate the potential impacts to water supplies

and water quality in the slant well project area or the SVGB. This information is critical to understanding and evaluating the potential impacts of the TSW.

The recent MCWRA's State of the Salinas River Groundwater Basin Report, dated January 16, 2015, confirms that the SVGB is out of hydrologic balance. (Exhibit 1, at p. ES-12) In fact, it estimates that the SVGB is out of hydrologic balance by approximately 17,000 to 24,000 acre-feet per year (AFY). More significant here, the entire Pressure Subarea is out of balance by approximately 12,000 to 19,000 AFY as explained below. That said, HGC has been unable to locate information regarding the hydrologic balance of the aquifers in the Marina Subarea of the Pressure Subarea. As explained below, it appears reduced pumping in the Marina Subarea (from historical averages) is beginning to restore hydrologic balance within the Marina Subarea based on recent monitoring and investigations. Further evaluation of the hydrologic balance within this area is necessary to evaluate the impacts of the TSW.

As the Salinas River Groundwater Basin Report explains inflow (or recharge) to the entire Pressure Subarea is largely the result of natural recharge which includes infiltration from the Salinas River, agricultural return flows, and precipitation. This accounts for approximately 117,000 AFY of the total recharge in the Pressure Subarea with 17,000 AFY contributed from subsurface inflow.

Outflow from the Pressure Subarea presently occurs as a combination of groundwater pumping and subsurface outflow to the East Side Subarea. The MCWRA estimated that pumping was about 118,000 AFY in the entire Pressure Subarea in 2013, the latest year of data available. (Exhibit 1, Salinas River Groundwater Basin Report, p. 4-10) The average annual groundwater extraction in the Pressure Subarea from 1959 to 2013 was about 129,000 AFY, and the average annual change in storage was about -500 AFY (or about -50 AFY depending on the storage coefficient utilized). As discussed further below, an additional 11,000 to 18,000 AFY of seawater intrusion occurs in the Pressure Subarea. The MCWRA determined that the current level of pumping in the Pressure Subarea is greater than the yield for that subarea by about 12,000 to 19,000 AFY. (Exhibit 1, Salinas River Groundwater Basin Report, p. 4-25)

The MCWRA has also reported the approximate distribution of pumping by aquifer in the Pressure Subarea. North of Salinas, about 90 percent of the pumping comes from the P-400-Foot Aquifer, 5 percent from the Pressure Deep Aquifer, and the remainder from the P-180-Foot Aquifer. South of Salinas, about 60 percent of the pumping comes from the P-400-Foot Aquifer and 40 percent from the P-180-Foot Aquifer. (Exhibit 1, Salinas River Groundwater Basin Report, p. 4-10)

Background on Seawater Intrusion in Pressure Subarea of SVGB

The upper two aquifers in the Pressure Subarea (P-180-Foot and P-400-Foot Aquifers) as well as the Dune Sand Aquifer are in hydraulic connection with the Pacific Ocean, meaning that seawater can potentially intrude into these aquifers. Water levels in the aquifers do not need to be below sea level for seawater intrusion to occur because seawater is denser than freshwater (by about 2.5 percent).

In an aquifer affected by seawater intrusion, the denser seawater lies at the bottom of the aquifer, while the lighter freshwater lies above. The position, extent, and shape of the seawater wedge in a coastal aquifer all depend on the properties of the aquifer (including its thickness and hydraulic conductivity), groundwater head, the depth of the aquifer, and the flux of freshwater discharging into the seawater body.

In an intruded aquifer, there is a transition zone separating the part of the aquifer containing mostly seawater from the part containing freshwater. Groundwater in this zone will be a mixture of seawater and freshwater, with water quality and density between the values of pure seawater and pure freshwater.

There is very little information regarding the water quality, quantity, or the extent of seawater intrusion into the Dune Sand Aquifer in the Marina Subarea. (See State Water Resources Control Board, Final Review of California-American Water Company's Monterey Peninsula Water Supply Project, date July 31, 2013, p. 50 ["Studies are needed to determine the extent of the Dune Sand Aquifer, the water quality and water quantity of the Dune Sand Aquifer, the extent and thickness of the Salinas Valley Aquitard.…"].) As discussed further below, the Monterey Peninsula Water Supply Project (MPWSP) monitoring well data indicate that the Dune Sand Aquifer is not highly intruded (i.e. has freshwater less than one-mile from the Coast), has protective head levels at Monitoring Well MW-1 and further inland at MW-4 when the TSW is not operating, and plays an important role in protecting the entire Marina Subarea from seawater intrusion.

Prior to the availability of the MPWSP monitoring data, it was largely believed that the 180-Foot and 400-Foot Aquifers were highly intruded (almost pure seawater) several miles inland, perhaps as far as the City of Salinas. As discussed below, recent information indicates this belief is not true (or is no longer true) within the Marina Subarea. Blended seawater/freshwater in the 180-Foot and 400-Foot Aquifers can migrate landward as a result of a reversed groundwater gradient that is present within most of both aquifers, meaning the flow of groundwater is landward instead of the natural seaward groundwater flow direction. Further, the movement of the seawater/freshwater transition zone can be affected by localized fluctuations in the groundwater head due to groundwater pumping. Notably, the seawater/freshwater transition zone can migrate preferentially in portions of an aquifer that facilitate more groundwater movement (i.e. have a higher hydraulic conductivity) than in adjacent portions of the groundwater bearing zone. Lastly, the vertical migration of seawater/freshwater transition zone between the 180-Foot and 400-Foot Aquifers is possible via wells with long perforated intervals, well casing conduits, and thinned or pinched out aquitards. (Exhibit 1, Salinas River Groundwater Basin Report, pp. 5-1 – 5-2)

Characterizations of historical seawater intrusion for the Pressure Subarea can be found in studies by Greene (1970), DWR (1973), Todd Engineers (1989), and Kennedy/Jenks (2004). The main condition historically allowing regional seawater intrusion in the northern Salinas Valley is that the 180-Foot and 400-Foot Aquifers are in hydraulic connectivity with the Monterey Bay. The secondary condition is that groundwater heads in the 180-Foot and 400-Foot

Aquifers are below sea level and that the natural seaward groundwater gradient had been reversed (groundwater flow is landward). A third condition allowing seawater intrusion in the Pressure Subarea is inter-aquifer movement of groundwater where the aquitard between the 180-Foot and 400-Foot Aquifers is discontinuous and water in the aquifer zones can mix. This last condition appears to be present in the vicinity of Monitoring Well MW-6 where the water levels of MW-6M and MW-6D have virtually the same elevation and trend. Additionally, many water wells in the area are perforated across multiple aquifer zones, or are otherwise improperly constructed or abandoned, and may act as vertical conduits for flow. Both the natural aquitard gaps and the improperly constructed or abandoned wells can allow degraded groundwater present in the 180-Foot Aquifer to migrate downward into the 400-Foot Aquifer (e.g. DWR, 1973). This downward migration is driven by the downward head gradient between the two aquifers. The head difference in some portions of the two aquifers was reported in 1989 to be about 30 to 40 feet (Todd Engineers, 1989). (Exhibit 1, Salinas River Groundwater Basin Report, p. 5-2.)

Using a numerical groundwater flow model, Yates (1988) found that the amount of seawater intrusion over the period from 1970 to 1981 was about 18,900 AFY. At that time, model results indicated that pumping would have to be decreased by about 30 percent in the Pressure and East Side Subareas to decrease seawater intrusion to about 8,100 AFY after 20 years. Based on 2012 actual extractions, pumping would have to decline from about 114,000 to 80,000 AFY in the Pressure Subarea and from about 96,000 to 67,000 AFY in the East Side Subarea. This is a total pumping reduction of about 63,000 AFY in both Subareas affected by seawater intrusion. Thus, MCWRA concluded the current groundwater extraction (versus available yield) in these coastal aquifer zones renders the aquifers out of balance with the unintended effect of seawater replenishing (intruding) the overdraft of fresh groundwater. (Exhibit 1, Salinas River Groundwater Basin Report, p. 4-26.)

According to the MCWRA, the seawater intrusion front has continued to proceed inland across the Pressure Subarea to the point where it has reportedly reached 8 miles inland. This information was relied on by the CCC in the 2014 Staff Report and Findings and was included in Staff's presentation at the November 2014 TSW hearing. (See Transcript of Proceedings, November 12, 2014, p. 10.) As indicated below in Figures 1 through 3 – Average Chloride Concentrations, Total Dissolved Solids Concentrations and Specific Conductance Values, Dune Sand and 180-Foot Aquifers, respectively, MCWRA's map does not provide an accurate picture of the seawater intrusion in the Marina Subarea. It should be noted that MCWRA did not have the benefit of the MPWSP monitoring well results and other available information provided by the TSW investigations when it prepared the maps. Similarly, CCC Staff did not have this information when it prepared the 2014 Staff Report.

Figure 1 – Average Chloride Concentrations
Dune Sand and 180-Foot Aquifers

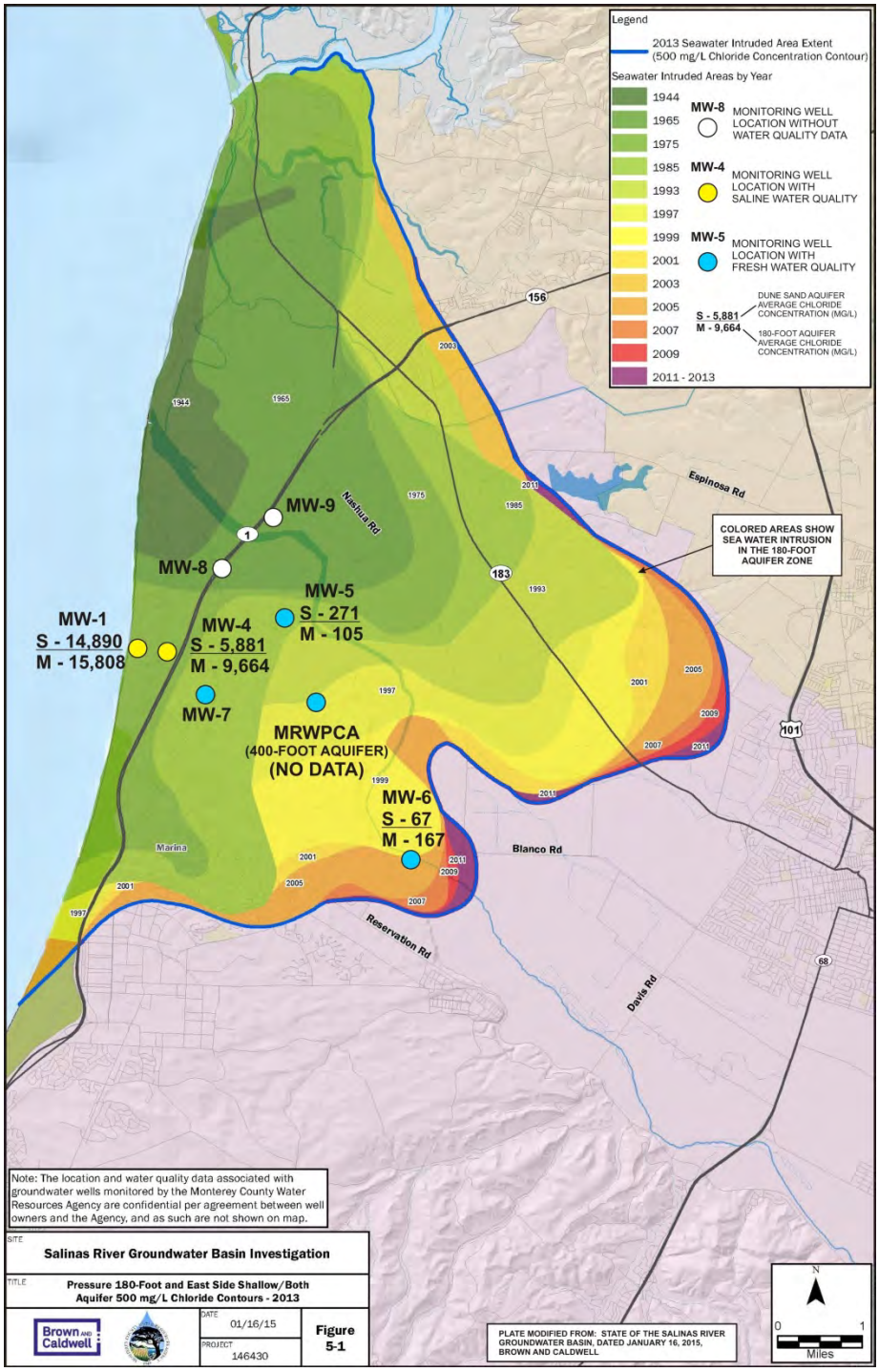


Figure 2 – Average Total Dissolved Solids Concentrations
Dune Sand and 180-Foot Aquifers

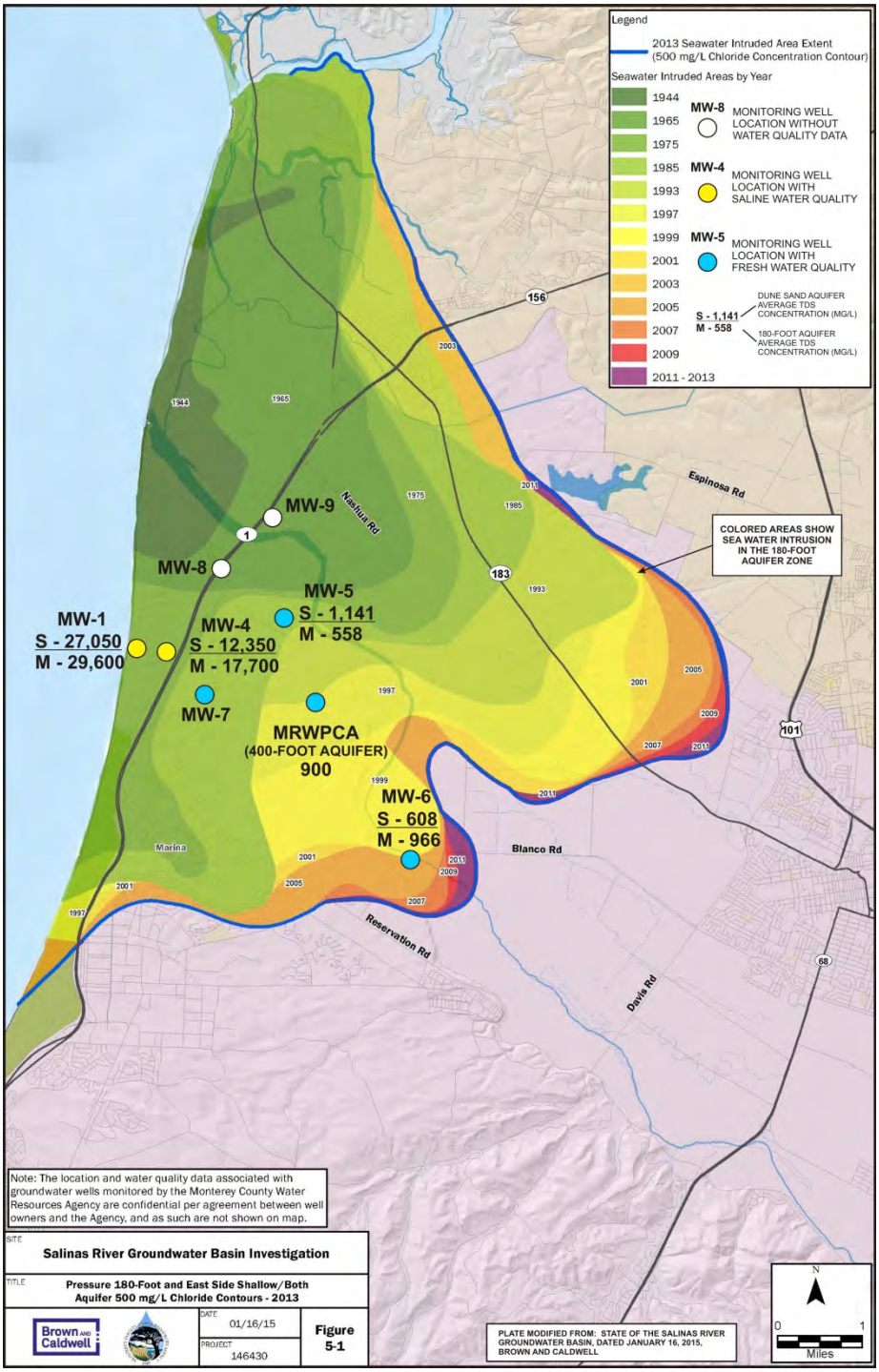
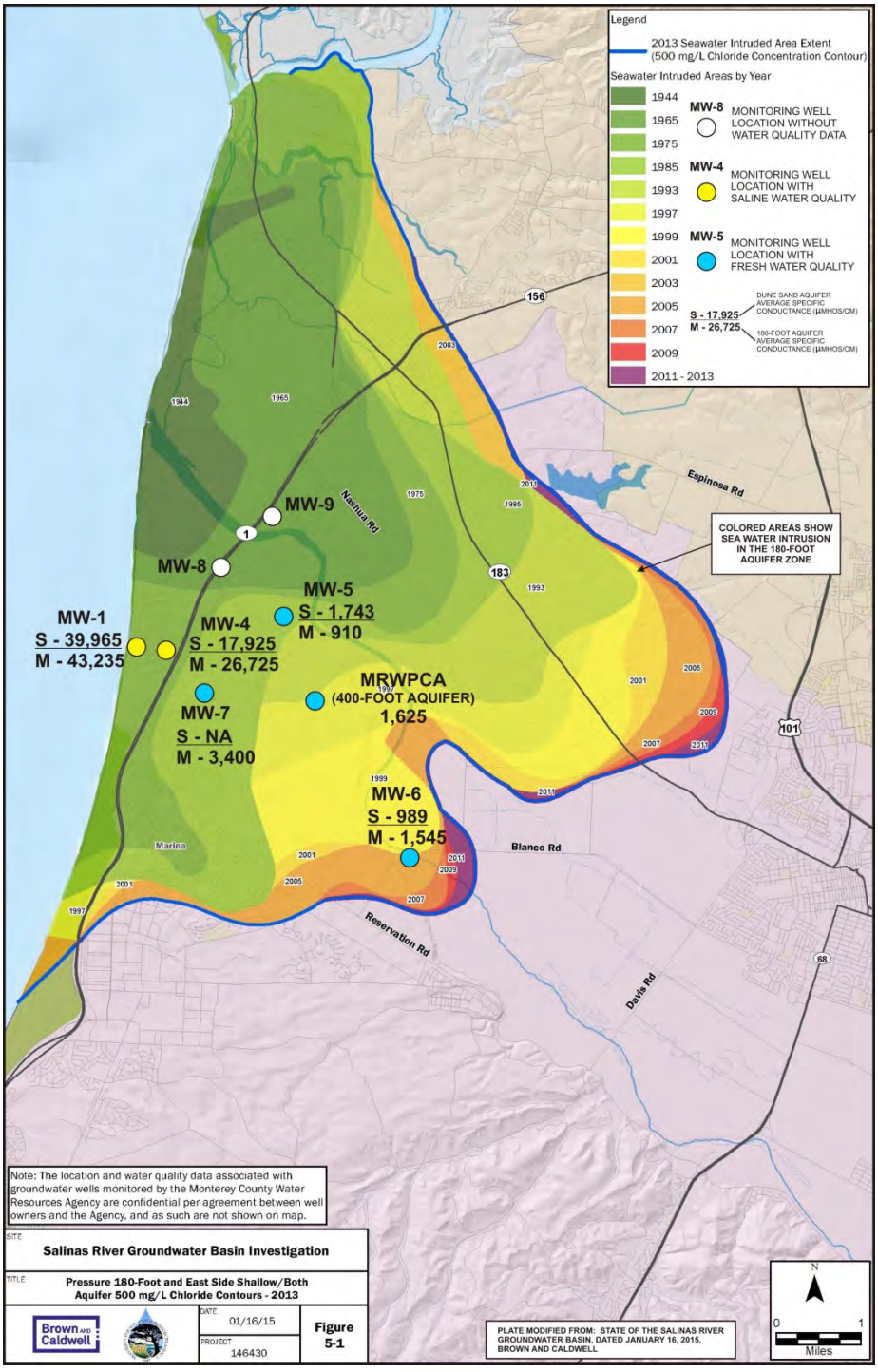
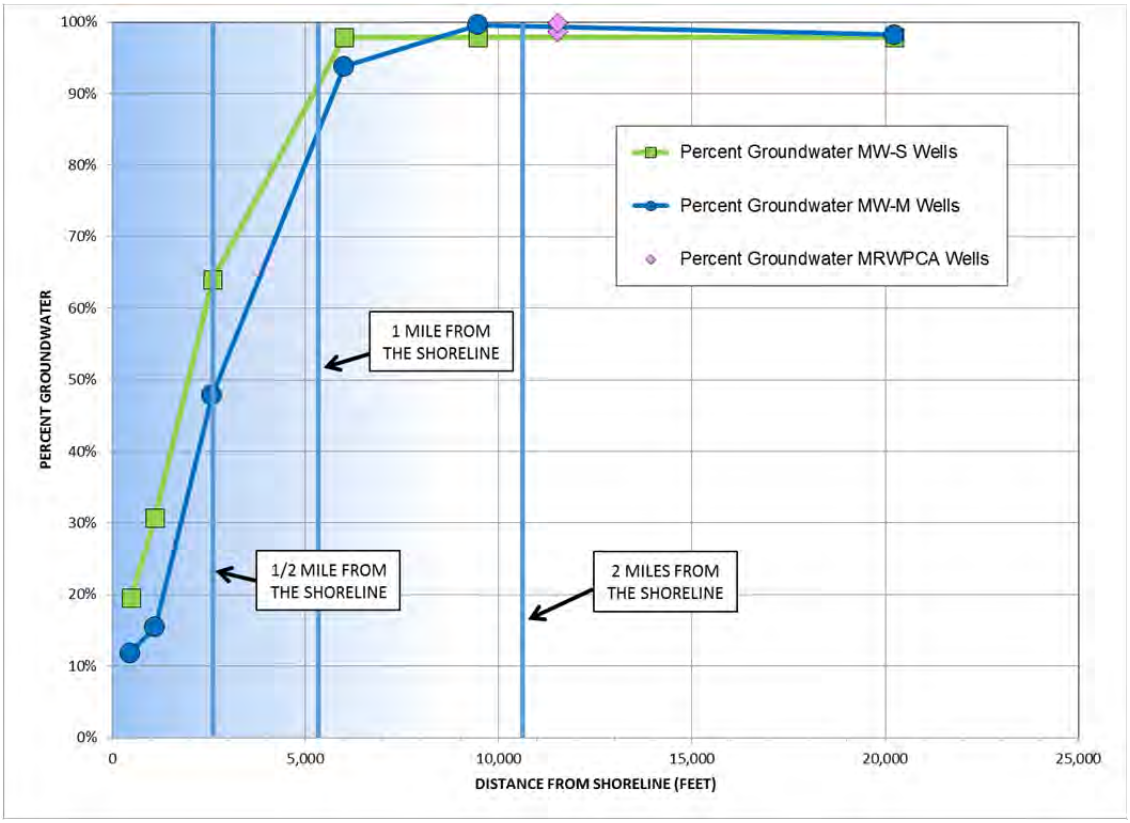


Figure 3 – Average Specific Conductance Values
Dune Sand and 180-Foot Aquifers



An analysis of available MPWSP monitoring well data further shows that the percentage of ocean water decreases significantly within a short distance of the coastline. It also shows that within the Marina Subarea, the portion of the Pressure Subarea affected by the project, the groundwater is not the salinity of seawater as previously assumed in the CCC's findings. A visual presentation of groundwater and ocean water percentages is shown in Figure 4 – Percent Groundwater and Ocean Water with Distance from the Shoreline and indicates fresh water in an area of the SVGB previously believed inundated with seawater.

Figure 4 – Percent Groundwater and Ocean Water with Distance from the Shoreline



MW-7M TDS ESTIMATED FROM SPECIFIC CONDUCTANCE DATA (LABORATORY RESULTS UNAVAILABLE)
MW-7S TDS ASSUMED SIMILAR TO MW-5 BASED ON WATER LEVEL GRADIENT

These data indicate a unique condition exists in the Marina Subarea south of the Salinas River that provides a significant degree of protection against seawater intrusion under the present and recent past hydrologic conditions as explained further below.

Extended Drought Conditions Without a Reduction in Pumping Will Exacerbate Decreasing Water Storage and Seawater Intrusion in the Pressure Subarea of the SVGB

California is currently in the fourth year of an extended drought. As a result, the SVGB has received substantially less precipitation and recharge from the Salinas River than normal, which provides most of the recharge for the SVGB. Compounding this problem, agricultural users (which account for nearly 90% of the SVGB's water use) often need to increase pumping to offset the lack of precipitation on their fields or curtail crop production. The effects of extended droughts on the SVGB were addressed in the Salinas River Groundwater Basin Report.

The MCWRA report calculated that cumulative storage losses over the 55-year period of monitoring in the SVGB have been approximated at about 349,000 AF (or 303,000 AF using the smaller storage coefficient value in the Pressure Subarea), about 60 percent of the total from 1944 to 2013. In addition, the period from 1944 to 1958 saw a storage decline of about 210,000 AF (or 159,000 AF using the smaller storage coefficient value in the Pressure Subarea), about 40 percent of the total. (Exhibit 1, Salinas River Groundwater Basin Report, p. 6-2) A large portion of the storage losses have occurred during extended drought periods. This is due to the loss of recharge from the lack of precipitation.

The MCWRA report also calculated that with the extended drought representative head changes at the subarea scale could range from:

• -5.3 to -1.1 feet per year in the Pressure Subarea (for all three aquifers),

• -9.6 to -3.0 feet per year in the East Side Subarea,

This storage loss, added to the existing storage deficit built up over the history of groundwater development in the study area, will exacerbate the problem of seawater intrusion in the Pressure Subarea. (Exhibit 1, Salinas River Groundwater Basin Report, p. ES-12)

Based on the continued large storage declines in the East Side and Pressure Subareas (and resulting groundwater head declines and seawater intrusion), the current distribution of groundwater extractions is not sustainable. Seawater intrusion can account for up to 18,000 AFY of the total storage loss of 24,000 AFY. Sustainable use of groundwater will only be achieved by aggressive and cooperative water resources planning to mitigate seawater intrusion and groundwater head declines. As the Salinas River Groundwater Basin Report concluded:

> ***The consequences of no-action under continued drought conditions will be the imminent advancement of seawater intrusion within the next few years and the continued decline of groundwater head.*** Both of these conditions would necessitate the drilling of deeper groundwater wells to produce the quantity and quality of water needed for consumptive use and irrigation. The installation of deeper wells may not be feasible in some areas because of lower groundwater yield and water quality in the Pressure Deep Aquifer. A more sustainable and long term

> management practice would encourage a Basin-wide redistribution and reduction of groundwater pumping, which would require cooperative and aggressive resource management. The unsustainability of the current distribution of groundwater extractions has long been recognized by various investigators, and Basin-wide redistribution and reduction of pumping have been recommended previously (e.g. DWR, 1946).

(Exhibit 1, Salinas River Groundwater Basin Report, p. ES-12; see also p. 6-3)

Based on this conclusion, the Salinas River Groundwater Basin Report provided several options for reducing storage losses in the SVGB. One option was to reduce pumping in the Pressure and East Side to assist in mitigating some of the anticipated effects of the extended drought on groundwater storage and water quality. The MCWRA report noted that shifting of pumping to areas further away from the coast would also be helpful, as long as it is shifted south of the current pumping trough in the East Side Subarea. A second alternative was shifting of some pumping from the 180-Foot and 400-Foot Aquifers to the Pressure Deep Aquifer to reduce the storage deficit in the shallower aquifers. However, the report noted that this would necessarily lead to head declines in the Pressure Deep Aquifer. Unlike the 180-Foot and 400-Foot Aquifers, it is not known whether or not the Pressure Deep Aquifer is hydraulically connected to the ocean in Monterey Bay, so it is not known whether this pumping shift would lead to the onset of regional seawater intrusion. Also unknown is the likelihood of localized interaquifer seawater mixing between the 400-Foot Aquifer and the Deep Aquifer. As a result, the report concluded that this management option requires more investigation to determine its feasibility. (Exhibit 1, Salinas River Groundwater Basin Report, p. 6-4)

Pumping From the TSW is Inconsistent With the MCWRA Report's Recommendations for Addressing Continued Declining Aquifer Heads, Groundwater Storage Losses, and Seawater Intrusion in the SVGB, Particularly the Coastal Portion or the Marina Subarea

Notably, the extent of seawater intrusion in 2013 was not detectably different from the extent mapped in 2011, indicating that the first two years of the current drought did not have a measurable effect on the movement of the seawater intrusion front. (Exhibit 1, p. 6-2.) As stated in the Salinas River Groundwater Basin Report, this can be attributed to the fact that groundwater head has not changed appreciably since the year 2000 in the coastal portions of the 180-Foot and 400-Foot Aquifers. (Exhibit 1, p. 6-2.) The amount of pumping from the TSW, however, is an appreciable change that is likely to significantly affect the groundwater head in the area in light of cumulative pumping and present drought conditions. As addressed below, the TSW represents a significant increase in pumping from the P-180 Aquifer over existing conditions and will reverse the cumulative efforts of MCWD and others to shift production to other aquifer zones and reduce pumping in the P-180 Aquifer in order to reduce seawater intrusion. It is also inconsistent with the recently enacted Sustainable Groundwater Management Act (SGMA) which was signed into law on September 16, 2014, and became effective January 1,

2015. The CCC's environmental study must address these issues as part of any adequate environmental review.

The TSW Pumping is a Significant Increase in the Amount of Pumping From the Marina Subarea

Cal-Am's TSW is screened in a portion of the 180-Foot Aquifer that the Cal-Am's TSW modeling *assumes* to be largely unconfined. (Geoscience July 2014 Draft: Monterey Peninsula Water Supply Project Results of Test Slant Well Predictive Scenarios Using the CEMEX Area Model, Prepared for Cal-Am, p. 10 [Table 2 - Summary of Aquifer Parameters Used in the CEMEX Model]; see also Geoscience Support Services, Inc., Monterey Peninsula Water Supply Project Hydrogeologic Investigation: Technical Memorandum (TM) Summary of Results – Exploratory Boreholes, prepared for California-American Water and RBF Consulting, July 8, 2014, p. 38 ["The 180-FTE Aquifer is believed to be in hydraulic continuity with the overlying Dune Sand Aquifer; both units extend seaward beneath Monterey Bay and have similar water quality."].) Cal-Am's amendment application does not propose any changes to the approved TSW's pumping rates. Assuming the same pumping rates are approved, the TSW will pump water 24 hours per day for up to 2 years at a rate from about 1,000 gallons per minute (gpm) to 2,500 gpm. This roughly translates into between 1,614 and 4,035 AFY.

While the CCC and public were advised that based on Cal-Am's modeling the TSW would pump about 4 percent brackish or freshwater from inland and 96 percent seawater (Transcript of Proceedings, November 12, 2014, p. 114), the TSW data show that the TSW pumping initially produced approximately 25.6 percent groundwater and 74.4 percent ocean water and after a 44-day period, it was producing approximately 13.5 percent groundwater and 86.5 percent ocean water. Thus, the actual average production of groundwater was 3.5 to 6 times greater than the amount represented by Cal-Am.

While it is not stated exactly how Cal-Am's modeling estimates (that the CCC relied on) were determined, information presented by Cal-Am in the California Public Utilities Commission (CPUC) MPWSP proceedings indicates that their analysis of the salinity of the feedwater assumed ocean water with a total dissolved solids (TDS) concentration of 33,500 milligrams per liter (mg/l) and groundwater with an average TDS concentration of 440 mg/l. Using Cal-Am's assumed values and the laboratory test results obtained during the MPWSP's TSW production period and included in the Technical Memorandum - MPWSP Baseline Water and Total Dissolved Solids Levels Test Slant Well Area, dated April 20, 2015 (Baseline Report) (Baseline Report 2015p, Table 2, attached as Exhibit 3), the TSW produced water with an average TDS concentration of 25,033 mg/l and was comprised of 25.6 percent groundwater and 74.4 percent ocean water. This is a conservative estimate. If groundwater TDS concentration of 1,000 mg/l (State Drinking Water secondary standard), 3,000 mg/l (Regional Water Quality Control Board [RWQCB] Water Quality Control Plan [WQCP] for the Central Coast Basin, water quality defined for beneficial uses), or 10,000 mg/l (U.S. Environmental Protection Agency's ["USEPA"] "Underground source of drinking water [USDW]," 40 CFR 144.3 standards) were used, the average amount of groundwater pumped by the TSW would be

significantly higher. HGC' believes using the USEPA USDW standard is most appropriate to evaluate the TSW impacts because it provides the most protection for this high priority basin.

We assume that Cal-Am will argue it is inappropriate to use average pumping numbers when the TSW percentage of groundwater pumping likely declined over the operational period. Even using the specific conductance values at the end of the test well pumping period, the TSW pumped more than triple the amount of groundwater estimated by Cal-Am. Over the period of the long-term pumping test, the specific conductance increased to a value of approximately 43,000 µmhos/cm (Geoscience, 2015o) by early June. Because our requests for laboratory water quality test results in the CPUC proceedings have not been provided to date, we have used the ratio of the average TDS concentration (25,033 mg/l) to average specific conductance value (37,010 µmhos/cm) provided by March and April laboratory test results. From these data, we estimate that the TDS concentration had reached approximately 29,085 mg/l prior to cessation of the test in early June. Using this value, and considering the groundwater component produced if a groundwater TDS concentration of 1,000 mg/l (State Drinking Water secondary standard), 3,000 mg/l RWQCB, WQCP for the Central Coast Basin, water quality defined for beneficial uses, or 10,000 mg/l USEPA's USDW, we calculated a range of Salinas Valley Groundwater that would be extracted annually by the TSW. Table 1 – Feedwater Composition Based on TDS Concentrations shows a comparison of the results using these values. As shown, approximately 13.4 to 18.8 percent of the TSW feedwater is groundwater.

Table 1 – Feedwater Composition Based on TDS Concentrations

WATER QUALITY SOURCE	OCEAN WATER SALINITY (MG/L)	GROUND-WATER SALINITY (MG/L)	FEED-WATER SALINITY (MG/L)[2]	GROUND-WATER (%)	OCEAN WATER (%)	ESTIMATED ANNUAL GROUNDWATER PUMPED (AFY)[3]
BASIN AVE.	33,500	440[1]	29,085	13.4	86.6	540
STATE DRINKING WATER STANDARD	33,500	1,000	29,085	13.6	86.4	550
RWQCB BASIN PLAN	33,500	3,000	29,085	14.5	85.5	585
USEPA USDW	33,500	10,000	29,085	18.8	81.2	758

1 – AVERAGE INLAND WATER SALINITY FROM (GEOSCIENCE, 2015a)
2 – ESTIMATED FROM TSW SPECIFIC CONDUCTANCE (GEOSCIENCE, 2015o)
3 – AMOUNT BASED ON 4,035 AFY TSW PRODUCTION

Based on these results, the slant well project will extract over 540 AFY of groundwater even based on Cal-Am's liberal modeling assumptions. Again, this estimate is very conservative because it uses the lower SVGB average to define groundwater and it assumes the TSW production will not draw more freshwater from the Marina Subarea. As discussed below, the

TSW monitoring data from MW-1 indicates that the TSW has not established direct hydraulic communication with the ocean floor. The result is that the effects of drawdown from the TSW are likely to extend further inland and outward along the coast than previously predicted.

Finally, we note that extracting over 500 AFY is not an insignificant amount of pumping, especially in the Marina Subarea. It exceeds the 500-acre-foot limit of the Lonestar Annexation agreement, is more than one-quarter (25%) the amount of groundwater pumped by MCWD to serve all of Central Marina Service Area. Moreover, this increase in the coastal area of the basin is substantial in light of the need to reduce pumping in the part of the Pressure Subarea to address seawater intrusion and the SGMA.

While the 2014 Staff Report and Finding focus on whether the TSW pumping will injure any agricultural users, its fails to address whether TSW pumping will further injure the overdrafted, seawater-intruded Pressure Subarea and prevent full groundwater sustainability within the Marina Subarea. (Water Code, § 10727.2, subd. (b)(1).) Given MCWD and other concerted efforts to address seawater intrusion and over-pumping, the Staff Report for the TSW amendment must address this recently enacted legislation.

The TSW Pumping Will Result in Adverse Groundwater Impacts in the Marina Subarea of the SVGB, Including a Decrease in Water Levels and Cumulative Increase of Seawater Intrusion

The CCC's 2014 Staff Report and Findings concluded that given the relatively small amount of water to be pumped, the distance to other active wells, and the mitigation measure below (which the applicant apparently has incorporated into its project description), the TSW project was not expected to adversely affect coastal agriculture:

> A drawdown of 1 foot above natural fluctuations on groundwater levels shall be considered a significant adverse effect on water supply. If pumping activities reflect a drawdown of 1 foot or greater on any adjacent well, compensatory mitigation shall be required. Feasible mitigation shall include consultation with the affected water user and implementation of compensatory mitigation measures, including monetary compensation (i. e., for increased pumping costs or for upgraded wells), or provision of replacement water from alternative sources. If compensation or other remediation is found to be unfeasible, pumping activities shall be adjusted so that no more than 1 foot of drawdown on usable water sources would result.

(2014 Staff Report, p. 51; Findings, p. 52.)

The CCC's 2014 Staff Report and Findings evaluation of the TSW's potential groundwater impacts is largely meaningless because it does not evaluate potential impacts to the Dune Sand and 180-Foot Aquifers in the Marina Subarea that will be impacted by the project. Unlike the City of Marina's (City's) uncertified Mitigated Negative Declaration (MND), the

CCC's Staff Report does use a threshold that evaluates the level of impact to the SVGB from groundwater pumping that would be a potentially significant impact – i.e. "Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be ***a net deficit in aquifer volume or a lowering of the local groundwater table level***." (See City of Marina MND, pp. 102-119, emphasis added.) Rather, the CCC's Staff Report and Findings focus on a 1-foot drawdown at adjacent agricultural wells. Based on conservation efforts and MCWRA Ordinance 3709, which generally prohibits groundwater extractions for the aquifers pumped by the TSW in the project area, it is not clear if there are any agricultural wells in proximity to the project that pump from the same aquifers in the Marina Subarea. According to the CCC's 2014 Staff Report and Findings, the closest active off-site wells in the Pressure Subarea are about 5,000 feet from the proposed test well. (2014 Staff Report, p. 50; Findings, p. 51.) Neither the 2014 Staff Report nor Findings identify which wells the CCC is referring to or what aquifers the referenced wells pump from (i.e.. do they pump from the same aquifers as the TSW?). Needless to say, using a 1-foot drawdown at unknown well locations pumping from unknown aquifers that are over 5,000-feet from TSW as a threshold for evaluating groundwater impacts does not address potential impacts to the aquifers in the Marina Subarea that will be affected by the TSW. For example, based on the CCC's standard for significance/threshold, the TSW could drain the entire Dune Sand Aquifer and not result in any adverse impacts. This is clearly not the case. As explained further below, lowering the existing protective head in the Dune Sand Aquifer will adversely impact groundwater levels, increase seawater intrusion, and decrease the amount of available freshwater in the Marina Subarea.

Moreover, even the CCC's 2014 Staff Report and Findings that the project will not impact select coastal agricultural wells is based on misleading information that downplay the significance of the TSW's potential impacts.

First, the Staff Report and Findings basis for concluding that the test well will pump a small amount of water is based on an inappropriate comparison of the estimated storage for the entire Pressure Subarea – namely 0.1% of the entire storage for the Pressure Subarea. (2014 Staff Report, p. 51, Findings, p. 52.) This comparison lacks any context and vastly understates the pumping that will occur in a critical coastal subarea of the SVGB. As explained above, the test well pumping alone will increase pumping from the Marina Subarea is more than one-quarter (25%) the amount of groundwater pumped by MCWD to serve all of Central Marina Service Area**.** Moreover, this comparison does not account for the location of the pumping near the Coast where MCWD, the MCWRA, and others have all agreed reductions in pumping are critical to address seawater intrusion.

Second, the CCC's conclusions regarding the potential drawdown at other active wells appears to be based on Cal-Am's projections that the expected cone of depression would extend about 2,500 feet from the well, where the drawdown was expected to be 4 inches after 8 months. (2014 Staff Report, p. 50, Findings, p. 51.) There is no information in the CCC's findings or record explaining how Cal-Am's TSW estimates were calculated or what assumptions were made in calculating the expected cone of depression. Nor do Cal-Am's amendment application

materials provide any updated estimates based on the data collected to date from TSW operations.

Based on our review of the uncertified City of Marina Initial Study/MND for the TSW Project, Groundwater Monitoring Reports, and the draft MPWSP, Results of Test Slant Well Predictive Scenarios Using the CEMEX Area Model that was provided to the CCC at the original hearing, it appears Cal-Am has used extremely liberal assumptions in estimating the drawdown from the TSW as well as the amount of groundwater (versus seawater) that will be extracted by the well. This inference was developed by comparing the groundwater response during the 44-day long-term test period, to the predicted values using the CEMEX Area Model, dated July 8, 2014 (see Table 4). The model results after pumping 8 months at a rate of 2,500 gpm indicated the Dune Sand Aquifer would have an average drawdown of approximately 3 feet and the 180-Foot Aquifer would have an average drawdown of 5.6 feet at the location of Monitoring Well MW-1. (Geoscience July 2014 Draft: Monterey Peninsula Water Supply Project Results of Test Slant Well Predictive Scenarios Using the CEMEX Area Model, Prepared for Cal-Am, p. 12 [Table 4].) Test monitoring data, however, show that after approximately 44 days, the drawdown in the Dune Sand Aquifer was just under 9 feet and in the 180-Foot Aquifer the drawdown was approximately 9 feet at Monitoring Well MW-1. Moreover, Cal-Am has estimated that as much as 80% of the TSW's extracted water has been from the Dune Sand Aquifer whereas the original model estimated approximately 30% would be produced from that zone. Nonetheless, available data indicate that pumping stress has induced a significantly greater drawdown response in both the Dune Sand and 180-Foot Aquifers than the 8-month model results predicted.

The coastal water level responses in the monitoring wells due to tidal influence indicate that the degree of aquifer confinement increases with depth. The minimal response in all the shallow zone wells due to tidal changes indicates that the shallow Dune Sand Aquifer is unconfined. MW-1 was the only monitoring well that is close enough to the ocean to be affected by noticeable tidal water table fluctuations in the Dune Sand Aquifer.

The 180-Foot Aquifer monitored by wells MW-1M, MW-3M, and MW-4M shows a degree of confinement that transmits the tidal loading pressure a significant distance inland (about a half mile) (Geoscience Long Term Monitoring Report 20, dated September 15, 2015, Figures 2-1 to 2-3). This observation clearly shows the aquifer is not truly unconfined and will not allow unimpeded vertical flow from the shallow Dune Sand Aquifer into the 180-Foot Aquifer as originally assumed and as the HWG suggests in Cal-Am's amendment application. (Cal-Am Amendment Application, HWG Letter dated July 23, 2015, p. 5 ["pumping just from the Dune Sand Aquifer at the CEMEX site will cause a water level response at nearby monitoring wells screened in the 180-FTE Aquifer, and pumping just from the 180-FTE Aquifer at the CEMEX site will cause a water level response at nearby monitoring wells in the Dune Sand Aquifer.|] The effect of this condition will propagate the impacts of the TSW pumping stresses to far greater distances within the Pressure Subarea 180-Foot Aquifer zone.

In addition, the component of groundwater produced will likely be significantly greater than the model predicted. The hand-measurement water level data from the MW-1S and MW-3S monitoring well installations are provided in Figures 5 and 6 – Monitoring Well MW-1S and MW-3S Drawdown Data, respectively, show a downward trend in the water levels that continued until pumping terminated in June and does not indicate stabilization associated with a boundary condition from a source of recharge. As result, it is highly likely that drawdown from the TSW's production will continue and extend further if operations resume.

Figure 5 – Monitoring Well MW-1S Drawdown Data

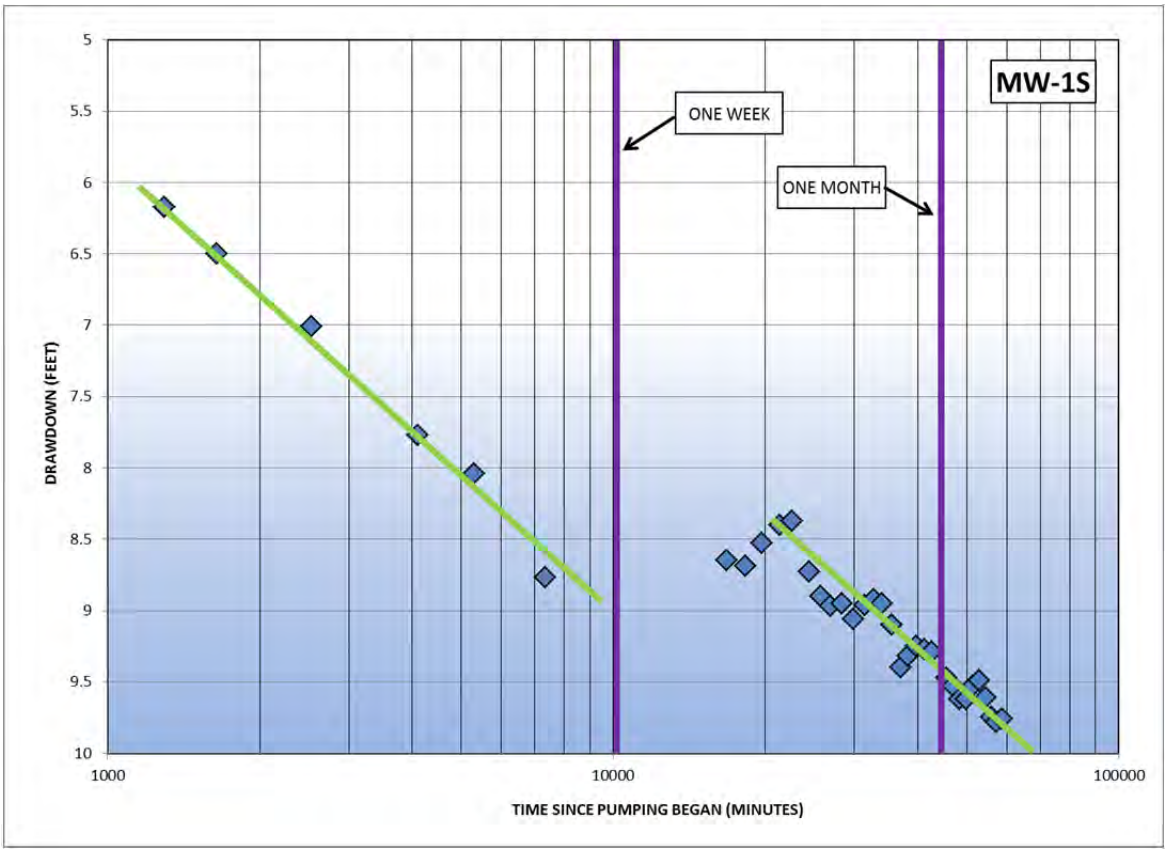
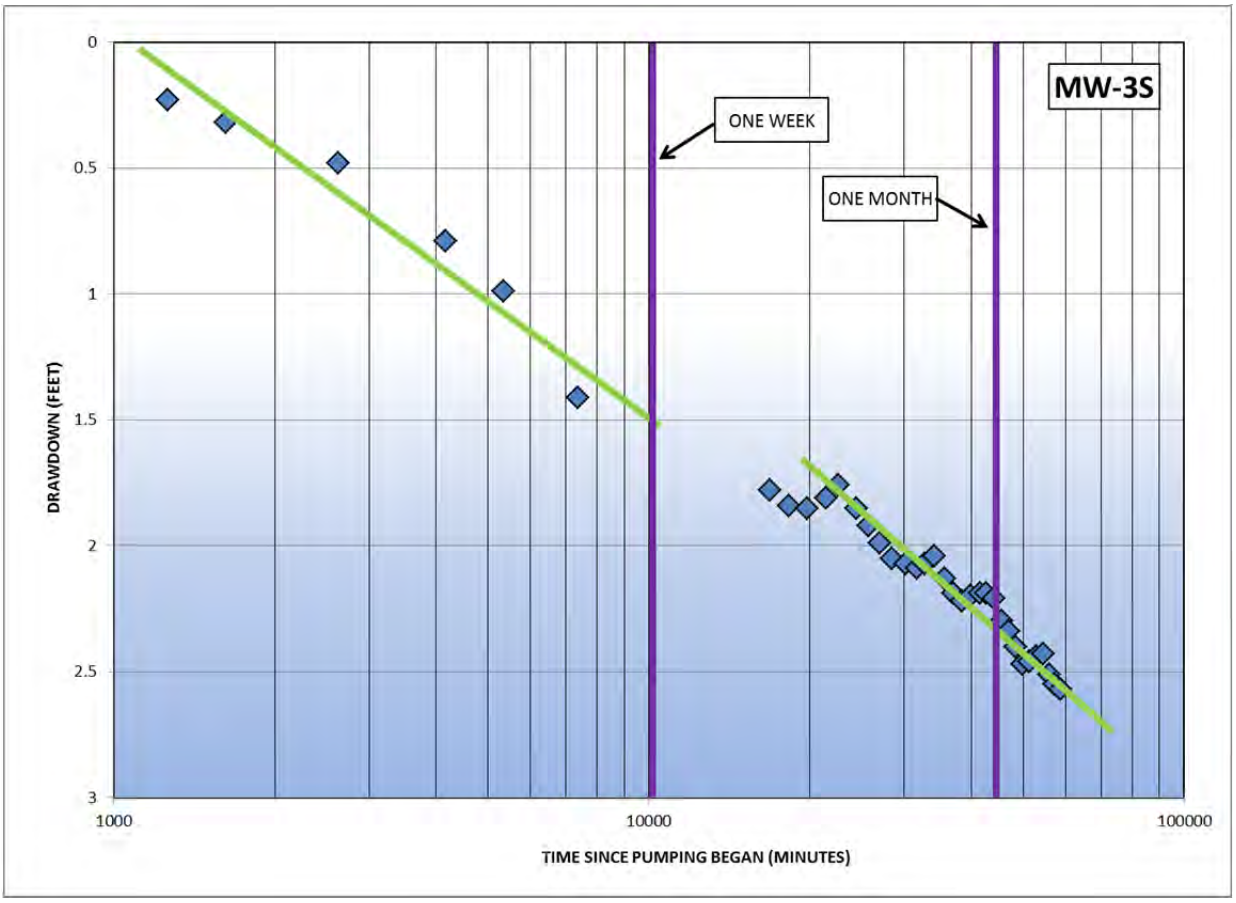
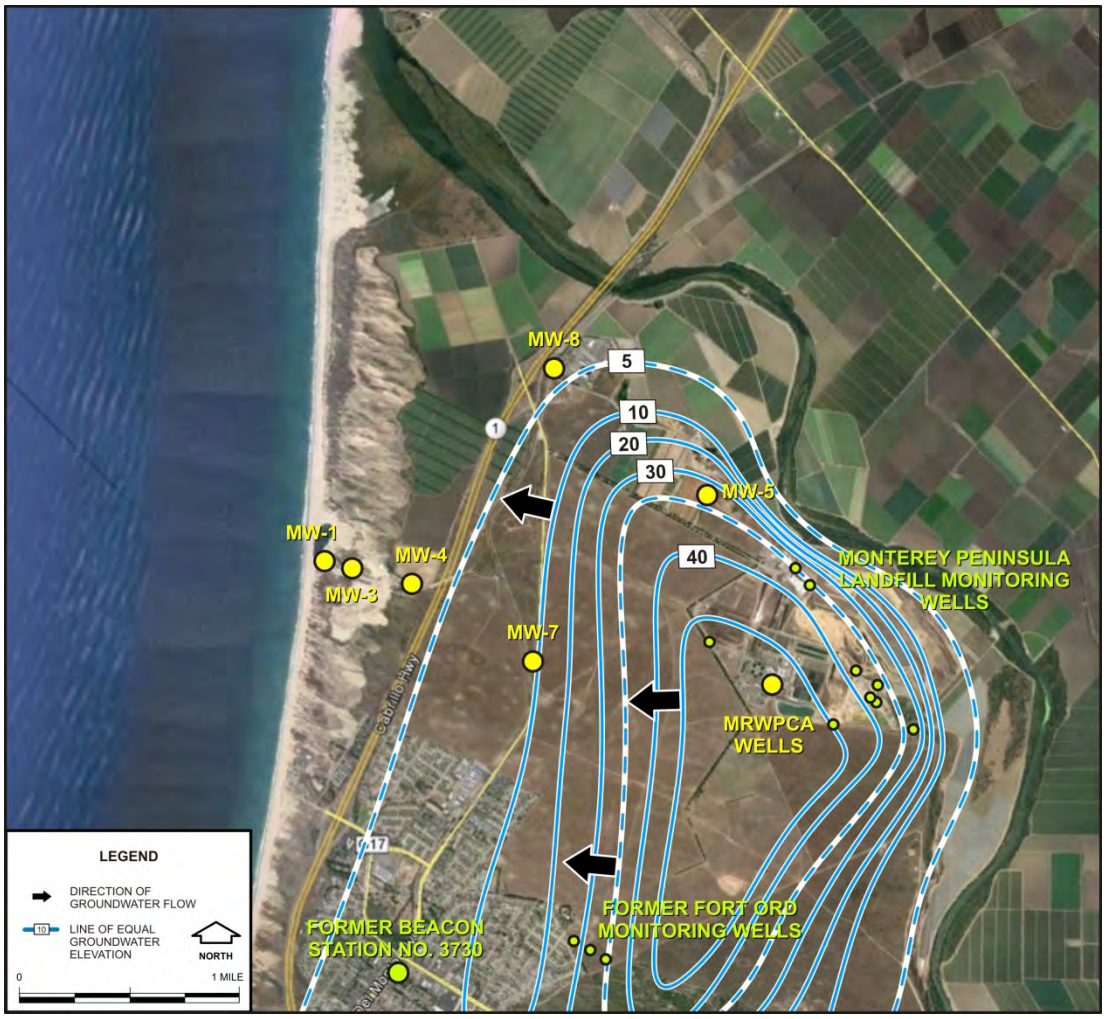


Figure 6 – Monitoring Well MW-3S Drawdown Data



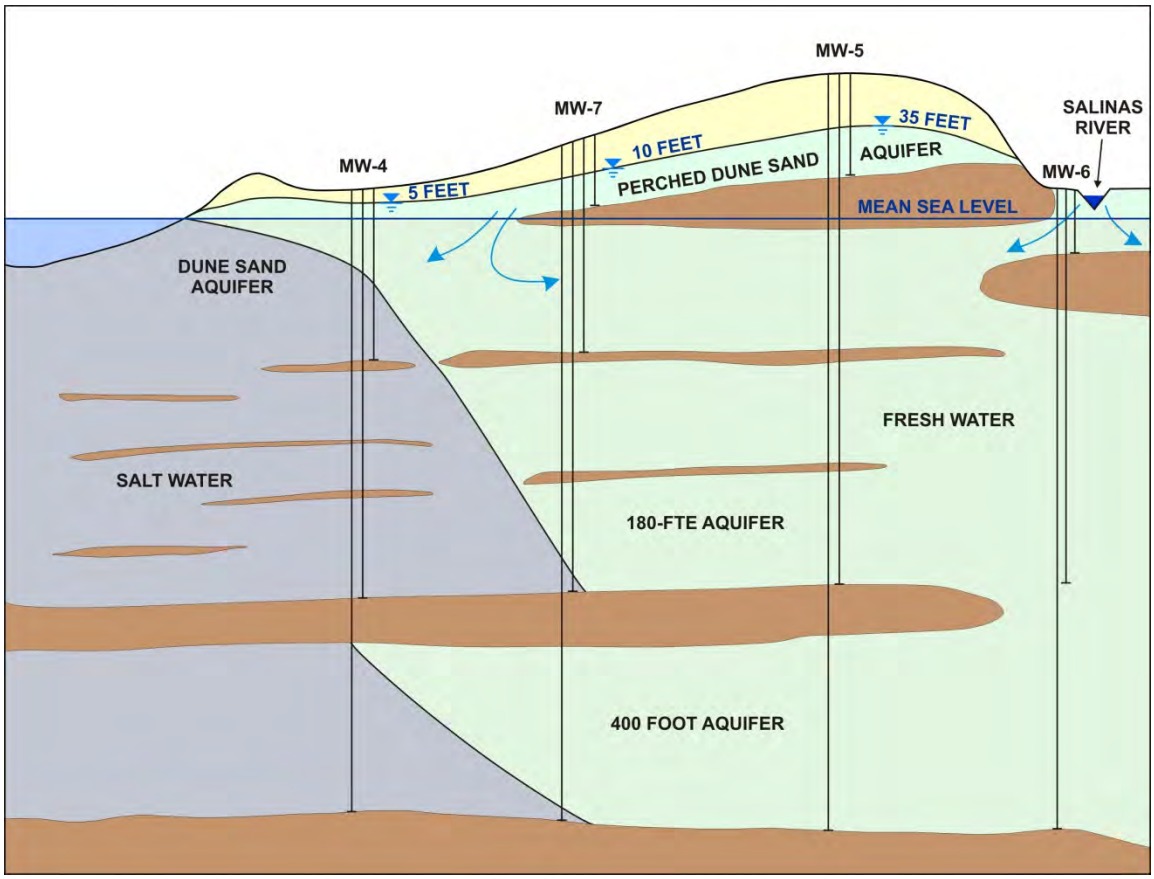
Even more importantly, the 2014 Staff Report and Findings fail to acknowledge the importance of the perched Dune Sand Aquifer's role in recharging the lower aquifers in the Marina Subarea (as indicated by MW-7 water levels) and in protecting the Pressure Subarea along this portion of the coastline (as indicated by MW-6 water quality), especially protecting the Marina Subarea, from unabated seawater intrusion. HGC generated a groundwater elevation contour map using data provided by available studies and the TSW monitoring program, which is provided below as Figure 7 – Dune Sand Aquifer Groundwater Elevation Contour Map. These data show the seaward direction (not landward) of groundwater flow in the perched Dune Sand Aquifer. This unique condition results in protective water levels in the Marina Subarea near the coast. The fact that the Dune Sand and 180-Foot Aquifers at Monitoring Well MW-7 have not been (or are no longer) contaminated by high concentrations of seawater can likely be explained by the changing hydrogeological conditions resulting from the efforts of MCWD (e.g., Annexation Agreement, etc.) and others to reduce pumping in the area. As a result, recharge from rainfall into the perched Dune Sand Aquifer creates a mound of freshwater that flows toward the Salinas River and the ocean.

Figure 7 – Dune Sand Aquifer Groundwater Elevation Contour Map



Downward recharge where the aquitard layer (Salinas Valley Aquitard) thins (or ends) provides fresh water recharge into the costal unconfined Dune Sand Aquifer and the underlying 180-Foot Aquifer. This condition is evidenced by the elevated water levels in both MW-7S and MW-7M during the dry season in the fourth year of a severe drought. Figure 8 – Conceptual Drawing of the Hydrogeology in the Marina Subarea illustrates the subsurface conditions indicated by these available data. Years of reduced pumping has resulted in beneficial groundwater conditions that are apparently slowing the movement of seawater and providing a freshwater source that is replenishing the aquifers. Monitoring data indicate that the elevation of the water level in Monitoring Well MW-7M approximately -1 feet below msl in the 180-Foot Aquifer and is higher than the levels in both MW-4M and MW-5M, which are approximately -3 feet below msl, and -6 feet below msl, respectively. This condition supports the coastal recharge from the perched Dune Sand Aquifer south of the Salinas River as shown in the conceptual drawing below.

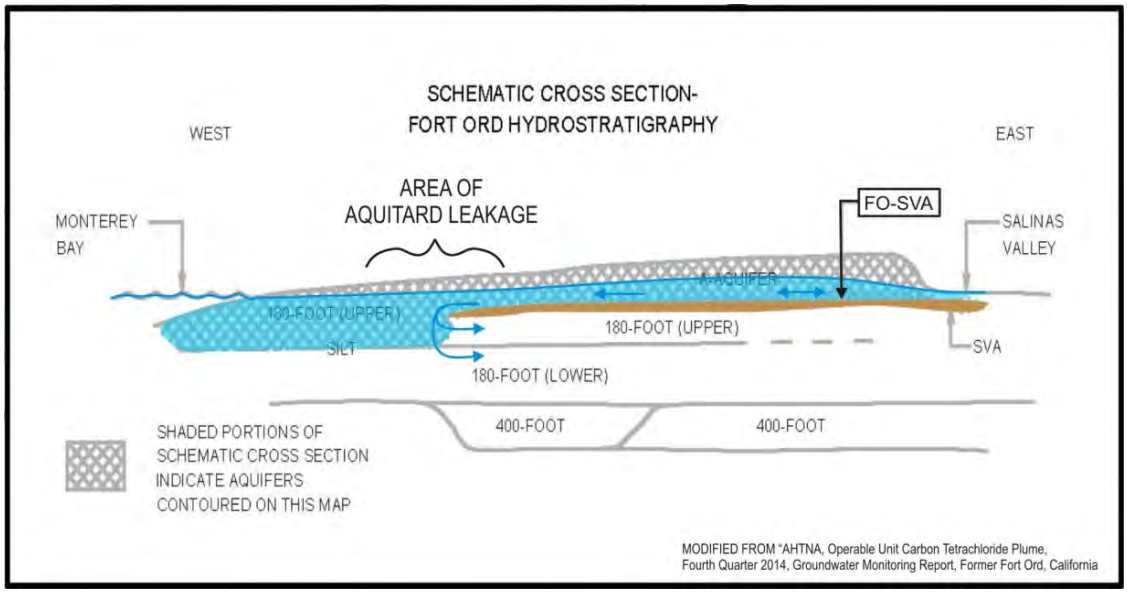
Figure 8 – Conceptual Drawing of the Hydrogeology in the Marina Subarea



This is a very significant development. Given that the groundwater found with a 35-foot elevation in the Dune Sand Aquifer at the location of MW-5 (and a 10-foot elevation at MW-7), has a potable quality based on its TDS concentration. The Dune Sand Aquifer effectively provides a protective layer preventing seawater intrusion from moving into the Marina Subarea at a shallow depth and percolating downward into the underlying aquifers. Instead, the Dune Sand Aquifer appears to be slowly recharging the lower aquifers (i.e., the 180-Foot and 400-Foot Aquifers), which has significantly reduced their TDS levels in this coastal area.

This coastal condition was previously documented as part of the Fort Ord cleanup effort located southeast of the CEMEX site. The study named the aquitard layer the Fort Ord-Salinas Valley Aquitard. Figure 9 - Perched Dune Sand Aquifer Schematic from Fort Ord Groundwater Monitoring Program shows a drawing of this condition which was modified to illustrate groundwater flow directions (Ahtna, 2014 minus Exhibit A, attached as Exhibit 4).

Figure 9 – Perched Dune Sand Aquifer Schematic from Fort Ord Groundwater Monitoring Program



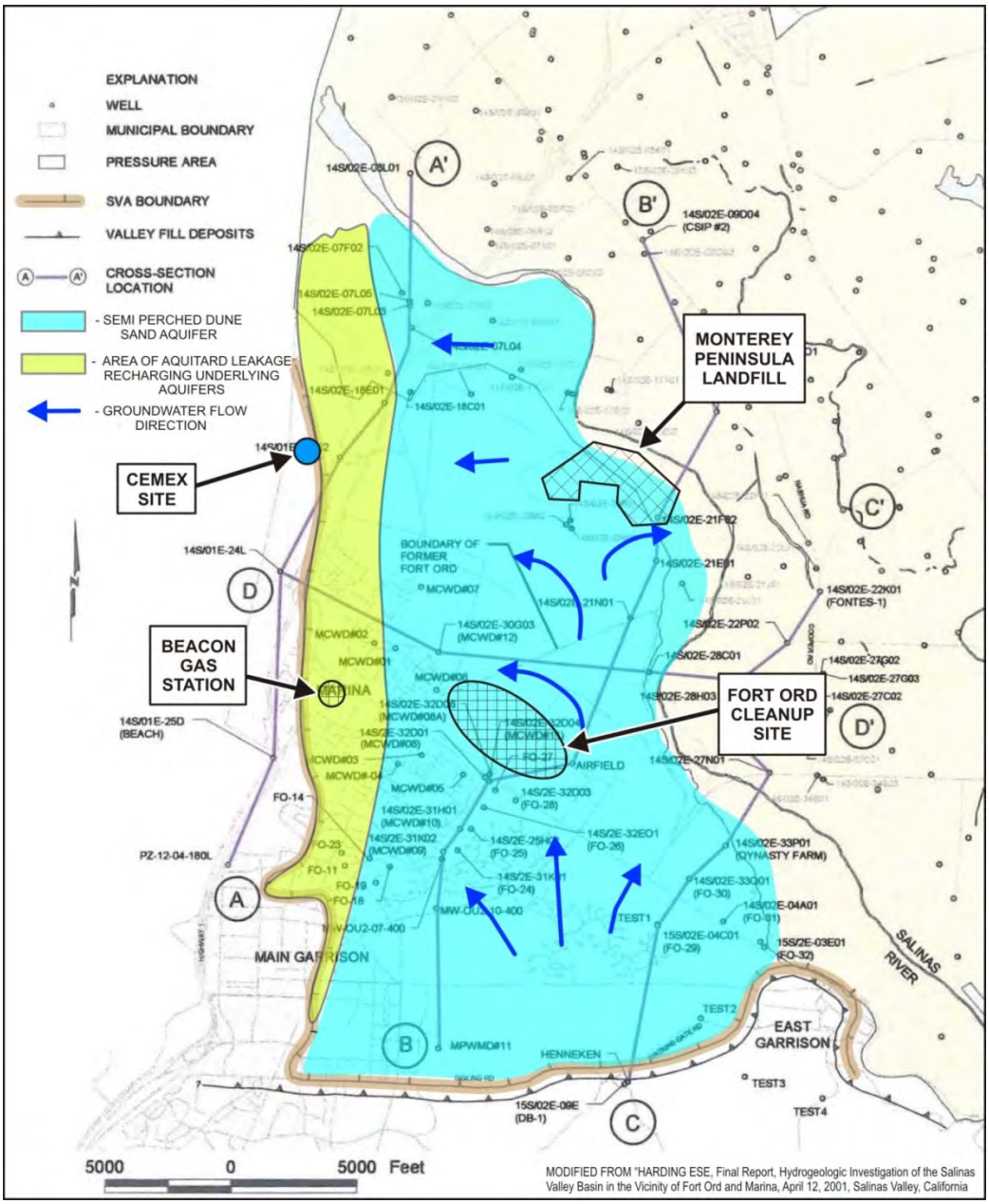
While additional studies are warranted, all available information indicates this unique condition in the Marina Subarea provides recharge all along the coast in an area that effectively forms a linear recharge barrier. Notably, the extent of the Fort Ord-Salinas Valley Aquitard was delineated in a 2001 study conducted as part of the Fort Ord cleanup program (Harding ESE, 2001). Using a diagram from that study, we have indicated the area of recharge where the aquitard thins and potentially ends along the coast. This area is shown in light green on Figure 10 – Approximate Extent of Perched Dune Sand Aquifer.

The TSW pumping which is estimated to draw 80 percent of its production from the shallow aquifer, however, will eliminate the protective coastal water levels in this layer and thus induce seawater intrusion into the Dune Sand Aquifer in a relatively short-period of time. To further define the coastal groundwater conditions, more monitoring wells will need to be installed.

In summary, the monitoring data available to date confirm that Cal-Am's assumptions regarding drawdown and pre-pumping groundwater elevations in the Marina Subarea are not accurate and must be updated. This is true even if drawdown at a particular well does not render any active wells inoperable during the test well pumping, such a conclusion ignores the potential cumulative impacts of pumping over 8,000 AF of water near the Coast during an extended drought. As explained above, TSW pumping will induce seawater intrusion into the Dune Sand Aquifer (and will exacerbate seawater intrusion in the underlying 180-Foot Aquifer) in this portion of the Pressure Subarea and likely result in cumulative impacts to aquifers in the Marina Subarea and to wells much further inland. It will also delay efforts to reverse the trend of

seawater intrusion in the Marina Subarea and throughout the SVGB. Significantly, the TSW will undercut MCWD's, and others, extensive efforts to eliminate the long term overdraft condition and to respond to the serious existing drought conditions. Notably, the MCWD has made extensive efforts to reduce pumping not only in the 180-Foot Aquifer, but also in the 400-Foot and Deep Aquifers in the Marina Subarea. Neither the 2014 Staff Report nor Cal-Am Amendment Application address these potential harms.

Figure 10 – Approximate Extent of Perched Dune Sand Aquifer



Special Condition 11 Does Not Mitigate the Project's Impacts to the Salinas Valley Groundwater Basin, Specifically the Marina Subarea

With the exception of stating Cal-Am's estimated cone of depression, no evaluation of the potential impacts to water supplies is provided in the CCC's 2014 Staff Report or Findings. As noted above, the City's uncertified MND and CCC's Staff Report, the slant well has the potential to cause adverse impacts to water supplies and water quality. (See City of Marina MND, pp. 102-119.). Instead of providing baseline information and analyzing the TSW potential to reduce groundwater levels and increase seawater intrusion, the CCC adopted Special Condition 11 (which Cal-Am now proposes to amend) believing it would ensure no impacts to the SVGB would occur. The current version of Special Condition 11, as well as the Cal-Am's proposed amendments, provide no such assurance for several reasons.

First, Special Condition 11 ceded the role of establishing the baseline for evaluating the TSW's impacts to the HWG stating: "prior to the commencement of long term pumping tests, the HWG shall establish baseline water and TDS levels in those monitoring wells and recommend these levels to the Executive Director of the CCC." (See Exhibit 3 p. 15.) While Special Condition 11 required baseline information to be provided to the CCC **prior to** the commencement of the long term pumping, this did not occur. The Baseline Report only provided limited information on pre-pumping conditions over a several week period of time (See Baseline Report, Exhibit 4 [Figures 2-1 to 2-4]) and did not establish baseline water or TDS levels for a single well, much less the required four monitoring wells within 2,000 feet of the test well. (See Exhibit 3, p. 14.) Instead, the Report provides a cursory discussion entitled "Recommended Monitoring of Baseline and TDS" Levels and then suggests a method for evaluating impacts without establishing a baseline. As to establishing baseline water levels for assessing impacts to water levels at MW-4 from the test well, the Report states:

> If ground water levels at MW-4 show a continuing downward trend but prior to reaching the threshold prescribed by CDP Condition 11, the test slant well will be voluntarily shut off. If the test slant well is the cause of the downward trend in groundwater levels at MW-4, then groundwater levels will show a recovering trend. If the groundwater levels do not recover, then this is indicative of regional and climatic impacts. The data will be reviewed by the HWG for confirmation and the test slant well will resume pumping. If the ground water levels continue to decline after start up, then the data indicative of impacts other the slant well will be submitted to the Coastal Commission Executive Director, prior to reaching the threshold.

Similarly, for assessing impacts to TDS levels at MW-4 from the test well the Report provides 3 different methods for measuring TDS and then notes:

> Each method prescribed above will be compared with the data collected by that method to determine whether TDS concentrations remain within acceptable levels or show an increasing trend. Seasonal changes in TDS may result from potential seasonal changes in ground water levels aside from changes potentially induced by groundwater extraction from the test slant well. Changes in TDS will also be compared to changes in groundwater levels to evaluate whether TDS changes represent seasonal water quality change in the underlying aquifers.
>
> If two of the three methods used indicate a rising trend in the MW-4 series monitoring wells, the data will be submitted to the HWG for review prior to reaching the threshold prescribed by CDP Condition 11. The HWG will evaluate the data to determine whether rising TDS, should it occur, is a result of TSW pumping or from some other cause.

(See Exhibit 3, p. 14-15.) Importantly, the Report does not provide baseline information that would allow the CCC or public to evaluate whether water level or TDS changes represent seasonal water quality change in the underlying aquifers, only a method for Cal-Am's HWG to continue monitoring at MW-4. Thus, while the HWG was required to establish and recommend baseline water and TDS levels for all the monitoring wells (and only 3 well clusters, not four were being monitored for water and TDS levels when the report was published), it indefinitely deferred establishing baseline water levels to a later date. We do not understand how the HWG or CCC determined the report satisfied Special Condition 11's requirements. The Staff Report of the amendment should explain the CCC's rationale so the public understands the CCC's interpretation of the condition.

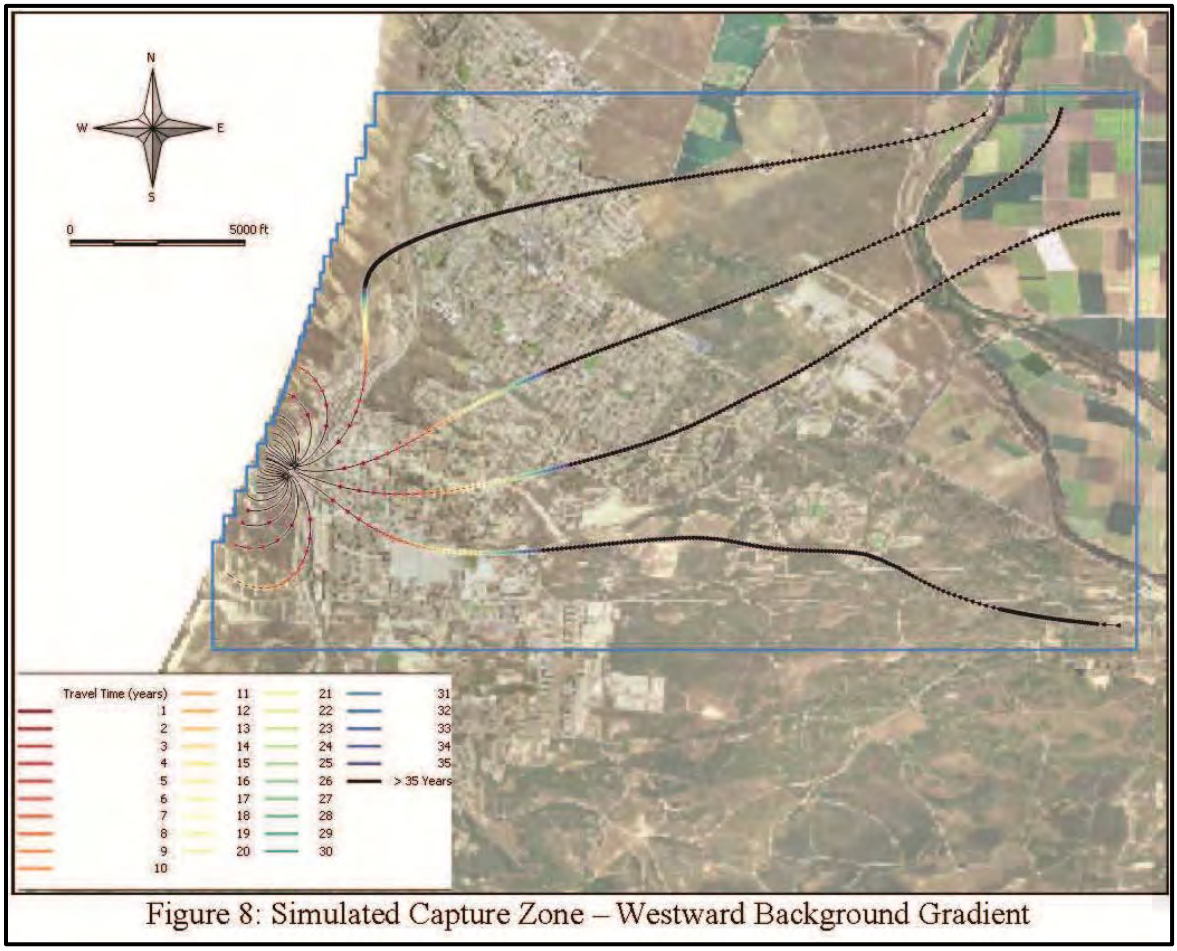
The inadequacies of Special Condition No. 11 were further exacerbated by the CCC's apparent waiver of the requirement that prior to project-related pump testing, Cal-Am was to install 4 monitoring devices in a minimum of four wells on the CEMEX site within 2,000 feet of the TSW, and one or more offsite wells to record water and salinity levels within the wells. (See Exhibit 3, p. 15.) While the technical report concludes Cal-Am complied with the condition, it is clear from the report that only three monitoring well clusters (Monitoring Well No. 1, 3, and 4) were completed when project-related pump tests began. (See Exhibit 3, pp. 3-4.) The proposed Monitoring Well No. 2 called for in the project description was never constructed. While Cal-Am installed a water level monitoring device in one of the CEMEX wells, the well does not record water levels in all three aquifers and did not measure TDS levels in any aquifer when the Report was published. (See Exhibit 3, p 5.) Notably, a fourth monitoring well that is not in line with the Monitoring Well Nos. 1, 3, and 4 is important to assess changes to water levels and TDS from the TSW in a direction parallel to the coast as discussed below. There is no explanation why the CCC waived, or decided not to enforce, this requirement.

Additionally, the Baseline Report was made available to the public without any opportunity to comment. (See http://www.watersupplyproject.org/hwg-tech-memo.) This closed process of ostensibly establishing the baseline conditions, as well as the TSW's contribution to drawdown and TDS increases (or decreases), did not provide the public and MCWD an opportunity to comment on the selected "baseline." As discussed in MCWD's prior comments, a closed process of establishing the baseline conditions, as well as the TSW's contribution to drawdown and TDS increases, provides no assurances to the public, and certainly no assurances to the MCWD, that the critical groundwater basin will be protected from significant impacts.

Second, the 2014 Staff Report and Findings do not include any analysis to support the assumption that a 1.5 foot water level drawdown or increase in TDS levels of two thousand parts per million at Monitoring Well 4 provides a meaningful "threshold" for assessing impacts to the Marina Subarea. Sustained drawdown from the well is likely to adversely impact the Marina Subarea and larger Pressure Subarea on a cumulative level even if it does not exceed 1.5 feet or 2,000 ppm TDS at Monitoring Well 4. Importantly, TSW monitoring data shows that specific conductivity in the Dune Sand Aquifer at Monitoring Wells MW-3S and MW-4S declined during the TSW's operation. These declines (as opposed to the increase in specific conductivity at MW-5) are likely the result of the TSW drawing increased amounts of freshwater from inland portions of the aquifer. As a result of Cal-Am's failure to install MW-2, or any other wells perpendicular to the TSW as originally represented, Cal-Am's monitoring program will not detect increased sea water intrusion where it is likely to first occur – parallel to TSW along the coast as illustrated in the Figure 11 – Particle Tracking With 8-Foot Background Gradient.

Third, the TSW will likely have impacts beyond the cone of depression originally estimated by Cal-Am as discussed above. If the TSW production results in drawdown at an extended distance from the well, the increase to the existing gradient that exists in the 180-Foot Aquifer would accelerate landward movement of seawater. The movement of seawater into the aquifer at greater distances beyond the zone of capture of the test slant well, will continue to move with the prevailing gradient, which is generally inland within the 180-Foot Aquifer except as indicated above by Monitoring Well MW-7M. As discussed below, MW-4 would be unlikely to detect this change during the duration of TSW pumping. The steep gradient flowing toward the shoreline in the shallow perched Dune Sand Aquifer along with the proportional shift of production from the 180-Foot Aquifer (71 percent simulated by the MPWSP model) to the Dune Sand Aquifer (80 percent reported from the TSW) indicate that the Cal-Am's model calculations of groundwater production (4 to 7 percent) is inaccurate and may underestimate the groundwater capture by 3 times the amount.

Figure 11 – Particle Tracking With 8-Foot Background Gradient



FROM MARINA COAST WATER DISTRICT STUDY (HYDROMETRICS, 2006)

Fourth, TSW production will reduce protective coastal water levels in the Dune Sand Aquifer and allow seawater intrusion in the shallow aquifer as discussed above. Not only is this a significant adverse impact, it is inconsistent with the RWQCB, WQCP for the Central Coast Basin and SGMA. Any degradation or groundwater deficit to the Marina Subarea should be considered a significant impact. (See Monterey County Water Resources Agency Act ("Agency Act"), Section 52-21 [prohibiting export of SVGB water]; MCWRA Ordinance 3709 [prohibiting groundwater extraction within between the depths of 0 mean sea level and -250 mean sea level]; SGMA [requiring Marina Subbasin is operated within its sustainable yield]; and Exhibit 1, Salinas River Groundwater Basin Report, p. 6-4 [recommending shifting pumping to areas further away from the coast and out of the P-180 and P-400 Aquifers to reduce the storage deficits in the SVGB].)

Finally, the TSW will remove the brackish groundwater influenced by seawater and replace it with highly saline groundwater (pure seawater) by purposefully inducing seawater

intrusion. The CCC's impact conclusion that there is no beneficial uses for the brackish or fresh quality groundwater contained within the Marina Subarea is inconsistent with RWQCB, WQCP for the Central Coast Basin and SGMA. It also fails to consider the potential for local SVGB users to use the brackish groundwater supply as a beneficial use for sustainable basin management efforts. The Staff Report for the Amendment must address how the TSW will impact potable water within the Marina Subarea as noted above.

Comments on Proposed Modifications to Special Condition 11

It is HGC' opinion that Special Condition 11 provides an inadequate threshold for evaluating potential harm to the Marina Subarea for the numerous reasons explained above. As requested by the District, we offer the following additional opinions regarding Cal-Am's revised modifications to Special Condition 11, which Cal-Am proposes as follows:

Restated Special Condition 11, First Sentence: PRIOR TO STARTING PROJECT-RELATED PUMP TESTS, the Permittee shall install monitoring devices a minimum of four wells on the CEMEX site, within 2000 feet of the test well, and one or more offsite wells to record water and salinity levels within the wells and shall provide to the Executive Director the baseline water and Total Dissolved Solids (TDS) levels in those wells prior to commencement of pumping from the test well.

HGC Comment: Cal-Am's HWG letter states that compliance with this requirement was met with monitoring of nine wells at three locations (MW-1S, MW-1M, MW-1D, MW-3S, MW-3M[1], MW-3D, MW-4S, MW-4M, and MW-4D), the Test Slant Well itself, and the CEMEX North Well prior to operation of the TSW.[2] They further state that all eleven of these wells are located on the CEMEX site within 2,000 feet of the TSW, and have transducers installed for continuous groundwater monitoring. Notably the HWG interpretation of the condition conflicts with Cal-Am's presentation to the CCC and public at the November 2014 hearing regarding the TSW's Monitoring Well Program that represented monitoring would be "extensive" with "4 locations on-site with 3 wells at each location and additional off-site wells." (California-American Water Presentation, CCC November 12, 2014 Hearing, p. 10.) It also conflicts with the HWG's own Baseline Report, which states:

> Initially four sets of monitoring wells were proposed for the CEMEX property. However, due to time constraints and the limitation of the working area near the test slant well, the MW-2 series was not constructed during the period that equipment access was allowed in the project area. The MW-5 and MW-6 series

[1] / TDS monitoring was not conducted continuously prior to the Baseline Report. (Baseline Report, Figure 2-7.)

[2] / At the CEMEX North Well location only a couple days of water level monitoring and notably no TDS monitoring was not conducted for the Baseline Report. (Baseline Report, Figure 2-7.) In addition, no information regarding which aquifer(s) the CEMEX North Well is screened in has been provided to the public.

> (shown on Figure 1-1) were selected by CalAm to provide water level and water quality data at farther distances from the test slant well site.

(Baseline Report, p. 3.) Interpreting each monitoring well cluster as 3 separate wells as the HWG suggests would eviscerate any protection from the TSW's already inadequate monitoring. Such an interpretation would allow Cal-Am to only monitor the TSW itself and the 400-Foot Aquifer at MW-1D, MW-3D, MW-4D. Similarly, it would allow Cal-Am to only monitor the TSW itself and MW-4S, MW-4M, and MW-4D. Thus, the HWG's interpretation of this condition is not reasonable.

Most importantly, given Cal-Am's failure to install MW-2 as originally represented, there are no monitoring wells perpendicular to the TSW alignment along the coast. As a result, Cal-Am's monitoring program will not detect increased sea water intrusion where it is likely to first occur – north or south of the TSW along the coast. Notably, increased seawater intrusion in the Dune Sand Aquifer from the TSW would be expected north and south of the TSW along the coast as illustrated in Figure 11. It is HGC' opinion that without the MW-2 monitoring well cluster, or any equivalent replacement well along the coast, the TSW will in effect have no monitoring for the likely seawater intrusion the TSW project is designed to induce.

Restated Special Condition 11, Second Sentence: The Hydrogeology Working Group shall establish the baseline water and TDS levels for the monitoring wells, along with regional groundwater elevation trends and TDS level trends.

HGC Comment: The CCC has previously determined that the HWG established the required baseline in Cal-Am's April 20 2015 Baseline Report. While HGC disagrees that the report actually established baseline conditions for the reasons articulated above, we believe clarification is needed regarding whether a new baseline report must be provided, with data from Monitoring Wells MW-6, MW-7, MW-8 and MW-9 included, before the TSW is permitted to resume operation. As we have noted previously, without any determination on existing baseline conditions as part of the environmental review, it is impossible for the CCC, MCWD, or the public to determine if a proposed threshold of a 1.5 foot water level change at MW-4 would result in impact. A 1.5-foot decline in water levels when basin levels are 10 feet above sea level may have an insignificant impact compared to a 1.5-foot decline when water levels are at or below sea level. As noted above, measuring increases in salinity at this location is not meaningful during the initially phase of the TSW (given we would expect the TSW to lower salinity level at MW-4S and MW-4M by pulling in fresher water).

Restated Special Condition 11, Third and Fourth Sentences: During the project pump tests, the Permittee shall, at least once per day, monitor water and TDS levels within those wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request.

HGC Comment: Cal-Am's presentation to CCC and public at the November 2014 hearing regarding the TSW's Monitoring Well Program represented that monitoring would be "transparent" with "Raw data and summary of results posted to website on daily to weekly basis (www.mpwsp.org)". (California-American Water Presentation, CCC November 12, 2014 Hearing, p. 10.) Cal-Am, however, has never provided results on a daily basis and on several occasions has failed or provide results on a weekly basis – including the present time were it has been more than a week since Cal-Am last posted a monitoring report. Moreover, Cal-Am has not provided "raw data" in a usable format, but rather included graphical illustrations in a pdf that cannot be used by MCWD or the public to perform its own analysis. Finally, the monitoring program has been plagued by an unusual number of faulty monitoring probes that have resulted in data gaps at critical times. The condition should be revised to require Cal-Am simply post the Excel spreadsheets of transducer data and hand water level measurements used to create the graphs for Test Slant Well Long Term Pumping Monitoring Report. Clarification of the posting requirements is also warranted.

Restated Special Condition 11, Fifth Sentence: The Hydrogeology Working Group shall review weekly monitoring data and prepare a monthly report that shall be submitted to the Executive Director documenting the regional/background groundwater elevation trends and TDS level trends.

HGC Comment: While HGC believes such reports could be beneficial, the monthly reports should be prepared by a neutral expert, not one controlled by the TSW project's proponents. Moreover, the CCC should provide significant guidance on the level of documentation and criteria used to determine regional/background groundwater elevation trends and TDS level trends. Without such guidance, the monthly reports would amount to nothing more than the preparer's opinion. As discussed below, the HWG's assumption that all changes in water levels and TDS at MW-4 are regional/background trends is not supportable.

Restated Special Condition 11, Sixth Sentence: If drawdown exceeds 1.5 feet at MW-4 (based on averaging of MW-4S and MW-4M) from regional groundwater elevation trends, or if TDS levels increase more than two thousand parts per million (based on averaging of MW-4S and MW-4M) from regional TDS level trends, the Permittee shall immediately stop the pump test and inform the Executive Director.

HGC Comment: As HGC commented previously, averaging the level of decline in each aquifer at MW-4 to determine whether Condition 11 is triggered is improper given the different confinement levels in the Dune Sand (unconfined), 180-Foot (semi-confined), and 400-Foot aquifers (confined). The HWG responded to our prior comments stating:

> Averaging of drawdowns (due to Test Slant Well pumping) in the MW-4S (Dune Sand Aquifer) and MW-4M (180-FTE Aquifer) for comparison to the performance standard of 1.5 feet is appropriate for the following reasons: a) The Dune Sand Aquifer and 180-FTE Aquifer beneath the CEMEX site are not separated by a thick

> continuous clay layer (aquitard), b) the Dune Sand Aquifer (represented by MW-4S) and 180-FTE Aquifer (represented by MW-4M) at the CEMEX site are in hydraulic communication due to the lack of a separating aquitard, c) pumping just from the Dune Sand Aquifer at the CEMEX site will cause a water level response at nearby monitoring wells screened in the 180-FTE Aquifer, and pumping just from the 180-FTE Aquifer at the CEMEX site will cause a water level response at nearby monitoring wells in the Dune Sand Aquifer, d) the Test Slant Well is screened in (and pumps water from) both the Dune Sand Aquifer and the 180-FTE Aquifer. Given the facts that the Dune Sand Aquifer and 180-FTE Aquifer are not isolated beneath the CEMEX site and the Test Slant Well is screened in both aquifers, an averaging of drawdowns in MW-4S and MW-4M due to Test Slant Well pumping is the most appropriate value to use for comparison to the 1.5 foot performance standard.
>
> The comment regarding the modeling is addressed in Response to Comment 17. Furthermore, it should be noted that the Salinas Valley Aquitard that overlies the 180-Foot Aquifer at inland well locations is not present beneath the CEMEX property. Thus, the shallow (Dune Sand) aquifer is in hydraulic communication with the 180-FTE Aquifer beneath the CEMEX site, whereas this is not the case further inland where the Salinas Valley Aquitard is present between the shallow aquifer and 180-Foot Aquifer. Again, Hopkins is making passing comments on the DEIR modeling effort, which is not the subject of Special Condition 11.

(Cal-Am Amendment Application, HWG Letter dated July 23, 2015, Attachment D.)

As addressed above, The 180-Foot Aquifer monitored by wells MW-1M, MW-3M, and MW-4M shows a degree of confinement that transmits the tidal loading pressure a significant distance inland (about a half mile) (Geoscience Long Term Monitoring Report 20, dated September 15, 2015, Figures 2-1 to 2-3). This observation clearly shows the aquifer is not truly unconfined and will not allow unimpeded vertical flow from the shallow Dune Sand aquifer into the 180-Foot Aquifer as originally assumed and as the HWG argues. The effect of this condition will propagate the impacts of the slant well pumping stresses to far greater distances within the Pressure Subarea 180-Foot Aquifer zone than Cal-Am predicted in its modeling as addressed also above. The generally stated condition "that the Dune Sand Aquifer and 180-FTE Aquifer are not isolated beneath the CEMEX site" has not been demonstrated by any type of field testing (i.e., zone isolation testing).

Moreover, averaging the drawdown in both aquifers essentially doubles the allowable drawdown from the test well in any single zone. Should the CCC approve such a change, it must evaluate

the amount of groundwater that could be extracted by the TSW to determine the impacts of using such a performance standard given that Cal-Am estimates 80 percent of the production is from the Dune Sand Aquifer and 20 percent is from the 180-Foot Aquifer. HGC further notes that the TSW well was constructed "with screening that will allow it to pump from each aquifer **separately**." (CCC Findings, p. 11, emphasis.)

Moreover, using regional groundwater elevation and TDS trends as part of the performance standard is also inappropriate and not scientifically supportable for at least two reasons. First, as explained above, a 1.5-foot decline in water levels when basin levels are 10 feet above sea level may have an insignificant impact compared to a 1.5-foot decline when water levels are at or below sea level. Therefore, it is critical to evaluate seasonal trends as part of the environmental review process. Second, as addressed below, establishing regional trends on a monthly basis will inject significant uncertainty into the enforceability of the performance standard. Establishing trends is not an exact science and could be the subject of significant scientific disagreement. Thus, allowing Cal-Am's HWG to establish these trends would appear to be improper.

Restated Special Condition 11, Sixth Sentence: The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the test well is shut down due to either of these causes. The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS is from a cause or causes other than the test well, and it will submit its determination to the Executive Director.

HGC Comment: Given the condition provides the HWG with the power to determine whether the TSW or regional trends are causing the drawdown, this provision would appear to give the Cal-Am's HWG a another chance to speculate about the causes of drawdown. If the proposed 1.5 foot/2,000 ppm standard is adopted, there should be no discretion decision on whether the TSW may resume pumping without additional environmental review.

Restated Special Condition 11, Seventh Sentence: If the Executive Director agrees with the HWG that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the Test Slant Well has caused a drop in water level (i.e., drawdown) of 1.5 feet or more or an increase in TDS of two thousand parts per million or more, the Permittee shall not re-start the pump test until receiving an amendment to this permit.

HGC Comment: See above comment.

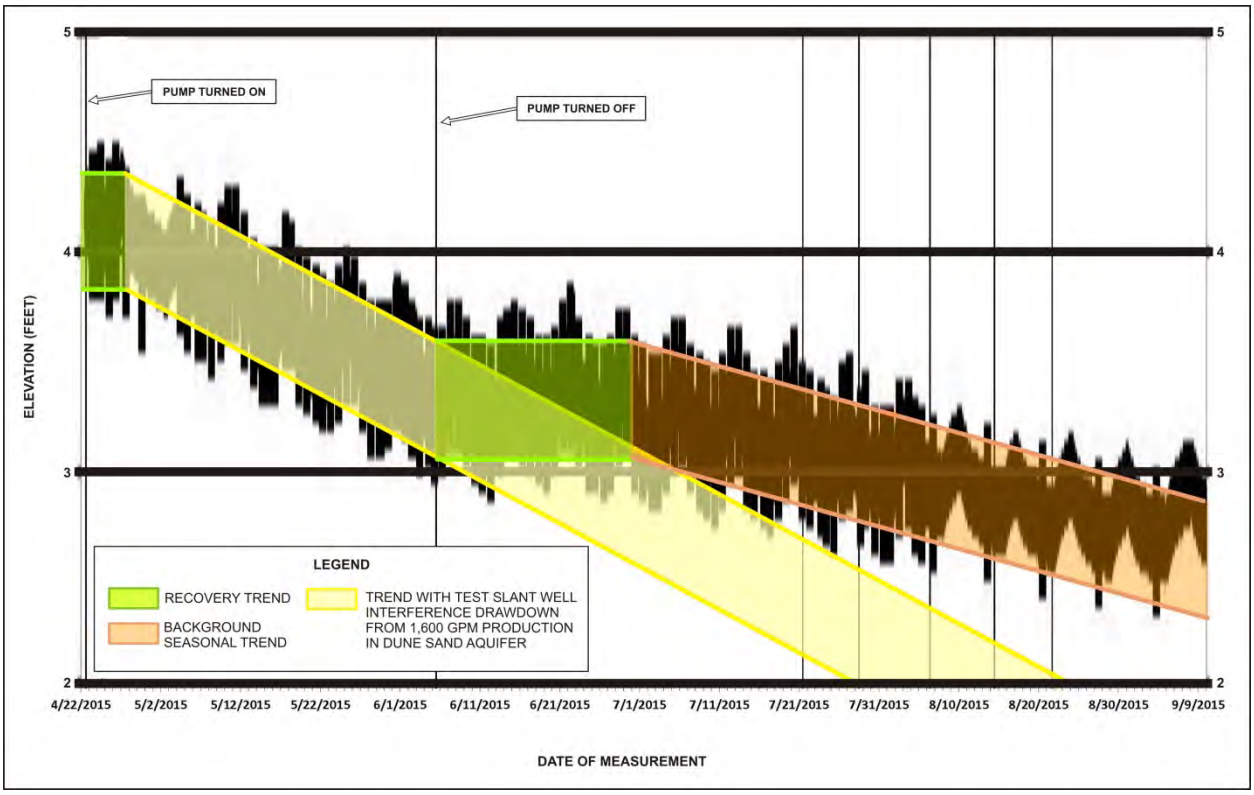
* * *

Finally, the HWG letter, included in Cal-Am's amendment application, states: "In order for Special Condition 11 to work as intended, the Condition requires definitions of certain terms, some clarification of key sentences, and inclusion of an additional reporting requirement." The HWG then suggests "the selection of 1.5 feet was intended to refer to a drawdown caused solely by the Test Slant Well, not a regional decline in groundwater levels due to other factors." We do not know how the HWG knows what the CCC intended when it drafted this language, but believe the original 1.5 performance standard is more appropriate than proposed amendments by

Cal-Am now. Again, a 1.5-foot decline in water levels when basin levels are 10-feet above sea level may have an insignificant impact compared to a 1.5-foot decline when water levels are at or below sea level. Unless, the CCC evaluates the performance standard based on potential seasonal levels decline in the Marina subarea under the potential further xtended drought conditions the change is clearly inappropriate.

Moreover, as noted above, establishing trends is not an exact science and could be the subject of significant scientific disagreement. The HGW states that "precise calculations of drawdown in MW-4S and 4M are somewhat difficult, given that the drawdowns are very small to negligible and superimposed on a declining regional water level trend." In the Geoscience reports, the vertical axis scale for Monitoring Well MW-4 spans from -20 feet to 45 feet above mean sea level (65 feet). The result is that the data appear to form a straight line, which is what the HWG concludes. When the scale is changed to be appropriate for the data set (3 feet total), trends become more visible. Figure 12 – MW-4S Data Set is an enlargement of a graph provided in Figure 2-3 of the Test Slant Well Long Term Pumping Test Report No. 20, which was necessary because these data are not provided otherwise. Evaluation of the data from MW-4S clearly shows a steeper gradient during the TSW pumping period, followed by a slightly increasing or flat recovery period trend in water levels. This clearly shows that the response is from the TSW pumping. If the well had continued to operate, the projected water levels shown in yellow would be substantially lower than the decline related to the background seasonal trend shown in orange.

Figure 12 – MW-4S Data Set



Also, data not presented in the right graphical format allow different (often erroneous) interpretations. Groundwater analyses using production test data commonly rely on semi-logarithmic plots to view aquifer responses to pumping stress. Figures 13 and 14 – Five Day Test, Test Slant Well Data, and Five Day Test, Monitoring Well No. 1 Data, respectively show the type of plot we cannot create without the raw data. These are the only two graphs from all the reports thus far submitted by Geoscience and the HWG that are semi-log plots. Note the late-time data show a straight line indicating a constant rate of drawdown, which is contrary to the HWG statement that the water levels stabilize after 2 days and don't drawdown any further after that period. These water level trends are not visible on a liner plot.

Review of the long-term test hand water level measurement data shown in Figure 15 – Long-Term Test, Test Slant Well Data, that were provided upon request, also indicates that a constant rate of drawdown in the TSW occurs well beyond a week after pumping started. After a week of pumping, the data appear to show a water level stabilization. However, subsequent data show the same downward trend for another couple weeks. The data then show a rise in level and a stabilized drawdown through the remainder of the test period. Factors contributing to changes in water level drawdown rates include; continued development of the well screen intervals, fluctuation in well production rates, and aquifer boundary conditions.

Figure 13 – Five-Day Test, Test Slant Well Data

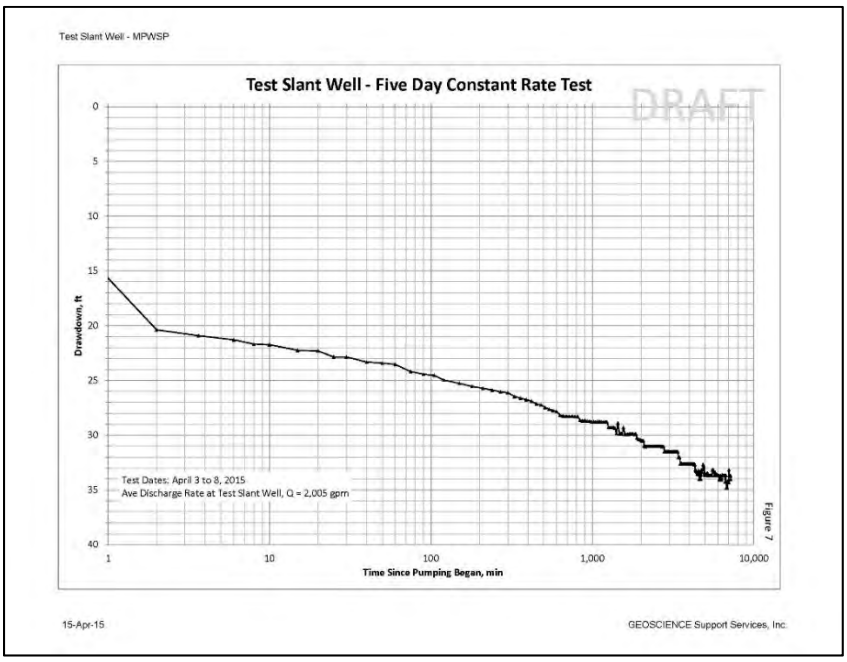
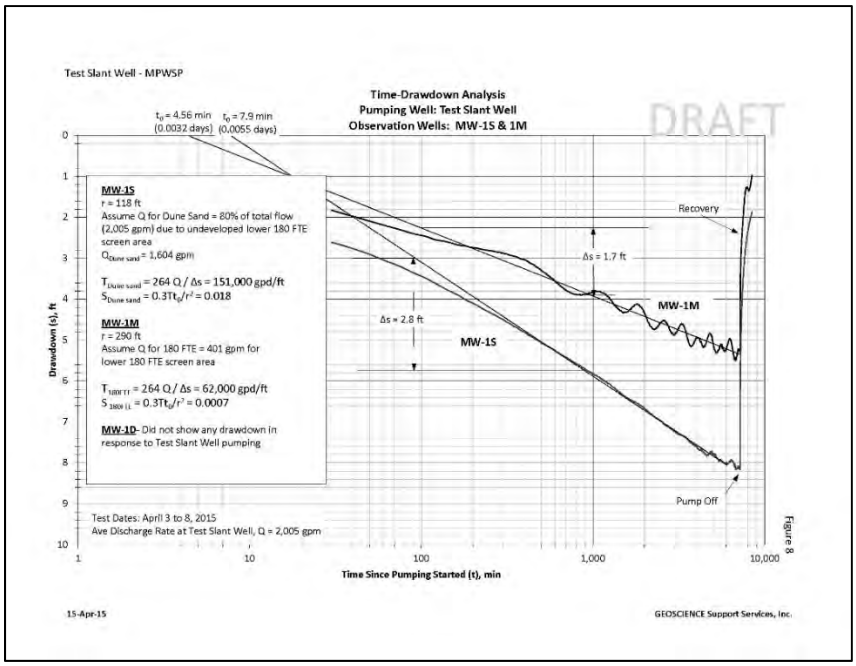


Figure 14 – Five Day Test, Monitoring Well MW-1 Data

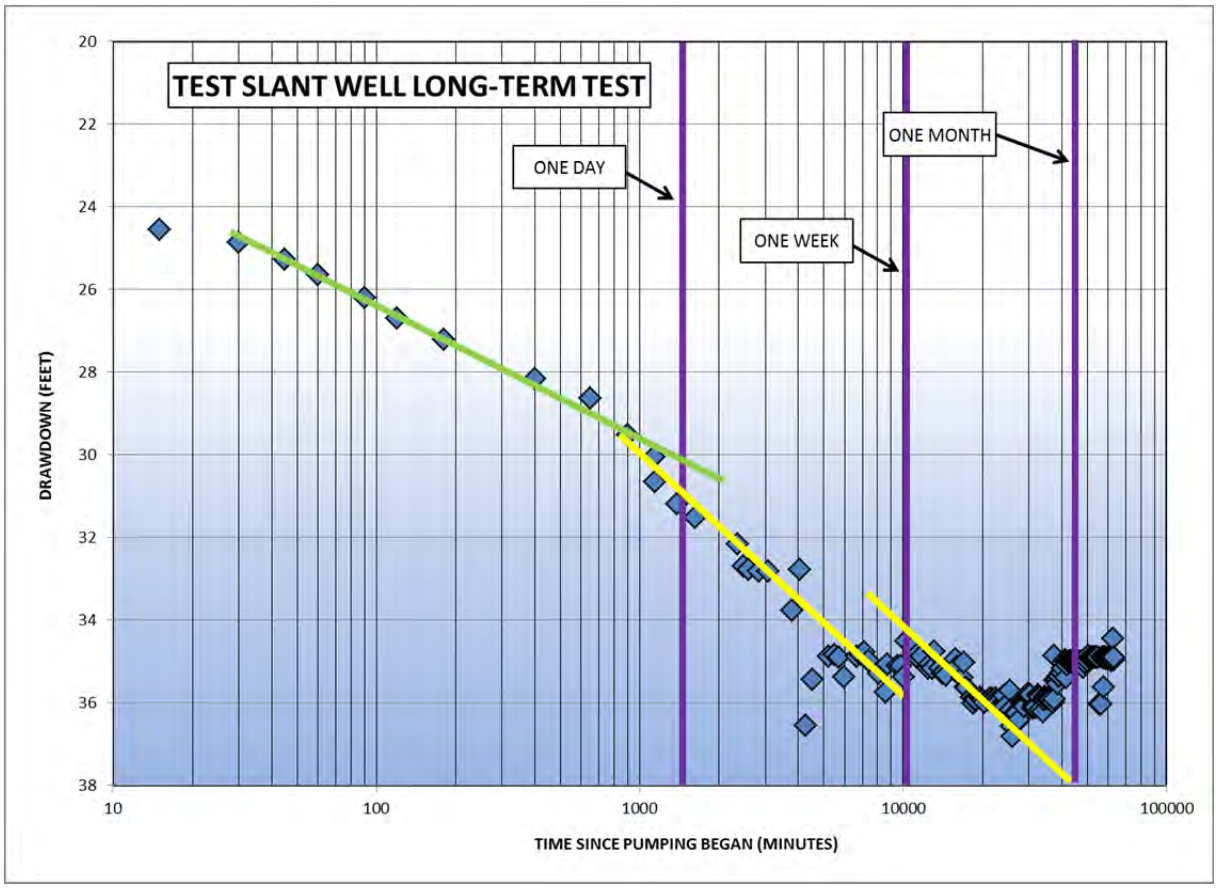


A boundary condition restricting flow was indicated in both the 5-day and the long-term test data after approximately 1 day of pumping. At that time, the rate of drawdown increased

and continued throughout the first week. At approximately one week of pumping, the data appear to show an increase in well performance, which caused the pumping water level in the well to rise or flatten out. The subsequent declining water level trend over the next 2 weeks is consistent with the trend observed between days 2 through 5. It is unclear if the subsequent water level rise is due to further improvement in well performance or a reduction in pumping rate. However, the last couple weeks indicate a relatively stable water level which may indicated the recharge boundary of the ocean was achieved. Again as shown in Figures 5 and 6, this recharge boundary was not visible in late time data in Monitoring Well MW-1 and MW-3.

Despite these variables, the HWG suggests that any drawdown at MW-4 should be attributed to regional trends. In support of their opinion, they cite data of seasonal declines in the 180-Foot Aquifer throughout the Salinas Valley Groundwater Basin. With the exception of the monitoring well data, however, all the rest of the well data provided by the HWG is from outside the Marina Subarea (North of the Salina River, see HWG Letter Exhibit entitled "180 Aquifer Well Hydrographs Monterey Peninsula Water Supply Project"), is from 2012 or 2013, and is miles from the Coast. Thus, these data do not address the seasonal trends in the Project area during the TSW pumping period. It is well known that the 180-Foot Aquifer and 400-Foot Aquifer are subject to extensive seasonal variation. In fact as we have noted in the MCWD v. CCC litigation average water level in the Pressure 180-foot Aquifer rose 10-feet from August 2013 to February 2014, and then declined 20-feet from February 2014 to July 2014. (Monterey County Water Resources Agency's Salinas Valley Water Conditions for the Fourth Quarter of Water Year 2013-2014.) But as HWG Martin Feeney testified in that case, "it would be hydraulically impossible for water levels to fluctuate to this degree at the Project location." (Declaration of Martin Feeney in Support of Cal-Am's Opposition to Motion For Stay And Preliminary Injunction, p. 11.) This is especially true given the unique hydrogeology of the Marina subarea and recharge provided by the Dune Sand Aquifer. Thus, while the 2012 and 2013 well data from outside the Marina subarea supports the unremarkable proposition there are large seasonal groundwater trends in the SVGB, it cannot be used to calculate daily average trends within the Marina subarea for 2015. As discussed above, the unique conditions in the Marina Subarea (perched Dune Sand Aquifer and lack of pumping) show that unlike other areas in the SVGB, conditions are getting better.

Figure 15 – Long-Term Test, Test Slant Well Data



Similarly, the HWG suggestion that any seasonal variations in water level do not pose an obstacle to analysis of the Project's impacts is scientifically unsupportable along this section of the coastline in the Marina Subarea. While it is likely possible to accumulate sufficient information during the short period of monitoring to date to estimate tidal variations, the monitoring data will not include any seasonable information of value that may be observed over a typical year or climatic cycle. As demonstrated in the HGW's Baseline Report (Exhibit 3), there is no seasonal record to superimpose in the Marina Subarea. Rather only a couple weeks or months of data collected in the fourth year of a drought are included in the report. Moreover, the procedures used to assess impacts in the Baseline memo (in lieu of establishing the required baseline) and in its letter regarding the TSW' compliance with Special Condition 11 demonstrate the HWG is speculating as to what is creating what effect on coastal water levels and providing a post hoc explanation to support its theories. This will remain the case in the future as any inland effects on coastal groundwater conditions can only be understood under the present drought conditions and cannot be used to assess wet or average year conditions.

As the above discussion indicates, given the significant uncertainties regarding hydrogeological conditions in the Marina subarea it would be inappropriate to require drawdown

to be shown solely from the TSW. Based on such a standard Cal-Am to argue any uncertainty regarding regional trends would be resolved in favor of continued operations rather than in favor of environmental protection. This would be inappropriate in most circumstances and is certainly the case here where there is significant uncertainty regarding the hydrogeology.

Finally, we note that our ability to provide analysis of the Cal-Am application is hindered by Cal-Am failure to provide information we have requested in the CPUC proceedings in June 2015. The following information that would allow us the opportunity to conduct a more thorough independent review should be included with the Staff Report:

1. Lithological logs and geophysical logs for the Test Slant Well, MW-1, MW-2, MW-3, MW-4, MW-5 and MW-7.
2. Excel Spreadsheets of transducer data and hand water level measurements used to create the graphs for the latest Test Slant Well Long Term Pumping Monitoring Report available, To date, Cal-Am has only provided the hand water level measurement data through June 17.
3. Laboratory water quality test results for all wells (these are not included in weekly reports).

Until this information is made available, our ability (and the CCC's ability) to conduct an independent analysis of the hydrogeological interpretations, water quality trends, and provide meaningful graphics that illustrate key hydrogeological issues is limited.

Conclusion

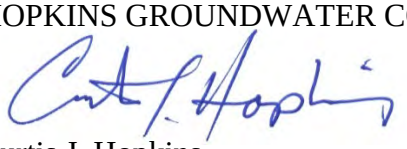
In our opinion, the operation of the TSW, especially during drought conditions, will likely adversely impact the Pressure Subarea of the SVGB (particularly the Marina Subarea) and perhaps the East Side Subarea which presently derives a substantial component of its recharge from subsurface inflow from the coastal portion of the Pressure Subarea.

We note that unlike prior desalinization projects in the SVGB that would have provided water to users within the Basin and thus allow reduced groundwater pumping elsewhere within the Pressure Subarea, the slant well project is discharging all of its pumped water to the ocean. Compensatory mitigation, as Cal-Am proposes, to drill deeper wells will not address harm to the Basin and may be infeasible in certain locations depending on the extent of the deep water aquifer. More importantly, once seawater has intruded into a freshwater aquifer, the elevated chloride concentrations will not decrease until freshwater recharge raises groundwater head elevations high enough to reverse the freshwater/seawater interface gradient towards the coast. The gradient would need to be maintained while flushing occurs over an extended period of time in order to remove all of the seawater, including the diluted brackish portions that result from the mixing that will occur during flow through the aquifer. If the intrusion front passes the linear area of semi-perched recharge (see Figure 10), it will continue inland even after protective water levels are restored in the aquifer along the coast. Thus, the harm from the TSW even after it is shutdown may not be able to be redressed for an extended period of time.

We trust this letter sufficiently illustrates why we or anyone else cannot fully analyze the potential impacts of the Cal-Am's TSW Amendment. Please call with any questions.

Sincerely,

HOPKINS GROUNDWATER CONSULTANTS, INC.



Curtis J. Hopkins
Principal Hydrogeologist
Certified Engineering Geologist EG 1800
Certified Hydrogeologist HG 114

Attachments: Exhibits 1 Through 4

c:

References

Ahtna Environmental Inc. (Ahtna, 2015), *Operable Unit Carbon Tetrachloride Plume Fourth Quarter 2014 Groundwater Monitoring Report, Former Fort Ord, California,* Prepared for Department of the Army, U.S. Army Corps of Engineers, Dated February.

Brown and Caldwell (B&C, 2015), *State of the Salinas River Groundwater Basin,* Prepared for Monterey County Resource Management Agency, dated January 16.

California American Water Hydrogeologic Working Group (2015), *Monterey Peninsula Water Supply Project – Test Slant Well Long Term Pumping Test and Coastal Development Permit #A-3-MRA-14-0050,* Letter addressed to Charles Luster, Executive Director, California Coastal Commission, Dated July 23.

Environmental Science Associates (ESA, 2015), *Calam Monterey Peninsula Water Supply Project, Draft Environmental Impact Report,* Prepared for California Public Utilities Commission, dated April.

Geoscience Support Services, Inc. (Geoscience, 2013), *Technical Memorandum, Protective Elevations to Control Sea Water Intrusion in the Salinas Valley,* Prepared for Monterey County Water Resources Agency, Dated November 19.

Geoscience Support Services, Inc. (Geoscience, 2014), *Monterey Peninsula Water Supply Project, Hydrogeologic Investigation, Technical Memorandum (TM1) Summary of Results – Exploratory Boreholes,* Prepared for California American Water, RBF Consulting, Dated July 8.

Geoscience Support Services, Inc. (Geoscience, 2014a), *Monterey Peninsula Water Supply Project, Results of Test Slant Well Predictive Scenarios Using the CEMEX Area Model, Draft,* Prepared for California American Water, Dated July 8.

Geoscience Support Services, Inc. (Geoscience, 2015), *Draft Technical Memorandum, MPWSP Action Items Discussed at the 19-May-15 Geohydrology Workshop, To Mr. Eric Zigas ESA, From Dennis Williams,* Dated June 12.

Geoscience Support Services, Inc. (Geoscience, 2015a), *Monterey Peninsula Water Supply Project, Groundwater Modeling and Analysis, Draft,* Prepared for California American Water and Environmental Science Associates, Dated April 17.

Geoscience Support Services, Inc. (Geoscience, 2015b), *Monterey Peninsula Water Supply Project, Groundwater Monitoring Report No. 1, 19-Feb-15 – 13-Mar-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated March 16.

Geoscience Support Services, Inc. (Geoscience, 2015c), *Monterey Peninsula Water Supply Project, Groundwater Monitoring Report No. 2, 13-Mar-15 – 20-Mar-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated March 23.

Geoscience Support Services, Inc. (Geoscience, 2015d), *Monterey Peninsula Water Supply Project, Groundwater Monitoring Report No. 3, 20-Mar-15 – 27-Mar-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated March 30.

Geoscience Support Services, Inc. (Geoscience, 2015e), *Monterey Peninsula Water Supply Project, Groundwater Monitoring Report No. 4, 27-Mar-15 – 3-Apr-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated April 6.

Geoscience Support Services, Inc. (Geoscience, 2015f), *Monterey Peninsula Water Supply Project, Groundwater Monitoring Report No. 5, 3-Apr-15 – 10-Apr-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated April 13.

Geoscience Support Services, Inc. (Geoscience, 2015g), *Monterey Peninsula Water Supply Project, Groundwater Monitoring Report No. 6, 10-Apr-15 – 17-Apr-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated April 20.

Geoscience Support Services, Inc. (Geoscience, 2015h), *Monterey Peninsula Water Supply Project, Groundwater Monitoring Report No. 7, 17-Apr-15 – 22-Apr-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated May 5.

Geoscience Support Services, Inc. (Geoscience, 2015i), *Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monitoring Report No. 1, 22-Apr-15 – 29-Apr-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated May 15.

Geoscience Support Services, Inc. (Geoscience, 2015j), *Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monitoring Report No. 2, 29-Apr-15 – 6-May-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated May 12.

Geoscience Support Services, Inc. (Geoscience, 2015k), *Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monitoring Report No. 3, 6-May-15 – 13-May-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated May 19.

Geoscience Support Services, Inc. (Geoscience, 2015l), *Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monitoring Report No. 4, 13-May-15 – 20-May-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated May 26.

Geoscience Support Services, Inc. (Geoscience, 2015m), *Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monitoring Report No. 5, 20-May-15 – 27-*

May-15, Coastal Development Permit #A-3-MrA-14-0050, Prepared for California American Water, Dated June 2.

Geoscience Support Services, Inc. (Geoscience, 2015n), *Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monitoring Report No. 6, 27-May-15 – 3-June-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated June 9.

Geoscience Support Services, Inc. (Geoscience, 2015o), *Monterey Peninsula Water Supply Project, Test Slant Well Long Term Pumping Monitoring Report No. 20, 2-September-15 – 9-September-15, Coastal Development Permit #A-3-MrA-14-0050,* Prepared for California American Water, Dated September 15.

Geoscience Support Services, Inc. (Geoscience, 2015p), *Technical Memorandum, Monterey Peninsula Water Supply Project, Baseline Water and Total Dissolved Solids Levels, Test Slant Well Area,* Submitted to the Hydrogeologic Working Group, Dated April 20.

Geoscience Support Services, Inc. (Geoscience, 2015q), *Monterey Peninsula Water Supply Project – Test Slant Well Long Term Pumping Test and Coastal Development Permit #A-3-MRA-14-0050,* Submitted to the California Coastal Commission, Dated June 10.

Geoscience Support Services, Inc. (Geoscience, 2015r), *Monterey Peninsula Water Supply Project – Test Slant Well Long Term Pumping Test and Coastal Development Permit #A-3-MRA-14-0050,* Submitted to the California Coastal Commission, Dated June 22.

Greene, Gary H. (1970), *Geology of Southern Monterey Bay and its Relationship to the Ground Water Basin and Salt Water Intrusion,* Open File Report , United States Department of the Interior Geological Survey, Dated August 6.

Harding ESE (2001), *Final Report Hydrogeologic Investigation of the Salinas Valley Basin in the Vicinity of Fort Ord and Marina, Salinas Valley, California,* Dated April.

HydroGeoLogic, Inc. (2009), *First Quarter 2008 Groundwater Monitoring Report, Operable Unit 1, Fritzsche Army Airfield Fire Drill Area, Former Fort Ord, California,* Prepared for U.S. Army Corps of Engineers, Dated August.

HydroMetrics, LLC. (2006), Preliminary Modeling Results for the MCWD Desalination Intake, Draft Technical Memorandum, Prepared for Martin Feeney, Dated November 27.

HydroMetrics, LLC. (2013), *Water Year 2013, Seawater Intrusion Analysis Report, Seaside Basin, Monterey County, California,* Dated December 5.

Independent Scientific Technical Advisory Panel (ISTAP, 2014), *Final Report: Technical Feasibility of Subsurface Intake Designs for the Proposed Poseidon Water Desalination Facility at Huntington Beach, California,* Under the Auspices of the California Coastal Commission and Poseidon Resources (Surfside) LLC, Dated October 9.

Kennedy-Jenks Consultants (KJC, 2004), *Hydrostratigraphic Analysis of the Northern Salinas Valley,* Prepared for Monterey County Water Resources Agency, Dated May 14.

Luhdorff and Scalmanini Consulting Engineers (LSCE, 2015), *Updated Draft Version 2, Hydrologic Modeling of the Monterey Peninsula Water Supply Project, Using the Salinas Valley Integrated Ground and Surface Water Model*, Prepared for Geoscience, Dated March.

Montery County Water Resources Agency (MCWRA, 2014), *Historic Seawater Intrusion Map, Pressure 180-Foot Aquifer – 500 mg/L Chloride Areas and Pressure 400-Foot Aquifer,* Dated December 16.

RBF Consulting, (RBF, 2013), Memorandum from Paul Findley to Richard Svindland, California American Water, Subject: Recommended Capacity for the Monterey Peninsula Water Supply Project (MPWSP) Desalination Plant, dated January 7.

Regional Water Quality Control Board, Central Coast Region, State Water Resources Control Board, California Environmental Protection Agency, (RWQCB, 2011), *Water Quality Control Plan for the Central Coastal Basin*, Dated June.

Shaw Environmental, Inc. (2010), *Report of Off-Site Groundwater Extraction Pilot Study and Quarterly Monitoring, Operable Unit 1, January to March 2010, Former Fort Ord, California, Total Environmental Restoration Contract, DACW05-96-D-0011*, Submitted to U.S. Department of the Army, Corps of Engineers, Revision 0, Dated August.

SWCA Environmental Consultants (SWCA, 2014), *Draft Initial Study and Mitigated Negative Declaration for the California American Water Slant Test Well Project*, Prepared for City of Marina, Dated May.

State of California, Department of Water Resources (1973), *Sea Water Intrusion Lower Salinas Valley, Monterey County*, Dated July.

State of California, Department of Water Resources, California Statewide Groundwater Elevation Monitoring (CASGEM) Groundwater Basin Prioritization, http://www.water.ca.gov/groundwater/casgem/pdfs/lists/StatewidePriority_Abridged_05262014.pdf

Todd Engineers (1989), *Sources of Saline Intrusion in the 400 Foot Aquifer, Castroville Area, California.*

From:	mjdelpiero@aol.com
To:	Luster, Tom@Coastal; Luster, Tom@Coastal; CNRA Office of the Secretary; sdarington@redshift.com; dicknutter@earthlink.net
Subject:	Cal-Am de-sal slant well permit change 9-14-1735-A1 and A-3-MRA-14-0050-A1
Date:	Wednesday, September 30, 2015 11:06:22 AM
Attachments:	BoardofDirectors.pdf Maps.pdf NoticeofObjection.pdf Oppositioncorrespondence.pdf Ag Land Trust well logs.pdf

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Director Luster - **On behalf of the Ag Land Trust of Monterey County, why are this e-mail and attachments (below) that were forwarded to you (for distribution to the Commission members) from the Ag Land Trust NOT included in the link to the CCC staff report?** We herewith incorporate by reference all of our prior submittals (see attachments and links) into this correspondence and comment letter on the proposed change to Special Condition 11.

As The Ag Land Trust has indicated and again asserts, the proposed modification of Special Condition 11 must not be allowed and necessitates the preparation of a new, and full CEQA analysis (including an independent review of the statistical problems disclosed by Ron Weitzman that the CCC consultant failed to uncover) and a full EIR before any modification to the permit is allowed. This proposal constitutes a major and material change that is likely to result in massive regional adverse impacts to groundwater resources because of the "Cal-Am-written changes" that have been incorprorated into the CCC staff recommendations.

The slant well pumping was stopped because "it did not work as advertised". All of Cal-Am's promises and assurances made in 2014 before the CCC and the public have been broken. We have provided you with information demonstrating this massive violation of the public's trust that have been ignored and not even included in in the CCC board packet.

IN THE LAST YEAR, neither your staff, nor CPUC representatives, nor your Hydrologic Working Group (whose impartiality is completely compromised because its' individual members are bound by side agreements (out-of- court settlements) by their employers with Cal-Am that bind the employers and their consultants to supporting Cal-Am's positions) have taken the time to contact us for the hydrologic and well information that we have offered and which demonstrates the significant adverse LOCALIZED effects of the slant well on the potable aquifers of the Salinas Valley that are identified, pursuant to legislative mandate, in the adopted CCRWQCB Basin Plan.

We hereby submit these final comments for distribution to the Commission members and await your response.

Respectfully, Marc Del Piero, Board Member for the Ag Land Trust of Monterey County

-----Original Message-----
From: mjdelpiero <mjdelpiero@aol.com>
To: Tom.Luster <Tom.Luster@coastal.ca.gov>; tluster <tluster@coastal.ca.gov>
Sent: Tue, Sep 22, 2015 2:35 pm
Subject: Fwd: Objection to Cal-Am appeal/application for test slant well

-----Original Message-----
From: mjdelpiero <mjdelpiero@aol.com>
To: tluster <tluster@coastal.ca.gov>; sdarington <sdarington@redshift.com>
Sent: Tue, Sep 22, 2015 11:08 am

Subject: Fwd: Objection to Cal-Am appeal/application for test slant well

Dear Mr. Luster: On behalf of the Ag Land Trust of Monterey County, I have been asked to send this letter to the California Coastal Commission so as to document the unmitigated and significant adverse impacts on the Trust's two operable agricultural irrigation wells from the uncontrolled pumping of the California American Water Company's so-called slant well. The conduct of Cal-Am constitutes a nuisance and a massive unmitigated adverse impact upon protected coastal resources and our property interests and rights. Cal-Am has no overlying groundwater rights in the over-drafted Salinas Valley. Moreover, we must point out that the California Public Utilities Commission has effectively abandoned all past environmental work conducted by its "conflicted and suspect" consultants whose testimony motivated the CCC to ignore our original objections to the slant well. Further, we are aware that numerous parties have requested a criminal investigations (including "qui tam" investigations) by the Attorney General of Cal-Am, its management, its conflicted consultants, members of the Hydrologic Working Group, and certain state and county employees who have cooperated with Cal-Am until their massive conflicts of interests were disclosed by members of the public.

The pumping of the Cal-Am slant well, without any "beneficial use" of the groundwater pumped (it was dumped/wasted into the ocean), has wrongfully taken (without groundwater rights) a massive amount of groundwater from beneath our property. It has also induced seawater intrusion and pollution into our protected groundwater supplies. This wrongful pumping, "dumping", wasting,, and wrongful taking of our groundwater resources has caused significant and unmitigated adverse impacts and damages to our groundwater resources, and to our protected prime coastal farmlands, and to our active dune habitat restoration program. We use our well water for recognized "beneficial" uses on our overlying property and dune habitat lands. Protection and perpetuation of these priority coastal resources are mandates imposed upon the Ag Land Trust by the CA. Coastal Conservancy and the US Department of Agriculture. Sadly, no member of the CCC staff has ever contacted us to determine the validity of our recorded documentation mandating the protection of our coastal resources.

We strongly object to any further pumping of the slant well for the following reasons:

1. The Trust has herewith attached documents that have previously been publicly presented, and ignored, to Coastal Commission staff and the CA. Coastal Commission (CCC). They were presented at the meeting wherein the CCC approved the slant well's construction in the fall of 2014. These previously submitted documents, that disclosed that Cal-Am's wasteful pumping of the slant well would wrongfully and intentionally pull fresh water from the overdrafted Salinas Valley aquifers, are hereby incorporated by reference into this letter of objection to Cal-Am's request to re-start the deleterious pumping.

2. Also attached and submitted herewith are the well logs for the operable Ag Land Trust irrigation wells (the Big Well and the Small Well) that have been adversely affected by the pumping of the Cal-Am slant well. During the CCC hearing in 2014, CCC staff indicated that it believed Cal-Am's Hydrologic Working Group's representation that our wells did not exist. The CCC staff stated that the information received from Cal-Am's consultants indicated that there was only one Ag Land Trust well and it was non-operable. This statement was unsubstantiated at the time, and has since been proven to be false. We believe these misstatements were made so that Cal-Am would not have to bear the environmental and financial responsibility of the damage that it has caused and further intends to cause to our overlying groundwater rights. Our groundwater is protected by the North Monterey County Certified Local Coastal Plan (see attachments) and mandates of the State Water Resources Control Board.

3. During the Cal-Am pumping of its slant well in late spring and early summer, Ag Land Trust Board Members Sherwood Darington (the Managing Director) and Marc Del Piero personally monitored the effects of the Cal-Am slant well pumping on the Trust's Big Well. The static groundwater level in the Big Well dropped by 12 inches during the pumping by Cal-Am. No other pumping of our wells took place during that period, and, we believe, all farming activities surrounding our wells for at least a one mile radius relied upon reclaimed water from the MRWPCA "purple valve" system during that period of time. The wrongful "drawdown" of 12 inches of our protected groundwater from beneath our property

by Cal-Am resulted in the wrongful "taking" and wasting of over 160 acre/feet of our groundwater resources in less than 60 days. The Ag Land Trust annually is billed by the Monterey County Water Resources Agency for its water projects to recharge, restore, and preserve our potable groundwater which Cal-Am is polluting with its slant well. Cal-Am's conduct (taking of groundwater without any payment or mitigation requirements) is intentionally interfering with and violating an adopted governmental program intended to protect statutorily protected coastal resources.

4. The MCWRA staff, that is bound (by the out of court settlement between the Board of Supervisor and Cal-Am) to basically do or say whatever Cal-Am tells them to do or say, has alternatively publicly said that the Ag Land Trust wells "did not exist", "were closed", "were capped", "were sealed and unusable", or were :"legally prohibited from being used because of the Ag Land Trust's agreement to purchase supplemental "purple valve water" for irrigation". These statements are false. MCWRA staff has never been on our property or inspected our wells, nor has the Cal-Am Hydrologic Working Group, nor have the contractors for the CPUC. Further, it is well established law in California that an overlying landowner/water rights holder does no lose their groundwater rights if they purchase supplemental supplies, particularly reclaimed waste water. This conduct is described in case law as "WATER CONSERVATION" and is legally/legislatively protected conduct. Our wells are operable; for years, we have owned a water truck to deliver water from the wells to our dune restoration areas; we have and continue to use our groundwater for "beneficial" uses; and the MCWRA has been forced to admit that it does not have any contract that limits or restricts the use of our irrigation wells (none of our wells are in their easements).

***See attached correspondence from MCWRA in the Ag Land Trust well logs attachment herewith.
ALSO SEE : Monterey Bay Partisan - "Phantom Well Produces an inconvenient gusher for Cal-Am" By Royal Calkins on May 18, 2015.
http://www.montereybaypartisan.com/2015/05/18/phantom-well-produces-an-inconvenient-gusher-for-cal-am/

We have previously offered to provide documentation of our assertions to CCC staff. We have never receive any contact from the CCC. We ask that no further pumping of the Cal-Am slant well be allowed that will result in further unmitigated damage to our existing overlying water rights, groundwater supplies and our protected coastal resources and farmland. Should the CCC staff decide that it is willing to fully investigate the factual situation regarding our property, we always remain available to meet.

Respectfully, on behalf of the Ag Land Trust of Monterey County,

Marc Del Piero, Board Member

-----Original Message-----
From: MJDelPiero <MJDelPiero@aol.com>
To: Tom.Luster <Tom.Luster@coastal.ca.gov>; sarahcoastalcom <sarahcoastalcom@yahoo.com>; zimmerccc <zimmerccc@gmail.com>; mmcclureccc <mmcclureccc@co.del-norte.ca.us>; cgroom <cgroom@smcgov.org>; Gregcoastal <Gregcoastal@sdcounty.ca.gov>; tom.luster <tom.luster@coastal.ca.gov>; tluster <tluster@coastal.ca.gov>; virginia.jameson <virginia.jameson@gmail.com>
Sent: Tue, Nov 11, 2014 7:49 pm
Subject: Fwd: Objection to Cal-Am appeal/application for test slant well

From: MJDelPiero@aol.com
To: tluster@coastal.ca.gov
Sent: 11/11/2014 7:39:42 P.M. Pacific Standard Time
Subj: Fwd: Objection to Cal-Am appeal/application for test slant well

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From: MJDelPiero@aol.com
To: sarahcoastalcom@yahoo.com, zimmerccc@gmail.com, mmcclureccc@co.del-norte.ca.us, cgroom@smcgov.org, Gregcoastal@sdcounty.ca.gov, tom.luster@coastal.ca.gov, tluster@coastal.ca.gov, virginia.jameson@gmail.com
Sent: 11/10/2014 7:09:15 A.M. Pacific Standard Time
Subj: Objection to Cal-Am appeal/application for test slant well

TO: The California Coastal Commission (Please Distribute/Forward This to All Members and Staff)
FROM: Monterey County Agricultural and Historic Lands Conservancy (THE AG LAND TRUST)
RE: Opposition to Proposed California American Water Company Appeal/Application to Acquire a Well Site to Violate Mandatory Policies of the Certified Local Coastal Plan and to Prescriptively "Take" Groundwater from the Overdrafted Salinas Valley Groundwater Basin and our Farm

Herewith enclosed, please accept this notice/letter of opposition to the appeal/application by the California American Water Company, along with the herewith attached EXHIBITS A, B, AND C.
Notice of Objection to proposed Cal-Am "test" slant well (11 pages)
Exhibit A - Board of Directors bios.
Exhibit B - Maps (showing induced seawater intrusion area and undisclosed A.L.T. wells)
Exhibit C - Prior objections correspondence (2006 - present)
The flawed Cal-Am appeal/application proposes to directly violate multiple mandatory Local Coastal Plan policies and state groundwater rights laws, and proposes an illegal "taking" of private property/groundwater rights, to economically benefit the privately held California American Water Company at the expense of the Ag Land Trust.
The application even fails to identify one of our agricultural groundwater wells on our farm property (the "Big Well"), which is the closest to the so-called Cal-Am "test well" and which will be the first to be permanently and irreparably contaminated by Cal-Am's illegal conduct. The proposed environmental review is incomplete and flawed.
No Coastal Commission staff review of these reasonably anticipated, immitigable adverse impacts on our protected coastal agricultural groundwater resources and farmland has been conducted or presented to the Commission in anticipation of this appeal hearing. The failure to even identify these unmitigated adverse impacts in the staff report, we assume, is because the Commission staff has relied exclusively on the flawed (by omission) Cal-Am appeal/application that has tried to "downplay" its intended "taking" of our groundwater supplies and its adverse environmental effects on our prime farmland. Coastal Commission staff has not contacted our Ag Land Trust in spite of our prior correspondence (see Exhibit C) .
We anticipate presenting testimony pursuant to our attached Letter of Opposition and Exhibits at your Wednesday meeting in Half Moon Bay.
Please distribute our full comments and all attachments to each and all commissioners prior to the day of the meeting so that they may fully understand and consider the potential consequences of their actions.
Most Respectfully, Marc Del Piero, Director

MONTEREY COUNTY

WATER RESOURCES AGENCY

PO BOX 930
SALINAS , CA 93902
(831)755-4860
FAX (831) 424-7935

DAVID E. CHARDAVOYNE
GENERAL MANAGER

STREET ADDRESS
893 BLANCO CIRCLE
SALINAS, CA 93901-4455

May 13, 2015

Mr. Sherwood Darington
Managing Director
Ag Land Trust
1263 Padre Drive
Salinas, CA 93901

Re: Your Public Records Act Request dated May 4, 2015

Dear Mr. Darington,

This letter is in response to your Public Records Act Request wherein you requested a copy of the "agreement or contract to receive CSIP water" to the property described in the Grant Deed you provided with the APN numbers 203-011-10, 203-011-11, 203-011-13 and 203-011-14.

As there were no specific agreements or contracts with landowners to receive CSIP water the Agency has no records responsive to this request.

However, I am providing you with copies of the Ordinances numbered 3535, 3626 and 3789 and Resolution No. 172 and Resolution No. 05-192, all of which provide the Agency with the authority to levy assessments on properties within Zone 2B. In addition, you will find a copy of the Agency Act which defines the powers of the Agency.

Please be advised that every effort has been made to provide you with all of the records which might fall within the scope of your inquiry, I believe our attempts to identify responsive records have been quite thorough, however, if you have knowledge of a specific document which has not been provided in response to your inquiry, please notify me and I will be happy to provide a copy of the document to you, if in our possession, unless it would be exempted from disclosure pursuant to Government Code Section 6254.

Sincerely,

Alice Henault
Public Records Coordinator

Big Well
Ag Land Trust

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
EPARTMENT OF WATER RESOURCES
/ATER WELL DRILLERS REPORT

Do Not Fill In
№ 121665
State Well No.
Other Well No.

(1) OWNER: Armstrong E
Name c/o M. L. Dubach, Jr
Address PO Box P, Davis, Ca. 95616

(2) LOCATION OF WELL:
County Monterey (Owner's number, if any)
Township, Range, and Section: Between Marina & Castroville
Distance from cities, roads, railroads, etc.: So. of Twin Bridges on Hwy 1, off Lapis Road

(3) TYPE OF WORK (*check*):
New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:
STEEL: OTHER:
SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall
0	303	14"	1/4
303	306	14"x12" reducer	
306	870	12	1/4

If gravel packed

Diameter of Bore	From ft.	To ft.
26	0	870

Size of shoe or well ring:
Size of gravel: 1/4 pea
Describe joint: welded

(7) PERFORATIONS OR SCREEN:
Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
6 66	834	8	4½	1/8" std louvre

(8) CONSTRUCTION:
Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth? 300 ft.
Were any strata sealed against pollution? Yes ☒ No ☐ If yes, note depth of strata
From 0 ft. to 300 ft.
From ft. to ft.
Method of sealing concrete

(9) WATER LEVELS:
Depth at which water was first found, if known ft.
Standing level before perforating, if known ft.
Standing level after perforating and developing ft.

(10) WELL TESTS: to be tested
Was pump test made? Yes ☐ No ☒ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

(11) WELL LOG:
Total depth ft. Depth of completed well 870 ft.
Formation: *Describe by color, character, size of material, and structure*

ft. to	
0	75 fine sand
75	to 100' coarse gravel
100	125 gravel-streaks clay
125	150 clay rock
150	175 coarse gravel
175	200 ~~fine sand streak clay~~ coarse gravel
200	225 fine sand streak clay
225	250 fine sand streak clay
250	275 gravel
275	300 fine sand & streak clay
300	325 white sand
325	350 sand-clay streaks
350	375 sand
375	400 fine sand
400	425 sand gravel
425	450 sand gravel
450	475 sand streaks clay
475	500 coarse gravel-clay
500	525 sand clay
525	550 sand clay
550	575 sandy clay
575	600 fine sand clay
600	625 sand
625	650 Red clay gravel
650	675 yellow clay
675	700 yellow clay
700	725 fine gravel
725	750 coarse gravel
750	775 coarse gravel
775	800 fine gravel
800	825 coarse gravel
825	850 coarse gravel
850	875 yellow clay
875	890 yellow clay
890	913 yellow clay

Work started 7-2-74 19 Completed 7-6-74 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME Salinas Pump Co.,
(Person, firm, or corporation) (*Typed or printed*)
Address 1128 Madison Lane, Salinas, Ca. 93901
[SIGNED] (Well Driller)

Ag Land TR. Small Well

14/2-18 P-400'

1 of 4

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In

No 126555

State Well No. 14S/2E-18C1

Other Well No.

(1) OWNER:

Name Hugo Totini

Address

Castroville, CA

(2) LOCATION OF WELL:

County Monterey Owner's number, if any

Township, Range, and Section

Distance from cities, roads, railroads, etc. Corner of Highway 1 and Lapis Road

(3) TYPE OF WORK (check):

New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic [ ] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

(5) EQUIPMENT:

Rotary [X]
Cable [ ]
Other [ ]

(6) CASING INSTALLED:

STEEL OTHER:
SINGLE [ ] DOUBLE [ ]

From ft.	To ft.	Diam.	Gage or Wall
+2	598	16"	¼

If gravel packed

Diameter of Bore	From ft.	To ft.
26	0	600

Size of shoe or well ring

Size of gravel pea

Describe joint weld

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
330	598			1/8

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 320 ft.

Were any strata sealed against pollution? Yes [X] No [ ] If yes, note depth of strata

From ft. to ft.

From ft. to ft.

Method of sealing

(9) WATER LEVELS:

Depth at which water was first found, if known ft.

Standing level before perforating, if known ft.

Standing level after perforating and development ft.

(10) WELL TESTS:

Was pump test made? Yes [ ] No [ ] If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes [ ] No [ ]

Was electric log made of well? Yes [ ] No [ ] If yes, attach copy

(11) WELL LOG:

Total depth 600 ft. Depth of completed well 600 ft.

Formation: Describe by color, character, size of material, and structure

Material	From	To
Top soil	0	2
Clay	2	12
Monterey sand	12	16
Coarse sand	16	41
Grayish clay(sticky)	41	46
Montery sand & gravel w/ 3/4" rock	46	77
Fine sand	77	81
Gravel & gray clay(sticky)	81	87
Monterey sand	87	89
Cemented sand	89	91
Sandy clay	91	97
Monterey sand&gravel	97	142
Brn cemented sand	142	222
Brn sandy clay w/gravel mixed	222	232
Brwn sticky clay	232	238
Gray clay	238	243
Cemented sand	243	250
Brown sandy clay w/ gravel mixed	250	251
Sand & gravel	251	254
Gray sandy clay	254	261
Blue sandy clay	261	276
Brown sandy clay	276	281
Yellow sticky clay	281	296
Sand & gravel	296	316
Yellow clay	316	321
Gray clay (sticky, slow)	321	330
Sand & gravel	330	339
Gravel, hard gray clay mixed	339	342
Sand & gravel	342	436
Cemented sand	436	474
Gray sandy clay w/gravel mixed	474	486
Brown sticky clay	486	493
Yellow clay	493	505

Work started 10-18 19 76 Completed 10-22 19 76

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Ben Barrow Co. Inc
(Person, Firm, or corporation) (Typed or printed)

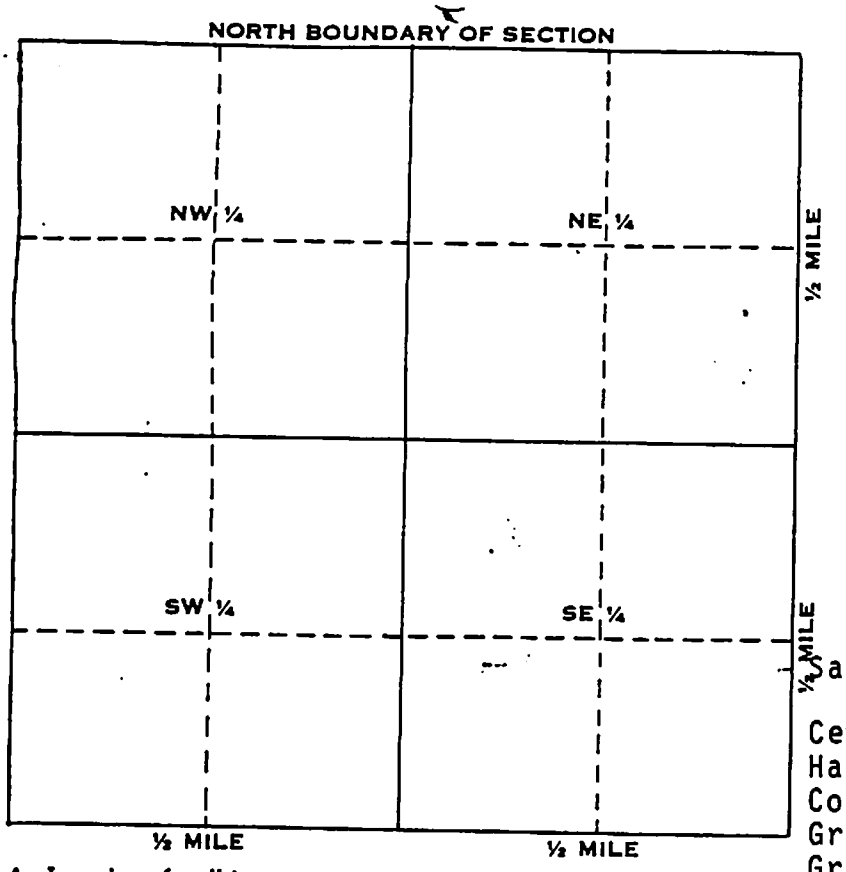
Address P.O. Box [illegible]
Woodland, CA

[SIGNED] G. B. Barrow
(Well Driller)

License No. Dated 10/27 19 76

SKETCH LOCATION OF WELL ON REVERSE SIDE

WELL LOCATION SKETCH



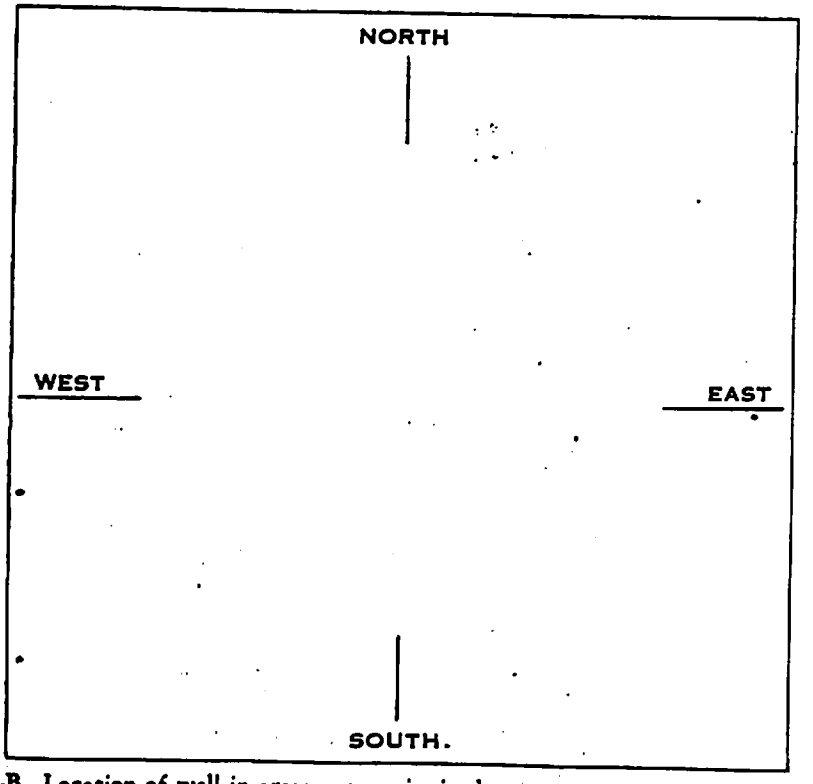
A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.

Township _____ N/S

Range _____ E/W

Section No. _____

	From	To
Sandy clay & gravel mixed	505	511
Cemented sand	511	513
Hard, gray sticky clay	513	519
Coarse sand & gravel	519	547
Gray clay	547	555
Gravel & coarse sand	555	587
Cemented sand	587	600



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

TU 15a 9-14-1735-A1 / A-3-MRA-14-0050-A1

California-American Water Company

EX PARTE COMMUNICATIONS

D.J. Moore
Direct Dial: +1.213.891.7758
dj.moore@lw.com

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Los Angeles, California 90071-1560
Tel: +1.213.485.1234 Fax: +1.213.891.8763
www.lw.com

LATHAM & WATKINS LLP

Agenda Item
T15a

September 23, 2015

File No. 055604-0002

VIA EMAIL AND FEDEX

Chair Kinsey and Honorable Commissioners
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105

Re: Permit Nos. A-3-MRA-14-0050-A1 and 9-14-1735-A1:
(California-American Water Company Test Well Project)

Dear Chair Kinsey and Honorable Commissioners:

On behalf of California-American Water Company ("Cal-Am"), we write regarding the Commission's consideration of Cal-Am's application to amend Coastal Development Permit No. A-3-MRA-14-0050 (issued December 8, 2014) and CDP No. 9-14-1735 (issued January 28, 2015) (collectively, the "Permits") to construct, operate, and decommission a temporary test slant well at the CEMEX sand mining facility (the "Project"). The Commission will consider the proposed amendment at its October 6, 2015, meeting.

As the Commission is aware, the Commission's November 2014 approval of the Permits was challenged in Santa Cruz County Superior Court by the Marina Coast Water District ("MCWD") in Case No. CV180839 and by the Ag Land Trust in Case No. CV180887. On July 23, 2015, both cases were tried on the merits before the Honorable Judge Rebecca Connolly. At the conclusion of the hearing, **Judge Connolly denied MCWD's and Ag Land Trust's petitions for writ of mandate and issued an oral statement of decision on the record entirely in the Commission's and Cal-Am's favor**. In particular, Judge Connolly made findings regarding the substantial evidence that supported the Commission's analysis and disclosure of the Project's existing environmental baseline, as well as the Commission's approval of Special Condition 11, the Special Condition that is proposed to be modified as part of Cal-Am's permit amendment.

Enclosed with the hard copy version of this letter being distributed to Commission staff is a copy of the Court Reporter's Transcript of Proceedings from the July 23, 2015, hearing. As reflected in the transcript, Judge Connolly made the following specific findings on the record

regarding (1) the baseline groundwater conditions in the vicinity of the Project area, and (2) Special Condition 11:

Environmental Baseline:

- "[T]here was significant evidence before the Coastal Commission with respect to the baseline condition of the environment." (Tr. at 10:21-24);
- "[T]he issue was whether or not the Commission adequately disclosed the baseline hydrological conditions of the Salinas Valley groundwater basin . . . I find that the Commission adequately did so in this case. The Commission's findings cite to reports that indicate that the groundwater in the project's general area is already severely contaminated by seawater intrusion and that these conditions are well understood and documented; that the reports describe the conditions and note that underlying basin is subject to seawater intrusion that extends several miles inland from the coast where the project is located." (Tr. 187:20-188:9);
- "The groundwater conditions describing the Salinas Valley groundwater basin past groundwater pumping, the degree of intrusion and groundwater storage capacity are also set forth in the administrative record." (Tr. 188:13-17);
- "[T]he record also discusses how groundwater conditions fluctuate over time, and that it has a high degree of fluctuation." (Tr. 189:23-25);
- "[T]here was significant scientific evidence before the Commission to determine that the groundwater aquifers from which the project was going to draw were greatly intruded by seawater and could not be used for agricultural irrigation or human consumption." (Tr. 190:10-14);
- "[T]he record establishes that determining the exact level and salinity levels at the project's monitoring wells was impossible to achieve prior to the Commission's review because the monitoring wells are, in fact, a component of the project, and that was analyzed and approved in the CDPs. The Commission staff report provided the detailed discussion of the existing groundwater conditions in the Salinas Valley groundwater basin and the two aquifers from which the project will draw water. That discussion was based on technical documents in the record; and. . . the Commission did not defer in assessing or neglect to study the baseline conditions." (Tr. 191:9-21); and
- "I do find the record adequately establishes the Commission appropriately determined the baseline environmental conditions prior to moving forward." (Tr. 191:22-24).

Special Condition 11:

- "I also find that in adopting Special Condition 11, that the Commission was acting as the lead agency, and it was appropriate for them to exercise its own judgment in selecting its standard of significance on that, and that was set forward in Condition 11." (Tr. 191:25 to 192:4);

- "[T]he evidence supports that Special Condition 11 was based on data from technical reports prepared by Geoscience and was referred to during the Commission's proceeding and is included in the Commission's record." (Tr. 192:5-9);

- "I also believe that the Commission's decision to alter the initial staff report proposed one-foot drawdown standard to 1.5 drawdown standard was permissible and supported by the administrative record." (Tr. 192:19-22);

- "Insofar as the TDS standards, the administrative record supports that the 2000 parts per million or ppm increase in TDS was selected because seawater has approximately 3,000 ppm variability, so it varies from 30,000 to 33,000 parts per million." (Tr. 192:23 to 193:2);

- "I do find that the drawdowns and the TDS standard included in Special Condition 11 were tailored to the project appropriately under CEQA and that they did not amount to a deferral of baseline measurement under CEQA to another group." (Tr. 193:7-11);

- "I further find that Special Condition 11 was not an impermissible deferral of mitigation, and that is based upon the fact that I think it is appropriate for the specific performance standards to be established even if all the specifics are not known at the time of the approval." (Tr. 193:12-17);

- "I think it was appropriate for the Commission to utilize HWG's technical expertise to implement Special Condition 11. And I also think that given that the groundwater levels and salinity fluctuate naturally, that it was appropriate for the Commission to set objective performance criteria and to delegate to the Commission's executive director to work with the scientific experts to determine whether or not the project was violating those criteria." (Tr. 193:19-194:2); and

- "I believe that the administrative record supported the Commission's finding that no seawater intrusion impact would occur in the Salinas Valley groundwater basin as a result of the project." (Tr. 194:12-16).

We appreciate the opportunity to submit the hearing transcript to the Commission for inclusion in the administrative record. We look forward to the Commission's consideration of Cal-Am's permit amendment at the October 6, 2015, meeting.

Very truly yours,

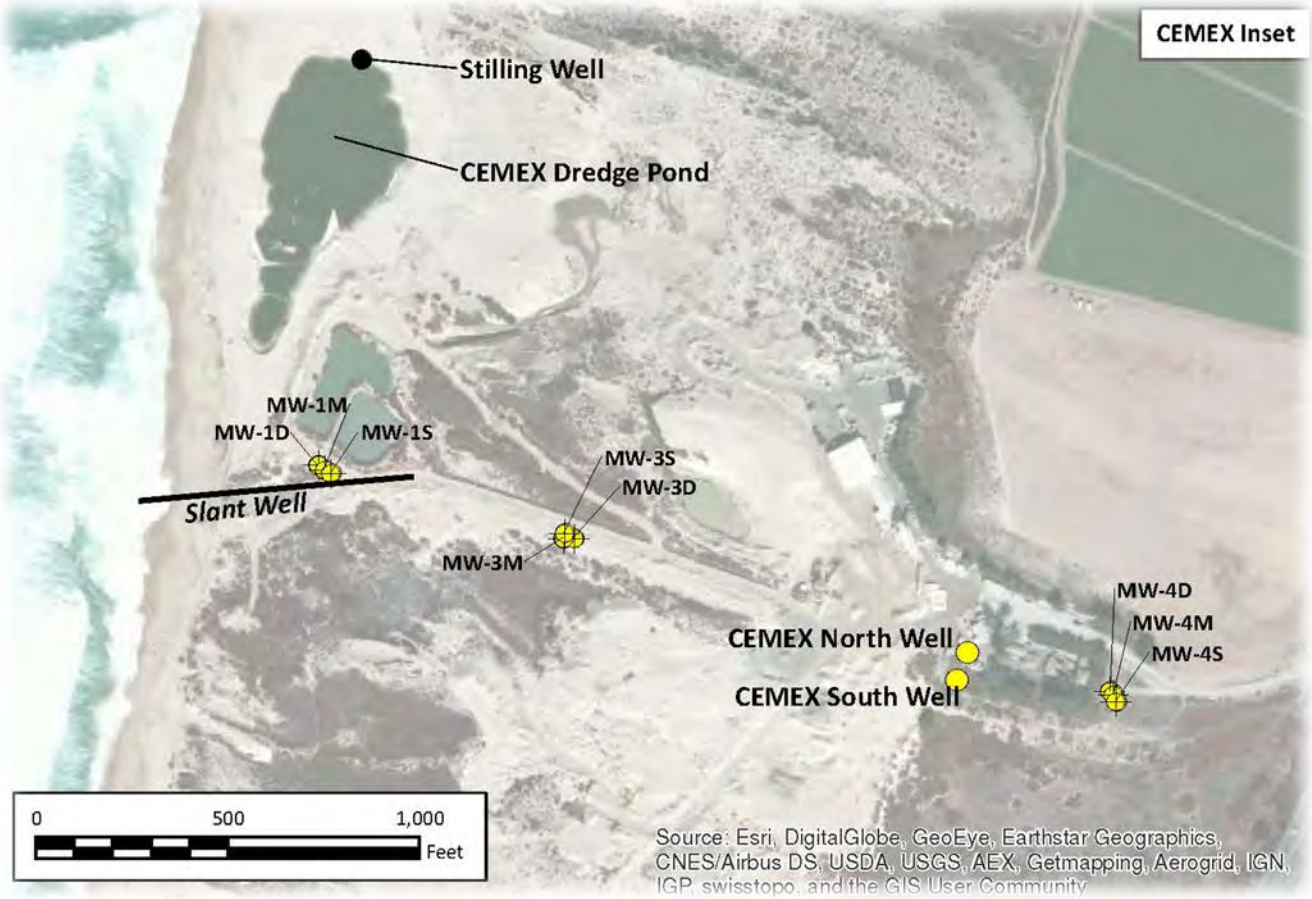
Duncan Joseph Moore
of LATHAM & WATKINS LLP

cc: Tom Luster, California Coastal Commission (with hearing transcript)
Andrew Homer, California-American Water Company

LA\4263854.3

Test Slant Well Project Permit Amendment

(Coastal Commission Agenda Item Tu 15a)



CALIFORNIA AMERICAN WATER

Court Upholds Test Slant Well CDPs

- Two lawsuits were filed challenging the Commission's 2014 approval of the test slant well project
- Santa Cruz Superior Court fully upheld the Commission's approval and CEQA review of the Project
- The court found that the Project would not result in groundwater impacts:
  - ***"I think that the record supports that the project will not impact any nearby [groundwater] wells because it only extracts water from the dunes and from the 180-foot aquifers."***
- The CDP amendment before the Commission is solely focused on ensuring that the condition governing ground-water monitoring is protective and can be practically implemented given changes in regional groundwater levels

A copy of these briefing materials has been provided to CCC Staff

Staff Report

- Cal-Am fully supports Commission staff's findings and recommendations, and the conclusions of the Commission's independent expert
  - "*The proposed amended **Special Condition 11** . . . provides that monitoring results for the pumping test be considered in context of . . . regional influences . . . [T]he **Commission finds that amended Special Condition 11 continues to ensure that the pumping test does not result in the potential for significant effects on coastal agricultural uses***."
  - "*As part of its review, Commission staff obtained the services of an independent licensed hydrogeologist . . . **That review resulted in conclusions that the threshold values and monitoring approach were appropriate for preventing impacts to agricultural groundwater users further inland and that the pumping test was not expected to cause any measurable effect on those groundwater users***."

Test Slant Well Project Background

- The Project's purpose is to gather data regarding the geologic, hydrogeologic, and water quality characteristics in the underlying aquifers to help determine the feasibility of slant wells for water production in the area of the Monterey Bay
  - Subsurface intakes are the preferred method of seawater intake by coastal regulators; the Monterey Bay National Marine Sanctuary requires that the feasibility of such intakes be investigated
  - Subsurface intakes require research to establish a location with ample water supply and acceptable water quality that will not impact inland groundwater supplies
- The Commission unanimously approved the Project on November 12, 2014

Test Slant Well Initial Modeling

- In 2014, Cal-Am modeled the expected "cone of depression" – the area in which groundwater levels would be lowered due to water withdrawal from the test well
- Models estimated a 4-inch decline in groundwater levels at a distance of 2,500 feet from the test well, and a one-foot decline approximately 1,800 feet from the test well
- The closest agricultural wells are about 5,000 feet from the test well, and the Commission determined these wells would not be significantly affected by the test well
- Nonetheless, the Commission approved Special Condition 11 to act as an early warning system if groundwater levels dropped, or salinity levels increased, more than expected

Approved Special Condition 11

- Special Condition 11 required Cal-Am to install monitoring devices at several locations to measure water and salinity levels
  - If water levels drop more than 1.5 feet, or if TDS (salinity) levels increase more than 2,000 parts per million from pre-pump test conditions at Monitoring Well ("MW") 4 (2,000 feet from the test well), then Cal-Am must immediately stop pumping and inform the Executive Director
- The Hydrogeologic Working Group was tasked with evaluating whether any such observed changes were caused by the test well and reporting their determinations to the Executive Director
  - If the Executive Director determines that the drop in water level or increase in TDS was from a source other than the test well, then pumping could resume
  - ***"If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then the Permittee shall not re-start the pump test until receiving an amendment to this permit."***

"Any Contribution" Language

- Special Condition 11 currently states:
  - If "the drop in water level was ***caused at least in part by the test well***," then a permit amendment is required
- Strictly interpreted, if the test well has *any contribution* to a drop in water level at MW-4 that is 1.5 feet or more, no matter how small, Cal-Am cannot re-start pumping without a permit amendment

Test Well Shutdown

- Prior to pumping, monitoring well data showed that regional groundwater levels started to decline in Spring 2015
- During pumping from April to June 2015, water levels continued the downward trend at MW-4 and were approaching a 1.5 foot decline since pumping started
- Test well pumping stopped on June 5, 2015 to comply with Special Condition 11
- Based on data from when the test well was both on and off, the Hydrogeologic Working Group determined that the test well may have contributed to at most a ¼ foot drop at MW-4 (if at all)
  - This is a negligible amount in terms of groundwater levels and less than groundwater modeling projected

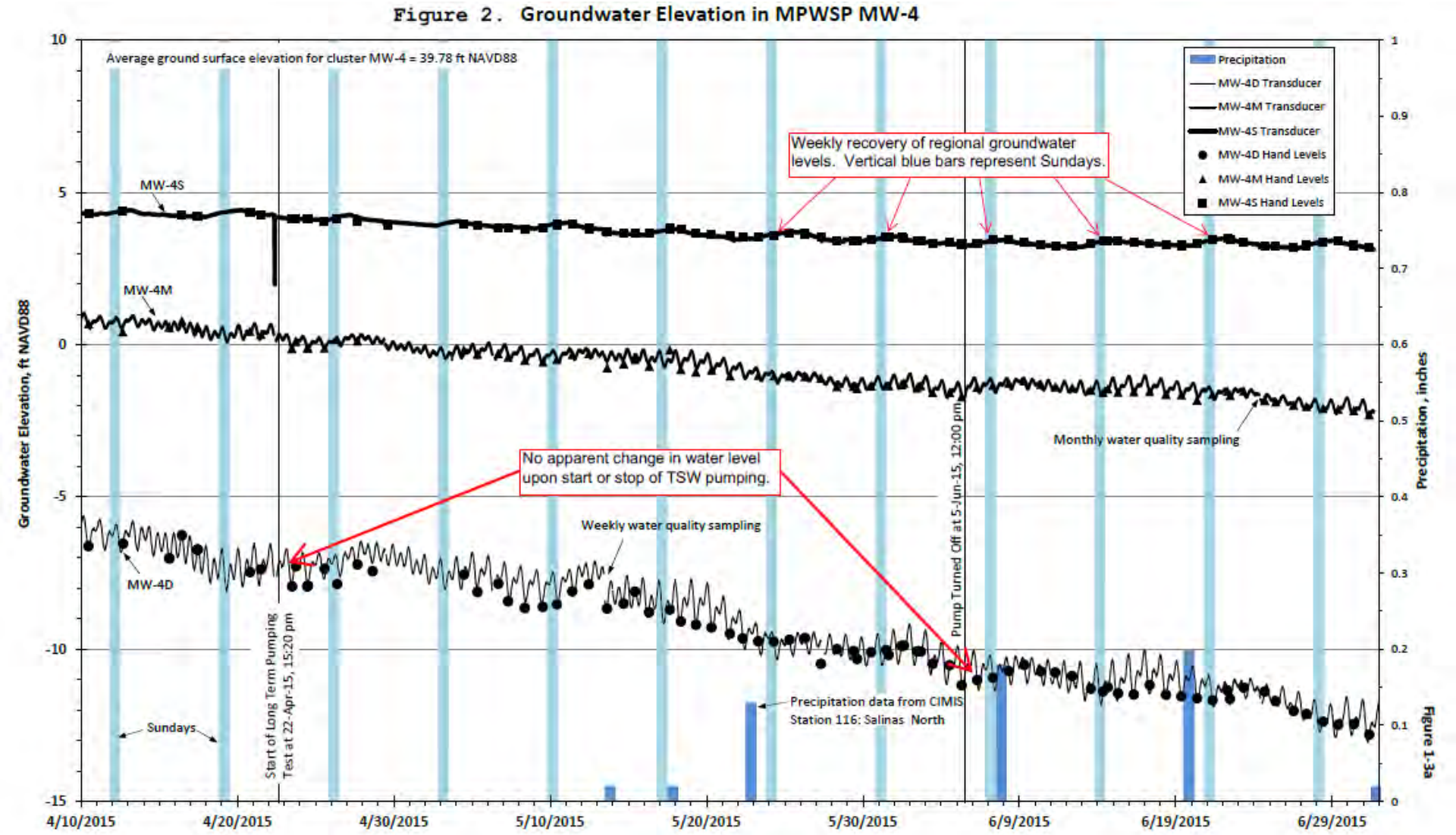
Regional Groundwater Trends

- The Hydrogeologic Working Group determined that downward trends in water levels were due to other factors than the test well – i.e., much larger regional groundwater pumping
- With no test well pumping, MW-4 continues to decline in response to regional pumping inland
  - Since June, water levels at MW-4 have dropped another 1-2 feet in the shallow and middle monitoring zones, and approximately 5 feet in the deep monitoring zone
  - Declining levels are ***wholly unrelated to the test well***

Regional Groundwater Trends

- "These seasonal declines are not a result of the cone of depression from one or a few wells, but rather a cumulative decline in groundwater levels and groundwater storage from tends to hundreds of pumping wells. . ."
  - Hydrogeologic Working Group Letter to Charles Lester (July 23, 2015)

Regional Groundwater Trends



A copy of these briefing materials has been provided to CCC Staff

Commission's Prior Findings

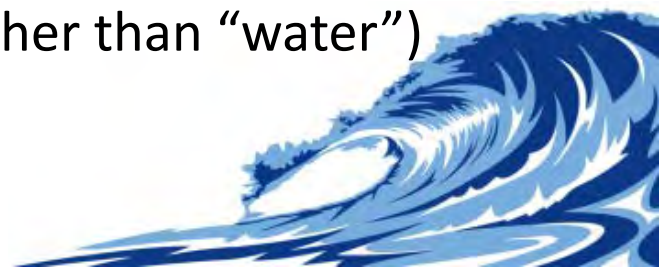
- Based on test well modeling data in the Commission's record, the Commission found that the test well would have no adverse impact on groundwater or Coastal agriculture
  - Special Condition 11 was imposed to provide a conservative, early warning system to ensure no impacts
  - 1.5-foot performance standard was based on modeling data that showed a 4-inch drop in water levels at a 2,500 foot distance from the test well
  - ***Santa Cruz Superior Court upheld the Commission's findings***
- The Hydrogeologic Working Group has determined that test well pumping resulted in no more than a 3-inch drop in water levels at a 2,000 foot distance from the test well
  - This is less than modeling predicted, and within the scope of the Commission's prior findings

Need to Amend Special Condition 11

- The intent of Special Condition 11 was to establish a performance standard to ensure that the test well would not cause water level decreases or salinity increases that were greater than modeling results
  - ***In order for these performance standards to work in practice, they must be applied against regional trends in water levels and salinity not caused by the test well***
- On July 3, 2015, the Executive Director recommended that Cal-Am develop a proposed amendment to Special Condition 11 that addresses regional trends
- The proposed amendment would keep the same numerical standards previously approved, but would compare test well monitoring results to observed regional trends
  - This amendment is the only issue before the Commission

Modifications to Special Condition 11

- Provide that groundwater and salinity performance standards be evaluated against regional trends so that changes caused by other sources do not require test well shut down
  - The Hydrogeologic Working Group shall provide monthly reports to the Executive Director documenting groundwater trends and TDS trends from regional influences
  - If MW-4S or MW-4M show either a 1.5 foot decrease in groundwater levels below regional trends, or an increase in TDS levels of 2,000 parts per million above regional trends, Cal-Am must stop pumping
  - If the Executive Director or the Hydrogeologic Working Group determines that the test well caused these performance standards to be exceeded, then Cal-Am must seek a permit amendment; otherwise, the Executive Director will permit pumping to resume
- Minor changes also provided for additional clarity to condition language (i.e., referring to "groundwater" rather than "water")



Commission's Independent Review

- Commission staff retained an independent, licensed hydrogeologist to evaluate the test well's modeling and monitoring data and review the proposed amendment

- The independent hydrogeologist concluded:
  - The threshold values and monitoring approach were appropriate for preventing impacts to agricultural groundwater
  - The pumping test was not expected to cause a measurable effect on groundwater users

Recommendation

- Cal-Am respectfully requests that the Commission approve the permit amendment and adopt the findings set forth in the Staff Report

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

Tu 15a

Filed:	August 26, 2015
180th Day:	February 19, 2016
Staff:	T. Luster-SF
Staff Report:	September 24, 2015
Hearing Date:	October 6, 2015

STAFF REPORT: MATERIAL AMENDMENT

Application No.:	**9-14-1735-A1 and A-3-MRA-14-0050-A1**
Applicant/Appellant:	**California American Water Company**
Project Location:	At the site of the CEMEX, Incorporated sand mining facility, Lapis Road, City of Marina, Monterey County. (APN #203-011-001 and #203-011-019)
Description of Previously Approved Project:	Construct and operate a test slant well and associated monitoring wells to both develop data and assess the feasibility of the project site as a potential long-term water source for a desalination facility.
Staff Recommendation:	**Approval** with conditions

SUMMARY OF STAFF RECOMMENDATION

In November 2014, the Commission approved California American Water's ("Cal-Am's") proposal to construct, operate, and decommission a test slant well and associated monitoring wells and other infrastructure near the shoreline of Monterey Bay in the City of Marina. The proposed project was to be used to conduct a pumping test program for up to about two years to obtain data regarding the geologic, hydrogeologic, and water quality characteristics in aquifers underlying the project area, which are within the coastal portion of the Salinas Valley Groundwater Basin, a regionally important source of agricultural and municipal water supply. In addition to the independent value of these data, information developed from the project is meant to help determine whether a similar subsurface intake system at or near this location could provide source water for a seawater desalination facility Cal-Am is separately proposing as part

of the Monterey Peninsula Water Supply Project, which is the subject of an application and environmental documents being reviewed by the California Public Utilities Commission ("CPUC"). The CPUC's review includes modeling, monitoring, and data analysis by the Hydrogeology Working Group ("HWG"), which consists of several licensed hydrogeologists representing stakeholders in the area.

The Commission's approval included **Special Condition 11**, which required Cal-Am to install onsite and offsite monitoring wells and equipment, and established allowable thresholds for changes in groundwater levels and salinity to prevent the project's pumping tests from causing adverse effects on nearby agricultural wells. If these thresholds were reached during the pumping test at the most distant onsite monitoring well, Cal-Am was to shut down the test and request a determination from the HWG and the Commission's Executive Director as to whether the pumping test was causing the changes. If any part of the change was determined to be due to the pumping test, Cal-Am was to not re-start the pumping test until receiving an amendment to its coastal development permit.

In early 2015, Cal-Am completed installation of project components and in February 2015 started its pumping test. It ran until June 5, 2015, when monitoring detected that groundwater levels were approaching the allowable threshold. Cal-Am stopped the test, conferred with the HWG and the Commission's Executive Director, who determined that the pumping test had resulted in a small percentage of the overall groundwater decrease, and applied for the required permit amendment on July 27, 2015.

Cal-Am's proposed amendment would modify **Special Condition 11.** The primary modification would keep the same numerical groundwater and salinity thresholds as previously approved, but would provide that they be compared to regional trends rather than be based on a static value at a single location. This modification is in recognition of monitoring data collected from early 2015 until the present that show the pumping test resulted in minimal effects at the monitoring well that were not evident at more distant monitoring sites, and that those minimal effects could readily be distinguished from other regional influences, such as municipal and seasonal agricultural groundwater pumping, that were causing much greater changes. The proposed modification specifically acknowledges these regional influences and direct the HWG and the Executive Director to consider them in their analyses. Other proposed changes to **Special Condition 11** would provide additional clarity to the condition language (e.g., referring to "groundwater" rather than "water").

As part of its review, Commission staff obtained the services of an independent licensed hydrogeologist to evaluate the relevant modeling and monitoring data and to review Cal-Am's proposed modification. That review resulted in conclusions that the threshold values and monitoring approach were appropriate for preventing impacts to agricultural groundwater users further inland and that the pumping test was not expected to cause any measurable effect on those groundwater users.

Recommendation
Staff recommends the Commission **approve** the proposed Findings and modifications to **Special Condition 11**.

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EXHIBITS

APPENDICES

I. MOTIONS & RESOLUTIONS

A. CDP DETERMINATION FOR A-3-MRA-14-0050-A1

Staff recommends that the Commission, after public hearing, adopt the following resolutions. Passage of the motions will result in approval of the permits as conditioned and adoption of the following resolutions and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Motion

*I move that the Commission approve Coastal Development Permit Amendment A-3-MRA-14-0050-A1 pursuant to the staff recommendation, and I recommend a **yes** vote.*

Resolution to Approve CDP

The Commission hereby approves the coastal development permit amendment and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the City of Marina Local Coastal Program policies and Coastal Act access and recreation policies. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

B. CDP DETERMINATION FOR CDP 9-14-1735-A1

Motion

*I move that the Commission **approve** Coastal Development Permit Amendment 9-14-1735-A1pursuant to the staff recommendation, and I recommend a **yes** vote.*

Resolution

The Commission hereby approves the coastal development permit amendment and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

Note: The original permits contained 17 special conditions (see Appendix B). This amendment modifies the original **Special Condition 11** only, as shown below in bold double-underlined and strikethrough text. The other standard and special conditions are unchanged and remain in force.

11. Protection of Nearby Wells. PRIOR TO STARTING PROJECT-RELATED PUMP**ING** TESTS, the Permittee shall install monitoring devices at a minimum of four wells on the CEMEX site, within 2000 feet of the test well, and one or more offsite wells to record **ground**water and salinity levels within the wells and shall provide to the Executive Director the baseline **ground**water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well.

The **Permittee, in coordination with the** Hydrogeology Working Group**,** shall ~~establish the baseline water and TDS levels for the monitoring wells~~**identify groundwater elevation trends and TDS level trends in the groundwater basin resulting from regional influences such as groundwater withdrawals, rainfall events, increases or decreases in streamflow contributions, and other influences**. During the project pump**ing** tests, the Permittee shall, at least once per day, monitor **ground**water and TDS levels within ~~those~~**the monitoring** wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request.

The Hydrogeology Working Group shall review data from the monitoring wells and prepare a monthly report that shall be submitted to the Executive Director that documents the groundwater elevation trends and TDS level trends resulting from regional influences. If ~~water levels drop more than one-and-one-half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions~~ **during the pumping tests, data collected from Monitoring Well-4S ("MW4-S") or Monitoring Well-4M ("MW-4M") during any weekly monitoring period show either a decrease in groundwater levels that exceeds an identified decrease in regional groundwater level trends by 1.5 feet or more or show an increase in TDS levels that exceeds an identified increase in regional TDS level trends by two thousand parts per million or more,** the Permittee shall immediately stop the pump**ing** test and inform the Executive Director. The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the **pumping** test ~~well~~ is ~~shut down~~ **stopped** due to either of these causes.

If, based on the above review of monitoring data, ~~The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS levels from a cause or causes other than the test well, and it will submit its determination to the Executive Director. If the Executive Director agrees with the Hydrogeology Working Group that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then the~~**the Executive Director or the Hydrogeology Working Group determines that the pumping test caused, at MW-4S or MW4-M, either a decrease in groundwater level of 1.5 feet or more or caused an increase in TDS levels of two thousand parts per million or more in excess of identified regional trends,** then the Permittee shall not re-start the pump**ing** test until receiving an amendment to this permit**; otherwise the Executive Director will allow the pumping test to resume**.

IV. FINDINGS & DECLARATIONS

A. PROJECT DESCRIPTION AND BACKGROUND

On November 12, 2014, the Commission approved two coastal development permits ("CDPs") allowing California American Water Company ("Cal-Am") to construct, operate, and decommission a test slant well and associated infrastructure at a site along the shoreline of Monterey Bay in the City of Marina (see Exhibit 1 – Project Area and Location of Project Components).[1] The test wellhead is located about 650 feet from the shoreline and extends downward at about a 20 degree angle to a point about 225 feet beneath the Monterey Bay shoreline (see Exhibit 2 – Schematic Drawing of Slant Well). The project also includes a number of monitoring wells, well clusters, and instrumentation installed both on and off the project site to measure groundwater levels and water quality in areas near the slant well (see Exhibit 1).

Cal-Am is using the test slant well and monitoring wells to conduct a pump test program for up to about two years to obtain data regarding the geologic, hydrogeologic, and water quality characteristics in aquifers underlying the project area, which are within the coastal portion of the Salinas Valley Groundwater Basin, a regionally important source of agricultural and municipal water supply. In addition to the independent value of these data, the data also will help determine whether a similar subsurface intake system at or near this location could provide source water for a potential seawater desalination facility that Cal-Am has proposed as part of its Monterey Peninsula Water Supply Project ("MPWSP"). The MPWSP is the subject of an application and environmental documents being reviewed by the California Public Utilities Commission ("CPUC").[2,3] The CPUC is evaluating the data produced from the test slant well to help determine the overall feasibility, available yield, and hydrogeologic effects of extracting water from this location. Much of this analysis is being conducted by the Hydrogeologic Working Group ("HWG"), a team of licensed hydrogeologists representing several project

[1] The project site is entirely within the coastal zone. Portions of the site landward of the mean high tide line are within the City of Marina's certified LCP permit jurisdiction where the standard of review is the City's certified LCP. Portions of the site seaward of the high tide line are within the Commission's retained jurisdiction where the standard of review is Chapter 3 of the Coastal Act. All project components within the Commission's retained jurisdiction are located beneath the seafloor.

On November 12, 2014, the Commission conducted a hearing on both Cal-Am's appeal of the City's CDP denial and the portions of the project within its retained jurisdiction, and approved the proposed project with conditions.

[2] The proposed project, including Cal-Am's CPUC Application A.12-04-019, is more fully described on the project website at: http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/index.html

[3] The Commission's initial CDP approval and the current proposed amendment address construction and operation of the test slant well only and do not evaluate or authorize development that may be proposed for long-term use of the well, including converting the well to use as a water source for the separately proposed MPWSP. Any such proposal will require additional review and analysis for conformity to relevant Local Coastal Programs and the Coastal Act and will be conducted independent of any decision arising from these Findings. Further, the Commission's decision regarding these Findings and proposed permit amendment exerts no influence over, and causes no prejudice to, the outcome of those separate future decisions.

stakeholders, that the CPUC established to provide comprehensive, expert review of the project's potential effects on the groundwater basin and its users.[4]

The project is located at the seaward extension of the Salinas Valley Groundwater Basin ("Basin"), which lies beneath the Salinas River valley and runs from the coast to about 140 miles inland. The Basin is divided into eight sub-regions, including what is known as the 180/400-Foot Sub-Basin at its coastal end. This Sub-Basin has an estimated groundwater storage capacity of about 6.8 million acre-feet.

The Basin is used extensively to provide agricultural and municipal water supplies, with recent groundwater pumping in the Basin's coastal areas exceeding 100,000 acre-feet per year.[5] The groundwater use, along with the Basin's hydrogeological characteristics, have resulted in seawater intrusion into the Basin along about ten miles of shoreline, at a rate of about 14,000 acre-feet per year, with the current extent of intrusion reaching several miles inland (see Exhibit 3 – Mapped Extent of Seawater Intrusion).[6] Although the Basin's groundwater management programs are attempting to reduce this rate, seawater intrusion has both reduced the quality of groundwater for agricultural use in this area and reduced the amount of groundwater pumped from nearby wells, with wells within two miles of the test slant well having already experienced seawater intrusion.[7] The test well is centrally located along the shoreline area where seawater intrusion is occurring.

The Basin and Sub-Basin are also affected by regional influences, such as changes in seasonal agricultural groundwater pumping, varying levels of municipal groundwater use, the effects of drought and rainfall on aquifer water levels, and others. For example, between February and September of 2015, monitoring data for some wells within the Basin located up to several miles from the test slant well experienced water level declines of up to 20 feet due to these regional influences.

The project area is underlain by three main aquifers – the relatively shallow Dune Sand Aquifer, and the 180-Foot Aquifer and 400-Foot Aquifer, which are named for their approximate depth below the ground surface. The slant test well is designed to intercept water from the seaward extension of the Dune Sand and 180-Foot Aquifers. Water quality data collected over the past several years show that these aquifers exhibit relatively high salinity levels, with concentrations

[4] The HWG was formed as a result of a 2013 Settlement Agreement among parties to the CPUC proceeding regarding Cal-Am's proposed Monterey Peninsula Water Supply Project. The HWG reviewed and approved the initial scope of Cal-Am's proposed field investigation and development of a hydrogeologic conceptual model from which to construct the groundwater modeling tools and has provided ongoing review of modeling and monitoring data. It includes hydrogeologic experts representing the Salinas Valley Water Coalition, Monterey County Farm Bureau, Cal-Am, and the CPUC.

[5] See Brown and Caldwell, *State of the Salinas River Groundwater Basin Report*, December 10, 2014.

[6] See Monterey County Water Resources Agency, *Monterey County Groundwater Management Plan*, Chapter 3 – Basin Description, pages 3.14 & 3.15, May 2006.

[7] See Monterey Bay National Marine Sanctuary, *Environmental Assessment for the California American Water Slant Test Well Project*, Section 6.1.2 – Water Supply and Quality, June 2014.

of total dissolved solids ranging from about 24,000 to 32,000 parts per million.[8] For comparison, seawater generally ranges from approximately 30,000 to 33,000 ppm, drinking water is usually below 500 ppm, and most crops generally cannot tolerate more than 2,000 ppm.

While there is an aquitard between the two aquifers further inland, exploratory borings taken at the project site indicate that there is little or no separation between the two near the test well. The Dune Sand Aquifer is not regionally extensive and is not considered a viable water source for agricultural users due to its poor water quality.

At the test well's maximum pumping rate of 2,500 gallons per minute, it would pump about 4,000 acre-feet per year of seawater from beneath Monterey Bay and what is expected to be almost entirely intruded seawater from the landward areas of the two aquifers.[9] The test well is screened to allow differential pumping from the two aquifers, with data from the pump tests to be used to better characterize aquifer characteristics, to refine the modeling and other analyses conducted to date, and to better understand the hydrogeology near the site, including information that will help determine the feasibility of potential full-scale wells.

B. EXISTING SPECIAL CONDITION 11 AND PROPOSED AMENDMENT

The Commission's permit approval includes **Special Condition 11**, which establishes monitoring requirements and allowable thresholds for changes in groundwater levels and salinity,[10] which are meant to prevent the project pump tests from causing adverse effects on nearby agricultural wells. It also relies in part on the review and expertise of the above-referenced Hydrogeology Working Group.

Special Condition 11 is meant to ensure that Cal-Am's pump tests do not cause water level drawdowns or increases in Total Dissolved Solids ("TDS") that might propagate to the nearest usable agricultural well, which at the time of the Commission's November 2014 review, was believed to be about 5,000 feet from the test well. **Special Condition 11** requires that Cal-Am install onsite and offsite monitoring wells and equipment to record groundwater levels and to determine Total Dissolved Solids ("TDS") concentrations, to establish baseline levels, and to regularly post the collected data on a publically-available website. At the most distant onsite monitoring well (Monitoring Well 4), located about 2,000 feet from the test slant well, **Special Condition 11 also** establishes thresholds for allowable changes to groundwater and TDS levels – i.e., a decrease of 1.5 feet or more or an increase of 2000 parts per million ("ppm") or more, respectively – and requires Cal-Am to stop its pump test should those thresholds be reached. The Commission's approval of these values was based on modeling conducted by the HWG showing that the water level and salinity changes expected from the pump test at this location would be somewhat less than these thresholds. The salinity threshold is also based in part on the

[8] See Geoscience, *California American Water / RBF Consulting, Monterey Peninsula Water Supply Project Hydrogeologic Investigation – Technical Memorandum (TM 1): Summary of Results – Exploratory Boreholes*, July 8, 2014.

[9] See Separation Processes, Inc., *Evaluation of Seawater Desalination Projects, Draft Report*, prepared for Monterey Peninsula Regional Water Authority, November 2012.

[10] ***Note:*** Project monitoring does not measure salinity directly. Salinity levels are calculated using monitoring data for levels of electrical conductivity or Total Dissolved Solids.

natural variability of seawater, which ranges from about 30,000 to 33,000 ppm – by keeping the threshold below the 3,000 ppm natural variability, monitoring would be able to detect a change before exceeding that level of variability. Requiring the pump test to shut down if these thresholds were reached would prevent these changes from propagating to the nearest agricultural wells several thousand feet further away. In the event the thresholds were reached and the pump test was shut down, the HWG was to examine the data to determine the cause of the water level decrease or TDS increase. If the ED determined that any of the 1.5-foot decrease or 2000 ppm increase was due to the pump test, Cal-Am was to not re-start the pump test until it obtained an amendment to the permit.

The requirements of the existing **Special Condition 11** were based largely on modeling data provided by Cal-Am and the HWG showing the expected hydrogeologic characteristics within the Basin aquifers and the expected effects of Cal-Am's pump tests. The modeling indicated that pump testing would not have significant effects on local or regional groundwater users, including the closest agricultural users of the Basin's groundwater supply. This was due to a number of factors, such as:

- **The extent of existing seawater intrusion in the Basin:** The test well would be located at a site on the shoreline where seawater had already intruded several miles inland and near the middle of several miles of shoreline under which seawater intrusion was occurring (see Exhibit 3). The model also showed that the well's "capture zone" – i.e., the area from which it would draw water – when operating at a much higher volume than the pumping test was almost entirely contained within the area already subject to seawater intrusion, so the well was not expected to pull in more than a *de minimis* amount of freshwater from further inland areas of the Basin (see Exhibit 4 – Modeled Particle Tracking).
- **The pump test's comparatively small withdrawal volumes:** The pump test would withdraw up to about 2,000 – 2,500 acre-feet per year, which represented only about 0.1 percent of the Sub-Basin's groundwater storage volume and less than 2% of recent pumping rates of over 100,000 acre-feet per year from more inland areas of the Sub-Basin.
- **The distance between the test well and the nearest active agricultural wells:** At the time of the Commission's approval, the closest known agricultural well was about 5,000 feet from the test well. Using the test well's proposed pumping rate, modeling showed that the pump test's cone of depression would reduce groundwater levels by approximately four inches at about 2,500 feet from the well, evidencing that any groundwater level decrease resulting from the pump test would be non-detectible at the additional 2,500-foot distance to the closest agricultural well.

Nonetheless, to ensure the test well did not have any potentially significant effect on agricultural uses in the Basin, the Commission imposed the above-referenced monitoring, threshold, and analysis requirements of **Special Condition 11**.

In early 2015, Cal-Am installed the approved test well and associated infrastructure, including three new onsite monitoring well clusters and equipment, as well as new monitoring equipment in an existing onsite CEMEX well. Starting in February 2015, it also collected monitoring data, including before, during, and after its initial pump test, which ran from April 22, 2015 to June 5, 2015, and posted the required weekly monitoring reports, along with several technical memoranda from the HWG, at its project website (available at

http://www.watersupplyproject.org/#!test-well/c1f1l). Cal-Am has also monitored several existing offsite wells and more recently installed Monitoring Wells 7, 8, and 9 off-site, as shown on Exhibit 1.

On June 5, 2015, Cal-Am stopped the pump test when it detected that water levels in Monitoring Well 4 were dropping to near the 1.5-foot threshold. The HWG reviewed the data from the monitoring wells and concluded that although the decrease was due almost entirely to regional influences such as seasonal agricultural pumping, a small amount – possibly 0.2 to 0.3 feet of the decrease – could be due to the pump test. While this decrease was within the range predicted from the hydrogeologic modeling and was small enough to not affect the closest agricultural wells, it was enough to trigger the requirement of **Special Condition 11** that Cal-Am not re-start the pump test until it received a permit amendment address this issue.

Proposed Condition Modifications: On July 27, 2015, Cal-Am submitted its initial application to amend **Special Condition 11**, which it later revised on September 23, 2015 (see Exhibit 5). Cal-Am's primary proposed modification to **Special Condition 11** is to allow the HWG and Executive Director to consider regional influences as part of determining whether the effects of the project pump tests are extending to agricultural wells – that is, rather than consider the 1.5-foot and 2000 ppm thresholds as static values at a single location, they would be considered in context with other changes being observed in the network of monitoring wells. As shown through the ongoing monitoring Cal-Am has conducted this year, other wells in the Basin and Sub-Basin and some distance outside the area influenced by the test well exhibit substantial changes due to regional influences, such as municipal groundwater pumping, seasonal agricultural uses, changes in rainfall and streamflow, and others. As noted above, for example, wells up to several miles away from the test well have experienced a 17- to 20-foot decrease in water levels, which the HWG identified as part of a regional trend that coincided with increased seasonal agricultural pumping.

The proposed condition modifications specifically acknowledge these regional influences and direct the HWG and the Executive Director to consider them in their analyses. The 1.5-foot and 2000 ppm thresholds remain the same and are measured at the same location in MW-4, but the proposed condition provides that they are now to be compared to observed regional trends in increases or decreases in groundwater or TDS levels. For example, if the MW-4 groundwater levels were to decrease in concert with a similar decrease observed as a regional trend, the MW-4 decrease would not be caused by the pumping test. If the MW-4 decrease was at least 1.5 feet more than the observed regional trend, it would suggest the pumping test was causing the additional decrease, and the pumping test would be stopped to more closely observe the data and determine what portion of the decrease exceeded the regional trend and was attributable to the pump test.

The several months of monitoring data collected earlier this year also allow the HWG to identify regional trends and distinguish them from changes resulting from the pumping test. For example, Exhibit 6 illustrates several months of groundwater level monitoring at MW-4 and several other monitoring wells located closer or further than MW-4 from the test well and show those levels before, during, and after the April-June 2015 pumping test. It is evident from the data shown on Exhibit 6 that the groundwater levels at the two monitoring wells closest to the

test well – MW-1 and MW-3 – respond strongly to the pump testing, while the more distant wells, including MW-4, show a response to the generally downward regional trend in groundwater levels during the monitoring period but a *de minimis* or no response to the pump testing. Should a groundwater level decrease during the pumping test similar to that observed at MW-1 and MW-3 propagate as far as MW-4, it would be evident in the monitoring data, and should that decrease be more than 1.5 feet greater than the observed regional trend, it would likewise be evident in the monitoring data.

Further, the proposed condition requires that should such a decrease be observed, the pumping test must stop and the monitoring data evaluated. This provides an additional safeguard because the ongoing monitoring at MW-4 would show whether there is a "rebound" of groundwater levels after the pumping test stops, indicating that the pumping test is influencing those levels as far away as MW-4. Conversely, if there is little or no change in the observed downward trend at MW-4 after the pumping test stops, such monitoring would indicate that the groundwater levels are being affected by regional influences other than the pumping test.

Commission Independent Review: During its initial November 2014 project review and permit approval, the Commission heard several concerns about the accuracy and independence of Cal-Am's and the HWG's review, some of which continued during this current review. In recognition of those concerns, the Commission conducted its own review by using an independent licensed hydrogeologist to evaluate relevant Cal-Am and HWG modeling and monitoring data and to assess Cal-Am's proposed modifications to **Special Condition 11**.[11]

Exhibit 7 provides the technical memorandum prepared by the independent licensed hydrogeologist. It responds to several questions raised by the Commission, including:

- Is Cal-Am's proposed permit modification sufficient to protect agricultural water users in the Salinas Valley Groundwater Basin ("SVGB") from reductions in groundwater availability or quality?
- Is the proposed condition adequately protective of nearby or regional agricultural users, given the characteristics of the SVGB's multiple aquifers and subareas – e.g., semiconfined aquifers, tidal influence, etc.?
- Is the proposed condition adequately protective, given the inland extent of seawater intrusion in the area?
- Would a sustained drawdown of less than 1.5 feet at MW-4 caused by the test well result in cumulative adverse impacts to the SVGB?

A summary of the independent review's conclusion includes:

- The main proposed revision to **Special Condition 11** – comparing the change in groundwater levels and TDS concentrations to the change in regional trends instead of using fixed values – is appropriate for identifying and preventing potential impacts to inland groundwater users.

[11] To conduct this review, the Commission obtained the services of William McIlvride, a senior project hydrogeologist with Weiss Associates. Mr. McIlvride is a California-licensed hydrogeologist with expertise in groundwater modeling and evaluation who had not previously been involved with the Cal-Am or HWG work efforts. Mr. McIlvride's resume is provided as part of Exhibit 7.

- The pumping test will not cause significant effects on the groundwater basin inland of Monitoring Well 4. This is supported by monitoring results that indicate the pumping test is drawing more water than predicted from beneath the Monterey Bay seafloor and shoreline than from inland, and the fact that the potential for impacts decreases as the distance to inland groundwater users increases.
- Monitoring results indicate that conducting the pumping tests at Cal-Am's proposed pumping rates would not cause any measurable effect on the nearest agricultural groundwater users.

The Commission's independent review also determined that the Cal-Am and HWG modeling was conservative in that it had predicted larger drawdown levels from the pumping test than have been identified through monitoring. For example, the model had predicted a drawdown of about one to 1.5 feet at MW-4 whereas monitoring at MW-4 shows no drawdown from the pump test in the Dune Sand Aquifer and just a 0.25-foot drawdown in the 180-Foot Aquifer. Similarly, the model had predicted a much larger capture area than is indicated by the monitoring, indicating that the areas inland of the test well that are influenced by the pump test are smaller than predicted.

The review also provided several recommendations regarding monitoring and data collection. For example, Cal-Am initially proposed modifying **Special Condition 11** so that Cal-Am could average the monitoring data taken from the Dune Sand Aquifer (i.e., from MW-4S) and from the 180-Foot Aquifer (from MW-4M). However, the review identified some degree of hydraulic separation at this location between the two aquifers – for instance, as illustrated by the above-referenced 0.25-foot difference in drawdown levels between the two – and therefore recommended that considering the results from MW-4S and MW-4M separately would be more conservative. This recommendation is reflected in Cal-Am's current proposed condition, which does not include the initially proposed averaging.

The review also evaluated data from one of the newer monitoring wells, MW-7, that appears to show higher groundwater levels than expected from the model. When conferring with Cal-Am, Cal-Am noted that the MW-7 elevation had not yet been surveyed, and the Commission's review recommended this be completed and the data adjusted as necessary to reflect the survey results. Cal-Am confirmed that it would soon be conducting the recommended survey work.[12]

[12] Personal communication between Commission staff, William McIlvride, Cal-Am staff, and the HWG, September 18, 2015.

C. COASTAL AGRICULTURE

LCP Policy 28 states:

> *To support agricultural use in the Coastal Zone.*

LCP Policy 29 states:

> *To provide incentives to retain agricultural activities within the Coastal Zone.*

The LCP requires that agricultural uses be supported in the coastal zone. There are no agricultural operations within the City's LCP jurisdiction, but other nearby coastal agricultural operations are heavily reliant on groundwater from the aquifers used by the test well. The Commission's initial approval of **Special Condition 11** was meant to ensure that aquifer drawdowns or reduction in water quality that might result from the pump test would not propagate to the closest agricultural wells. In its November 2014 approval, the Commission found that the location from where the test slant well would withdraw groundwater and the amount of groundwater it would withdraw during the pumping test would not result in significant effects on coastal agriculture, including the closest identified agricultural well about 5,000 feet from the test slant well. The Commission added **Special Condition 11** to ensure no potential for significant effects on agriculture even though the pumping test would not significantly or adversely affect water supply or water quality for agricultural uses.

As noted above, the Commission's initial review in November 2014 considered Cal-Am's modeling data showing that the test well's expected "cone of depression" – that is, the area in which groundwater levels are lowered due to this water withdrawal – would extend to about 2,500 feet from the well, where the drawdown was expected to be about four inches. Additionally, the modeled "capture zone" of the well did not extend as far inland as the mapped areas of seawater intrusion, which provided further assurance that the pump test would draw in primarily seawater and not adversely affect agricultural uses further inland. The closest known active agricultural well was approximately 5,000 feet from the test slant well, which is more than twice the distance between the test slant well and MW-4. The modeling results suggested that detecting the changes identified in **Special Condition 11** at MW-4 and stopping the pumping test to evaluate the data would prevent any effects of the pumping test from propagating to the closest agricultural well or other offsite locations. In addition, given the relatively small amount of water to be pumped during the pumping test as compared to the storage volume of the Basin and the pumping volumes of inland agricultural uses, along with the distance from the test well to any active agricultural wells, the Commission found that the project will not adversely affect coastal agriculture.

Effects of modified permit condition on coastal agriculture

Since the Commission's November 2014 permit approval, the project has benefitted from several new sources of information, including extensive monitoring data from before, during, and after pump test operations. As described in Section IV.B of these Findings, review of that data and the modeling done for the project by Cal-Am, the HWG, and the Commission's independent review, show that the initial modeling that served as the basis for the initial **Special Condition**

11 was a conservative representation of groundwater capture by the test slant well. Those monitoring data have also helped identify the substantial regional influences on the groundwater basin, such as municipal or agricultural groundwater use, that result in more significant changes inland of areas influenced by the pumping test. The proposed amended **Special Condition 11** therefore provides that monitoring results for the pumping test be considered in context of those regional influences. Therefore, for all of the reasons and supporting evidence described above, the Commission finds that amended Special Condition 11 continues to ensure that the pumping test does not result in the potential for significant effects on coastal agricultural uses.

Conclusion

For the reasons described above, the Commission finds that the amended development is supportive of coastal agriculture and is therefore consistent with relevant provisions of the LCP.

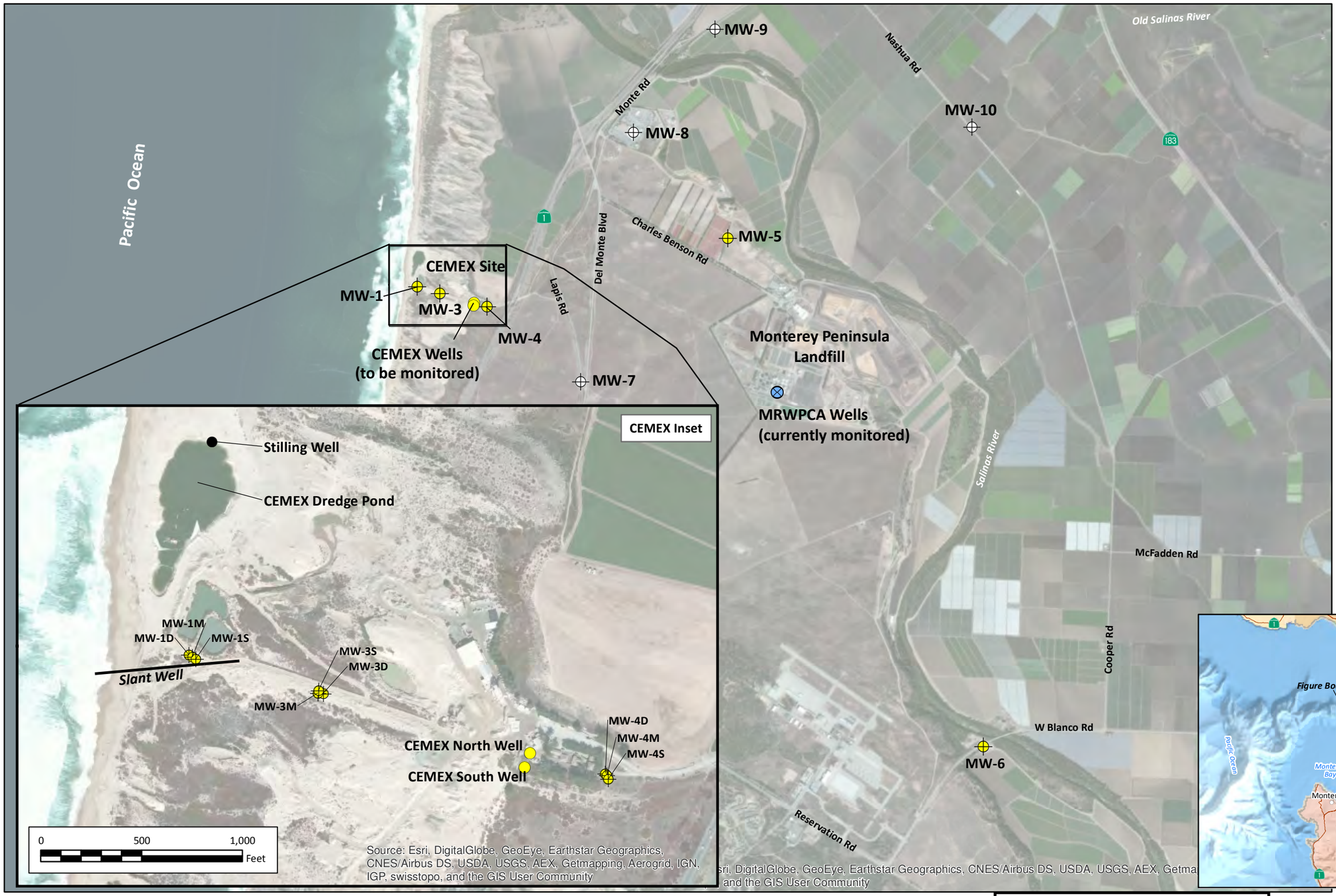
V. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096(a) of the Commission's administrative regulations requires Commission approval of coastal development permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant adverse effect which the activity may have on the environment. The Commission's review of the project showed that it will not have any significant or potentially significant effects on the environment and therefore no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment.

CALIFORNIA AMERICAN WATER

MONTEREY PENINSULA WATER SUPPLY PROJECT

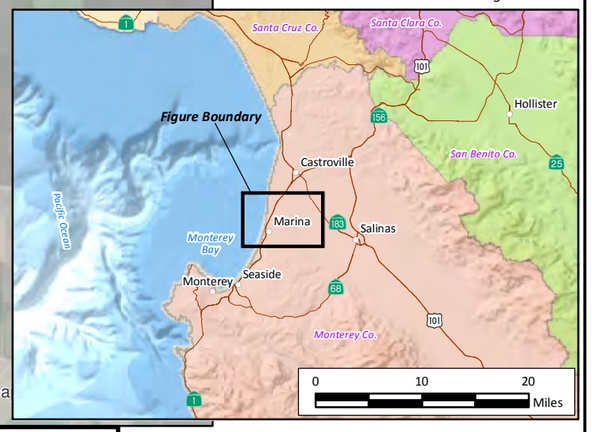
WELLS MONITORED FOR PERMIT COMPLIANCE



EXPLANATION

- Existing Monitoring Well Cluster
- Proposed Monitoring Well Cluster
- Existing Production Well
- CEMEX Wells
- Slant Well

Regional Inset



15-Apr-15

Prepared by: DWB. Map Projection: State Plane 1983, Zone IV.

NORTH

0 1,500 3,000 6,000 Feet

EXHIBIT 1
9-14-1735-A1 /
A-3-MRA-14-0050-A1

GEOSCIENCE
GEOSCIENCE Support Services, Inc.
P.O. Box 220, Claremont, CA 91711
Tel: (909) 451-6650 Fax: (909) 451-6638
www.gssiwater.com

Figure 1-1

GIS_proj/mcwsp_cal_am/rbf_wl_monitoring/Monitoring_Rpt_No4_4-6-15/1_Fig_1-1_MonWells_used_4-15-15.mxd

(WEST) (EAST)

Elevation, ft amsl

Dune Sand

Older Dune Sand

(Static water level at beginning of pump test on April 3, 2015)

18-inch Well Screen

14-inch Well Screen

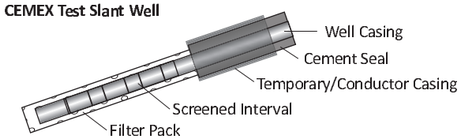
MD: 140 ft
MD: 63 ft
MD: 123 ft
MD: 130 ft
MD: 345 ft
MD: 400 ft
MD: 320 ft
MD: 345 ft
MD: 396 ft
MD: 710 ft
MD: 720 ft
MD: 724 ft

180-FTE Aquifer

Explanation

- Sand with Gravel (SP)
- Fine to Coarse Grained Sand (SP)
- Fine to Medium Grained Sand (SP)
- Fine Grained Sand (SP)
- Sand with Silt (SP-SM)
- Silt or Silt with Sand (ML/SM)
- Clayey Sand (SC)
- Clay (CL)
- — ? — Geologic Contact (approximate)

CEMEX Test Slant Well



MD = Measured (Lineal) Depth

EXHIBIT 2
9-14-1735-A1 /
A-3-MRA-14-0050-A1

0 50 100
Approximate Scale Feet

DRAFT

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CALIFORNIA AMERICAN WATER

CEMEX TEST SLANT WELL LITHOLOGY

Drawn: LC
Checked:
Approved:
Date: 15-Apr-15

Figure 1-3

X:\Projects\MONTEREY AREA DESAL STUDIES\01a) Test Slant Well Project\0) Baseline Data TM\Fig_1-3_x-section_SlantWell_Apr-15.ai

Document Path: BCSAC01\\bcsac01\projects\46000\146430 - Salinas Valley GW Study - Simulation\GIS_MAPDOCS\WORKING\StateoftheBasin\FigES-6_ShallowCl_20141210.mxd

EXHIBIT 3
9-14-1735-A1 /
A-3-MRA-14-0050-A1

Legend

2013 Seawater Intruded Area Extent
(500 mg/L Chloride Concentration Contour)

Seawater Intruded Areas by Year

- 1944
- 1965
- 1975
- 1985
- 1993
- 1997
- 1999
- 2001
- 2003
- 2005
- 2007
- 2009
- 2011 - 2013

Note: The location and water quality data associated with groundwater wells monitored by the Monterey County Water Resources Agency are confidential per agreement between well owners and the Agency, and as such are not shown on map.

SITE
Salinas River Groundwater Basin Investigation

TITLE
Pressure 180-Foot and East Side Shallow/Both Aquifer Chloride Contours - 2013

Brown AND Caldwell

DATE 12/10/14

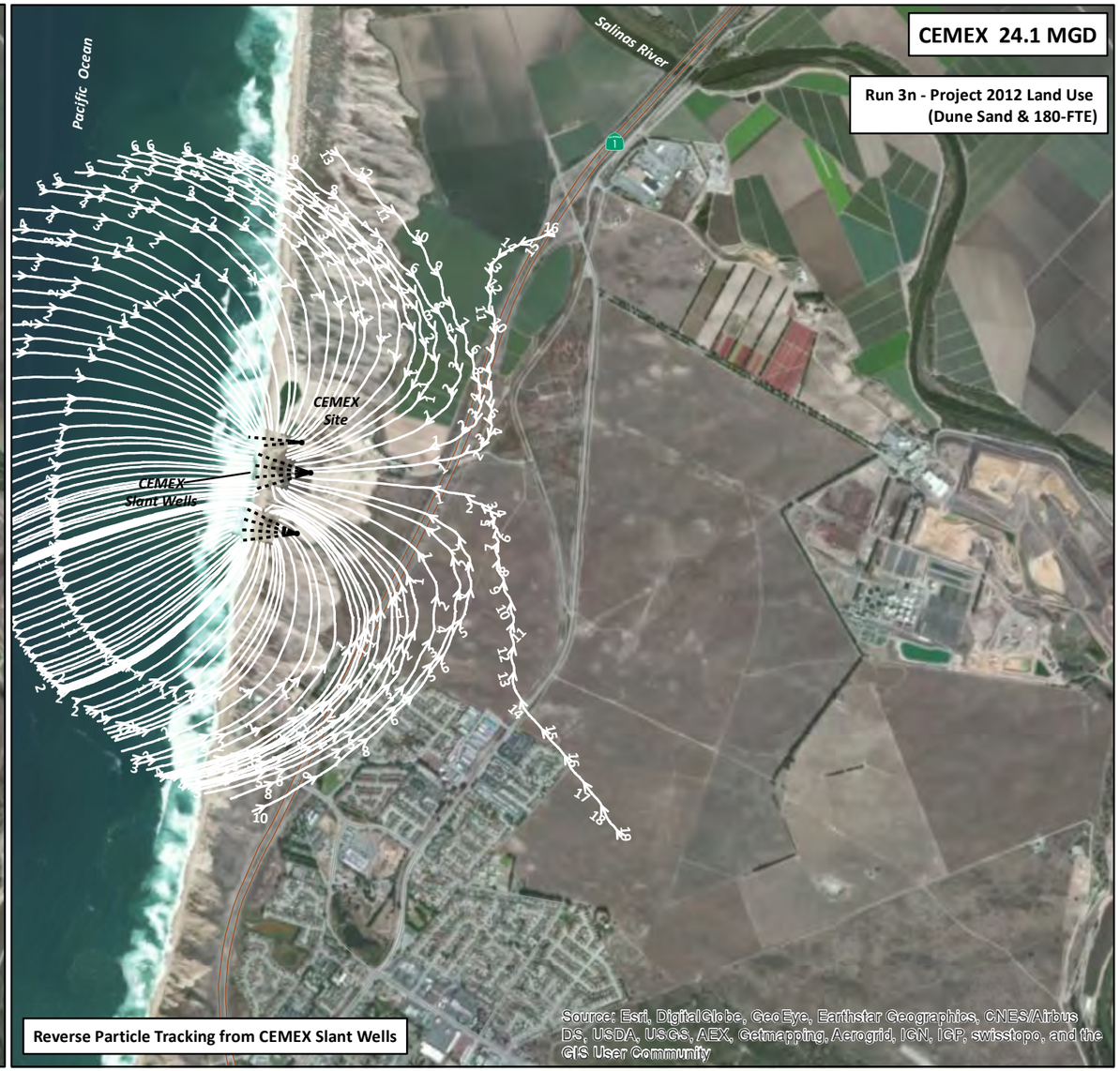
PROJECT 146430

Figure ES-6

N

0 1

Miles



EXPLANATION

white line — Particle Travel Path

white arrow — Direction of Particle Travel and Travel Time (1 Year Increments)

Slant Wellhead
Blank Casing
Well Screen

CEMEX Slant Wells - Configuration A
(Feedwater Supply of 24.1 MGD)
(See Figure 47 for Detailed Slant Well Layout)

Note: 180-FTE = 180-Foot Equivalent Aquifer

NORTH
0 2,500 5,000 Feet

Run 1n - Baseline (No Project) 2012 Land Use

Run 3n - Project 2012 Land Use (Dune Sand & 180-FTE)

EXHIBIT 4
9-14-1735-A1 /
A-3-MRA-14-0050-A1

**PARTICLE TRACKING NEAR CEMEX SITE
NO PROJECT (RUN 1n) AND
CEMEX 24.1 MGD (RUN 3n)
180-FT/180-FTE AQUIFER**

17-Apr-15

Prepared by: DB. Map Projection: State Plane 1983, Zone IV.

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DRAFT

Figure 137

GIS_proj/mcwsp_cal_am/esa_TM_proj_modeling_9-14/14_Fig_137_Run1nRun3n_parttrack_CEMEX_180FTE_2panel_4-15.mxd

CALIFORNIA
AMERICAN WATER

Andrew W. Homer
Corporate Counsel
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Coronado, CA 92118
andrew.homer@amwater.com

P 619.522.6384
C 619.346.9337
F 619.522.6391

VIA EMAIL ONLY

September 23, 2015

Mr. Tom Luster
Senior Environmental Scientist
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105

Re: ***Application to Amend Coastal Development PermitsA-3-MRA-14-0050 and 9-14-1735***

Dear Mr. Luster,

In connection with California-American Water Company's July 23, 2015 application to amend Coastal Development Permits A-3-MRA-14-0050 and 9-14-1735, I have attached further proposed refinements to the language of Special Condition 11 for your consideration. Please let me know if you have any questions or would otherwise like to discuss.

Sincerely,

Andrew W. Homer

Cc: Ian Crooks
D.J. Moore

Attachment

Draft Special Condition 11:

Protection of Nearby Wells. PRIOR TO STARTING PROJECT-RELATED PUMP**ING** TESTS, the Permittee shall install monitoring devices at a minimum of four wells on the CEMEX site, within 2000 feet of the test well, and one or more offsite wells to record **ground**water and salinity levels within the wells and shall provide to the Executive Director the baseline **ground**water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well.

The **Permittee, in coordination with the** Hydrogeology Working Group**,** shall ~~establish the baseline water and TDS levels for the monitoring wells~~**identify groundwater elevation trends and TDS level trends in the groundwater basin resulting from regional influences such as groundwater withdrawals, rainfall events, increases or decreases in streamflow contributions, and other influences**. During the project pump**ing** tests, the Permittee shall, at least once per day, monitor **ground**water and TDS levels within ~~those~~**the monitoring** wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request.

The Hydrogeology Working Group shall review data from the monitoring wells and prepare a monthly report that shall be submitted to the Executive Director that documents the groundwater elevation trends and TDS level trends resulting from regional influences. If ~~water levels drop more than one-and-one-half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions~~ **during the pumping tests, data collected from Monitoring Well-4S ("MW-4S") or Monitoring Well-4M ("MW-4M") during any weekly monitoring period show either a decrease in groundwater levels that exceeds an identified decrease in regional groundwater level trends by 1.5 feet or more or show an increase in TDS levels that exceeds an identified increase in regional TDS level trends by two thousand parts per million or more,** the Permittee shall immediately stop the pump**ing** test and inform the Executive Director. The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the **pumping** test ~~well~~ is ~~shut down~~ **stopped** due to either of these causes.

If, based on the above review of monitoring data, ~~The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS levels from a cause or causes other than the test well, and it will submit its determination to the Executive Director. If the Executive Director agrees with the Hydrogeology Working Group that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then~~ the **Executive Director or the Hydrogeology Working Group determines that the pumping test caused, at MW-4S or MW-4M, either a decrease in groundwater level of 1.5 feet or more or caused an increase in TDS levels of two thousand parts per million or more in excess of identified regional trends,** then the Permittee shall not re-start the pump**ing** test until receiving an amendment to this permit**; otherwise, the Executive Director will permit the pumping test to resume.**

Groundwater Elevation in MPWSP MW-4S, MW-5S, MW-6S, MW-7S, MW-8S and MW-9S

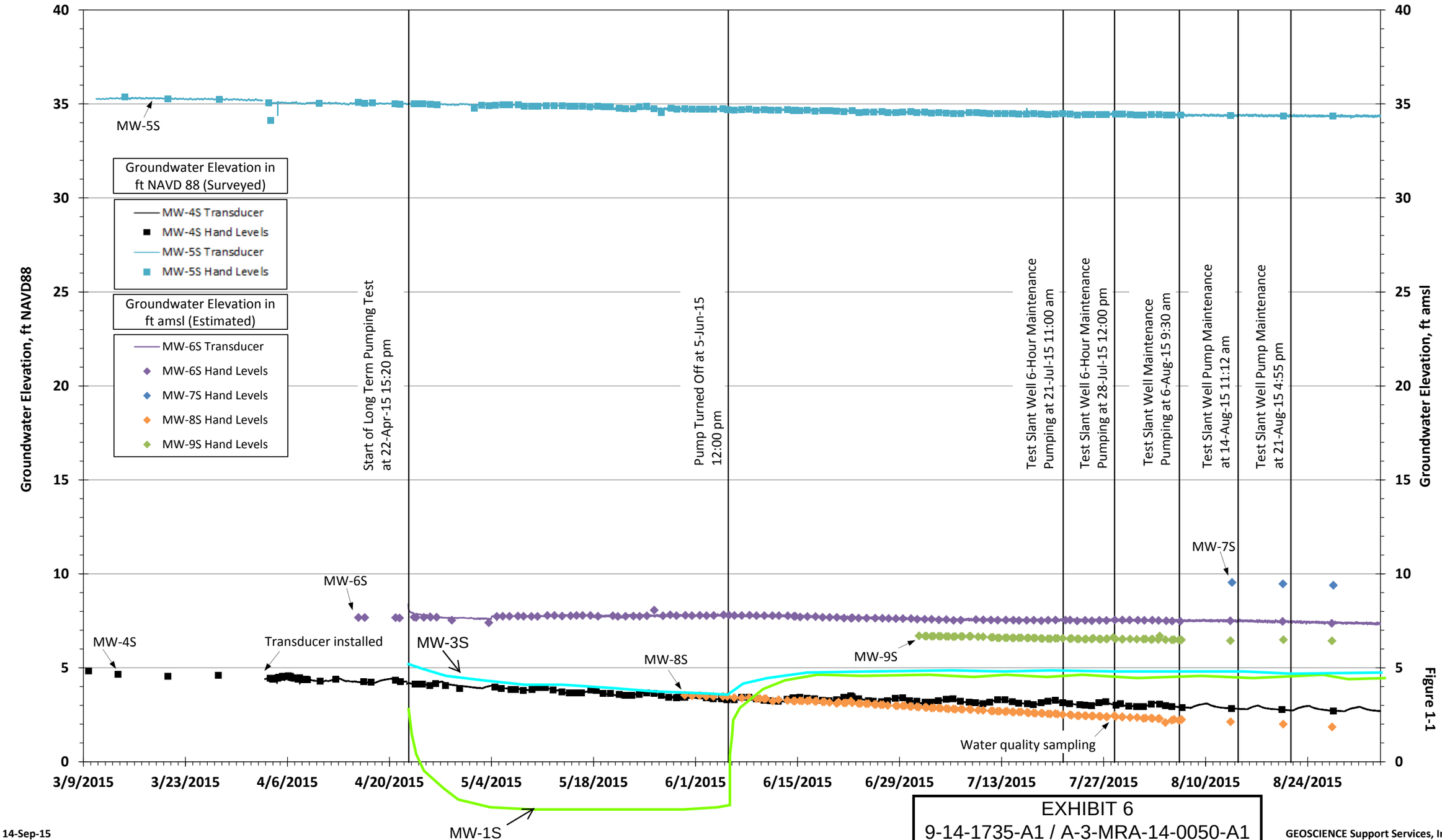

Figure 1-1

14-Sep-15

EXHIBIT 6
9-14-1735-A1 / A-3-MRA-14-0050-A1
Page 1 of 2

Groundwater Elevation in MPWSP MW-4M, MW-5M, MW-6M, MW-7M, MW-8M and MW-9M

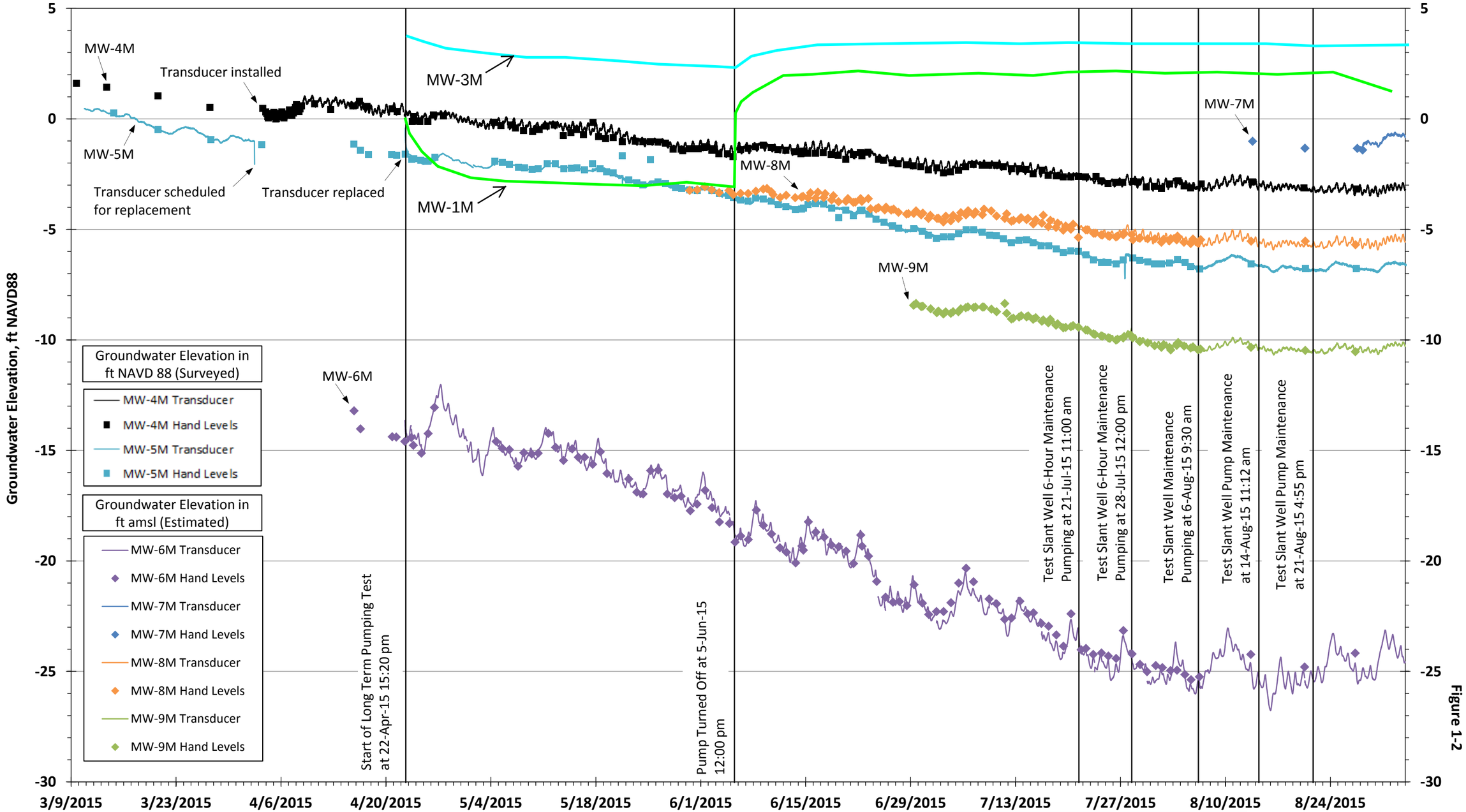

Figure 1-2

EXHIBIT 6
9-14-1735-A1 / A-3-MRA-14-0050-A1
Page 2 of 2

Weiss Associates Environmental Science, Engineering, and Management
2200 Powell Street, Suite 925, Emeryville, CA 94608-1879 Fax: 510-547-5043 Phone: 510-450-6000

September 23, 2015

Tom Luster
California Coastal Commission
45 Fremont Street #2000
San Francisco, California 94105

RE: Cal-Am Test Slant Well Independent Hydrogeologic Review
Weiss Job No. 466-2068

Dear Mr. Luster:

This report documents Weiss Associates (Weiss's) independent hydrogeologic review of proposed revisions to groundwater monitoring thresholds being used to determine whether a long-term pump test in a coastal portion of the Salinas Valley Groundwater Basin (SVGB) is affecting other groundwater users in the coastal portions of the SVGB. The pump test is being conducted by California-American Water (Cal-Am) at a test slant well (TSW) designed to extract predominately seawater as part of an evaluation of a desalinization plant proposed by Cal-Am

The project includes a Hydrogeologic Working Group (HWG), established through the California Public Utilities Commission, which developed a model and monitoring protocols for the TSW pumping test. The HWG also produces regular monitoring reports and technical memoranda related to the pumping test.

SUMMARY

Key findings of this review are detailed below.

The proposed revisions to the Cal-Am Coastal Development Permit Special Condition #11 groundwater monitoring thresholds, consisting of comparing groundwater levels and total dissolved solids concentrations at monitoring well MW-4 to regional groundwater and total dissolved solids trends, instead of the fixed values at the start of pumping, are appropriate for preventing potential impacts to agricultural groundwater resources further inland.

The monitoring results from MW-4 during the April to June 2015 test indicate that more water is entering the TSW from beneath the Monterey Bay sea floor and shoreline, and less from inland, then is indicated by the groundwater model results reported in July 2014 and April 2015. These results indicate negligible impact to the SVGB inland of monitoring well MW-4, with the probability of potential impacts decreasing with distance inland from that well.

The available data indicates that operating the TSW within the constraints of the revised groundwater monitoring thresholds would not be expected to cause any measureable effects on the nearest agricultural well, located approximately 5,000 feet inland from the TSW, or on wells farther inland.

BACKGROUND

In November 2014, Cal-Am received a Coastal Development Permit from the California Coastal Commission (Commission) authorizing construction and operation of the TSW along the shoreline of Monterey Bay within the CEMEX site in the northern part of the City of Marina. In early 2015, Cal-Am constructed the well and started its long-term pumping test, which is intended to provide data to determine whether the site is suitable for additional wells that would be used over the next several decades to provide source water for a proposed desalination facility.

The TSW is expected to draw predominantly seawater, either through the overlying Monterey Bay sea floor or from coastal areas of the SVGB where seawater has intruded some distance inland. However, the SVGB is also heavily used by nearby municipalities, regional agricultural interests, and water districts, and they are concerned that Cal-Am's test well and long-term proposed project will adversely affect their use of the Basin.

To ensure that the TSW would not adversely affect those interests, the Commission's permit included Special Condition #11, which requires Cal-Am to shut down its pump test if certain thresholds are reached in monitoring well MW-4, located about 2,000 feet from the test well. After pumping from April 22 through June 5, 2015, Cal-Am shut down the test because one of the thresholds, a 1.5-foot drop in water level in MW-4, was about to be exceeded. Cal-Am was therefore required to submit a determination from the HWG as to whether any part of the decreased water level was due to pumping at the TSW. Condition #11 also stated that if the Commission's Executive Director finds that any part of the decrease is due to the pumping test, Cal-Am is to submit an application to amend its permit and not re-start the test until receiving that amendment.

DOCUMENT REVIEW

Weiss reviewed the following documents, which in total constitute a progressive, iterative refinement of the conceptual site model of the hydrogeology of the TSW vicinity, and the hydro-geologic impacts of the TSW during pumping:

1. *Monterey Peninsula Water Supply Project (MPWSP) Hydrogeologic Investigation Work Plan* (December 18, 2013)
2. *Monterey Peninsula Water Supply Project Hydrogeologic Investigation Technical Memorandum (TM1) Summary of Results - Exploratory Boreholes* (July 8, 2014), and Appendix A1 – Borehole Lithologic Logs
3. California Coastal Commission, *Final Adopted Findings for Test Well Project* (November 12, 2014)

4. Declarations (2) of Curtis Hopkins (includes "State of the Salinas Groundwater Basin" (January 16, 2015))
    a. Declaration of Curtis Hopkins in Support of Marina Coast Water District's Motion for Stay and Preliminary Injunction (April 7, 2014)
    b. Reply Declaration of Curtis Hopkins in Support of Marina Coast Water District's Motion for Stay and Preliminary Injunction (April 24, 2014)
5. Section 4.4 of the MPWSP *Draft Environmental Impact Report (DEIR): Groundwater Resources* (April, 2015)
6. Appendix E2 of the *MPWSP-DEIR - Groundwater Modeling and Analysis* – DRAFT (April 17, 2015)
7. Technical Memorandum, *Monterey Peninsula Water Supply Project, Baseline Water and Total Dissolved Solids Levels - Test Slant Well Area* (April 20, 2015)
8. Hopkins Groundwater Consultants letter regarding HWG conclusions (June 25, 2015) (In a letter from Howard "Chip" Wilkins III of Remy Moose Manley LLP)
9. Appendix E1 of the *MPWSP-DEIR - Results of Test Slant Well Predictive Scenarios Using the CEMEX Area Model* – DRAFT (July 8, 2014)
10. HWG letters (June 10, 2015 [10a] and June 22, 2015 [10b])
11. California Coastal Commission staff letter, from Charles F. Lester, Executive Director, to Ian Crooks, Cal-Am (July 3, 2015)
12. Cal-Am permit amendment application (July 23, 2015)
13. *Test Slant Well Long Term Pumping Monitoring Report No. 18, 19-August-15 – 26-August-15* (September 1, 2015)

INDEPENDENT HYDROGEOLOGIC REVIEW

The questions and issues that the Commission requested Weiss to address in the independent review are shown below in bold text, followed by our opinions and findings. Reviewed documents are referred to by number from the list in the previous section.

<u>Primary question:</u> Is Cal-Am's proposed permit modification sufficient to protect agricultural water users in the Salinas Valley Groundwater Basin ("SVGB") from reductions in groundwater availability or quality? Stated another way, what is the scientific basis for using a 1.5 foot drawdown as the trigger for shutting down the well? Why will this ensure no adverse impacts to agricultural or groundwater resources? If 1.5 feet is not appropriate, what threshold would be suitable? Are there additional parameters that could be added to the condition that would ensure a proper methodology for establishing how to calculate regional groundwater elevation trends?

A reasonable scientific basis for setting the trigger drawdown level can be developed from the drawdown maps generated by groundwater modeling and through observations made during the operation of the TSW.

The CEMEX Model results[5] for Scenario 1, with a slant well angle of 19 degrees (essentially the same as the installed TSW angle of 18.7 degrees) and pumping 2,500 gallons per minute [gpm] indicate drawdown in the MW-4 area in the Dune Sand Aquifer on the order of 0.75 to 1-foot (Figures 4 through 6)[5], and in the 180 FT/180 FTE Aquifer on the order of 1.25 feet (Figures 7 through 9)[5].

A similar analysis can be used to estimate impacts to agricultural or groundwater resources inland of monitoring well MW-4 in the SVGB – the Scenario 1 drawdown contours indicate 0.5 foot of drawdown occurring approximately 5,000 feet inland of the TSW in both the Dune Sand and the 180-Foot Aquifers.

The above estimates are consistent with an extrapolation of the results from the North Marina Groundwater Model[6] reported in April 2015, which models pumping at 24.1 and 15.5 million gallons per day from the full array of slant wells for the completed project. The estimates should be verified by running the models with pumping at 2,000 gpm from the TSW.

While this analysis is one approach, the results from pumping so far, although at a rate of 2,000 gpm (80 percent of the modeled rate of 2,500 gpm) indicates no drawdown in MW-4S, and 0.25-foot in MW-4M. This is far less than predicted by the models, even taking the lower pumping rate into account. This indicates that the models are a conservative representation of groundwater capture by the TSW (i.e., the capture area shown by the models is much larger than indicated by the TSW pumping results), and suggests that there is better hydraulic connection between the sea and the TSW than is represented by the models. This indicates that more water is being captured from the seaward side of the TSW, and less from the landward side, than is indicated by the models.

Given that a 1.5-foot decrease in water levels at monitoring well MW-4 will equate to progressively smaller decreases inland, of magnitudes that are only a small fraction of the regional water level fluctuations that are on the order of several feet, this parameter appears to be a reasonable threshold to prevent potential impacts to agricultural or groundwater resources further inland. However, because of the inherent uncertainties in the model and subsurface conditions, additional monitoring is indicated. Monitoring water levels in wells MW-5 through MW-9, as is proposed by Cal-Am, will provide additional data to document any possible impacts beyond MW-4. We concur that electrical conductivity (used to calculate total dissolved solids) should continue to be monitored in all wells to demonstrate any potential capture of fresh water, or augmentation of seawater intrusion, by the TSW. We also recommend that all wells, including MW-7, be instrumented to collect calibrated water level and electrical conductivity data.

<u>Additional questions:</u> Coastal Commission staff also received comments regarding potential pump test effects on other components of the SVGB, which raise additional questions, including:

1. **Is the proposed condition adequately protective of nearby or regional agricultural users, given the characteristics of the SVGB's multiple aquifers and subareas - e.g., semiconfined aquifers, tidal influence, etc.?**

   The response to the Primary Question addresses this question.

2. Is the proposed condition adequately protective, given the inland extent (several miles) of seawater intrusion in the area?

The response to the Primary Question addresses this question.

3. Would a sustained drawdown of less than 1.5 feet at MW-4 caused by the test well result in cumulative adverse impacts to the SVGB?

As described in the response to the Primary Question above, modeling results[5] indicate no cumulative adverse impacts to the SVGB. Data from TSW pumping so far indicates that the models are conservative representations of the potential impacts. The drawdown of approximately 0.25-foot in MW-4 during the April to June 2015 test, and similar recovery after pumping stopped, stabilized at this value within one to two weeks. This indicates that steady-state or near steady-state flow conditions were achieved during the test. As stated by the HWG[12] in Cal-Am's proposed amendment to Special Condition #11, while an approximation, the distance-drawdown analysis indicates little if any influence of TSW pumping landward of MW-4. In addition, the groundwater elevation record for MW-4 shows the weekly cycle pattern (with less pumping on Sundays) in all three wells (S, M, and D) as referred to by the HWG[12] in its proposed amendment to Special Condition #11. The amplitude of these weekly cycles is on the order of 0.2-foot in MW-4S and MW-4M, almost as much as the 0.25-foot of drawdown and recovery in MW-4M from the April to June TSW pumping period. This indicates that the Dune Sand Aquifer is responding more to regional influences than it is to pumping at the TSW. Should the models be revised to reflect these observed conditions, it is likely that model runs will show even less potential impact to the SVGB than the already negligible impact shown by the current models.

4. Would Cal-Am's pumping eliminate or reduce the expected benefits of the lower coastal pumping rates being used in the SVGB to managed seawater intrusion?

Benefits of the seawater intrusion management program include: (1) lower pumping costs from a higher fresh water head/water table, and (2) improvement in groundwater quality, or at least a lessening of the rate of salinity increase. As described in the responses to the questions above, the monitoring data indicate that it is unlikely there will be any impact to the SVGB inland of MW-4, and potential impacts decrease with distance inland from that well. Therefore we would not foresee any reduction in the expected benefits of the seawater intrusion management program.

Regarding water quality, to the extent that the TSW captures any of the brackish groundwater currently present in the area landward of the TSW, the salt water/fresh water interface will migrate seaward. This should result in improvements to water quality in the areas of the SVGB that are influenced by the TSW, due to seaward migration of fresher water.

RELATED ISSUES

MW-7 Water Elevations

The August and September 2015 monitoring data show a seaward component of the groundwater gradient in the Dune Sand, the 180-Foot, and 400-Foot Aquifers between MW-7 and MW-4. This condition contradicts the general conceptual site model that water levels in the 180-Foot

and 400-Foot Aquifers decrease landward from the coast, and suggests the presence of a groundwater divide east of the project. Higher water levels in the Dune Sand Aquifer have previously been measured and documented in MW-5[13] so the conditions in MW-7 for that aquifer are not unexpected. However, the data for the 180-Foot and 400-Foot Aquifers at MW-7 should be considered preliminary, as the elevation of this well has not been determined by a referenced land survey. Cal-Am plans to conduct a survey and double-check the elevation data in MW-7 as appropriate. If the new survey confirms that the current understanding of the MW-7 groundwater elevations is correct, future revisions of the groundwater models should take this condition into account. If a groundwater divide is indeed present, it may tend to serve as a barrier that further mitigates the already negligible potential effects of TSW pumping from propagating inland.

Hydraulic Separation of Dune Sand and 180-Foot Aquifers in the TSW Area

The HWG analysis[12] states on Page 5 that *"the Dune Sand Aquifer (represented by MW-4S) and 180-FTE Aquifer (represented by MW-4M) at the CEMEX site are in hydraulic communication due to the lack of a separating aquitard..."*, and this was one of the reasons given for potentially averaging the Dune Sand and 180-FTE Aquifer water levels to compare with the 1.5-foot drawdown threshold. However, there is some degree of hydraulic separation at this location, given that MW-4S did not respond to TSW pumping, and MW-4M showed a drawdown of 0.25-foot during TSW pumping. Therefore, applying the 1.5-foot drawdown threshold to these aquifers separately, instead of averaging the two, is a more conservative approach.

CLOSING

Weiss Associates work at the California-American Water test slant well site and vicinity was conducted under my supervision. To the best of my knowledge, the data contained herein is true and accurate, based on what can be reasonably understood as a result of this project while satisfying the scope of work prescribed by the client for this project. The data, findings, recommendations, specifications, and/or professional opinions were prepared solely for the use of the California Marine Sanctuary Foundation and the California Coastal Commission in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of the contents herein.

Sincerely,
Weiss Associates

William A. McIlvride

William A. McIlvride, PG, CEG, CHG
Senior Project Hydrogeologist

WAM/mlm
J:\California Marine Sanctuary Foundation\Report\Cal-Am Review Tech Memo_Final_0923015.docx

William A. McIlvride, PG, CHG

Senior Project Hydrogeologist

Weiss Associates

Technical Skills

Hydrogeological Investigation

Groundwater modeling

Environmental Investigations

Years of Experience

Industry: 24+ years
Weiss Associates: 22 years

Education

M.S., Geology, 1982, Emphasis on groundwater and surficial geology, University of Massachusetts, Amherst, Massachusetts

B.A., Geology And Geography, 1976, Magna Cum Laude, Boston University, Boston, Massachusetts

Registration

PG, No. 4359, California
CEG, No. 1359, California
CHG, No. 970, California

Affiliations

Association of Ground Water Scientists and Engineers

American Geophysical Union

Publications/ Presentations

Authored or co-authored more than 50 technical reports for client submittal to regulatory agencies. Has made numerous presentations at technical conferences.

Bill is a Certified Hydrogeologist in California with more than 24 years of professional experience in hydrogeological and environmental investigations.

Representative Projects

Hydraulic Testing and Groundwater Modeling, *Central Valley, California* - Supervised and interpreted a series of pumping and slug tests and modeled groundwater flow and chloroform and hexavalent chromium fate and transport with MODFLOW and MT3DMS to refine the site conceptual model and develop multiple remedial options for a feasibility study.

Water Resources Investigation, *Napa County, California* – Evaluated hydrogeology of a coast range bedrock terrane, and designed and supervised hydraulic and water quality testing in three production wells. Analyzed results and determined long-term sustainable production.

Groundwater Resource Investigation and Development, *Haifa, Israel* - Conducted hydrogeologic survey of a fractured dolomite aquifer affected by salt-water intrusion, developed a conceptual model for a fresh-water irrigation water supply well, supervised pilot well hydraulic testing, and designed the successful production well.

Hydrologic Assessment, *Hilazon Basin, Israel* - Conducted field studies, reviewed technical reports, and produced a comprehensive hydrologic analysis and feasibility study of a complex estuarine site, located at the confluence of a large ephemeral stream and a smaller perennial, spring-fed stream, subject to massive commercial and residential development. Coordinated with developers, government agencies and technical consultants to develop a basis for protection and restoration of historic Crusader-and Ottoman-era water-powered grain mills, with modification of development to preserve a historic holy site.

Groundwater and Soil Contamination Investigation and Corrective Action, *Lawrence Livermore National Laboratory – Site 300, Tracy, California*

Developed and presented a proposal that won against eight competitors to provide hydrogeologic site investigation and cleanup of a research and explosives testing facility. It contained landfills, USTs, abandoned disposal wells, lagoons, and burn pits, with contaminants including tritium, fuels, solvents, and high explosive compounds. Work included oversight of investigation, hydraulic testing, modeling, and production of final report for regulatory approval. The client, pleased with progress on the project, doubled the original scope of work within the first year, and has retained the project team for more than 20 years.

Groundwater Supply—Protection and Development, *Lawrence Livermore National Laboratory – Site 300, Tracy, California*

Discovered a threat to a water supply well in a deep bedrock aquifer. Groundwater was flowing down an abandoned well from a contaminated, shallow alluvial aquifer to the deeper aquifer. Supervised well abandonment, alternative pumping, hydraulic testing and installation of a new 500-ft-deep double-cased well to assure an uninterrupted 300-gpm supply of clean water.

Remedial Investigation/Feasibility Study, Superfund Site, *Santa Clara, California*
Directed a groundwater and soil contamination investigation, feasibility study, and remedial action. Defined plume with monitoring wells and distinguished it from plumes at neighboring sites by mapping individual chlorinated hydrocarbon compounds and their breakdown products. Modeled groundwater flow, and sited and installed extraction wells. Supervised UST removal, installation of an extraction sump at the contaminant source, and treatment with granular activated carbon and air stripping. Prepared a risk assessment and RI/FS report and presented findings to California and EPA regulators, guiding them to deselect the most costly, and unwarranted, remedial options for the site. This site was the first of about 40 Superfund sites in Silicon Valley to reach a Record of Decision.

Quarry Dewatering Impact Evaluation, *Western New York* - Analyzed hydraulic test data from quarry dewatering operations, developed a hydrogeologic conceptual model, and modeled a range of scenarios to estimate impacts of quarry dewatering to neighboring residential wells.

Bioremediation of Contaminated Sediments, *Federal Facility, Pennsylvania*
Supervised field-scale pilot testing of augmented bioremediation to treat PCB, PAH, metal, and pesticide in a 2,000-foot segment of a storm water drainage ditch.

Professional History

2000–Present **Senior Project Engineering Geologist**, *Weiss Associates, Emeryville, California*—Conduct and supervise water resource and groundwater, soil, and soil vapor contamination investigations and evaluations. Write and review RI/FS reports. Analyze hydrogeologic systems and manage innovative technology remediation projects.

1990–1999 **Director, Grounds Department**, *Baha'i World Center, Haifa, Israel*— Evaluated water resources, conducted hydraulic testing, determined hydrogeologic impacts of development projects, and supervised a landfill closure. Supervised 70-person engineering and horticultural staff maintaining 120 acres of formal gardens.

1986–1990 **Senior Project/Principal Hydrogeologist,** *Weiss Associates, Emeryville, California*—Managed EPA-Superfund and RCRA site investigations and cleanups including the first in site in Silicon Valley to achieve a ROD, and the first approved for monitored natural attenuation. Completed numerous Phase I and Phase II investigations involving landfills, property transfers, USTs, and liability determinations.

1983–1986 **Staff/Project Hydrogeologist,** *Weiss Associates, Emeryville, California*—Supervised and performed pumping and slug tests, groundwater modeling, water and soil sampling and remediation system installation. Wrote reports satisfying California and Federal regulations. Supervised drilling and remediation system installation contractors.

1982–1983 **Geologist,** *USDA Natural Resource Conservation Service, Davis, California, and California Division of Mines and Geology, San Francisco, California*
Conducted erosion and sedimentation studies, compiled geologic data and mapped landslides.

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

California American Water Test Well Documents (available at http://www.watersupplyproject.org/#!test-well/c1f1l , as of September 23, 2015) include:

Borehole Data Analysis:

- Hydrogeologic Investigation Borehole Technical Memorandum - Summary of Results (25.61 MB)
- Hydrogeologic Investigation Borehole Technical Memorandum - Appendices A-D (20.58 MB)
- Hydrogeologic Investigation Borehole Technical Memorandum - Appendices E-F (42.2 MB)
- Hydrogeologic Investigation Borehole Technical Memorandum - Appendix G (34.25 MB)
- Hydrogeologic Investigation Work Plan (18.56 MB)

Monitoring Data:

- Groundwater Monitoring Report No. 1 (19-Feb to 13-Mar, 2015) (4.39 MB)
- Groundwater Monitoring Report No. 2 (13-Mar to 20-Mar, 2015) (3.99 MB)
- Groundwater Monitoring Report No. 3 (20-Mar to 27-Mar, 2015) (3.49 MB)
- Groundwater Monitoring Report No. 4 (27-Mar to 03-Apr, 2015) (2.49 MB)
- Groundwater Monitoring Report No. 5 (10-Apr to 17-Apr, 2015) (4.88 MB)
- Groundwater Monitoring Report No. 6 (17-Apr to 22-Apr, 2015) (4.4 MB)
- Groundwater Monitoring Report No. 7 (19-Feb to 13-Mar, 2015) (7.1 MB)
- Technical Memorandum: Baseline Water & TDS Levels (20-Apr,2015) (6.56 MB
- Long-Term Pumping Monitoring Report No. 1 (22-Apr to 29-Apr, 2015) (4.83 MB)
- Long-Term Pumping Monitoring Report No. 2 (29-Apr to 6-May, 2015) (6.8 MB)
- Long-Term Pumping Monitoring Report No. 3 (6-May to 13-May, 2015) (7.6 MB)
- Long-Term Pumping Monitoring Report No. 4 (13-May to 20-May, 2015) (9.6 MB)
- Long-Term Pumping Monitoring Report No. 5 (20-May to 27-May, 2015) (9.0 MB)
- Long-Term Pumping Monitoring Report No. 6 (27-May to 3-June, 2015) (7.3 MB)
- Long-Term Pumping Monitoring Report No. 7 (3-June to 10-June, 2015) (6.2 MB)
- Test Slant Well Long-Term Pumping Test and Coastal Development Permit #A-3-MRA-14-0050 (10-June, 2015) (1 MB)
- Test Slant Well Long-Term Pumping Test and Coastal Development Permit #A-3-MRA-14-0050 (22-June, 2015) (1.7 MB)
- Long-Term Pumping Monitoring Report No. 8 (10-June to 17-June, 2015) (7.5 MB)
- Long-Term Pumping Monitoring Report No. 9 (17-June to 24-June, 2015) (11.8 MB)
- Condition Compliance Letter - Special Condition #11 of Coastal Development Permits (3-July, 2015) (51 KB)
- Long-Term Pumping Monitoring Report No. 10 (24-June to 1-July, 2015) (8.6 MB)
- Long-Term Pumping Monitoring Report No. 11 (1-July to 8-July, 2015) (8.8 MB)
- Long-Term Pumping Monitoring Report No. 12 (8-July to 15-July, 2015) (5.3 MB)
- Long-Term Pumping Monitoring Report No. 13 (15-July to 22-July, 2015) (7.5 MB)
- Long-Term Pumping Monitoring Report No. 14 (22-July to 4-Aug, 2015) (9.0 MB)

- Long-Term Pumping Monitoring Report No. 15 (4-Aug to 11-Aug, 2015) (10.9 MB)
- Long-Term Pumping Monitoring Report No. 16 (11-Aug to 18-Aug, 2015) (10 MB)
- Long-Term Pumping Monitoring Report No. 17 (18-Aug to 25-Aug, 2015) (11.5 MB)
- Long-Term Pumping Monitoring Report No. 18 (25-Aug to 1-Sept, 2015) (9.7 MB)
- Long-Term Pumping Monitoring Report No. 19 (1-Sept to 8-Sept, 2015) (8.9 MB)
- Long-Term Pumping Monitoring Report No. 20 (8-Sept to 15-Sept, 2015) (8.7MB)

California Public Utilities Commission, *Monterey Peninsula Water Supply Project Draft Environmental Report*, April 2015 – available at:
http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir_toc.html

APPENDIX B - PERMIT CONDITIONS FROM NOVEMBER 2014 CDP APPROVAL

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

COASTAL DEVELOPMENT PERMIT

On November 12, 2014, by a vote of 11-0, the California Coastal Commission granted to California American Water Company (Cal-Am) Coastal Development Permit #9-14-1735 subject to the attached standard and special conditions, for development consisting of:

> Construction, operation, and decommissioning of a test slant well at the CEMEX sand mining facility in the City of Marina and beneath Monterey Bay in the County of Monterey.

Issued on behalf of the Coastal Commission on January 28, 2015.

CHARLES LESTER
Executive Director

By: ALISON J. DETTMER
Deputy Director
Energy, Ocean Resources, and Federal Consistency Division

Acknowledgment:

The undersigned Permittee acknowledges receipt of this permit and agrees to abide by all terms and conditions thereof.

The undersigned Permittee acknowledges that Government Code Section 818.4, which states in pertinent part, that: "A public entity is not liable for injury caused by the issuance... of any permit..." applies to the issuance of this permit.

IMPORTANT: THIS PERMIT IS NOT VALID UNLESS AND UNTIL A COPY OF THE PERMIT WITH THE SIGNED ACKNOWLEDGMENT HAS BEEN RETURNED TO THE COMMISSION OFFICE (14 Cal. Admin. Code Section 13158(a).)

1-28-15

Date

Signature of Permittee or Representative

STANDARD CONDITIONS

This permit is subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

SPECIAL CONDITIONS

This permit is subject to the following special conditions:

1. **Proof of Legal Interest and Other Approvals.** The Permittee shall provide to the Executive Director a copy of each of the following approvals or documentation from the relevant agency that such approval is not required:
   a. PRIOR TO PERMIT ISSUANCE, proof of legal interest in the project site.
   b. PRIOR TO CONNECTING TO THE OUTFALL, the negotiated agreement or memorandum of understanding between the applicant and the Monterey Regional Water Pollution Control Agency ("MRWPCA") regarding connection and use of the ocean outfall for discharge of water produced from the test well.
   c. PRIOR TO ISSUANCE OF CDP 9-14-1735, a lease from the State Lands Commission.

   The Permittee shall inform the Executive Director of any changes to the project required by, or resulting from, these permits or approvals. Such changes shall not be incorporated into the project until the Permittee obtains a Commission amendment to this permit, unless the Executive Director determines that no amendment is legally required.

2. **Liability for Costs and Attorneys Fees.** The Permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys fees – including (a) those charged by the Office of the Attorney General; and (b) any court costs and attorneys fees that the Coastal Commission may be required by a court to pay – that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Permittee against the Coastal Commission, its officers, employees, agents, successors, and assigns challenging the approval or issuance of this permit, the interpretation and/or enforcement of permit conditions, or any other matter related to this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

3. **Project Construction.** The Permittee shall conduct project construction as described and conditioned herein, including the following measures:
   a. Project-related construction shall occur only in areas as described in the permit application.
   b. Project-related construction, including site preparation, equipment staging, and installation or removal of equipment or wells, occurring between February 28 and October 1 of any year is subject to the timing and species protection requirements of Special Condition 14.
   c. Construction equipment and materials, including project-related debris, shall be placed or stored where it cannot enter a storm drain or coastal waters. The Permittee shall ensure that all construction personnel keep all food-related trash items in sealed containers and remove them daily to discourage the concentration of potential predators in snowy plover habitat. All trash and construction debris shall be removed from work areas and properly disposed of at the end of each work day at an approved upland location. All vegetation removed from the construction site shall be taken to a certified landfill to prevent the spread of invasive species.
   d. To reduce construction noise, noise attenuation devices (e.g., noise blankets, sound baffles, etc.) shall be installed around all stationary construction equipment, including drill rigs.
   e. All project vehicles shall maintain speeds of 10 miles per hour or less when at the project site. Prior to moving any vehicle, project personnel shall visually inspect for special-status species under and around the vehicle, and shall notify the on-site biologist should any be detected.
   f. To avoid predation of special-status species, wire excluders or similar anti-perching devices shall be installed and maintained on the top of all aboveground structures (e.g., electrical panel) to deter perching by avian predators.

   No changes to these requirements shall occur without a Commission amendment to this permit unless the Executive Director determines that no amendment is legally required.

4. **Protection of Water Quality.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit an erosion control plan for Executive Director review and approval. The Plan shall include a schedule for the completion of erosion- and sediment-control structures, which ensures that all such erosion-control structures are in place by mid-November of the year that construction begins and maintained thereafter. The plan

shall identify standard Best Management Practices to be implemented to address both temporary and permanent measures to control erosion and reduce sedimentation. Site monitoring by the applicant's erosion-control specialist shall be undertaken and a follow-up report shall be prepared that documents the progress and/or completion of required erosion-control measures both during and after construction and decommissioning activities. No synthetic plastic mesh products shall be used in any erosion control materials. All plans shall show that sedimentation and erosion control measures are installed prior to any other ground disturbing work.

5. **Hazardous Material Spill Prevention and Response.**
   (a) PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit for Executive Director review and approval a project-specific Hazardous Materials Spill Prevention and Response Plan that includes:
   - an estimate of a reasonable worst case release of fuel or other hazardous materials onto the project site or into adjacent sensitive habitat areas or coastal waters resulting from project operations;
   - all identified locations within the project footprint of known or suspected buried hazardous materials, including current or former underground storage tanks, septic systems, refuse disposal areas, and the like;
   - specific protocols for monitoring and minimizing the use of fuel and hazardous materials during project operations, including Best Management Practices that will be implemented to ensure minimal impacts to the environment;
   - a detailed response and clean-up plan in the event of a spill or accidental discharge or release of fuel or hazardous materials;
   - a list of all spill prevention and response equipment that will be maintained on-site;
   - the designation of the onsite person who will have responsibility for implementing the plan;
   - a telephone contact list of all regulatory and public trustee agencies, including Coastal Commission staff, having authority over the development and/or the project site and its resources to be notified in the event of a spill or material release; and,
   - a list of all fuels and hazardous materials that will be used or might be used during the proposed project, together with Material Safety Data Sheets for each of these materials.

   The Permittee shall implement the Plan as approved by the Executive Director. The Permittee shall also ensure that all onsite project personnel participate in a training program that describes the above-referenced Plan, identifies the Plan's requirements for implementing Best Management Practices to prevent spills or releases, specifies the location of all clean-up materials and equipment available on site, and specifies the measures that are to be taken should a spill or release occur.

(b) In the event that a spill or accidental discharge of fuel or hazardous materials occurs during project construction or operations, all non-essential project construction and/or operation shall cease and the Permittee shall implement spill response measures of the approved Plan, including notification of Commission staff. Project construction and/or operation shall not start again until authorized by Commission staff.

(c) If project construction or operations result in a spill or accidental discharge that causes adverse effects to coastal water quality, ESHA, or other coastal resources, the Permittee shall submit an application to amend this permit, unless the Executive Director determines no amendment is required. The application shall identify proposed measures to prevent future spills or releases and shall include a proposed restoration plan for any coastal resources adversely affected by the spill or release.

The Permittee shall implement the Plan as approved by the Executive Director.

6. **Monitoring and Removal of Temporary Structures, Well Head Burial & Well Closure/Destruction.** The Permittee shall monitor beach erosion at least once per week over the duration of the project to ensure the slant well and monitoring wells remain covered. If the wellheads, linings, casings, or other project components become exposed due to erosion, shifting sand or other factors, the Permittee shall immediately take action to reduce any danger to the public or to marine life and shall submit within one week of detecting the exposed components a complete application for a new or amended permit to remedy the exposure.

   Upon project completion, and no later than February 28, 2018, the Permittee shall cut off, cap, and bury the slant well head at least 40 feet below the ground surface, and shall completely remove all other temporary facilities approved by this coastal development permit. To ensure timely removal, the Permittee shall post the bond or other surety device as required by **Special Condition 17** to ensure future removal measures would be appropriately supported and timed to prevent any future resurfacing of the well casing or other project components.

7. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the Permittee acknowledges and agrees:
   a. that the site may be subject to hazards from coastal erosion, storm conditions, wave uprush, and tsunami runup;
   b. to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development;
   c. to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and
   d. to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

8. **No Future Shoreline Protective Device.** By acceptance of this permit, the Permittee agrees, on behalf of itself and all other successors and assigns, that no shoreline protective device(s) shall ever be constructed to protect the development approved pursuant to this permit, including the wells, supporting infrastructure, and any future improvements, in the event that the development is threatened with damage or destruction from waves, erosion, storm conditions or other natural hazards in the future. By acceptance of this permit, the Permittee hereby waives, on behalf of itself and all successors and assigns, any rights to construct such devices that may exist under Public Resources Code Section 30235.

   By acceptance of this permit, the Permittee further agrees, on behalf of itself and all successors and assigns, that the Permittee shall remove the development authorized by this permit, including the wells, supporting infrastructure, and any future improvements, if any government agency with the requisite jurisdiction and authority has ordered, and the Executive Director has concurred, that the development is not to be used due to any of the hazards identified in **Special Condition 7**. In the event that portions of the development fall to the beach before they are removed, the Permittee shall remove all recoverable debris associated with the development from the beach and ocean and lawfully dispose of the material in an approved disposal site. Such removal shall require a coastal development permit.

9. **Geology/Hazards.** The project shall be designed to meet or exceed all applicable requirements of the California Building Code. Project design and construction shall meet or exceed all applicable feasible conclusions and recommendations in the *Geotechnical Investigation for the California American Water Temporary Slant Test Well Project, Marina, Monterey County*, California, dated April 3, 2014 (GeoSoils 2014). Project components shall be sited to avoid areas identified in the coastal erosion memorandum prepared by ESA-PWA (March 2014) as subject to coastal erosion during the duration of the project.

10. **Visual Resources.** PRIOR TO PERMIT ISSUANCE, the Permittee shall submit for Executive Director review and approval a Lighting Plan prepared by a qualified engineer that includes the following:
    a. Identifies all lighting and associated infrastructure proposed for use during the test well project, such as towers, poles, electrical lines, etc. The Lighting Plan shall identify the locations, heights, dimensions, and intensity of the lighting and associated lighting infrastructure.
    b. Evaluates the effects of project lighting and associated infrastructure on wildlife in the project area and describes proposed measures to avoid or minimize any adverse effects. These measures may include shielding project lighting from off-site locations, directing lighting downward, using the minimum amount of lighting necessary to ensure project safety, and other similar measures.
    c. Affirms that all lighting structures and fixtures installed for use during the project and visible from public areas, including shoreline areas of Monterey Bay, will be painted or finished in neutral tones that minimize their visibility from those public areas.

    The Permittee shall implement the Lighting Plan as approved by the Executive Director.

11. **Protection of Nearby Wells.** PRIOR TO STARTING PROJECT-RELATED PUMP TESTS, the Permittee shall install monitoring devices a minimum of four wells on the CEMEX site, within 2000 feet of the test well, and one or more offsite wells to record water and salinity levels within the wells and shall provide to the Executive Director the baseline water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well. The Hydrogeology Working Group shall establish the baseline water and TDS levels for the monitoring wells. During the project pump tests, the Permittee shall, at least once per day, monitor water and TDS levels within those wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request. If water levels drop more than one-and-one-half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions, the Permittee shall immediately stop the pump test and inform the Executive Director. The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the test well is shut down due to either of these causes. The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS is from a cause or causes other than the test well, and it will submit its determination to the Executive Director. If the Executive Director agrees with the Hydrogeology Working Group that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then the Permittee shall not re-start the pump test until receiving an amendment to this permit.

12. **Protection of Biological Resources – Biological Monitor(s).** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall retain one or more qualified biologists approved by the Executive Director to ensure compliance with all relevant mitigation measures and Special Conditions. The approved biologist(s) shall conduct the required preconstruction surveys, implement ongoing monitoring and inspections, keep required records, and notify Commission staff and staff of other agencies as necessary regarding project conformity to these measures and Special Conditions.

    The approved biologist(s) shall be present during daylight hours for all project construction and decommissioning activities and on a periodic basis when the biologist determines operational activities may affect areas previously undisturbed by project activities. The biologist(s) shall monitor construction equipment access and shall have authority to halt work activities, if the potential for impacts to special-status species or habitat is identified, until the issue can be resolved. The qualified biologist(s) shall immediately report any observations of significant adverse effects on special-status species to the Executive Director.

13. **Protection of Biological Resources – Training of On-site Personnel.** Prior to starting construction and decommissioning activities, the approved biologist(s) shall conduct an environmental awareness training for all construction personnel that are on-site during activities. The training shall include, at a minimum, the following:
    - Descriptions of the special-status species with potential to occur in the project area;
    - Habitat requirements and life histories of those species as they relate to the project;
    - Avoidance, minimization, and mitigation measures that will be implemented to avoid impacts to the species and their habitats;
    - Identification of the regulatory agencies and regulations that manage their protection; and,
    - Consequences that may result from unauthorized impacts or take of special-status species and their habitats.

    The training shall include distribution of an environmental training brochure, and collection of signatures from all attendees acknowledging their participation in the training. Subsequent trainings shall be provided by the qualified biologist as needed for additional construction or operations workers through the life of the project.

14. **Protection of Biological Resources – Pre-Construction and Pre-Disturbance Surveys.** The approved biologist(s) shall conduct pre-construction surveys for special-status species as described below:
    a. No more than 14 days before the start of onsite activities or any activities planned for areas previously undisturbed by project activities, the biologist(s) shall conduct a field evaluation of the nature and extent of Western snowy plover activity in the project area and shall identify measures needed to ensure construction activities minimize potential effects to the species. Those measures shall, at a minimum, meet the standards and requirements of the mitigation measures included in Exhibit 5 as well as those included in subsection (d) of this special condition. Those measures shall also be submitted for Executive Director review and approval at least five days before the start of construction activities. The Permittee shall implement the measures as approved by the Executive Director.
    b. Prior to construction or activities planned for areas previously undisturbed by project activities, the approved biologist(s) shall coordinate with construction crews to identify and mark the boundaries of project disturbance, locations of special-status species and suitable habitat, avoidance areas, and access routes. GPS data collected during preconstruction surveys completed in 2012, 2013, and 2014 shall be used to flag the known locations of Monterey spineflower and buckwheat for avoidance during construction. Avoidance buffers shall be established and flagged or fenced as necessary to avoid surface disturbance or vegetation removal. The monitoring biologist shall fit the placement of flags and fencing to minimize impacts to any sensitive resources. At a minimum, the biologist shall direct the placement of highly visible exclusion fencing (snow fence or similar) at the following locations:
        - around sensitive snowy plover habitat areas that do not require regular access;
        - areas along the northern edge of the CEMEX accessway in the vicinity of the settling ponds; and
        - between the work area and any identified occurrence of Monterey spineflower or buckwheat within 10 feet of the existing accessway or work area.

All delineated areas of temporary fencing shall be shown on grading plans and shall remain in place and functional throughout the duration of construction and decommissioning activities.

c. The approved biologist(s) shall conduct surveys for Monterey spineflower and buckwheat (host plant for Smith's blue butterfly) within all project disturbance areas and within 20 feet of project boundaries during the blooming period for the spineflower (April-June) to identify and record the most current known locations of these species in the project vicinity. Surveys shall be conducted by a qualified botanist, and shall include collection of Global Positioning System (GPS) data points for use during flagging of sensitive plant species locations and avoidance buffers prior to construction.

d. Starting no later than February 1 of each year of project construction, operation, and decommissioning, the approved biologist(s) shall conduct breeding and nesting surveys of sensitive avian species within 500 feet of the project footprint. The approved biologist(s) shall continue those surveys at least once per week during periods of project construction, well re-packing, and decommissioning that occur between February 1 and October 1 each year.

In the event that any sensitive species are present in the project area but do not exhibit reproductive behavior and are not within the estimated breeding/reproductive cycle of the subject species, the qualified biologist shall either: (1) initiate a salvage and relocation program prior to any excavation/maintenance activities to move sensitive species by hand to safe locations elsewhere along the project reach or (2) as appropriate, implement a resource avoidance program with sufficient buffer areas to ensure adverse impacts to such resources are avoided. The Permittee shall also immediately notify the Executive Director of the presence of such species and which of the above actions are being taken. If the presence of any such sensitive species requires review by the United States Fish and Wildlife Service and/or the California Department of Fish and Game, then no development activities shall be allowed or continue until any such review and authorizations to proceed are received and also authorizes construction to proceed.

If an active nest of a federally or state-listed threatened or endangered species, species of special concern, or any species of raptor or heron is found, the Permittee shall notify the appropriate State and Federal wildlife agencies within 24 hours, and shall develop an appropriate action specific to each incident. The Permittee shall notify the California Coastal Commission in writing by facsimile or e-mail within 24 hours and consult with the Commission regarding determinations of State and Federal agencies.

If the biologist(s) identify an active nest of any federally- or state-listed threatened or endangered species, species of special concern, or any species of raptor or heron within 300 feet of construction activities (500 feet for raptors), the biologist(s) shall monitor bird behavior and construction noise levels. The biologist(s) shall be present at all relevant construction meetings and during all significant construction activities

(those with potential noise impacts) to ensure that nesting birds are not disturbed by construction-related noise. The biologist(s) shall monitor birds and noise every day at the beginning of the project and during all periods of significant construction activities. Construction activities may occur only if construction noise levels are at or below a peak of 65 dB at the nest(s) site. If construction noise exceeds a peak level of 65 dB at the nest(s) site, sound mitigation measures such as sound shields, blankets around smaller equipment, mixing concrete batches off-site, use of mufflers, and minimizing the use of back-up alarms shall be employed. If these sound mitigation measures do not reduce noise levels, construction within 300 ft. (500 ft. for raptors) of the nesting areas shall cease and shall not re-start until either new sound mitigation can be employed or nesting is complete.

If active plover nests are located within 300 feet of the project or access routes, avoidance buffers shall be established to minimize potential disturbance of nesting activity, and the biologist shall coordinate with and accompany the Permittee's operational staff as necessary during the nesting season to guide access and activities to avoid impacts to nesting plovers. The biologist shall contact the USFWS and CDFW immediately if a nest is found in areas near the wellhead that could be affected by project operations. Operations shall be immediately suspended until the Permittee submits to the Executive Director written authorization to proceed from the USFWS.

If, after starting project activities, the Permittee must stop construction due to the presence of sensitive species or due to the lack of necessary approvals or permits (e.g., a lease from the State Lands Commission), the Permittee shall remove and properly store all project-related equipment and vehicles away from the project site in a manner that does not adversely affect sensitive species.

15. **Project Area Restoration.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall prepare a Restoration Plan for review and approval by the Executive Director that is consistent with the City of Marina restoration requirements as codified in Municipal Code Section 17.41.100. The Plan shall include, at a minimum:
    a. a description of the habitat characteristics and extent of the area to be restored, which shall include, at a minimum, all areas of temporary disturbance in the project footprint other than those areas actively in use by CEMEX for mining purposes;
    b. performance standards and success criteria to be used;
    c. a minimum 3:1 ratio of native plants to be replaced within the affected area;
    d. an invasive species control program to be implemented for the duration of the project;
    e. the timing of proposed restoration activities;
    f. proposed methods to monitor restoration performance and success for at least five years following initiation of the Plan; and
    g. identification of all relevant conditions, requirements, and approvals by regulatory agencies needed to implement the Plan.

    The Permittee shall implement the Plan: (1) during and immediately following construction and prior to operation of the test well, and (2) during and immediately following decommissioning activities.

Success criteria will include plant cover and species composition/diversity, which shall meet or exceed adjacent undisturbed dune habitat on the CEMEX parcel as determined by the biological monitor. Success criteria shall, at a minimum, be consistent with the requirements of the existing Lapis Revegetation Plan prepared for the RMC Lonestar Lapis Sand Plant (25 percent average vegetative cover and species diversity of all species listed in Group A of the Plan present and providing at least 1 percent cover).

16. **Invasive Species Control.** The Permittee shall remove and properly dispose of at a certified landfill all invasive or exotic plants disturbed or removed during project activities. The Permittee shall use existing on-site soils for fill material to the extent feasible. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species, or the material must consist of purchased clean material.

17. **Posting of Bond.** To ensure timely removal, PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall provide to the Commission a surety bond or similar security device acceptable to the Executive Director for $1,000,000 (one million dollars), and naming the Coastal Commission as the assured, to guarantee the Permittee's compliance with Special Conditions 6 and 15. The surety bond or other security device shall be maintained in full force and effect at all times until Special Conditions 6 and 15 have been met.

APPENDIX C - EX PARTE COMMUNICATIONS

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LATHAM & WATKINS LLP

Agenda Item
T15a

September 23, 2015

File No. 055604-0002

VIA EMAIL AND FEDEX

Chair Kinsey and Honorable Commissioners
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105

Re: Permit Nos. A-3-MRA-14-0050-A1 and 9-14-1735-A1:
(California-American Water Company Test Well Project)

Dear Chair Kinsey and Honorable Commissioners:

On behalf of California-American Water Company ("Cal-Am"), we write regarding the Commission's consideration of Cal-Am's application to amend Coastal Development Permit No. A-3-MRA-14-0050 (issued December 8, 2014) and CDP No. 9-14-1735 (issued January 28, 2015) (collectively, the "Permits") to construct, operate, and decommission a temporary test slant well at the CEMEX sand mining facility (the "Project"). The Commission will consider the proposed amendment at its October 6, 2015, meeting.

As the Commission is aware, the Commission's November 2014 approval of the Permits was challenged in Santa Cruz County Superior Court by the Marina Coast Water District ("MCWD") in Case No. CV180839 and by the Ag Land Trust in Case No. CV180887. On July 23, 2015, both cases were tried on the merits before the Honorable Judge Rebecca Connolly. At the conclusion of the hearing, **Judge Connolly denied MCWD's and Ag Land Trust's petitions for writ of mandate and issued an oral statement of decision on the record entirely in the Commission's and Cal-Am's favor**. In particular, Judge Connolly made findings regarding the substantial evidence that supported the Commission's analysis and disclosure of the Project's existing environmental baseline, as well as the Commission's approval of Special Condition 11, the Special Condition that is proposed to be modified as part of Cal-Am's permit amendment.

Enclosed with the hard copy version of this letter being distributed to Commission staff is a copy of the Court Reporter's Transcript of Proceedings from the July 23, 2015, hearing. As reflected in the transcript, Judge Connolly made the following specific findings on the record

regarding (1) the baseline groundwater conditions in the vicinity of the Project area, and (2) Special Condition 11:

Environmental Baseline:

- "[T]here was significant evidence before the Coastal Commission with respect to the baseline condition of the environment." (Tr. at 10:21-24);
- "[T]he issue was whether or not the Commission adequately disclosed the baseline hydrological conditions of the Salinas Valley groundwater basin . . . I find that the Commission adequately did so in this case. The Commission's findings cite to reports that indicate that the groundwater in the project's general area is already severely contaminated by seawater intrusion and that these conditions are well understood and documented; that the reports describe the conditions and note that underlying basin is subject to seawater intrusion that extends several miles inland from the coast where the project is located." (Tr. 187:20-188:9);
- "The groundwater conditions describing the Salinas Valley groundwater basin past groundwater pumping, the degree of intrusion and groundwater storage capacity are also set forth in the administrative record." (Tr. 188:13-17);
- "[T]he record also discusses how groundwater conditions fluctuate over time, and that it has a high degree of fluctuation." (Tr. 189:23-25);
- "[T]here was significant scientific evidence before the Commission to determine that the groundwater aquifers from which the project was going to draw were greatly intruded by seawater and could not be used for agricultural irrigation or human consumption." (Tr. 190:10-14);
- "[T]he record establishes that determining the exact level and salinity levels at the project's monitoring wells was impossible to achieve prior to the Commission's review because the monitoring wells are, in fact, a component of the project, and that was analyzed and approved in the CDPs. The Commission staff report provided the detailed discussion of the existing groundwater conditions in the Salinas Valley groundwater basin and the two aquifers from which the project will draw water. That discussion was based on technical documents in the record; and. . . the Commission did not defer in assessing or neglect to study the baseline conditions." (Tr. 191:9-21); and
- "I do find the record adequately establishes the Commission appropriately determined the baseline environmental conditions prior to moving forward." (Tr. 191:22-24).

Special Condition 11:

- "I also find that in adopting Special Condition 11, that the Commission was acting as the lead agency, and it was appropriate for them to exercise its own judgment in selecting its standard of significance on that, and that was set forward in Condition 11." (Tr. 191:25 to 192:4);

- "[T]he evidence supports that Special Condition 11 was based on data from technical reports prepared by Geoscience and was referred to during the Commission's proceeding and is included in the Commission's record." (Tr. 192:5-9);

- "I also believe that the Commission's decision to alter the initial staff report proposed one-foot drawdown standard to 1.5 drawdown standard was permissible and supported by the administrative record." (Tr. 192:19-22);

- "Insofar as the TDS standards, the administrative record supports that the 2000 parts per million or ppm increase in TDS was selected because seawater has approximately 3,000 ppm variability, so it varies from 30,000 to 33,000 parts per million." (Tr. 192:23 to 193:2);

- "I do find that the drawdowns and the TDS standard included in Special Condition 11 were tailored to the project appropriately under CEQA and that they did not amount to a deferral of baseline measurement under CEQA to another group." (Tr. 193:7-11);

- "I further find that Special Condition 11 was not an impermissible deferral of mitigation, and that is based upon the fact that I think it is appropriate for the specific performance standards to be established even if all the specifics are not known at the time of the approval." (Tr. 193:12-17);

- "I think it was appropriate for the Commission to utilize HWG's technical expertise to implement Special Condition 11. And I also think that given that the groundwater levels and salinity fluctuate naturally, that it was appropriate for the Commission to set objective performance criteria and to delegate to the Commission's executive director to work with the scientific experts to determine whether or not the project was violating those criteria." (Tr. 193:19-194:2); and

- "I believe that the administrative record supported the Commission's finding that no seawater intrusion impact would occur in the Salinas Valley groundwater basin as a result of the project." (Tr. 194:12-16).

We appreciate the opportunity to submit the hearing transcript to the Commission for inclusion in the administrative record. We look forward to the Commission's consideration of Cal-Am's permit amendment at the October 6, 2015, meeting.

Very truly yours,

Duncan Joseph Moore
of LATHAM & WATKINS LLP

cc: Tom Luster, California Coastal Commission (with hearing transcript)
Andrew Homer, California-American Water Company

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Filed:	August 26, 2015
180th Day:	February 19, 2016
Staff:	T. Luster-SF
Staff Report:	September 24, 2015
Hearing Date:	October 6, 2015

STAFF REPORT: MATERIAL AMENDMENT

Application No.:	**9-14-1735-A1 and A-3-MRA-14-0050-A1**
Applicant/Appellant:	**California American Water Company**
Project Location:	At the site of the CEMEX, Incorporated sand mining facility, Lapis Road, City of Marina, Monterey County. (APN #203-011-001 and #203-011-019)
Description of Previously Approved Project:	Construct and operate a test slant well and associated monitoring wells to both develop data and assess the feasibility of the project site as a potential long-term water source for a desalination facility.
Staff Recommendation:	**Approval** with conditions

SUMMARY OF STAFF RECOMMENDATION

In November 2014, the Commission approved California American Water's ("Cal-Am's") proposal to construct, operate, and decommission a test slant well and associated monitoring wells and other infrastructure near the shoreline of Monterey Bay in the City of Marina. The proposed project was to be used to conduct a pumping test program for up to about two years to obtain data regarding the geologic, hydrogeologic, and water quality characteristics in aquifers underlying the project area, which are within the coastal portion of the Salinas Valley Groundwater Basin, a regionally important source of agricultural and municipal water supply. In addition to the independent value of these data, information developed from the project is meant to help determine whether a similar subsurface intake system at or near this location could provide source water for a seawater desalination facility Cal-Am is separately proposing as part

of the Monterey Peninsula Water Supply Project, which is the subject of an application and environmental documents being reviewed by the California Public Utilities Commission ("CPUC"). The CPUC's review includes modeling, monitoring, and data analysis by the Hydrogeology Working Group ("HWG"), which consists of several licensed hydrogeologists representing stakeholders in the area.

The Commission's approval included **Special Condition 11**, which required Cal-Am to install onsite and offsite monitoring wells and equipment, and established allowable thresholds for changes in groundwater levels and salinity to prevent the project's pumping tests from causing adverse effects on nearby agricultural wells. If these thresholds were reached during the pumping test at the most distant onsite monitoring well, Cal-Am was to shut down the test and request a determination from the HWG and the Commission's Executive Director as to whether the pumping test was causing the changes. If any part of the change was determined to be due to the pumping test, Cal-Am was to not re-start the pumping test until receiving an amendment to its coastal development permit.

In early 2015, Cal-Am completed installation of project components and in February 2015 started its pumping test. It ran until June 5, 2015, when monitoring detected that groundwater levels were approaching the allowable threshold. Cal-Am stopped the test, conferred with the HWG and the Commission's Executive Director, who determined that the pumping test had resulted in a small percentage of the overall groundwater decrease, and applied for the required permit amendment on July 27, 2015.

Cal-Am's proposed amendment would modify **Special Condition 11.** The primary modification would keep the same numerical groundwater and salinity thresholds as previously approved, but would provide that they be compared to regional trends rather than be based on a static value at a single location. This modification is in recognition of monitoring data collected from early 2015 until the present that show the pumping test resulted in minimal effects at the monitoring well that were not evident at more distant monitoring sites, and that those minimal effects could readily be distinguished from other regional influences, such as municipal and seasonal agricultural groundwater pumping, that were causing much greater changes. The proposed modification specifically acknowledges these regional influences and direct the HWG and the Executive Director to consider them in their analyses. Other proposed changes to **Special Condition 11** would provide additional clarity to the condition language (e.g., referring to "groundwater" rather than "water").

As part of its review, Commission staff obtained the services of an independent licensed hydrogeologist to evaluate the relevant modeling and monitoring data and to review Cal-Am's proposed modification. That review resulted in conclusions that the threshold values and monitoring approach were appropriate for preventing impacts to agricultural groundwater users further inland and that the pumping test was not expected to cause any measurable effect on those groundwater users.

Recommendation
Staff recommends the Commission **approve** the proposed Findings and modifications to **Special Condition 11**.

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EXHIBITS

APPENDICES

I. MOTIONS & RESOLUTIONS

A. CDP DETERMINATION FOR A-3-MRA-14-0050-A1

Staff recommends that the Commission, after public hearing, adopt the following resolutions. Passage of the motions will result in approval of the permits as conditioned and adoption of the following resolutions and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Motion

*I move that the Commission approve Coastal Development Permit Amendment A-3-MRA-14-0050-A1 pursuant to the staff recommendation, and I recommend a **yes** vote.*

Resolution to Approve CDP

The Commission hereby approves the coastal development permit amendment and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the City of Marina Local Coastal Program policies and Coastal Act access and recreation policies. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

B. CDP DETERMINATION FOR CDP 9-14-1735-A1

Motion

*I move that the Commission **approve** Coastal Development Permit Amendment 9-14-1735-A1pursuant to the staff recommendation, and I recommend a **yes** vote.*

Resolution

The Commission hereby approves the coastal development permit amendment and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

Note: The original permits contained 17 special conditions (see Appendix B). This amendment modifies the original **Special Condition 11** only, as shown below in bold double-underlined and strikethrough text. The other standard and special conditions are unchanged and remain in force.

11. Protection of Nearby Wells. PRIOR TO STARTING PROJECT-RELATED PUMP**ING** TESTS, the Permittee shall install monitoring devices at a minimum of four wells on the CEMEX site, within 2000 feet of the test well, and one or more offsite wells to record **ground**water and salinity levels within the wells and shall provide to the Executive Director the baseline **ground**water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well.

The **Permittee, in coordination with the** Hydrogeology Working Group**,** shall ~~establish the baseline water and TDS levels for the monitoring wells~~**identify groundwater elevation trends and TDS level trends in the groundwater basin resulting from regional influences such as groundwater withdrawals, rainfall events, increases or decreases in streamflow contributions, and other influences**. During the project pump**ing** tests, the Permittee shall, at least once per day, monitor **ground**water and TDS levels within ~~those~~**the monitoring** wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request.

The Hydrogeology Working Group shall review data from the monitoring wells and prepare a monthly report that shall be submitted to the Executive Director that documents the groundwater elevation trends and TDS level trends resulting from regional influences. If ~~water levels drop more than one-and-one-half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions~~ **during the pumping tests, data collected from Monitoring Well-4S ("MW4-S") or Monitoring Well-4M ("MW-4M") during any weekly monitoring period show either a decrease in groundwater levels that exceeds an identified decrease in regional groundwater level trends by 1.5 feet or more or show an increase in TDS levels that exceeds an identified increase in regional TDS level trends by two thousand parts per million or more,** the Permittee shall immediately stop the pump**ing** test and inform the Executive Director. The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the **pumping** test ~~well~~ is ~~shut down~~ **stopped** due to either of these causes.

If, based on the above review of monitoring data, ~~The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS levels from a cause or causes other than the test well, and it will submit its determination to the Executive Director. If the Executive Director agrees with the Hydrogeology Working Group that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then the~~**the Executive Director or the Hydrogeology Working Group determines that the pumping test caused, at MW-4S or MW4-M, either a decrease in groundwater level of 1.5 feet or more or caused an increase in TDS levels of two thousand parts per million or more in excess of identified regional trends,** then the Permittee shall not re-start the pump**ing** test until receiving an amendment to this permit**; otherwise the Executive Director will allow the pumping test to resume**.

IV. FINDINGS & DECLARATIONS

A. PROJECT DESCRIPTION AND BACKGROUND

On November 12, 2014, the Commission approved two coastal development permits ("CDPs") allowing California American Water Company ("Cal-Am") to construct, operate, and decommission a test slant well and associated infrastructure at a site along the shoreline of Monterey Bay in the City of Marina (see Exhibit 1 – Project Area and Location of Project Components).[1] The test wellhead is located about 650 feet from the shoreline and extends downward at about a 20 degree angle to a point about 225 feet beneath the Monterey Bay shoreline (see Exhibit 2 – Schematic Drawing of Slant Well). The project also includes a number of monitoring wells, well clusters, and instrumentation installed both on and off the project site to measure groundwater levels and water quality in areas near the slant well (see Exhibit 1).

Cal-Am is using the test slant well and monitoring wells to conduct a pump test program for up to about two years to obtain data regarding the geologic, hydrogeologic, and water quality characteristics in aquifers underlying the project area, which are within the coastal portion of the Salinas Valley Groundwater Basin, a regionally important source of agricultural and municipal water supply. In addition to the independent value of these data, the data also will help determine whether a similar subsurface intake system at or near this location could provide source water for a potential seawater desalination facility that Cal-Am has proposed as part of its Monterey Peninsula Water Supply Project ("MPWSP"). The MPWSP is the subject of an application and environmental documents being reviewed by the California Public Utilities Commission ("CPUC").[2,3] The CPUC is evaluating the data produced from the test slant well to help determine the overall feasibility, available yield, and hydrogeologic effects of extracting water from this location. Much of this analysis is being conducted by the Hydrogeologic Working Group ("HWG"), a team of licensed hydrogeologists representing several project

[1] The project site is entirely within the coastal zone. Portions of the site landward of the mean high tide line are within the City of Marina's certified LCP permit jurisdiction where the standard of review is the City's certified LCP. Portions of the site seaward of the high tide line are within the Commission's retained jurisdiction where the standard of review is Chapter 3 of the Coastal Act. All project components within the Commission's retained jurisdiction are located beneath the seafloor.

On November 12, 2014, the Commission conducted a hearing on both Cal-Am's appeal of the City's CDP denial and the portions of the project within its retained jurisdiction, and approved the proposed project with conditions.

[2] The proposed project, including Cal-Am's CPUC Application A.12-04-019, is more fully described on the project website at: http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/index.html

[3] The Commission's initial CDP approval and the current proposed amendment address construction and operation of the test slant well only and do not evaluate or authorize development that may be proposed for long-term use of the well, including converting the well to use as a water source for the separately proposed MPWSP. Any such proposal will require additional review and analysis for conformity to relevant Local Coastal Programs and the Coastal Act and will be conducted independent of any decision arising from these Findings. Further, the Commission's decision regarding these Findings and proposed permit amendment exerts no influence over, and causes no prejudice to, the outcome of those separate future decisions.

stakeholders, that the CPUC established to provide comprehensive, expert review of the project's potential effects on the groundwater basin and its users.[4]

The project is located at the seaward extension of the Salinas Valley Groundwater Basin ("Basin"), which lies beneath the Salinas River valley and runs from the coast to about 140 miles inland. The Basin is divided into eight sub-regions, including what is known as the 180/400-Foot Sub-Basin at its coastal end. This Sub-Basin has an estimated groundwater storage capacity of about 6.8 million acre-feet.

The Basin is used extensively to provide agricultural and municipal water supplies, with recent groundwater pumping in the Basin's coastal areas exceeding 100,000 acre-feet per year.[5] The groundwater use, along with the Basin's hydrogeological characteristics, have resulted in seawater intrusion into the Basin along about ten miles of shoreline, at a rate of about 14,000 acre-feet per year, with the current extent of intrusion reaching several miles inland (see Exhibit 3 – Mapped Extent of Seawater Intrusion).[6] Although the Basin's groundwater management programs are attempting to reduce this rate, seawater intrusion has both reduced the quality of groundwater for agricultural use in this area and reduced the amount of groundwater pumped from nearby wells, with wells within two miles of the test slant well having already experienced seawater intrusion.[7] The test well is centrally located along the shoreline area where seawater intrusion is occurring.

The Basin and Sub-Basin are also affected by regional influences, such as changes in seasonal agricultural groundwater pumping, varying levels of municipal groundwater use, the effects of drought and rainfall on aquifer water levels, and others. For example, between February and September of 2015, monitoring data for some wells within the Basin located up to several miles from the test slant well experienced water level declines of up to 20 feet due to these regional influences.

The project area is underlain by three main aquifers – the relatively shallow Dune Sand Aquifer, and the 180-Foot Aquifer and 400-Foot Aquifer, which are named for their approximate depth below the ground surface. The slant test well is designed to intercept water from the seaward extension of the Dune Sand and 180-Foot Aquifers. Water quality data collected over the past several years show that these aquifers exhibit relatively high salinity levels, with concentrations

[4] The HWG was formed as a result of a 2013 Settlement Agreement among parties to the CPUC proceeding regarding Cal-Am's proposed Monterey Peninsula Water Supply Project. The HWG reviewed and approved the initial scope of Cal-Am's proposed field investigation and development of a hydrogeologic conceptual model from which to construct the groundwater modeling tools and has provided ongoing review of modeling and monitoring data. It includes hydrogeologic experts representing the Salinas Valley Water Coalition, Monterey County Farm Bureau, Cal-Am, and the CPUC.

[5] See Brown and Caldwell, *State of the Salinas River Groundwater Basin Report*, December 10, 2014.

[6] See Monterey County Water Resources Agency, *Monterey County Groundwater Management Plan*, Chapter 3 – Basin Description, pages 3.14 & 3.15, May 2006.

[7] See Monterey Bay National Marine Sanctuary, *Environmental Assessment for the California American Water Slant Test Well Project*, Section 6.1.2 – Water Supply and Quality, June 2014.

of total dissolved solids ranging from about 24,000 to 32,000 parts per million.[8] For comparison, seawater generally ranges from approximately 30,000 to 33,000 ppm, drinking water is usually below 500 ppm, and most crops generally cannot tolerate more than 2,000 ppm.

While there is an aquitard between the two aquifers further inland, exploratory borings taken at the project site indicate that there is little or no separation between the two near the test well. The Dune Sand Aquifer is not regionally extensive and is not considered a viable water source for agricultural users due to its poor water quality.

At the test well's maximum pumping rate of 2,500 gallons per minute, it would pump about 4,000 acre-feet per year of seawater from beneath Monterey Bay and what is expected to be almost entirely intruded seawater from the landward areas of the two aquifers.[9] The test well is screened to allow differential pumping from the two aquifers, with data from the pump tests to be used to better characterize aquifer characteristics, to refine the modeling and other analyses conducted to date, and to better understand the hydrogeology near the site, including information that will help determine the feasibility of potential full-scale wells.

B. EXISTING SPECIAL CONDITION 11 AND PROPOSED AMENDMENT

The Commission's permit approval includes **Special Condition 11**, which establishes monitoring requirements and allowable thresholds for changes in groundwater levels and salinity,[10] which are meant to prevent the project pump tests from causing adverse effects on nearby agricultural wells. It also relies in part on the review and expertise of the above-referenced Hydrogeology Working Group.

Special Condition 11 is meant to ensure that Cal-Am's pump tests do not cause water level drawdowns or increases in Total Dissolved Solids ("TDS") that might propagate to the nearest usable agricultural well, which at the time of the Commission's November 2014 review, was believed to be about 5,000 feet from the test well. **Special Condition 11** requires that Cal-Am install onsite and offsite monitoring wells and equipment to record groundwater levels and to determine Total Dissolved Solids ("TDS") concentrations, to establish baseline levels, and to regularly post the collected data on a publically-available website. At the most distant onsite monitoring well (Monitoring Well 4), located about 2,000 feet from the test slant well, **Special Condition 11 also** establishes thresholds for allowable changes to groundwater and TDS levels – i.e., a decrease of 1.5 feet or more or an increase of 2000 parts per million ("ppm") or more, respectively – and requires Cal-Am to stop its pump test should those thresholds be reached. The Commission's approval of these values was based on modeling conducted by the HWG showing that the water level and salinity changes expected from the pump test at this location would be somewhat less than these thresholds. The salinity threshold is also based in part on the

[8] See Geoscience, *California American Water / RBF Consulting, Monterey Peninsula Water Supply Project Hydrogeologic Investigation – Technical Memorandum (TM 1): Summary of Results – Exploratory Boreholes*, July 8, 2014.

[9] See Separation Processes, Inc., *Evaluation of Seawater Desalination Projects, Draft Report*, prepared for Monterey Peninsula Regional Water Authority, November 2012.

[10] ***Note:*** Project monitoring does not measure salinity directly. Salinity levels are calculated using monitoring data for levels of electrical conductivity or Total Dissolved Solids.

natural variability of seawater, which ranges from about 30,000 to 33,000 ppm – by keeping the threshold below the 3,000 ppm natural variability, monitoring would be able to detect a change before exceeding that level of variability. Requiring the pump test to shut down if these thresholds were reached would prevent these changes from propagating to the nearest agricultural wells several thousand feet further away. In the event the thresholds were reached and the pump test was shut down, the HWG was to examine the data to determine the cause of the water level decrease or TDS increase. If the ED determined that any of the 1.5-foot decrease or 2000 ppm increase was due to the pump test, Cal-Am was to not re-start the pump test until it obtained an amendment to the permit.

The requirements of the existing **Special Condition 11** were based largely on modeling data provided by Cal-Am and the HWG showing the expected hydrogeologic characteristics within the Basin aquifers and the expected effects of Cal-Am's pump tests. The modeling indicated that pump testing would not have significant effects on local or regional groundwater users, including the closest agricultural users of the Basin's groundwater supply. This was due to a number of factors, such as:

- **The extent of existing seawater intrusion in the Basin:** The test well would be located at a site on the shoreline where seawater had already intruded several miles inland and near the middle of several miles of shoreline under which seawater intrusion was occurring (see Exhibit 3). The model also showed that the well's "capture zone" – i.e., the area from which it would draw water – when operating at a much higher volume than the pumping test was almost entirely contained within the area already subject to seawater intrusion, so the well was not expected to pull in more than a *de minimis* amount of freshwater from further inland areas of the Basin (see Exhibit 4 – Modeled Particle Tracking).
- **The pump test's comparatively small withdrawal volumes:** The pump test would withdraw up to about 2,000 – 2,500 acre-feet per year, which represented only about 0.1 percent of the Sub-Basin's groundwater storage volume and less than 2% of recent pumping rates of over 100,000 acre-feet per year from more inland areas of the Sub-Basin.
- **The distance between the test well and the nearest active agricultural wells:** At the time of the Commission's approval, the closest known agricultural well was about 5,000 feet from the test well. Using the test well's proposed pumping rate, modeling showed that the pump test's cone of depression would reduce groundwater levels by approximately four inches at about 2,500 feet from the well, evidencing that any groundwater level decrease resulting from the pump test would be non-detectible at the additional 2,500-foot distance to the closest agricultural well.

Nonetheless, to ensure the test well did not have any potentially significant effect on agricultural uses in the Basin, the Commission imposed the above-referenced monitoring, threshold, and analysis requirements of **Special Condition 11**.

In early 2015, Cal-Am installed the approved test well and associated infrastructure, including three new onsite monitoring well clusters and equipment, as well as new monitoring equipment in an existing onsite CEMEX well. Starting in February 2015, it also collected monitoring data, including before, during, and after its initial pump test, which ran from April 22, 2015 to June 5, 2015, and posted the required weekly monitoring reports, along with several technical memoranda from the HWG, at its project website (available at

http://www.watersupplyproject.org/#!test-well/c1f1l). Cal-Am has also monitored several existing offsite wells and more recently installed Monitoring Wells 7, 8, and 9 off-site, as shown on Exhibit 1.

On June 5, 2015, Cal-Am stopped the pump test when it detected that water levels in Monitoring Well 4 were dropping to near the 1.5-foot threshold. The HWG reviewed the data from the monitoring wells and concluded that although the decrease was due almost entirely to regional influences such as seasonal agricultural pumping, a small amount – possibly 0.2 to 0.3 feet of the decrease – could be due to the pump test. While this decrease was within the range predicted from the hydrogeologic modeling and was small enough to not affect the closest agricultural wells, it was enough to trigger the requirement of **Special Condition 11** that Cal-Am not re-start the pump test until it received a permit amendment address this issue.

Proposed Condition Modifications: On July 27, 2015, Cal-Am submitted its initial application to amend **Special Condition 11**, which it later revised on September 23, 2015 (see Exhibit 5). Cal-Am's primary proposed modification to **Special Condition 11** is to allow the HWG and Executive Director to consider regional influences as part of determining whether the effects of the project pump tests are extending to agricultural wells – that is, rather than consider the 1.5-foot and 2000 ppm thresholds as static values at a single location, they would be considered in context with other changes being observed in the network of monitoring wells. As shown through the ongoing monitoring Cal-Am has conducted this year, other wells in the Basin and Sub-Basin and some distance outside the area influenced by the test well exhibit substantial changes due to regional influences, such as municipal groundwater pumping, seasonal agricultural uses, changes in rainfall and streamflow, and others. As noted above, for example, wells up to several miles away from the test well have experienced a 17- to 20-foot decrease in water levels, which the HWG identified as part of a regional trend that coincided with increased seasonal agricultural pumping.

The proposed condition modifications specifically acknowledge these regional influences and direct the HWG and the Executive Director to consider them in their analyses. The 1.5-foot and 2000 ppm thresholds remain the same and are measured at the same location in MW-4, but the proposed condition provides that they are now to be compared to observed regional trends in increases or decreases in groundwater or TDS levels. For example, if the MW-4 groundwater levels were to decrease in concert with a similar decrease observed as a regional trend, the MW-4 decrease would not be caused by the pumping test. If the MW-4 decrease was at least 1.5 feet more than the observed regional trend, it would suggest the pumping test was causing the additional decrease, and the pumping test would be stopped to more closely observe the data and determine what portion of the decrease exceeded the regional trend and was attributable to the pump test.

The several months of monitoring data collected earlier this year also allow the HWG to identify regional trends and distinguish them from changes resulting from the pumping test. For example, Exhibit 6 illustrates several months of groundwater level monitoring at MW-4 and several other monitoring wells located closer or further than MW-4 from the test well and show those levels before, during, and after the April-June 2015 pumping test. It is evident from the data shown on Exhibit 6 that the groundwater levels at the two monitoring wells closest to the

test well – MW-1 and MW-3 – respond strongly to the pump testing, while the more distant wells, including MW-4, show a response to the generally downward regional trend in groundwater levels during the monitoring period but a *de minimis* or no response to the pump testing. Should a groundwater level decrease during the pumping test similar to that observed at MW-1 and MW-3 propagate as far as MW-4, it would be evident in the monitoring data, and should that decrease be more than 1.5 feet greater than the observed regional trend, it would likewise be evident in the monitoring data.

Further, the proposed condition requires that should such a decrease be observed, the pumping test must stop and the monitoring data evaluated. This provides an additional safeguard because the ongoing monitoring at MW-4 would show whether there is a "rebound" of groundwater levels after the pumping test stops, indicating that the pumping test is influencing those levels as far away as MW-4. Conversely, if there is little or no change in the observed downward trend at MW-4 after the pumping test stops, such monitoring would indicate that the groundwater levels are being affected by regional influences other than the pumping test.

Commission Independent Review: During its initial November 2014 project review and permit approval, the Commission heard several concerns about the accuracy and independence of Cal-Am's and the HWG's review, some of which continued during this current review. In recognition of those concerns, the Commission conducted its own review by using an independent licensed hydrogeologist to evaluate relevant Cal-Am and HWG modeling and monitoring data and to assess Cal-Am's proposed modifications to **Special Condition 11**.[11]

Exhibit 7 provides the technical memorandum prepared by the independent licensed hydrogeologist. It responds to several questions raised by the Commission, including:

- Is Cal-Am's proposed permit modification sufficient to protect agricultural water users in the Salinas Valley Groundwater Basin ("SVGB") from reductions in groundwater availability or quality?
- Is the proposed condition adequately protective of nearby or regional agricultural users, given the characteristics of the SVGB's multiple aquifers and subareas – e.g., semiconfined aquifers, tidal influence, etc.?
- Is the proposed condition adequately protective, given the inland extent of seawater intrusion in the area?
- Would a sustained drawdown of less than 1.5 feet at MW-4 caused by the test well result in cumulative adverse impacts to the SVGB?

A summary of the independent review's conclusion includes:

- The main proposed revision to **Special Condition 11** – comparing the change in groundwater levels and TDS concentrations to the change in regional trends instead of using fixed values – is appropriate for identifying and preventing potential impacts to inland groundwater users.

[11] To conduct this review, the Commission obtained the services of William McIlvride, a senior project hydrogeologist with Weiss Associates. Mr. McIlvride is a California-licensed hydrogeologist with expertise in groundwater modeling and evaluation who had not previously been involved with the Cal-Am or HWG work efforts. Mr. McIlvride's resume is provided as part of Exhibit 7.

- The pumping test will not cause significant effects on the groundwater basin inland of Monitoring Well 4. This is supported by monitoring results that indicate the pumping test is drawing more water than predicted from beneath the Monterey Bay seafloor and shoreline than from inland, and the fact that the potential for impacts decreases as the distance to inland groundwater users increases.
- Monitoring results indicate that conducting the pumping tests at Cal-Am's proposed pumping rates would not cause any measurable effect on the nearest agricultural groundwater users.

The Commission's independent review also determined that the Cal-Am and HWG modeling was conservative in that it had predicted larger drawdown levels from the pumping test than have been identified through monitoring. For example, the model had predicted a drawdown of about one to 1.5 feet at MW-4 whereas monitoring at MW-4 shows no drawdown from the pump test in the Dune Sand Aquifer and just a 0.25-foot drawdown in the 180-Foot Aquifer. Similarly, the model had predicted a much larger capture area than is indicated by the monitoring, indicating that the areas inland of the test well that are influenced by the pump test are smaller than predicted.

The review also provided several recommendations regarding monitoring and data collection. For example, Cal-Am initially proposed modifying **Special Condition 11** so that Cal-Am could average the monitoring data taken from the Dune Sand Aquifer (i.e., from MW-4S) and from the 180-Foot Aquifer (from MW-4M). However, the review identified some degree of hydraulic separation at this location between the two aquifers – for instance, as illustrated by the above-referenced 0.25-foot difference in drawdown levels between the two – and therefore recommended that considering the results from MW-4S and MW-4M separately would be more conservative. This recommendation is reflected in Cal-Am's current proposed condition, which does not include the initially proposed averaging.

The review also evaluated data from one of the newer monitoring wells, MW-7, that appears to show higher groundwater levels than expected from the model. When conferring with Cal-Am, Cal-Am noted that the MW-7 elevation had not yet been surveyed, and the Commission's review recommended this be completed and the data adjusted as necessary to reflect the survey results. Cal-Am confirmed that it would soon be conducting the recommended survey work.[12]

[12] Personal communication between Commission staff, William McIlvride, Cal-Am staff, and the HWG, September 18, 2015.

C. COASTAL AGRICULTURE

LCP Policy 28 states:

> *To support agricultural use in the Coastal Zone.*

LCP Policy 29 states:

> *To provide incentives to retain agricultural activities within the Coastal Zone.*

The LCP requires that agricultural uses be supported in the coastal zone. There are no agricultural operations within the City's LCP jurisdiction, but other nearby coastal agricultural operations are heavily reliant on groundwater from the aquifers used by the test well. The Commission's initial approval of **Special Condition 11** was meant to ensure that aquifer drawdowns or reduction in water quality that might result from the pump test would not propagate to the closest agricultural wells. In its November 2014 approval, the Commission found that the location from where the test slant well would withdraw groundwater and the amount of groundwater it would withdraw during the pumping test would not result in significant effects on coastal agriculture, including the closest identified agricultural well about 5,000 feet from the test slant well. The Commission added **Special Condition 11** to ensure no potential for significant effects on agriculture even though the pumping test would not significantly or adversely affect water supply or water quality for agricultural uses.

As noted above, the Commission's initial review in November 2014 considered Cal-Am's modeling data showing that the test well's expected "cone of depression" – that is, the area in which groundwater levels are lowered due to this water withdrawal – would extend to about 2,500 feet from the well, where the drawdown was expected to be about four inches. Additionally, the modeled "capture zone" of the well did not extend as far inland as the mapped areas of seawater intrusion, which provided further assurance that the pump test would draw in primarily seawater and not adversely affect agricultural uses further inland. The closest known active agricultural well was approximately 5,000 feet from the test slant well, which is more than twice the distance between the test slant well and MW-4. The modeling results suggested that detecting the changes identified in **Special Condition 11** at MW-4 and stopping the pumping test to evaluate the data would prevent any effects of the pumping test from propagating to the closest agricultural well or other offsite locations. In addition, given the relatively small amount of water to be pumped during the pumping test as compared to the storage volume of the Basin and the pumping volumes of inland agricultural uses, along with the distance from the test well to any active agricultural wells, the Commission found that the project will not adversely affect coastal agriculture.

Effects of modified permit condition on coastal agriculture

Since the Commission's November 2014 permit approval, the project has benefitted from several new sources of information, including extensive monitoring data from before, during, and after pump test operations. As described in Section IV.B of these Findings, review of that data and the modeling done for the project by Cal-Am, the HWG, and the Commission's independent review, show that the initial modeling that served as the basis for the initial **Special Condition**

11 was a conservative representation of groundwater capture by the test slant well. Those monitoring data have also helped identify the substantial regional influences on the groundwater basin, such as municipal or agricultural groundwater use, that result in more significant changes inland of areas influenced by the pumping test. The proposed amended **Special Condition 11** therefore provides that monitoring results for the pumping test be considered in context of those regional influences. Therefore, for all of the reasons and supporting evidence described above, the Commission finds that amended Special Condition 11 continues to ensure that the pumping test does not result in the potential for significant effects on coastal agricultural uses.

Conclusion

For the reasons described above, the Commission finds that the amended development is supportive of coastal agriculture and is therefore consistent with relevant provisions of the LCP.

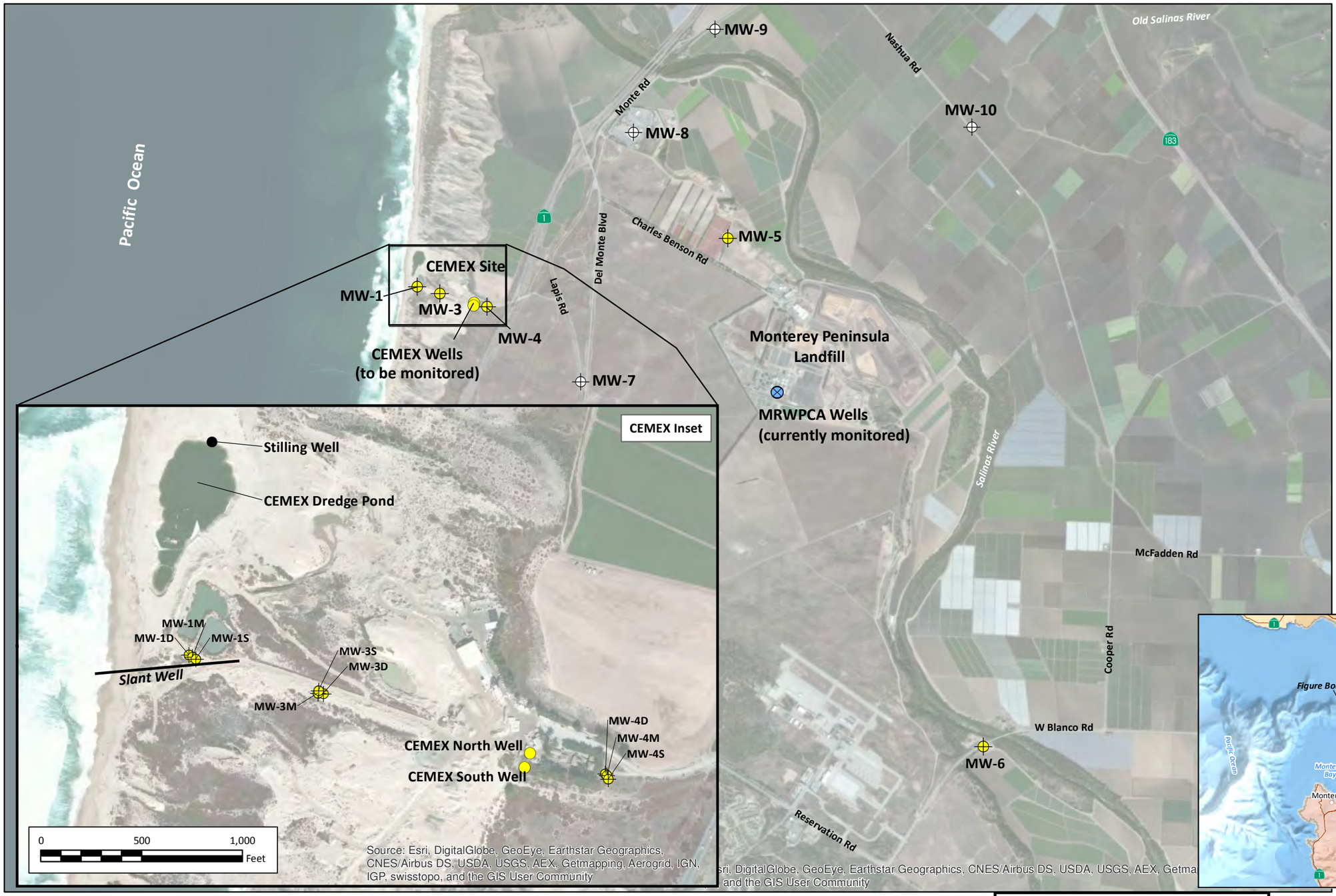
V. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096(a) of the Commission's administrative regulations requires Commission approval of coastal development permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant adverse effect which the activity may have on the environment. The Commission's review of the project showed that it will not have any significant or potentially significant effects on the environment and therefore no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment.

CALIFORNIA AMERICAN WATER

MONTEREY PENINSULA WATER SUPPLY PROJECT

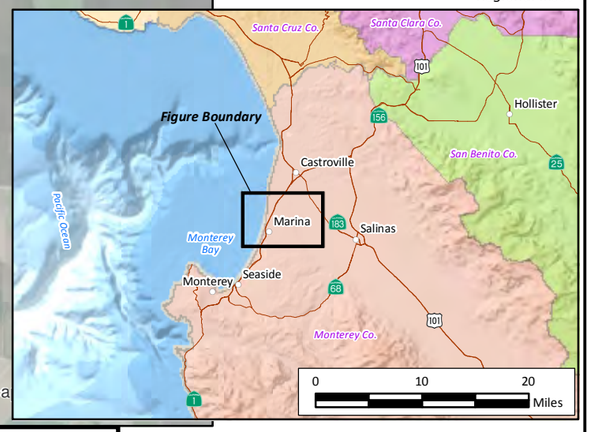
WELLS MONITORED FOR PERMIT COMPLIANCE



EXPLANATION

- Existing Monitoring Well Cluster
- Proposed Monitoring Well Cluster
- Existing Production Well
- CEMEX Wells
- Slant Well

Regional Inset



15-Apr-15

Prepared by: DWB. Map Projection: State Plane 1983, Zone IV.

NORTH

0 1,500 3,000 6,000 Feet

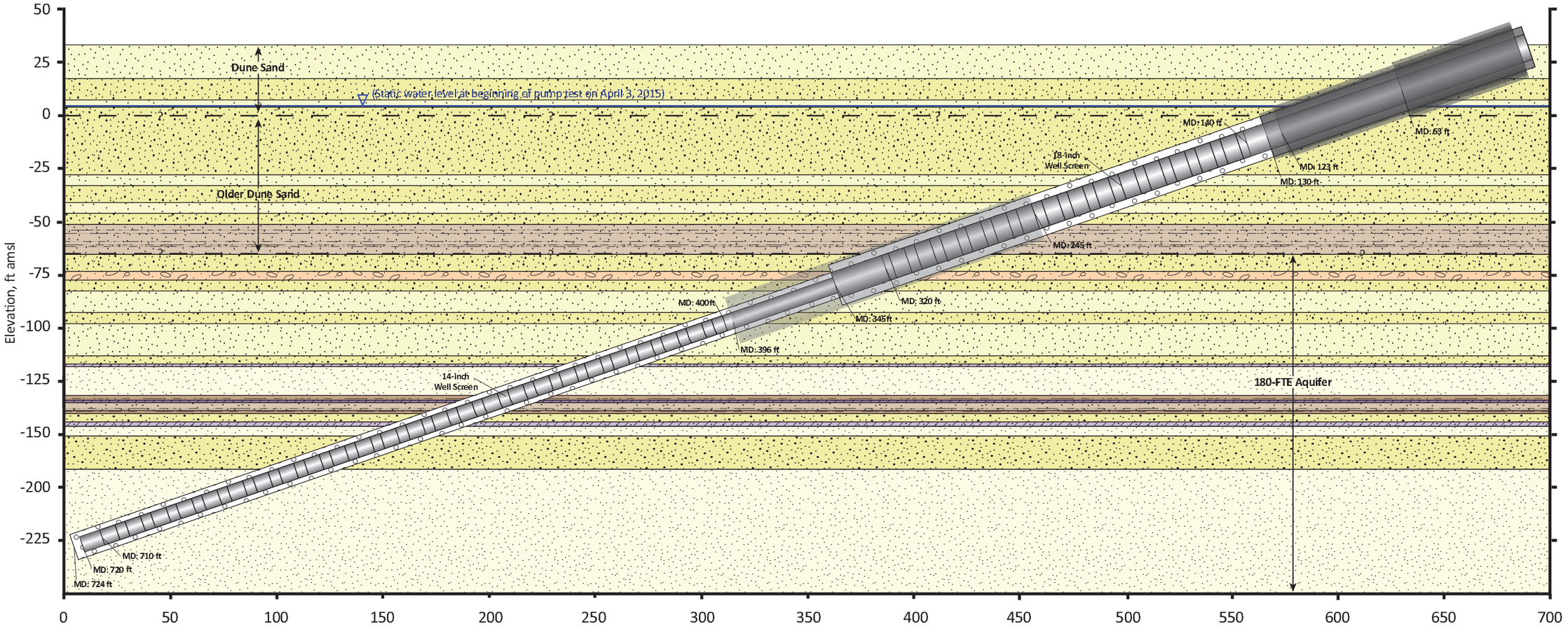
EXHIBIT 1
9-14-1735-A1 /
A-3-MRA-14-0050-A1

GEOSCIENCE
GEOSCIENCE Support Services, Inc.
P.O. Box 220, Claremont, CA 91711
Tel: (909) 451-6650 Fax: (909) 451-6638
www.gssiwater.com

Figure 1-1

GIS_proj/mcwsp_cal_am/rbf_wl_monitoring/Monitoring_Rpt_No4_4-6-15/1_Fig_1-1_MonWells_used_4-15-15.mxd

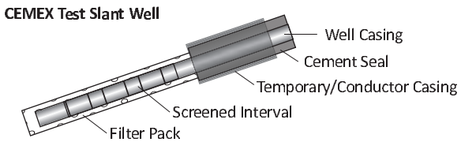
(WEST) (EAST)



Explanation

- Sand with Gravel (SP)
- Sand with Silt (SP-SM)
- Fine to Coarse Grained Sand (SP)
- Silt or Silt with Sand (ML/SM)
- Fine to Medium Grained Sand (SP)
- Clayey Sand (SC)
- Fine Grained Sand (SP)
- Clay (CL)
- — ? — Geologic Contact (approximate)

CEMEX Test Slant Well



MD = Measured (Lineal) Depth

EXHIBIT 2
9-14-1735-A1 /
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0 50 100
Approximate Scale Feet

DRAFT

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CALIFORNIA AMERICAN WATER

CEMEX TEST SLANT WELL LITHOLOGY

Drawn: LC
Checked:
Approved:
Date: 15-Apr-15

Figure 1-3

X:\Projects\MONTEREY AREA DESAL STUDIES\01a) Test Slant Well Project\0) Baseline Data TM\Fig_1-3_x-section_SlantWell_Apr-15.ai

Document Path: BCSAC01\\bcsac01\projects\46000\146430 - Salinas Valley GW Study - Simulation\GIS_MAPDOCS\WORKING\StateoftheBasin\FigES-6_ShallowCl_20141210.mxd

EXHIBIT 3
9-14-1735-A1 /
A-3-MRA-14-0050-A1

Legend

2013 Seawater Intruded Area Extent
(500 mg/L Chloride Concentration Contour)

Seawater Intruded Areas by Year

- 1944
- 1965
- 1975
- 1985
- 1993
- 1997
- 1999
- 2001
- 2003
- 2005
- 2007
- 2009
- 2011 - 2013

Note: The location and water quality data associated with groundwater wells monitored by the Monterey County Water Resources Agency are confidential per agreement between well owners and the Agency, and as such are not shown on map.

SITE
Salinas River Groundwater Basin Investigation

TITLE
Pressure 180-Foot and East Side Shallow/Both Aquifer Chloride Contours - 2013

Brown AND Caldwell

DATE 12/10/14

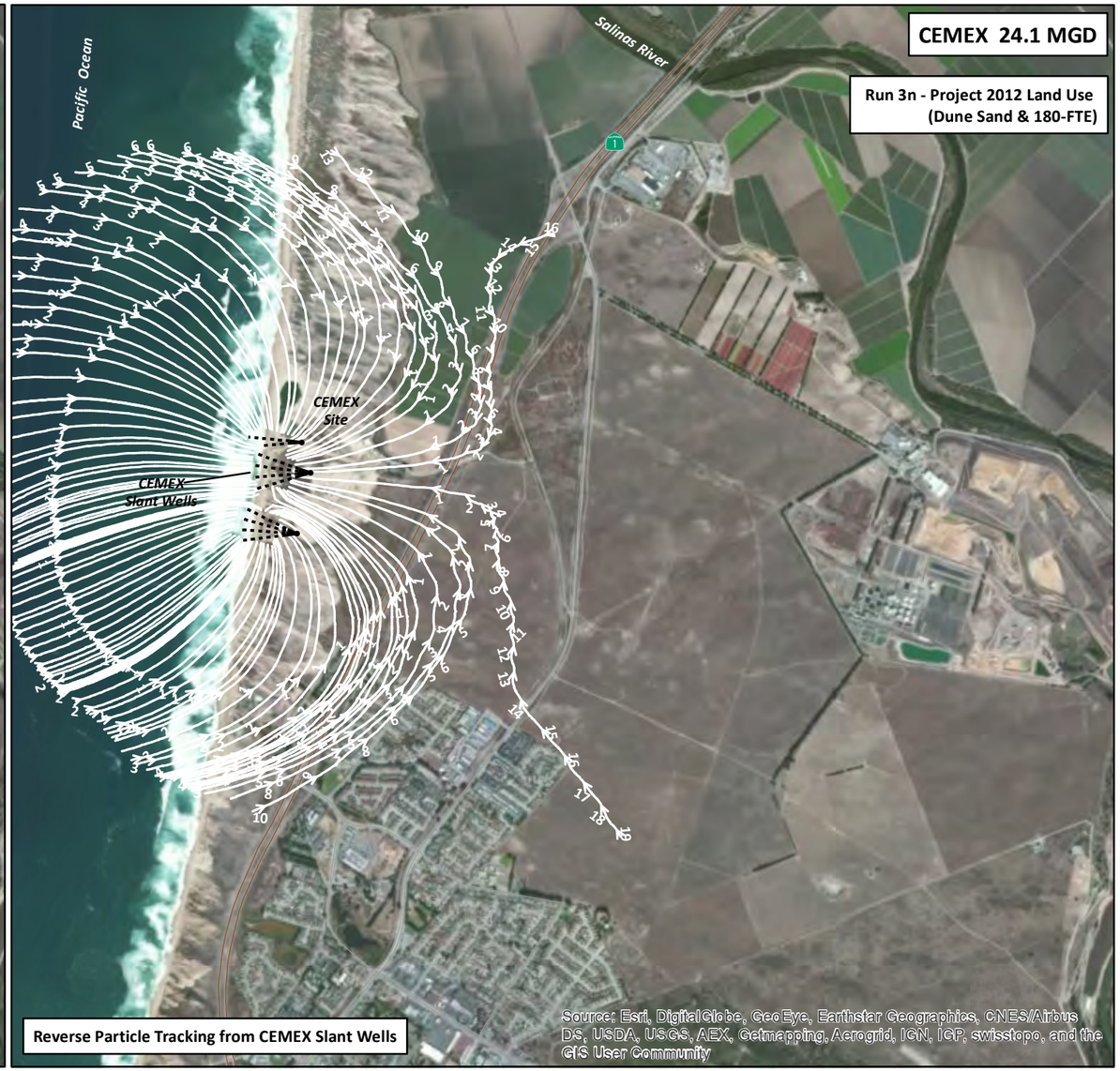
PROJECT 146430

Figure ES-6

N

0 1

Miles



EXPLANATION

white line — Particle Travel Path

white arrow — Direction of Particle Travel and Travel Time (1 Year Increments)

Slant Wellhead
Blank Casing
Well Screen

CEMEX Slant Wells - Configuration A
(Feedwater Supply of 24.1 MGD)
(See Figure 47 for Detailed Slant Well Layout)

Note: 180-FTE = 180-Foot Equivalent Aquifer

NORTH
0 2,500 5,000 Feet

Run 1n - Baseline (No Project)
2012 Land Use

Run 3n - Project 2012 Land Use
(Dune Sand & 180-FTE)

EXHIBIT 4
9-14-1735-A1 /
A-3-MRA-14-0050-A1

**PARTICLE TRACKING NEAR CEMEX SITE
NO PROJECT (RUN 1n) AND
CEMEX 24.1 MGD (RUN 3n)
180-FT/180-FTE AQUIFER**

17-Apr-15

Prepared by: DB. Map Projection: State Plane 1983, Zone IV.

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DRAFT

Figure 137

GIS_proj/mcwsp_cal_am/esa_TM_proj_modeling_9-14/14_Fig_137_Run1nRun3n_parttrack_CEMEX_180FTE_2panel_4-15.mxd

CALIFORNIA
AMERICAN WATER

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VIA EMAIL ONLY

September 23, 2015

Mr. Tom Luster
Senior Environmental Scientist
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105

Re: ***Application to Amend Coastal Development PermitsA-3-MRA-14-0050 and 9-14-1735***

Dear Mr. Luster,

In connection with California-American Water Company's July 23, 2015 application to amend Coastal Development Permits A-3-MRA-14-0050 and 9-14-1735, I have attached further proposed refinements to the language of Special Condition 11 for your consideration. Please let me know if you have any questions or would otherwise like to discuss.

Sincerely,

Andrew W. Homer

Cc: Ian Crooks
D.J. Moore

Attachment

Draft Special Condition 11:

Protection of Nearby Wells. PRIOR TO STARTING PROJECT-RELATED PUMP**ING** TESTS, the Permittee shall install monitoring devices at a minimum of four wells on the CEMEX site, within 2000 feet of the test well, and one or more offsite wells to record **ground**water and salinity levels within the wells and shall provide to the Executive Director the baseline **ground**water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well.

The **Permittee, in coordination with the** Hydrogeology Working Group**,** shall ~~establish the baseline water and TDS levels for the monitoring wells~~**identify groundwater elevation trends and TDS level trends in the groundwater basin resulting from regional influences such as groundwater withdrawals, rainfall events, increases or decreases in streamflow contributions, and other influences**. During the project pump**ing** tests, the Permittee shall, at least once per day, monitor **ground**water and TDS levels within ~~those~~**the monitoring** wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request.

The Hydrogeology Working Group shall review data from the monitoring wells and prepare a monthly report that shall be submitted to the Executive Director that documents the groundwater elevation trends and TDS level trends resulting from regional influences. If ~~water levels drop more than one-and-one-half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions~~ **during the pumping tests, data collected from Monitoring Well-4S ("MW-4S") or Monitoring Well-4M ("MW-4M") during any weekly monitoring period show either a decrease in groundwater levels that exceeds an identified decrease in regional groundwater level trends by 1.5 feet or more or show an increase in TDS levels that exceeds an identified increase in regional TDS level trends by two thousand parts per million or more,** the Permittee shall immediately stop the pump**ing** test and inform the Executive Director. The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the **pumping** test ~~well~~ is ~~shut down~~ **stopped** due to either of these causes.

If, based on the above review of monitoring data, ~~The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS levels from a cause or causes other than the test well, and it will submit its determination to the Executive Director. If the Executive Director agrees with the Hydrogeology Working Group that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then~~ the **Executive Director or the Hydrogeology Working Group determines that the pumping test caused, at MW-4S or MW-4M, either a decrease in groundwater level of 1.5 feet or more or caused an increase in TDS levels of two thousand parts per million or more in excess of identified regional trends,** then the Permittee shall not re-start the pump**ing** test until receiving an amendment to this permit**; otherwise, the Executive Director will permit the pumping test to resume.**

Groundwater Elevation in MPWSP MW-4S, MW-5S, MW-6S, MW-7S, MW-8S and MW-9S

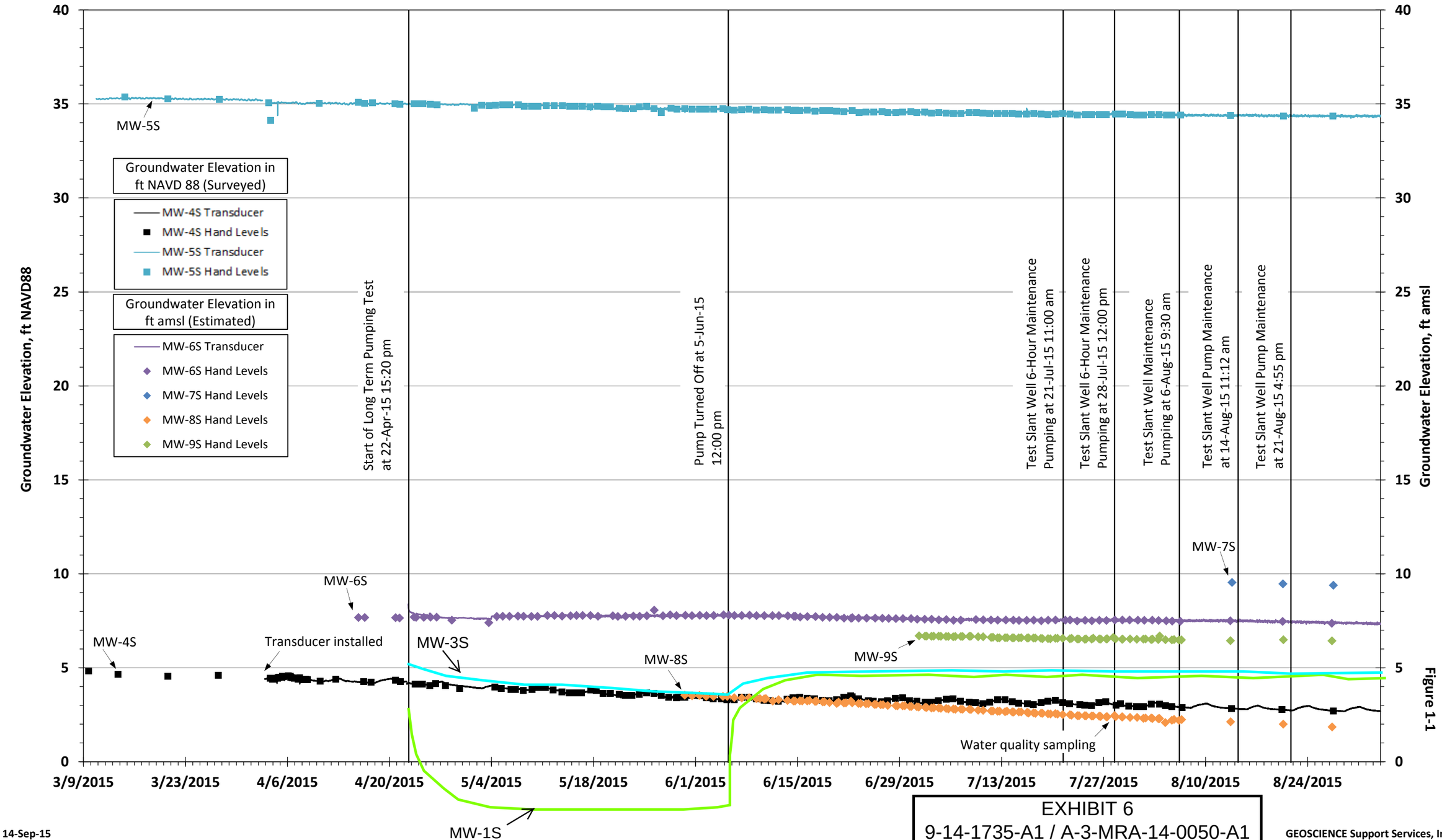

Figure 1-1

14-Sep-15

EXHIBIT 6
9-14-1735-A1 / A-3-MRA-14-0050-A1
Page 1 of 2

Groundwater Elevation in MPWSP MW-4M, MW-5M, MW-6M, MW-7M, MW-8M and MW-9M

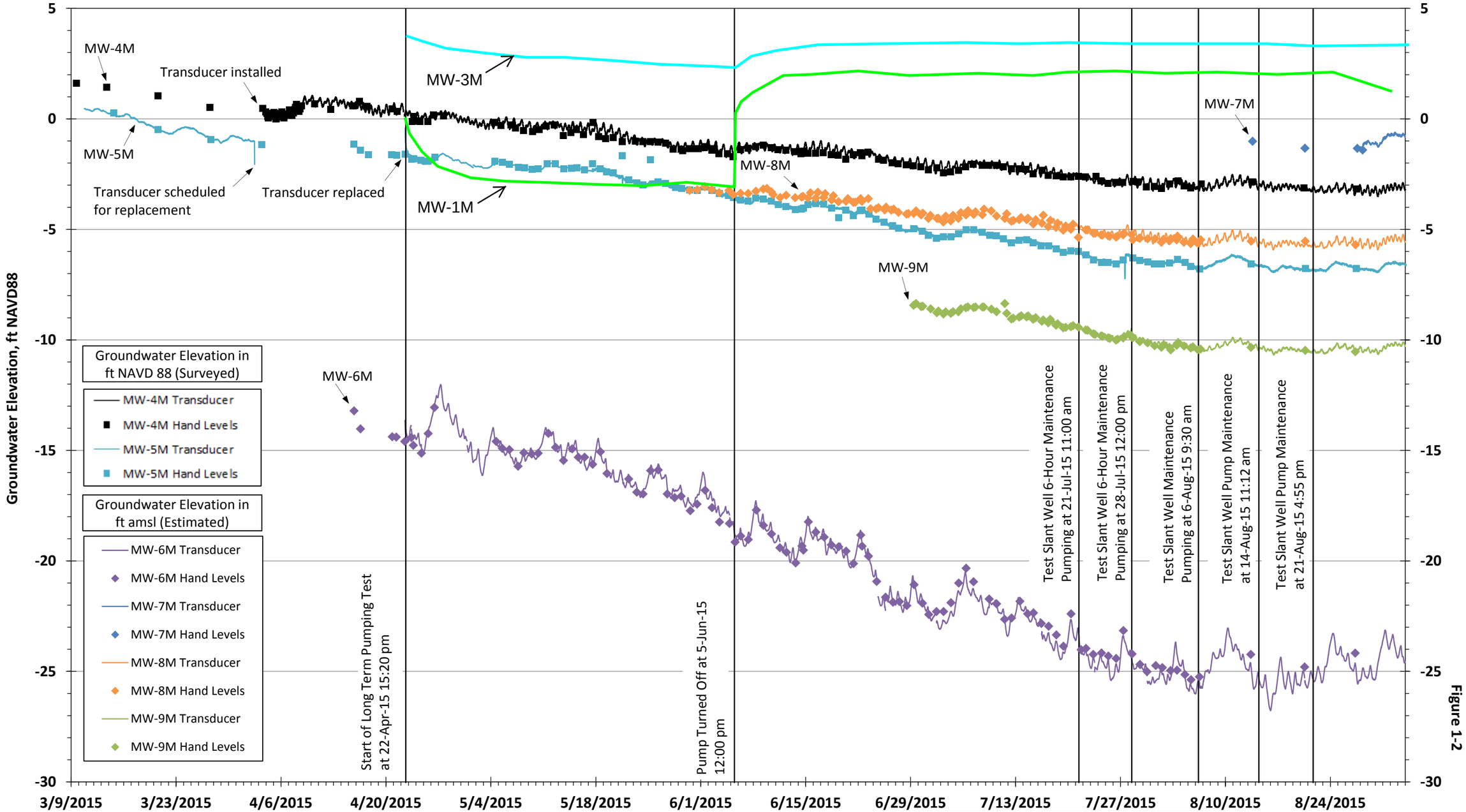

Figure 1-2

EXHIBIT 6
9-14-1735-A1 / A-3-MRA-14-0050-A1
Page 2 of 2

Weiss Associates Environmental Science, Engineering, and Management
2200 Powell Street, Suite 925, Emeryville, CA 94608-1879 Fax: 510-547-5043 Phone: 510-450-6000

September 23, 2015

Tom Luster
California Coastal Commission
45 Fremont Street #2000
San Francisco, California 94105

RE: Cal-Am Test Slant Well Independent Hydrogeologic Review
Weiss Job No. 466-2068

Dear Mr. Luster:

This report documents Weiss Associates (Weiss's) independent hydrogeologic review of proposed revisions to groundwater monitoring thresholds being used to determine whether a long-term pump test in a coastal portion of the Salinas Valley Groundwater Basin (SVGB) is affecting other groundwater users in the coastal portions of the SVGB. The pump test is being conducted by California-American Water (Cal-Am) at a test slant well (TSW) designed to extract predominately seawater as part of an evaluation of a desalinization plant proposed by Cal-Am

The project includes a Hydrogeologic Working Group (HWG), established through the California Public Utilities Commission, which developed a model and monitoring protocols for the TSW pumping test. The HWG also produces regular monitoring reports and technical memoranda related to the pumping test.

SUMMARY

Key findings of this review are detailed below.

The proposed revisions to the Cal-Am Coastal Development Permit Special Condition #11 groundwater monitoring thresholds, consisting of comparing groundwater levels and total dissolved solids concentrations at monitoring well MW-4 to regional groundwater and total dissolved solids trends, instead of the fixed values at the start of pumping, are appropriate for preventing potential impacts to agricultural groundwater resources further inland.

The monitoring results from MW-4 during the April to June 2015 test indicate that more water is entering the TSW from beneath the Monterey Bay sea floor and shoreline, and less from inland, then is indicated by the groundwater model results reported in July 2014 and April 2015. These results indicate negligible impact to the SVGB inland of monitoring well MW-4, with the probability of potential impacts decreasing with distance inland from that well.

The available data indicates that operating the TSW within the constraints of the revised groundwater monitoring thresholds would not be expected to cause any measureable effects on the nearest agricultural well, located approximately 5,000 feet inland from the TSW, or on wells farther inland.

BACKGROUND

In November 2014, Cal-Am received a Coastal Development Permit from the California Coastal Commission (Commission) authorizing construction and operation of the TSW along the shoreline of Monterey Bay within the CEMEX site in the northern part of the City of Marina. In early 2015, Cal-Am constructed the well and started its long-term pumping test, which is intended to provide data to determine whether the site is suitable for additional wells that would be used over the next several decades to provide source water for a proposed desalination facility.

The TSW is expected to draw predominantly seawater, either through the overlying Monterey Bay sea floor or from coastal areas of the SVGB where seawater has intruded some distance inland. However, the SVGB is also heavily used by nearby municipalities, regional agricultural interests, and water districts, and they are concerned that Cal-Am's test well and long-term proposed project will adversely affect their use of the Basin.

To ensure that the TSW would not adversely affect those interests, the Commission's permit included Special Condition #11, which requires Cal-Am to shut down its pump test if certain thresholds are reached in monitoring well MW-4, located about 2,000 feet from the test well. After pumping from April 22 through June 5, 2015, Cal-Am shut down the test because one of the thresholds, a 1.5-foot drop in water level in MW-4, was about to be exceeded. Cal-Am was therefore required to submit a determination from the HWG as to whether any part of the decreased water level was due to pumping at the TSW. Condition #11 also stated that if the Commission's Executive Director finds that any part of the decrease is due to the pumping test, Cal-Am is to submit an application to amend its permit and not re-start the test until receiving that amendment.

DOCUMENT REVIEW

Weiss reviewed the following documents, which in total constitute a progressive, iterative refinement of the conceptual site model of the hydrogeology of the TSW vicinity, and the hydro-geologic impacts of the TSW during pumping:

1. *Monterey Peninsula Water Supply Project (MPWSP) Hydrogeologic Investigation Work Plan* (December 18, 2013)
2. *Monterey Peninsula Water Supply Project Hydrogeologic Investigation Technical Memorandum (TM1) Summary of Results - Exploratory Boreholes* (July 8, 2014), and Appendix A1 – Borehole Lithologic Logs
3. California Coastal Commission, *Final Adopted Findings for Test Well Project* (November 12, 2014)

4. Declarations (2) of Curtis Hopkins (includes "State of the Salinas Groundwater Basin" (January 16, 2015))
    a. Declaration of Curtis Hopkins in Support of Marina Coast Water District's Motion for Stay and Preliminary Injunction (April 7, 2014)
    b. Reply Declaration of Curtis Hopkins in Support of Marina Coast Water District's Motion for Stay and Preliminary Injunction (April 24, 2014)
5. Section 4.4 of the MPWSP *Draft Environmental Impact Report (DEIR): Groundwater Resources* (April, 2015)
6. Appendix E2 of the *MPWSP-DEIR - Groundwater Modeling and Analysis* – DRAFT (April 17, 2015)
7. Technical Memorandum, *Monterey Peninsula Water Supply Project, Baseline Water and Total Dissolved Solids Levels - Test Slant Well Area* (April 20, 2015)
8. Hopkins Groundwater Consultants letter regarding HWG conclusions (June 25, 2015) (In a letter from Howard "Chip" Wilkins III of Remy Moose Manley LLP)
9. Appendix E1 of the *MPWSP-DEIR - Results of Test Slant Well Predictive Scenarios Using the CEMEX Area Model* – DRAFT (July 8, 2014)
10. HWG letters (June 10, 2015 [10a] and June 22, 2015 [10b])
11. California Coastal Commission staff letter, from Charles F. Lester, Executive Director, to Ian Crooks, Cal-Am (July 3, 2015)
12. Cal-Am permit amendment application (July 23, 2015)
13. *Test Slant Well Long Term Pumping Monitoring Report No. 18, 19-August-15 – 26-August-15* (September 1, 2015)

INDEPENDENT HYDROGEOLOGIC REVIEW

The questions and issues that the Commission requested Weiss to address in the independent review are shown below in bold text, followed by our opinions and findings. Reviewed documents are referred to by number from the list in the previous section.

<u>Primary question:</u> Is Cal-Am's proposed permit modification sufficient to protect agricultural water users in the Salinas Valley Groundwater Basin ("SVGB") from reductions in groundwater availability or quality? Stated another way, what is the scientific basis for using a 1.5 foot drawdown as the trigger for shutting down the well? Why will this ensure no adverse impacts to agricultural or groundwater resources? If 1.5 feet is not appropriate, what threshold would be suitable? Are there additional parameters that could be added to the condition that would ensure a proper methodology for establishing how to calculate regional groundwater elevation trends?

A reasonable scientific basis for setting the trigger drawdown level can be developed from the drawdown maps generated by groundwater modeling and through observations made during the operation of the TSW.

The CEMEX Model results[5] for Scenario 1, with a slant well angle of 19 degrees (essentially the same as the installed TSW angle of 18.7 degrees) and pumping 2,500 gallons per minute [gpm] indicate drawdown in the MW-4 area in the Dune Sand Aquifer on the order of 0.75 to 1-foot (Figures 4 through 6)[5], and in the 180 FT/180 FTE Aquifer on the order of 1.25 feet (Figures 7 through 9)[5].

A similar analysis can be used to estimate impacts to agricultural or groundwater resources inland of monitoring well MW-4 in the SVGB – the Scenario 1 drawdown contours indicate 0.5 foot of drawdown occurring approximately 5,000 feet inland of the TSW in both the Dune Sand and the 180-Foot Aquifers.

The above estimates are consistent with an extrapolation of the results from the North Marina Groundwater Model[6] reported in April 2015, which models pumping at 24.1 and 15.5 million gallons per day from the full array of slant wells for the completed project. The estimates should be verified by running the models with pumping at 2,000 gpm from the TSW.

While this analysis is one approach, the results from pumping so far, although at a rate of 2,000 gpm (80 percent of the modeled rate of 2,500 gpm) indicates no drawdown in MW-4S, and 0.25-foot in MW-4M. This is far less than predicted by the models, even taking the lower pumping rate into account. This indicates that the models are a conservative representation of groundwater capture by the TSW (i.e., the capture area shown by the models is much larger than indicated by the TSW pumping results), and suggests that there is better hydraulic connection between the sea and the TSW than is represented by the models. This indicates that more water is being captured from the seaward side of the TSW, and less from the landward side, than is indicated by the models.

Given that a 1.5-foot decrease in water levels at monitoring well MW-4 will equate to progressively smaller decreases inland, of magnitudes that are only a small fraction of the regional water level fluctuations that are on the order of several feet, this parameter appears to be a reasonable threshold to prevent potential impacts to agricultural or groundwater resources further inland. However, because of the inherent uncertainties in the model and subsurface conditions, additional monitoring is indicated. Monitoring water levels in wells MW-5 through MW-9, as is proposed by Cal-Am, will provide additional data to document any possible impacts beyond MW-4. We concur that electrical conductivity (used to calculate total dissolved solids) should continue to be monitored in all wells to demonstrate any potential capture of fresh water, or augmentation of seawater intrusion, by the TSW. We also recommend that all wells, including MW-7, be instrumented to collect calibrated water level and electrical conductivity data.

<u>Additional questions:</u> Coastal Commission staff also received comments regarding potential pump test effects on other components of the SVGB, which raise additional questions, including:

1. **Is the proposed condition adequately protective of nearby or regional agricultural users, given the characteristics of the SVGB's multiple aquifers and subareas - e.g., semiconfined aquifers, tidal influence, etc.?**

   The response to the Primary Question addresses this question.

2. Is the proposed condition adequately protective, given the inland extent (several miles) of seawater intrusion in the area?

The response to the Primary Question addresses this question.

3. Would a sustained drawdown of less than 1.5 feet at MW-4 caused by the test well result in cumulative adverse impacts to the SVGB?

As described in the response to the Primary Question above, modeling results[5] indicate no cumulative adverse impacts to the SVGB. Data from TSW pumping so far indicates that the models are conservative representations of the potential impacts. The drawdown of approximately 0.25-foot in MW-4 during the April to June 2015 test, and similar recovery after pumping stopped, stabilized at this value within one to two weeks. This indicates that steady-state or near steady-state flow conditions were achieved during the test. As stated by the HWG[12] in Cal-Am's proposed amendment to Special Condition #11, while an approximation, the distance-drawdown analysis indicates little if any influence of TSW pumping landward of MW-4. In addition, the groundwater elevation record for MW-4 shows the weekly cycle pattern (with less pumping on Sundays) in all three wells (S, M, and D) as referred to by the HWG[12] in its proposed amendment to Special Condition #11. The amplitude of these weekly cycles is on the order of 0.2-foot in MW-4S and MW-4M, almost as much as the 0.25-foot of drawdown and recovery in MW-4M from the April to June TSW pumping period. This indicates that the Dune Sand Aquifer is responding more to regional influences than it is to pumping at the TSW. Should the models be revised to reflect these observed conditions, it is likely that model runs will show even less potential impact to the SVGB than the already negligible impact shown by the current models.

4. Would Cal-Am's pumping eliminate or reduce the expected benefits of the lower coastal pumping rates being used in the SVGB to managed seawater intrusion?

Benefits of the seawater intrusion management program include: (1) lower pumping costs from a higher fresh water head/water table, and (2) improvement in groundwater quality, or at least a lessening of the rate of salinity increase. As described in the responses to the questions above, the monitoring data indicate that it is unlikely there will be any impact to the SVGB inland of MW-4, and potential impacts decrease with distance inland from that well. Therefore we would not foresee any reduction in the expected benefits of the seawater intrusion management program.

Regarding water quality, to the extent that the TSW captures any of the brackish groundwater currently present in the area landward of the TSW, the salt water/fresh water interface will migrate seaward. This should result in improvements to water quality in the areas of the SVGB that are influenced by the TSW, due to seaward migration of fresher water.

RELATED ISSUES

MW-7 Water Elevations

The August and September 2015 monitoring data show a seaward component of the groundwater gradient in the Dune Sand, the 180-Foot, and 400-Foot Aquifers between MW-7 and MW-4. This condition contradicts the general conceptual site model that water levels in the 180-Foot

and 400-Foot Aquifers decrease landward from the coast, and suggests the presence of a groundwater divide east of the project. Higher water levels in the Dune Sand Aquifer have previously been measured and documented in MW-5[13] so the conditions in MW-7 for that aquifer are not unexpected. However, the data for the 180-Foot and 400-Foot Aquifers at MW-7 should be considered preliminary, as the elevation of this well has not been determined by a referenced land survey. Cal-Am plans to conduct a survey and double-check the elevation data in MW-7 as appropriate. If the new survey confirms that the current understanding of the MW-7 groundwater elevations is correct, future revisions of the groundwater models should take this condition into account. If a groundwater divide is indeed present, it may tend to serve as a barrier that further mitigates the already negligible potential effects of TSW pumping from propagating inland.

Hydraulic Separation of Dune Sand and 180-Foot Aquifers in the TSW Area

The HWG analysis[12] states on Page 5 that *"the Dune Sand Aquifer (represented by MW-4S) and 180-FTE Aquifer (represented by MW-4M) at the CEMEX site are in hydraulic communication due to the lack of a separating aquitard..."*, and this was one of the reasons given for potentially averaging the Dune Sand and 180-FTE Aquifer water levels to compare with the 1.5-foot drawdown threshold. However, there is some degree of hydraulic separation at this location, given that MW-4S did not respond to TSW pumping, and MW-4M showed a drawdown of 0.25-foot during TSW pumping. Therefore, applying the 1.5-foot drawdown threshold to these aquifers separately, instead of averaging the two, is a more conservative approach.

CLOSING

Weiss Associates work at the California-American Water test slant well site and vicinity was conducted under my supervision. To the best of my knowledge, the data contained herein is true and accurate, based on what can be reasonably understood as a result of this project while satisfying the scope of work prescribed by the client for this project. The data, findings, recommendations, specifications, and/or professional opinions were prepared solely for the use of the California Marine Sanctuary Foundation and the California Coastal Commission in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of the contents herein.

Sincerely,
Weiss Associates

William A. McIlvride

William A. McIlvride, PG, CEG, CHG
Senior Project Hydrogeologist

WAM/mlm
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William A. McIlvride, PG, CHG

Senior Project Hydrogeologist

Weiss Associates

Technical Skills

Hydrogeological Investigation

Groundwater modeling

Environmental Investigations

Years of Experience

Industry: 24+ years
Weiss Associates: 22 years

Education

M.S., Geology, 1982, Emphasis on groundwater and surficial geology, University of Massachusetts, Amherst, Massachusetts

B.A., Geology And Geography, 1976, Magna Cum Laude, Boston University, Boston, Massachusetts

Registration

PG, No. 4359, California
CEG, No. 1359, California
CHG, No. 970, California

Affiliations

Association of Ground Water Scientists and Engineers

American Geophysical Union

Publications/ Presentations

Authored or co-authored more than 50 technical reports for client submittal to regulatory agencies. Has made numerous presentations at technical conferences.

Bill is a Certified Hydrogeologist in California with more than 24 years of professional experience in hydrogeological and environmental investigations.

Representative Projects

Hydraulic Testing and Groundwater Modeling, *Central Valley, California* - Supervised and interpreted a series of pumping and slug tests and modeled groundwater flow and chloroform and hexavalent chromium fate and transport with MODFLOW and MT3DMS to refine the site conceptual model and develop multiple remedial options for a feasibility study.

Water Resources Investigation, *Napa County, California* – Evaluated hydrogeology of a coast range bedrock terrane, and designed and supervised hydraulic and water quality testing in three production wells. Analyzed results and determined long-term sustainable production.

Groundwater Resource Investigation and Development, *Haifa, Israel* - Conducted hydrogeologic survey of a fractured dolomite aquifer affected by salt-water intrusion, developed a conceptual model for a fresh-water irrigation water supply well, supervised pilot well hydraulic testing, and designed the successful production well.

Hydrologic Assessment, *Hilazon Basin, Israel* - Conducted field studies, reviewed technical reports, and produced a comprehensive hydrologic analysis and feasibility study of a complex estuarine site, located at the confluence of a large ephemeral stream and a smaller perennial, spring-fed stream, subject to massive commercial and residential development. Coordinated with developers, government agencies and technical consultants to develop a basis for protection and restoration of historic Crusader-and Ottoman-era water-powered grain mills, with modification of development to preserve a historic holy site.

Groundwater and Soil Contamination Investigation and Corrective Action, *Lawrence Livermore National Laboratory – Site 300, Tracy, California*

Developed and presented a proposal that won against eight competitors to provide hydrogeologic site investigation and cleanup of a research and explosives testing facility. It contained landfills, USTs, abandoned disposal wells, lagoons, and burn pits, with contaminants including tritium, fuels, solvents, and high explosive compounds. Work included oversight of investigation, hydraulic testing, modeling, and production of final report for regulatory approval. The client, pleased with progress on the project, doubled the original scope of work within the first year, and has retained the project team for more than 20 years.

Groundwater Supply—Protection and Development, *Lawrence Livermore National Laboratory – Site 300, Tracy, California*

Discovered a threat to a water supply well in a deep bedrock aquifer. Groundwater was flowing down an abandoned well from a contaminated, shallow alluvial aquifer to the deeper aquifer. Supervised well abandonment, alternative pumping, hydraulic testing and installation of a new 500-ft-deep double-cased well to assure an uninterrupted 300-gpm supply of clean water.

Remedial Investigation/Feasibility Study, Superfund Site, *Santa Clara, California*
Directed a groundwater and soil contamination investigation, feasibility study, and remedial action. Defined plume with monitoring wells and distinguished it from plumes at neighboring sites by mapping individual chlorinated hydrocarbon compounds and their breakdown products. Modeled groundwater flow, and sited and installed extraction wells. Supervised UST removal, installation of an extraction sump at the contaminant source, and treatment with granular activated carbon and air stripping. Prepared a risk assessment and RI/FS report and presented findings to California and EPA regulators, guiding them to deselect the most costly, and unwarranted, remedial options for the site. This site was the first of about 40 Superfund sites in Silicon Valley to reach a Record of Decision.

Quarry Dewatering Impact Evaluation, *Western New York* - Analyzed hydraulic test data from quarry dewatering operations, developed a hydrogeologic conceptual model, and modeled a range of scenarios to estimate impacts of quarry dewatering to neighboring residential wells.

Bioremediation of Contaminated Sediments, *Federal Facility, Pennsylvania*
Supervised field-scale pilot testing of augmented bioremediation to treat PCB, PAH, metal, and pesticide in a 2,000-foot segment of a storm water drainage ditch.

Professional History

2000–Present **Senior Project Engineering Geologist**, *Weiss Associates, Emeryville, California*—Conduct and supervise water resource and groundwater, soil, and soil vapor contamination investigations and evaluations. Write and review RI/FS reports. Analyze hydrogeologic systems and manage innovative technology remediation projects.

1990–1999 **Director, Grounds Department**, *Baha'i World Center, Haifa, Israel*— Evaluated water resources, conducted hydraulic testing, determined hydrogeologic impacts of development projects, and supervised a landfill closure. Supervised 70-person engineering and horticultural staff maintaining 120 acres of formal gardens.

1986–1990 **Senior Project/Principal Hydrogeologist,** *Weiss Associates, Emeryville, California*—Managed EPA-Superfund and RCRA site investigations and cleanups including the first in site in Silicon Valley to achieve a ROD, and the first approved for monitored natural attenuation. Completed numerous Phase I and Phase II investigations involving landfills, property transfers, USTs, and liability determinations.

1983–1986 **Staff/Project Hydrogeologist,** *Weiss Associates, Emeryville, California*—Supervised and performed pumping and slug tests, groundwater modeling, water and soil sampling and remediation system installation. Wrote reports satisfying California and Federal regulations. Supervised drilling and remediation system installation contractors.

1982–1983 **Geologist,** *USDA Natural Resource Conservation Service, Davis, California, and California Division of Mines and Geology, San Francisco, California*
Conducted erosion and sedimentation studies, compiled geologic data and mapped landslides.

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

California American Water Test Well Documents (available at http://www.watersupplyproject.org/#!test-well/c1f1l , as of September 23, 2015) include:

Borehole Data Analysis:

- Hydrogeologic Investigation Borehole Technical Memorandum - Summary of Results (25.61 MB)
- Hydrogeologic Investigation Borehole Technical Memorandum - Appendices A-D (20.58 MB)
- Hydrogeologic Investigation Borehole Technical Memorandum - Appendices E-F (42.2 MB)
- Hydrogeologic Investigation Borehole Technical Memorandum - Appendix G (34.25 MB)
- Hydrogeologic Investigation Work Plan (18.56 MB)

Monitoring Data:

- Groundwater Monitoring Report No. 1 (19-Feb to 13-Mar, 2015) (4.39 MB)
- Groundwater Monitoring Report No. 2 (13-Mar to 20-Mar, 2015) (3.99 MB)
- Groundwater Monitoring Report No. 3 (20-Mar to 27-Mar, 2015) (3.49 MB)
- Groundwater Monitoring Report No. 4 (27-Mar to 03-Apr, 2015) (2.49 MB)
- Groundwater Monitoring Report No. 5 (10-Apr to 17-Apr, 2015) (4.88 MB)
- Groundwater Monitoring Report No. 6 (17-Apr to 22-Apr, 2015) (4.4 MB)
- Groundwater Monitoring Report No. 7 (19-Feb to 13-Mar, 2015) (7.1 MB)
- Technical Memorandum: Baseline Water & TDS Levels (20-Apr,2015) (6.56 MB
- Long-Term Pumping Monitoring Report No. 1 (22-Apr to 29-Apr, 2015) (4.83 MB)
- Long-Term Pumping Monitoring Report No. 2 (29-Apr to 6-May, 2015) (6.8 MB)
- Long-Term Pumping Monitoring Report No. 3 (6-May to 13-May, 2015) (7.6 MB)
- Long-Term Pumping Monitoring Report No. 4 (13-May to 20-May, 2015) (9.6 MB)
- Long-Term Pumping Monitoring Report No. 5 (20-May to 27-May, 2015) (9.0 MB)
- Long-Term Pumping Monitoring Report No. 6 (27-May to 3-June, 2015) (7.3 MB)
- Long-Term Pumping Monitoring Report No. 7 (3-June to 10-June, 2015) (6.2 MB)
- Test Slant Well Long-Term Pumping Test and Coastal Development Permit #A-3-MRA-14-0050 (10-June, 2015) (1 MB)
- Test Slant Well Long-Term Pumping Test and Coastal Development Permit #A-3-MRA-14-0050 (22-June, 2015) (1.7 MB)
- Long-Term Pumping Monitoring Report No. 8 (10-June to 17-June, 2015) (7.5 MB)
- Long-Term Pumping Monitoring Report No. 9 (17-June to 24-June, 2015) (11.8 MB)
- Condition Compliance Letter - Special Condition #11 of Coastal Development Permits (3-July, 2015) (51 KB)
- Long-Term Pumping Monitoring Report No. 10 (24-June to 1-July, 2015) (8.6 MB)
- Long-Term Pumping Monitoring Report No. 11 (1-July to 8-July, 2015) (8.8 MB)
- Long-Term Pumping Monitoring Report No. 12 (8-July to 15-July, 2015) (5.3 MB)
- Long-Term Pumping Monitoring Report No. 13 (15-July to 22-July, 2015) (7.5 MB)
- Long-Term Pumping Monitoring Report No. 14 (22-July to 4-Aug, 2015) (9.0 MB)

- Long-Term Pumping Monitoring Report No. 15 (4-Aug to 11-Aug, 2015) (10.9 MB)
- Long-Term Pumping Monitoring Report No. 16 (11-Aug to 18-Aug, 2015) (10 MB)
- Long-Term Pumping Monitoring Report No. 17 (18-Aug to 25-Aug, 2015) (11.5 MB)
- Long-Term Pumping Monitoring Report No. 18 (25-Aug to 1-Sept, 2015) (9.7 MB)
- Long-Term Pumping Monitoring Report No. 19 (1-Sept to 8-Sept, 2015) (8.9 MB)
- Long-Term Pumping Monitoring Report No. 20 (8-Sept to 15-Sept, 2015) (8.7MB)

California Public Utilities Commission, *Monterey Peninsula Water Supply Project Draft Environmental Report*, April 2015 – available at:
http://www.cpuc.ca.gov/Environment/info/esa/mpwsp/deir_toc.html

APPENDIX B - PERMIT CONDITIONS FROM NOVEMBER 2014 CDP APPROVAL

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

COASTAL DEVELOPMENT PERMIT

On November 12, 2014, by a vote of 11-0, the California Coastal Commission granted to California American Water Company (Cal-Am) Coastal Development Permit #9-14-1735 subject to the attached standard and special conditions, for development consisting of:

> Construction, operation, and decommissioning of a test slant well at the CEMEX sand mining facility in the City of Marina and beneath Monterey Bay in the County of Monterey.

Issued on behalf of the Coastal Commission on January 28, 2015.

CHARLES LESTER
Executive Director

By: ALISON J. DETTMER
Deputy Director
Energy, Ocean Resources, and Federal Consistency Division

Acknowledgment:

The undersigned Permittee acknowledges receipt of this permit and agrees to abide by all terms and conditions thereof.

The undersigned Permittee acknowledges that Government Code Section 818.4, which states in pertinent part, that: "A public entity is not liable for injury caused by the issuance... of any permit..." applies to the issuance of this permit.

IMPORTANT: THIS PERMIT IS NOT VALID UNLESS AND UNTIL A COPY OF THE PERMIT WITH THE SIGNED ACKNOWLEDGMENT HAS BEEN RETURNED TO THE COMMISSION OFFICE (14 Cal. Admin. Code Section 13158(a).)

1-28-15

Date

Signature of Permittee or Representative

STANDARD CONDITIONS

This permit is subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

SPECIAL CONDITIONS

This permit is subject to the following special conditions:

1. **Proof of Legal Interest and Other Approvals.** The Permittee shall provide to the Executive Director a copy of each of the following approvals or documentation from the relevant agency that such approval is not required:
   a. PRIOR TO PERMIT ISSUANCE, proof of legal interest in the project site.
   b. PRIOR TO CONNECTING TO THE OUTFALL, the negotiated agreement or memorandum of understanding between the applicant and the Monterey Regional Water Pollution Control Agency ("MRWPCA") regarding connection and use of the ocean outfall for discharge of water produced from the test well.
   c. PRIOR TO ISSUANCE OF CDP 9-14-1735, a lease from the State Lands Commission.

   The Permittee shall inform the Executive Director of any changes to the project required by, or resulting from, these permits or approvals. Such changes shall not be incorporated into the project until the Permittee obtains a Commission amendment to this permit, unless the Executive Director determines that no amendment is legally required.

2. **Liability for Costs and Attorneys Fees.** The Permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys fees – including (a) those charged by the Office of the Attorney General; and (b) any court costs and attorneys fees that the Coastal Commission may be required by a court to pay – that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Permittee against the Coastal Commission, its officers, employees, agents, successors, and assigns challenging the approval or issuance of this permit, the interpretation and/or enforcement of permit conditions, or any other matter related to this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

3. **Project Construction.** The Permittee shall conduct project construction as described and conditioned herein, including the following measures:
   a. Project-related construction shall occur only in areas as described in the permit application.
   b. Project-related construction, including site preparation, equipment staging, and installation or removal of equipment or wells, occurring between February 28 and October 1 of any year is subject to the timing and species protection requirements of Special Condition 14.
   c. Construction equipment and materials, including project-related debris, shall be placed or stored where it cannot enter a storm drain or coastal waters. The Permittee shall ensure that all construction personnel keep all food-related trash items in sealed containers and remove them daily to discourage the concentration of potential predators in snowy plover habitat. All trash and construction debris shall be removed from work areas and properly disposed of at the end of each work day at an approved upland location. All vegetation removed from the construction site shall be taken to a certified landfill to prevent the spread of invasive species.
   d. To reduce construction noise, noise attenuation devices (e.g., noise blankets, sound baffles, etc.) shall be installed around all stationary construction equipment, including drill rigs.
   e. All project vehicles shall maintain speeds of 10 miles per hour or less when at the project site. Prior to moving any vehicle, project personnel shall visually inspect for special-status species under and around the vehicle, and shall notify the on-site biologist should any be detected.
   f. To avoid predation of special-status species, wire excluders or similar anti-perching devices shall be installed and maintained on the top of all aboveground structures (e.g., electrical panel) to deter perching by avian predators.

   No changes to these requirements shall occur without a Commission amendment to this permit unless the Executive Director determines that no amendment is legally required.

4. **Protection of Water Quality.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit an erosion control plan for Executive Director review and approval. The Plan shall include a schedule for the completion of erosion- and sediment-control structures, which ensures that all such erosion-control structures are in place by mid-November of the year that construction begins and maintained thereafter. The plan

shall identify standard Best Management Practices to be implemented to address both temporary and permanent measures to control erosion and reduce sedimentation. Site monitoring by the applicant's erosion-control specialist shall be undertaken and a follow-up report shall be prepared that documents the progress and/or completion of required erosion-control measures both during and after construction and decommissioning activities. No synthetic plastic mesh products shall be used in any erosion control materials. All plans shall show that sedimentation and erosion control measures are installed prior to any other ground disturbing work.

5. **Hazardous Material Spill Prevention and Response.**
   (a) PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit for Executive Director review and approval a project-specific Hazardous Materials Spill Prevention and Response Plan that includes:
   - an estimate of a reasonable worst case release of fuel or other hazardous materials onto the project site or into adjacent sensitive habitat areas or coastal waters resulting from project operations;
   - all identified locations within the project footprint of known or suspected buried hazardous materials, including current or former underground storage tanks, septic systems, refuse disposal areas, and the like;
   - specific protocols for monitoring and minimizing the use of fuel and hazardous materials during project operations, including Best Management Practices that will be implemented to ensure minimal impacts to the environment;
   - a detailed response and clean-up plan in the event of a spill or accidental discharge or release of fuel or hazardous materials;
   - a list of all spill prevention and response equipment that will be maintained on-site;
   - the designation of the onsite person who will have responsibility for implementing the plan;
   - a telephone contact list of all regulatory and public trustee agencies, including Coastal Commission staff, having authority over the development and/or the project site and its resources to be notified in the event of a spill or material release; and,
   - a list of all fuels and hazardous materials that will be used or might be used during the proposed project, together with Material Safety Data Sheets for each of these materials.

   The Permittee shall implement the Plan as approved by the Executive Director. The Permittee shall also ensure that all onsite project personnel participate in a training program that describes the above-referenced Plan, identifies the Plan's requirements for implementing Best Management Practices to prevent spills or releases, specifies the location of all clean-up materials and equipment available on site, and specifies the measures that are to be taken should a spill or release occur.

(b) In the event that a spill or accidental discharge of fuel or hazardous materials occurs during project construction or operations, all non-essential project construction and/or operation shall cease and the Permittee shall implement spill response measures of the approved Plan, including notification of Commission staff. Project construction and/or operation shall not start again until authorized by Commission staff.

(c) If project construction or operations result in a spill or accidental discharge that causes adverse effects to coastal water quality, ESHA, or other coastal resources, the Permittee shall submit an application to amend this permit, unless the Executive Director determines no amendment is required. The application shall identify proposed measures to prevent future spills or releases and shall include a proposed restoration plan for any coastal resources adversely affected by the spill or release.

The Permittee shall implement the Plan as approved by the Executive Director.

6. **Monitoring and Removal of Temporary Structures, Well Head Burial & Well Closure/Destruction.** The Permittee shall monitor beach erosion at least once per week over the duration of the project to ensure the slant well and monitoring wells remain covered. If the wellheads, linings, casings, or other project components become exposed due to erosion, shifting sand or other factors, the Permittee shall immediately take action to reduce any danger to the public or to marine life and shall submit within one week of detecting the exposed components a complete application for a new or amended permit to remedy the exposure.

   Upon project completion, and no later than February 28, 2018, the Permittee shall cut off, cap, and bury the slant well head at least 40 feet below the ground surface, and shall completely remove all other temporary facilities approved by this coastal development permit. To ensure timely removal, the Permittee shall post the bond or other surety device as required by **Special Condition 17** to ensure future removal measures would be appropriately supported and timed to prevent any future resurfacing of the well casing or other project components.

7. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the Permittee acknowledges and agrees:
   a. that the site may be subject to hazards from coastal erosion, storm conditions, wave uprush, and tsunami runup;
   b. to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development;
   c. to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and
   d. to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

8. **No Future Shoreline Protective Device.** By acceptance of this permit, the Permittee agrees, on behalf of itself and all other successors and assigns, that no shoreline protective device(s) shall ever be constructed to protect the development approved pursuant to this permit, including the wells, supporting infrastructure, and any future improvements, in the event that the development is threatened with damage or destruction from waves, erosion, storm conditions or other natural hazards in the future. By acceptance of this permit, the Permittee hereby waives, on behalf of itself and all successors and assigns, any rights to construct such devices that may exist under Public Resources Code Section 30235.

   By acceptance of this permit, the Permittee further agrees, on behalf of itself and all successors and assigns, that the Permittee shall remove the development authorized by this permit, including the wells, supporting infrastructure, and any future improvements, if any government agency with the requisite jurisdiction and authority has ordered, and the Executive Director has concurred, that the development is not to be used due to any of the hazards identified in **Special Condition 7**. In the event that portions of the development fall to the beach before they are removed, the Permittee shall remove all recoverable debris associated with the development from the beach and ocean and lawfully dispose of the material in an approved disposal site. Such removal shall require a coastal development permit.

9. **Geology/Hazards.** The project shall be designed to meet or exceed all applicable requirements of the California Building Code. Project design and construction shall meet or exceed all applicable feasible conclusions and recommendations in the *Geotechnical Investigation for the California American Water Temporary Slant Test Well Project, Marina, Monterey County*, California, dated April 3, 2014 (GeoSoils 2014). Project components shall be sited to avoid areas identified in the coastal erosion memorandum prepared by ESA-PWA (March 2014) as subject to coastal erosion during the duration of the project.

10. **Visual Resources.** PRIOR TO PERMIT ISSUANCE, the Permittee shall submit for Executive Director review and approval a Lighting Plan prepared by a qualified engineer that includes the following:
    a. Identifies all lighting and associated infrastructure proposed for use during the test well project, such as towers, poles, electrical lines, etc. The Lighting Plan shall identify the locations, heights, dimensions, and intensity of the lighting and associated lighting infrastructure.
    b. Evaluates the effects of project lighting and associated infrastructure on wildlife in the project area and describes proposed measures to avoid or minimize any adverse effects. These measures may include shielding project lighting from off-site locations, directing lighting downward, using the minimum amount of lighting necessary to ensure project safety, and other similar measures.
    c. Affirms that all lighting structures and fixtures installed for use during the project and visible from public areas, including shoreline areas of Monterey Bay, will be painted or finished in neutral tones that minimize their visibility from those public areas.

    The Permittee shall implement the Lighting Plan as approved by the Executive Director.

11. **Protection of Nearby Wells.** PRIOR TO STARTING PROJECT-RELATED PUMP TESTS, the Permittee shall install monitoring devices a minimum of four wells on the CEMEX site, within 2000 feet of the test well, and one or more offsite wells to record water and salinity levels within the wells and shall provide to the Executive Director the baseline water and Total Dissolved Solids ("TDS") levels in those wells prior to commencement of pumping from the test well. The Hydrogeology Working Group shall establish the baseline water and TDS levels for the monitoring wells. During the project pump tests, the Permittee shall, at least once per day, monitor water and TDS levels within those wells in person and/or with electronic logging devices. The Permittee shall post data collected from all monitoring wells on a publicly-available internet site at least once per week and shall provide all monitoring data to the Executive Director upon request. If water levels drop more than one-and-one-half foot, or if TDS levels increase more than two thousand parts per million from pre-pump test conditions, the Permittee shall immediately stop the pump test and inform the Executive Director. The Hydrogeology Working Group shall examine the data from Monitoring Well 4 if the test well is shut down due to either of these causes. The Hydrogeology Working Group shall determine whether the drop in water level or increase in TDS is from a cause or causes other than the test well, and it will submit its determination to the Executive Director. If the Executive Director agrees with the Hydrogeology Working Group that the cause of the drop in water level or increase in TDS was a source or sources other than the test well, then the Executive Director may allow testing to resume. If, however, the Executive Director determines that the drop in water level was caused at least in part by the test well, then the Permittee shall not re-start the pump test until receiving an amendment to this permit.

12. **Protection of Biological Resources – Biological Monitor(s).** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall retain one or more qualified biologists approved by the Executive Director to ensure compliance with all relevant mitigation measures and Special Conditions. The approved biologist(s) shall conduct the required preconstruction surveys, implement ongoing monitoring and inspections, keep required records, and notify Commission staff and staff of other agencies as necessary regarding project conformity to these measures and Special Conditions.

    The approved biologist(s) shall be present during daylight hours for all project construction and decommissioning activities and on a periodic basis when the biologist determines operational activities may affect areas previously undisturbed by project activities. The biologist(s) shall monitor construction equipment access and shall have authority to halt work activities, if the potential for impacts to special-status species or habitat is identified, until the issue can be resolved. The qualified biologist(s) shall immediately report any observations of significant adverse effects on special-status species to the Executive Director.

13. **Protection of Biological Resources – Training of On-site Personnel.** Prior to starting construction and decommissioning activities, the approved biologist(s) shall conduct an environmental awareness training for all construction personnel that are on-site during activities. The training shall include, at a minimum, the following:
    - Descriptions of the special-status species with potential to occur in the project area;
    - Habitat requirements and life histories of those species as they relate to the project;
    - Avoidance, minimization, and mitigation measures that will be implemented to avoid impacts to the species and their habitats;
    - Identification of the regulatory agencies and regulations that manage their protection; and,
    - Consequences that may result from unauthorized impacts or take of special-status species and their habitats.

    The training shall include distribution of an environmental training brochure, and collection of signatures from all attendees acknowledging their participation in the training. Subsequent trainings shall be provided by the qualified biologist as needed for additional construction or operations workers through the life of the project.

14. **Protection of Biological Resources – Pre-Construction and Pre-Disturbance Surveys.** The approved biologist(s) shall conduct pre-construction surveys for special-status species as described below:
    a. No more than 14 days before the start of onsite activities or any activities planned for areas previously undisturbed by project activities, the biologist(s) shall conduct a field evaluation of the nature and extent of Western snowy plover activity in the project area and shall identify measures needed to ensure construction activities minimize potential effects to the species. Those measures shall, at a minimum, meet the standards and requirements of the mitigation measures included in Exhibit 5 as well as those included in subsection (d) of this special condition. Those measures shall also be submitted for Executive Director review and approval at least five days before the start of construction activities. The Permittee shall implement the measures as approved by the Executive Director.
    b. Prior to construction or activities planned for areas previously undisturbed by project activities, the approved biologist(s) shall coordinate with construction crews to identify and mark the boundaries of project disturbance, locations of special-status species and suitable habitat, avoidance areas, and access routes. GPS data collected during preconstruction surveys completed in 2012, 2013, and 2014 shall be used to flag the known locations of Monterey spineflower and buckwheat for avoidance during construction. Avoidance buffers shall be established and flagged or fenced as necessary to avoid surface disturbance or vegetation removal. The monitoring biologist shall fit the placement of flags and fencing to minimize impacts to any sensitive resources. At a minimum, the biologist shall direct the placement of highly visible exclusion fencing (snow fence or similar) at the following locations:
        - around sensitive snowy plover habitat areas that do not require regular access;
        - areas along the northern edge of the CEMEX accessway in the vicinity of the settling ponds; and
        - between the work area and any identified occurrence of Monterey spineflower or buckwheat within 10 feet of the existing accessway or work area.

All delineated areas of temporary fencing shall be shown on grading plans and shall remain in place and functional throughout the duration of construction and decommissioning activities.

c. The approved biologist(s) shall conduct surveys for Monterey spineflower and buckwheat (host plant for Smith's blue butterfly) within all project disturbance areas and within 20 feet of project boundaries during the blooming period for the spineflower (April-June) to identify and record the most current known locations of these species in the project vicinity. Surveys shall be conducted by a qualified botanist, and shall include collection of Global Positioning System (GPS) data points for use during flagging of sensitive plant species locations and avoidance buffers prior to construction.

d. Starting no later than February 1 of each year of project construction, operation, and decommissioning, the approved biologist(s) shall conduct breeding and nesting surveys of sensitive avian species within 500 feet of the project footprint. The approved biologist(s) shall continue those surveys at least once per week during periods of project construction, well re-packing, and decommissioning that occur between February 1 and October 1 each year.

In the event that any sensitive species are present in the project area but do not exhibit reproductive behavior and are not within the estimated breeding/reproductive cycle of the subject species, the qualified biologist shall either: (1) initiate a salvage and relocation program prior to any excavation/maintenance activities to move sensitive species by hand to safe locations elsewhere along the project reach or (2) as appropriate, implement a resource avoidance program with sufficient buffer areas to ensure adverse impacts to such resources are avoided. The Permittee shall also immediately notify the Executive Director of the presence of such species and which of the above actions are being taken. If the presence of any such sensitive species requires review by the United States Fish and Wildlife Service and/or the California Department of Fish and Game, then no development activities shall be allowed or continue until any such review and authorizations to proceed are received and also authorizes construction to proceed.

If an active nest of a federally or state-listed threatened or endangered species, species of special concern, or any species of raptor or heron is found, the Permittee shall notify the appropriate State and Federal wildlife agencies within 24 hours, and shall develop an appropriate action specific to each incident. The Permittee shall notify the California Coastal Commission in writing by facsimile or e-mail within 24 hours and consult with the Commission regarding determinations of State and Federal agencies.

If the biologist(s) identify an active nest of any federally- or state-listed threatened or endangered species, species of special concern, or any species of raptor or heron within 300 feet of construction activities (500 feet for raptors), the biologist(s) shall monitor bird behavior and construction noise levels. The biologist(s) shall be present at all relevant construction meetings and during all significant construction activities

(those with potential noise impacts) to ensure that nesting birds are not disturbed by construction-related noise. The biologist(s) shall monitor birds and noise every day at the beginning of the project and during all periods of significant construction activities. Construction activities may occur only if construction noise levels are at or below a peak of 65 dB at the nest(s) site. If construction noise exceeds a peak level of 65 dB at the nest(s) site, sound mitigation measures such as sound shields, blankets around smaller equipment, mixing concrete batches off-site, use of mufflers, and minimizing the use of back-up alarms shall be employed. If these sound mitigation measures do not reduce noise levels, construction within 300 ft. (500 ft. for raptors) of the nesting areas shall cease and shall not re-start until either new sound mitigation can be employed or nesting is complete.

If active plover nests are located within 300 feet of the project or access routes, avoidance buffers shall be established to minimize potential disturbance of nesting activity, and the biologist shall coordinate with and accompany the Permittee's operational staff as necessary during the nesting season to guide access and activities to avoid impacts to nesting plovers. The biologist shall contact the USFWS and CDFW immediately if a nest is found in areas near the wellhead that could be affected by project operations. Operations shall be immediately suspended until the Permittee submits to the Executive Director written authorization to proceed from the USFWS.

If, after starting project activities, the Permittee must stop construction due to the presence of sensitive species or due to the lack of necessary approvals or permits (e.g., a lease from the State Lands Commission), the Permittee shall remove and properly store all project-related equipment and vehicles away from the project site in a manner that does not adversely affect sensitive species.

15. **Project Area Restoration.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall prepare a Restoration Plan for review and approval by the Executive Director that is consistent with the City of Marina restoration requirements as codified in Municipal Code Section 17.41.100. The Plan shall include, at a minimum:
    a. a description of the habitat characteristics and extent of the area to be restored, which shall include, at a minimum, all areas of temporary disturbance in the project footprint other than those areas actively in use by CEMEX for mining purposes;
    b. performance standards and success criteria to be used;
    c. a minimum 3:1 ratio of native plants to be replaced within the affected area;
    d. an invasive species control program to be implemented for the duration of the project;
    e. the timing of proposed restoration activities;
    f. proposed methods to monitor restoration performance and success for at least five years following initiation of the Plan; and
    g. identification of all relevant conditions, requirements, and approvals by regulatory agencies needed to implement the Plan.

    The Permittee shall implement the Plan: (1) during and immediately following construction and prior to operation of the test well, and (2) during and immediately following decommissioning activities.

Success criteria will include plant cover and species composition/diversity, which shall meet or exceed adjacent undisturbed dune habitat on the CEMEX parcel as determined by the biological monitor. Success criteria shall, at a minimum, be consistent with the requirements of the existing Lapis Revegetation Plan prepared for the RMC Lonestar Lapis Sand Plant (25 percent average vegetative cover and species diversity of all species listed in Group A of the Plan present and providing at least 1 percent cover).

16. **Invasive Species Control.** The Permittee shall remove and properly dispose of at a certified landfill all invasive or exotic plants disturbed or removed during project activities. The Permittee shall use existing on-site soils for fill material to the extent feasible. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species, or the material must consist of purchased clean material.

17. **Posting of Bond.** To ensure timely removal, PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall provide to the Commission a surety bond or similar security device acceptable to the Executive Director for $1,000,000 (one million dollars), and naming the Coastal Commission as the assured, to guarantee the Permittee's compliance with Special Conditions 6 and 15. The surety bond or other security device shall be maintained in full force and effect at all times until Special Conditions 6 and 15 have been met.

APPENDIX C - EX PARTE COMMUNICATIONS

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LATHAM & WATKINS LLP

Agenda Item
T15a

September 23, 2015

File No. 055604-0002

VIA EMAIL AND FEDEX

Chair Kinsey and Honorable Commissioners
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, California 94105

Re: Permit Nos. A-3-MRA-14-0050-A1 and 9-14-1735-A1:
(California-American Water Company Test Well Project)

Dear Chair Kinsey and Honorable Commissioners:

On behalf of California-American Water Company ("Cal-Am"), we write regarding the Commission's consideration of Cal-Am's application to amend Coastal Development Permit No. A-3-MRA-14-0050 (issued December 8, 2014) and CDP No. 9-14-1735 (issued January 28, 2015) (collectively, the "Permits") to construct, operate, and decommission a temporary test slant well at the CEMEX sand mining facility (the "Project"). The Commission will consider the proposed amendment at its October 6, 2015, meeting.

As the Commission is aware, the Commission's November 2014 approval of the Permits was challenged in Santa Cruz County Superior Court by the Marina Coast Water District ("MCWD") in Case No. CV180839 and by the Ag Land Trust in Case No. CV180887. On July 23, 2015, both cases were tried on the merits before the Honorable Judge Rebecca Connolly. At the conclusion of the hearing, **Judge Connolly denied MCWD's and Ag Land Trust's petitions for writ of mandate and issued an oral statement of decision on the record entirely in the Commission's and Cal-Am's favor**. In particular, Judge Connolly made findings regarding the substantial evidence that supported the Commission's analysis and disclosure of the Project's existing environmental baseline, as well as the Commission's approval of Special Condition 11, the Special Condition that is proposed to be modified as part of Cal-Am's permit amendment.

Enclosed with the hard copy version of this letter being distributed to Commission staff is a copy of the Court Reporter's Transcript of Proceedings from the July 23, 2015, hearing. As reflected in the transcript, Judge Connolly made the following specific findings on the record

regarding (1) the baseline groundwater conditions in the vicinity of the Project area, and (2) Special Condition 11:

Environmental Baseline:

- "[T]here was significant evidence before the Coastal Commission with respect to the baseline condition of the environment." (Tr. at 10:21-24);
- "[T]he issue was whether or not the Commission adequately disclosed the baseline hydrological conditions of the Salinas Valley groundwater basin . . . I find that the Commission adequately did so in this case. The Commission's findings cite to reports that indicate that the groundwater in the project's general area is already severely contaminated by seawater intrusion and that these conditions are well understood and documented; that the reports describe the conditions and note that underlying basin is subject to seawater intrusion that extends several miles inland from the coast where the project is located." (Tr. 187:20-188:9);
- "The groundwater conditions describing the Salinas Valley groundwater basin past groundwater pumping, the degree of intrusion and groundwater storage capacity are also set forth in the administrative record." (Tr. 188:13-17);
- "[T]he record also discusses how groundwater conditions fluctuate over time, and that it has a high degree of fluctuation." (Tr. 189:23-25);
- "[T]here was significant scientific evidence before the Commission to determine that the groundwater aquifers from which the project was going to draw were greatly intruded by seawater and could not be used for agricultural irrigation or human consumption." (Tr. 190:10-14);
- "[T]he record establishes that determining the exact level and salinity levels at the project's monitoring wells was impossible to achieve prior to the Commission's review because the monitoring wells are, in fact, a component of the project, and that was analyzed and approved in the CDPs. The Commission staff report provided the detailed discussion of the existing groundwater conditions in the Salinas Valley groundwater basin and the two aquifers from which the project will draw water. That discussion was based on technical documents in the record; and. . . the Commission did not defer in assessing or neglect to study the baseline conditions." (Tr. 191:9-21); and
- "I do find the record adequately establishes the Commission appropriately determined the baseline environmental conditions prior to moving forward." (Tr. 191:22-24).

Special Condition 11:

- "I also find that in adopting Special Condition 11, that the Commission was acting as the lead agency, and it was appropriate for them to exercise its own judgment in selecting its standard of significance on that, and that was set forward in Condition 11." (Tr. 191:25 to 192:4);

- "[T]he evidence supports that Special Condition 11 was based on data from technical reports prepared by Geoscience and was referred to during the Commission's proceeding and is included in the Commission's record." (Tr. 192:5-9);

- "I also believe that the Commission's decision to alter the initial staff report proposed one-foot drawdown standard to 1.5 drawdown standard was permissible and supported by the administrative record." (Tr. 192:19-22);

- "Insofar as the TDS standards, the administrative record supports that the 2000 parts per million or ppm increase in TDS was selected because seawater has approximately 3,000 ppm variability, so it varies from 30,000 to 33,000 parts per million." (Tr. 192:23 to 193:2);

- "I do find that the drawdowns and the TDS standard included in Special Condition 11 were tailored to the project appropriately under CEQA and that they did not amount to a deferral of baseline measurement under CEQA to another group." (Tr. 193:7-11);

- "I further find that Special Condition 11 was not an impermissible deferral of mitigation, and that is based upon the fact that I think it is appropriate for the specific performance standards to be established even if all the specifics are not known at the time of the approval." (Tr. 193:12-17);

- "I think it was appropriate for the Commission to utilize HWG's technical expertise to implement Special Condition 11. And I also think that given that the groundwater levels and salinity fluctuate naturally, that it was appropriate for the Commission to set objective performance criteria and to delegate to the Commission's executive director to work with the scientific experts to determine whether or not the project was violating those criteria." (Tr. 193:19-194:2); and

- "I believe that the administrative record supported the Commission's finding that no seawater intrusion impact would occur in the Salinas Valley groundwater basin as a result of the project." (Tr. 194:12-16).

We appreciate the opportunity to submit the hearing transcript to the Commission for inclusion in the administrative record. We look forward to the Commission's consideration of Cal-Am's permit amendment at the October 6, 2015, meeting.

Very truly yours,

Duncan Joseph Moore
of LATHAM & WATKINS LLP

cc: Tom Luster, California Coastal Commission (with hearing transcript)
Andrew Homer, California-American Water Company

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