

SEASIDE BASIN WATERMASTER

ANNUAL REPORT – 2010

Integral to the Superior Court Decision (Decision) rendered by Judge Roger D. Randall on March 27, 2006 is the requirement to file an Annual Report. The ruling of the Court requires that the Annual Report be prepared and filed with the Court and mailed to all the parties on or before the 15th day of November every year for the preceding Water Year. In a Court filing dated November 12, 2010 the City of Seaside on behalf of Watermaster requested an extension of time to file the Water Year 2010 Annual Report until December 31, 2010. A copy of this filing is contained in Attachment 15. Watermaster required an extension of time to file its Annual Report because it needed additional time to prepare and have the Watermaster Board of Directors review, analyze, discuss and approve the Annual Report, as well as to allow for public review. The Court Ruling on Request for Extension of Time dated November 24, 2010 was granted to December 23, 2010. This 2010 Annual Report is being filed on or before December 23, 2010. This Annual Report addresses the specific Watermaster functions set forth in Section III. L. 3. x. of the Decision. In addition this Annual Report includes a section pertaining to Water Quality Monitoring and Basin Management.

A. Groundwater Extractions

The schedule summarizing the Water Year 2010 (WY 2010) groundwater production from all the producers allocated a Production Allocation in the Seaside Groundwater Basin is provided in Attachment 1, “Seaside Groundwater Basin Watermaster, Reported Quarterly and Annual Water Production from the Seaside Groundwater Basin for all Producers Included in the Seaside Basin Adjudication During Water Year 2010.” For the purposes of this Annual Report Water Year 2010 is defined as beginning October 1, 2009 and ending on September 30, 2010.

B. Groundwater Storage

Monterey Peninsula Water Management District (MPWMD), in cooperation with California American Water (CAW), operated the Seaside Basin Aquifer Storage and Recovery (ASR) program during WY 2010. During WY 2010, a total of 1,110.5 acre-feet (AF) of water was diverted by CAW from its Carmel River sources during periods of flow in excess of NOAA-Fisheries’ recommended bypass flows, and transported through the existing CAW distribution system for injection and storage in the Seaside Basin at the MPWMD’s Santa Margarita ASR Well Nos. 1 and 2 located on former Fort Ord property. This is the only reported storage of non-native groundwater into the Seaside Basin in WY 2010.

Also during WY 2010, work was completed on installation of a permanent water delivery pipeline in the newly realigned section of General Jim Moore Boulevard south of Eucalyptus Road, as well as the installation of Pressure Regulating Valves (PRVs) at key locations within the CAW distribution system to allow the Phase 1 ASR Project to operate at its full design capacity of 3,000 gallons per minute (13 acre-feet per day). In addition, the MPWMD and CAW proceeded with installation of a test ASR well at the nearby Seaside Middle School. Installation of this new well is intended to satisfy one of the requirements of State Water Resources Control Board Order 2009-0060 (i.e., the Cease and Desist Order) that requires

CAW to implement one or more “small projects” that total not less than 500 AF per year to reduce diversions from the Carmel River.

Based upon production reported for WY 2009, the following Standard Producers are entitled to Free and Not-Free Carryover Credits in accordance with the Decision, Section III. H. 5. for WY 2010:

<u>Producer</u>	<u>Free Carryover Credit</u>	<u>Not-Free Carryover Credit</u>
Granite Rock	40.39 acre-feet	50.47 acre-feet
DBO Development	91.60 acre-feet	101.03 acre-feet
CAW	0 acre-feet	495.90 acre-feet

C. Amount of Artificial Replenishment, if any, performed by Watermaster

Per the Decision, “Artificial Replenishment” means the act of the Watermaster, directly or indirectly, engaging in contracting for Non-Native Water to be added to the Groundwater supply of the Seaside Basin through Spreading or Direct Injection to offset the cumulative Over-Production from the Seaside Basin in any particular Water Year pursuant to Section III.L.3.j.iii. It also includes programs in which Producers agree to refrain, in whole or in part, from exercising their right to produce their full Production Allocation where the intent is to cause the replenishment of the Seaside Basin through forbearance in lieu of the injection or spreading of Non-Native Water (referred to herein as “In-lieu Replenishment”).

The Watermaster has interpreted the above language to mean that the following Artificial Replenishment action was undertaken in WY 2010:

Watermaster indirectly engaged in In-lieu Replenishment of the Basin during Water Year 2010. Non-native water was made available to the Basin during Water Year 2010 and is foreseeable for Water Year 2011 under a Memorandum of Understanding and Agreement entered into by Watermaster with the City of Seaside for its golf course irrigation program creating in-lieu replenishment water. 319.551 acre-feet was in-lieu replenished to the Basin by the program in Water Year 2010.

D. Leases or sales of Production Allocation

No sale of Production Allocation occurred during WY 2010.

However, two actions pertaining to real property and/or water rights occurred, as described below:

1. One Standard Producer, DBO Development No. 27, conveyed the real property it owned that is subject to the Decision to D.B.O. Development No. 30. In addition, D.B.O. No. 27 assigned to D.B.O. No. 30 all its right, title, and interest under the Decision, including but not limited to its water rights, water allocations, carryover credits, storage rights, and all other rights defined in the Decision, and also delegated, and D.B.O. No. 30 agreed to assume, all D.B.O. No. 27's duties and obligations under the Judgment and Decision. A copy of the legal document pertaining to this action is contained in Attachment 13.

2. One Alternative Producer, Security National Guaranty (SNG), executed a Front Loading Agreement (wheeling agreement) with CAW in May of 2009 in order for SNG's property to be served water from the Seaside Basin via CAW's distribution system. A copy of the legal document pertaining to this action is contained in Attachment 13.

E. Use of imported, reclaimed, or desalinated Water as a source of Water for Storage or as a water supply for lands overlying the Seaside Basin

The CAW/MPWMD ASR Program occurred in Water Year 2010 with 1,110.5 acre-feet of water injected into the Basin as Stored Water Credits and zero acre-feet extracted. A Storage and Recovery Agreement between Watermaster and California American Water governing the ASR Program storage and recovery is being developed to formalize the terms and conditions of the ASR program.

In addition to the water imported from the Carmel Basin for the ASR program described above, during WY 2010 319.551 acre-feet of imported water was used to irrigate golf courses owned by the City of Seaside overlying the Seaside Basin. The terms and conditions under which this in-lieu replenishment water was used to generate a credit to be applied against the City of Seaside's overproduction replenishment assessments is described in the "Memorandum of Understanding Between the Seaside Basin Watermaster and the City of Seaside" contained in Attachment 3. This is the only imported, reclaimed or desalinated water used either directly or for storage in the groundwater basin that has been reported to the Watermaster during WY 2009-2010.

F. Violations of the Decision and any corrective actions taken

Section III. D. of the Decision enjoins all Producers from any Over-Production beyond the Operating Yield in any Water Year in which the Watermaster declares that Artificial Replenishment is not available or possible. Section III. L. 3. j. iii. requires that the Watermaster declare the unavailability of Artificial Replenishment in December so that the Producers are informed of the prohibition against pumping in excess of the Operating Yield.

The Watermaster made a declaration regarding the availability of Artificial Replenishment for WY 2011 at its Board meeting of December 1, 2010. A copy of this declaration is contained in Attachment 2. In WY 2010 the Watermaster increased the original production allocation reduction of 7.5%, made during WY 2009, by an additional 2.5% to bring the reduction up to the full 10% as required under Section III.B.2 of the Decision.

Total pumping for WY 2010 did not exceed the Operating Yield (OY) for the Seaside Basin, but it did exceed the Natural Safe Yield (NSY) of the Basin.

CAW and the City of Seaside reported annual pumping quantities that exceeded their Standard Production NSY allocations by 1,479.47 and 83.44 acre-feet, respectively, and the City of Seaside's reported annual pumping quantity exceeded its OY by 29.77 acre-

feet. The City of Seaside did not exceed its Alternative Production NSY. The Watermaster will assess CAW and the City of Seaside a Replenishment Assessment for these over-productions, as further described in Section H, below.

G. Watermaster administrative costs

The total estimated Administrative costs for Fiscal Year 2010 amounted to \$90,000 including a \$25,000 dedicated reserve. This included the cost of maintaining an office and paying a part time administrator and some part time staff to take and transcribe minutes of the Watermaster Board meetings during 2010. The “Fiscal Year 2010 Administrative Fund Report” is provided as Attachment 4.

H. Replenishment Assessments

A Replenishment Assessment of \$2,780 per acre-foot was established by the Watermaster Board at its October 7, 2009 meeting for use against WY 2010 pumping. At its meeting of September 22, 2010 the Watermaster Board determined that this same \$2,780 per acre-foot Replenishment Assessment unit cost should be used against WY 2011 pumping. The Agenda transmittal from that meeting discussing this determination is contained in Attachment 5.

Alternative and Standard Producers report their production amounts from the Basin to the Watermaster on a quarterly basis. Based upon the reported production for WY 2010, CAW’s Replenishment Assessment for Overproduction in excess of its share of the NSY is \$4,112,933.15. CAW did not incur any assessment for Operating Yield Over Production in WY 2010. The City of Seaside’s Replenishment Assessment for its Municipal System for Overproduction in excess of its share of the NSY is \$231,960.82 and its Replenishment Assessment for Operating Yield Over Production is \$82,760.60. The City of Seaside did not exceed its Alternative Production Allocation for its Golf Course System production. A summary of the calculations for Replenishment Assessment for WY 2010 is contained in Attachment 6.

I. All components of the Watermaster budget

The Watermaster budget has four separate funds: Administrative Fund; Monitoring & Management–Operations; Monitoring and Management–Capital Fund and; Replenishment Fund. Copies of the Fiscal Year 2011 adopted budgets are contained in Attachment 7. The Chief Executive Officer provides monthly financial status reports to the Watermaster Board on all financial activities for each month with year-to-date totals.

J. Water Quality Monitoring and Basin Management

Water Quality Analytical Results

Groundwater quality data continued to be collected and analyzed on a quarterly basis during WY 2010 from the enhanced network of monitoring wells. As initiated in the preceding year, a new low-flow sampling method continued to be implemented to improve the efficiency of sample collection, and will continue to be employed during the upcoming year. Data collection with the new method will continue for two full years at these coastal monitor well locations prior to requesting any modifications to the quarterly data collection frequency at these wells for WY 2012. This is consistent with the process

used prior to recommending a reduction in induction logging frequency at the Watermaster Sentinel wells. Where feasible, water quality at selected locations may be supplemented with continuous water-quality dataloggers to offset the reduction in sample collection frequency.

In addition, quarterly geophysical (induction) logging continued to be performed at the four Watermaster Sentinel wells that were installed in 2007. The induction logging results have shown very little variations and trends have been steady since this monitoring began, indicating that the coastal water quality conditions are not changing at this sample frequency. Therefore, beginning in WY 2010, as approved by the Court's Order dated February 19, 2010, the induction logging frequency was reduced to semi-annually at these wells. Water samples from these wells continue to be collected on an annual basis.

Copies of the sampling results are contained in Attachment 8. Analysis of the results indicate no evidence of water quality changes indicative of seawater intrusion at the locations and depths sampled in the coastal areas of the basin.

All of the recommendations contained in the report in Attachment 8 are being actively pursued by the Watermaster. Funds to pursue these recommendations have been included in the adopted FY 2011 budgets contained in Attachment 7.

Construction of New Monitoring Well in the Northern Inland Subarea

During WYs 2009 and 2010 an additional monitoring well in the northern inland subarea of the Basin was constructed at the BLM site. Construction began in August 2009, but drilling difficulties were encountered that delayed completion of the well until November 2009. The consultant that managed this work prepared a report describing the construction, hydrogeologic findings, and initial water quality sampling results of this project. However, that report could not be completed until after the 2009 Annual Report had been prepared, so it is included in Attachment 9 to this 2010 Annual Report.

The principle conclusions described in that report are:

- At the location of the new monitoring well, the depth to the Monterey Formation, the adopted base of freshwater for the Seaside Basin, is greater than previously believed by approximately 450 feet.
- The thickness of the Santa Margarita Sandstone and Paso Robles Formations at this location are significantly thicker than have been encountered at other locations in the Basin.
- The observed water levels at the new well were accurately predicted by the Watermaster's Groundwater Model.
- It is likely that the deep aquifer at the new well site is impacted by pumping in the highly-confined Santa Margarita Sandstone from wells in Seaside proper. It is also likely that water levels will be influenced by injection operations in the Santa Margarita Sandstone.

Basin Management Database

Pertinent groundwater resource data obtained from a number of sources has been consolidated into the Watermaster's database to allow more efficient organization and data retrieval.

In 2009 initial internal testing and debugging of the Database was completed, and the Database was placed on the Watermaster's website for access by all interested parties. In 2010 enhancements to the Database were being completed to improve its usefulness and user-friendliness. Those enhancements are described in Attachment 10.

Enhanced Monitoring Well Network

The Seaside Basin M&MP uses an Enhanced Monitoring Well Network to fill in data gaps in the previous monitoring well network used by the Monterey Peninsula Water Management District (MPWMD), and others, in order to improve the Basin management capabilities of the Watermaster. The Enhanced Monitoring Well Network has been described in detail in previous Watermaster Annual Reports. It continues to be used to obtain additional data that is useful to the Watermaster in managing the Basin.

Basin Management Action Plan (BMAP)

HydroMetrics Water Resources, Inc. was hired by the Watermaster to prepare the BMAP which contains these Sections:

- Executive Summary
- The Background and Purpose of the Plan
- The State of the Basin
- Supplemental Water Supplies (long-term water supply solutions)
- Groundwater Management Actions (to be taken as interim measures while long-term supplies are being developed)
- Recommended Management Strategies
- References

The Final BMAP was approved by the Watermaster Board at its February 2009 meeting, and the Executive Summary from the BMAP was contained in Attachment 9 of the 2009 Annual Report. The complete document may be viewed and downloaded from the Watermaster's website at: <http://www.seasidebasinwatermaster.org/>.

Updating of the BMAP was planned for FY 2010, but certain information (coming from other parties) that would be needed to perform that work was not yet available. Therefore, updating the BMAP has been rescheduled for FY 2011, as described in the M&MP Work Plan contained in Attachment 12.

Seawater Intrusion Response Plan

HydroMetrics Water Resources, Inc. was hired by the Watermaster to prepare a long-term Seawater Intrusion Response Plan (SIRP), as required in the M&MP.

The Final SIRP was approved by the Watermaster Board at its January 2009 meeting, and a summary of the Seawater Intrusion Contingency Actions from the SIRP was contained in Attachment 10 of the 2009 Annual Report. The complete document may be viewed and downloaded from the Watermaster's website at: <http://www.seasidebasinwatermaster.org/>.

Seawater Intrusion Analysis

The Watermaster retained HydroMetrics Water Resources, Inc. to prepare the WY 2010 Seawater Intrusion Analysis Report (SIAR) required by the M&MP. The WY 2010 SIAR provides an analysis of data collected during this Water Year.

The principle conclusions reported in the SIAR are that depressed groundwater levels, continued pumping in excess of recharge and fresh water inflows, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin. However, in spite of these factors, multiple forms of analyses led to the conclusion that no seawater intrusion is currently being observed in existing monitoring wells within the Basin.

The SIAR is lengthy, but the full *Executive Summary Section* from it is provided in Attachment 11. A complete copy of the document may be viewed and downloaded from the Watermaster's website at: <http://www.seasidebasinwatermaster.org/>.

The Watermaster continues to analyze the data that is being gathered at the various monitoring sites in order to keep a close watch on the conditions within the Basin, as discussed under the "Enhanced Monitoring Well Network" heading above.

Groundwater Modeling

During FY 2009 the previous Groundwater Model of the Basin was updated and a separate Groundwater Model was developed to determine protective water levels within the Basin. The modeling work was performed by HydroMetrics Water Resources, Inc. This Model development work was described in the 2009 Annual Report.

Modeling Scenarios

In FY 2010 two Scenarios to be modeled using the updated Groundwater Model were developed, and funds to model those Scenarios were included in the FY 2010 M&MP Budget.

These two Scenarios are described below:

Scenario 1 models the effects of additional pumping in the Laguna Seca Subarea. Although no additional pumping from wells in this Subarea is currently being considered, the purpose of this scenario was to begin addressing questions about the impacts on other subareas of the Basin resulting from pumping by wells in the Laguna Seca subarea. Under Scenario 1 three new simulations were run, with pumping from all wells in the Laguna Seca subarea increased by 0%, 10%, and 20% for all years. Each simulation was analyzed for the following:

- A. Impact on coastal groundwater levels,
- B. Impact on amount of groundwater flowing into the Southern Coastal subarea,
- C. Impact on amount of groundwater flowing into the Northern Inland subarea, and
- D. Changes to Laguna Seca subarea groundwater levels.

Work on Scenario 1 was completed, and a full copy of the Technical Memorandum describing that work is contained in Attachment 14. The principle conclusions from this work were:

- At current pumping rates, groundwater levels in the Laguna Seca subarea will continue to decline.
- After 5 years of pumping at 10% increased rates, the groundwater levels within the Laguna Seca Subarea where the greatest drop in groundwater levels occurs will be 3 feet lower than they would be without this increase in pumping. This grows to 5 feet lower after 22 years of 10% increased pumping rates.
- After 5 years of pumping at 20% increased rates, the groundwater levels within the Laguna Seca Subarea where the greatest drop in groundwater levels occurs will be 5 feet lower than they would be without this increase in pumping. This grows to 10 feet lower after 22 years of 20% increased pumping rates.
- Continued pumping even at current (Water Year 2009) rates is unsustainable because groundwater levels will eventually fall low enough to cause some wells to no longer be operational. This problem would be accelerated by increasing the pumping rates of the Alternative Producers within the Laguna Seca subarea.
- Increasing Alternative Producer's pumping rates by 10% or 20% reduces groundwater flow to the Southern Coastal subarea by only a minor amount because of the wells' distance from the Southern Coastal subarea. However, it considerably reduces groundwater flow into the Northern Inland subarea.
- The Laguna Seca subarea is not isolated. Although increasing pumping has only minor impacts on the Southern Coastal subarea, it has more significant impacts on groundwater flows into the Northern Inland subarea. Increasing Laguna Seca pumping also significantly impacts areas outside the Seaside Groundwater Basin, including the Toro area.

Scenario 2 will be to model the effects of implementing the "Monterey Regional Water Supply Project –Phase 1" as that project is defined in the Final EIR for the Coastal Water Project. A key component of this project will be a Regional Desalination Plant.

One of the initial steps in beginning work on this Scenario would be for HydroMetrics to determine the quantities of water that would be supplied to the Seaside Groundwater Basin by the Monterey Regional Water Supply Project. During the course of starting to compile this information it became clear that there were some water supply issues that were not fully or clearly explained in the Final EIR, and that those issues would likely be at least partially clarified when the PUC acts to approve the project. The issues will be further clarified when water quality data from monitoring wells that will be constructed to help refine the estimate of how much groundwater will be taken from the Salinas Valley Basin by the proposed Regional Desalination Plant intake wells has been obtained. Data from the monitoring wells is anticipated to become available in mid-summer of 2011.

For these reasons the Watermaster has deferred proceeding with work on Scenario 2 at this time, and to reconsider starting that work in FY 2011. This Scenario 2 modeling work has been included in the Monitoring and Management Program Scope of Work and Budget for FY 2011, so that this work can be performed when the more definitive data necessary to perform this work will be available.

If the Watermaster were to proceed with Scenario 2 without having a clear understanding of each of these issues, HydroMetrics would have to make assumptions on some of the water supply quantities for the Seaside Basin. This could result in having to re-run the model after decisions on those issues have been made, which would cause the expenditure of additional funds by the Watermaster beyond those currently budgeted for this work. Since the Regional Water Supply Project will take at least several years to be completed after PUC approval is granted, there does not appear to be any risk in delaying this modeling work until clearer answers to these water supply issues are available.

Protective Water Levels

In FY 2009 the Watermaster completed development of preliminary Protective Water Levels (PWLs) for each of the Basin's production aquifers at the locations of several coastal wells. There was discussion of performing refined analyses and/or to determine how the PWLs would be affected if less than 100% of the Basin was to be protected. Performing these refinements was included as a Task in the 2010 M&MP Work Plan, and in the M&MP Budget.

However, certain information (water supply information from the Regional Water Supply Project as discussed above under *Modeling Scenarios*) that would be needed to perform that work was not yet available. There was consensus that there was no danger at this time in delaying refining the Protective Water Levels. Therefore, refining the PWLs has been rescheduled and budgeted for FY 2011, as described in the M&MP Work Plan contained in Attachment 12.

K. Conclusions and Recommendations

The Seaside Basin Watermaster Board has worked diligently to meet all of the Court's established deadline dates. All of the Phase 1 Scope of Work activities that are described in the "Implementation Plan for the Seaside Basin Monitoring and Management Program" dated March 7, 2007 have been completed. At the Watermaster Board meeting held on September 22, 2010 the Board adopted the budgets contained in Attachment 7, which support carrying out all elements of the "Seaside Groundwater Basin Management and Monitoring Program Anticipated 2011 Work Plan." That Work Plan describes the M&MP activities that will be conducted during Fiscal Year 2011. A copy of this Work Plan is contained in Attachment 12.

As described in Section J above, information from the Enhanced Monitoring Well Network is being utilized to detect any seawater intrusion. The response actions described in the Watermaster's Seawater Intrusion Response Plan, which was contained in the 2009 Annual Report, will be implemented if seawater intrusion is detected within the Basin.

Each year that the Watermaster has prepared its Annual Reports as required by the Decision, it has been very difficult to assemble all of the data that is necessary to complete the report in time for the completed draft document to be reviewed by the Watermaster’s Technical Advisory Committee, which sometimes proposes edits to the draft document, and then by the Board, which sometimes also proposes edits to the draft document.

Water production data is needed to prepare the Production Report that goes into Attachment 1. The production data, as well as water quality data, is also needed in order to complete preparation of the SIAR which goes into Attachment 11. However, the 4th quarter production data cannot be generated until the 4th quarter of the Water Year has ended, on September 30, and is often not received by the Watermaster until October 15 or later. In addition production reports from the de minimis producers are submitted only to the MPWMD, not to the Watermaster, and HydroMetrics would like to include that production data when it prepares the SIAR. However, MPWMD’s reporting deadline for that data is November 15 which means that much of that data cannot be included in the SIAR, if the SIAR is to be included as part of the Annual Report which is due to the Court by November 15.

Similarly, water quality data is needed in order for MPWMD to complete preparation of its 4th quarter Water Quality Analytical Results report that goes into Attachment 8, and for the SIAR to be completed. However, water quality data from some of the producers is also often not received until at least mid-October. In some instances this has led to the necessity of holding special meetings in order to complete the Annual Report in time to submit it to the Court by the currently-required November 15th filing deadline.

Several other adjudicated basin Watermasters were contacted regarding the submittal schedules for their annual reports. Based on the information that was received it appears that Watermaster annual reports are required anywhere between 2 and 6 months after the end of the reporting period. The information is summarized in the table below. The Seaside Basin’s schedule for submitting its Annual Report 1.5 months after the end of the Water Year is shorter than any of the other adjudicated basins.

Basin	Reporting Period	Report Due Date	Time Allotted for Preparing Report
Main San Gabriel Basin	July 1 – June 30	November 1	4 Months
Raymond Basin	July 1 – June 30	September 1	2 Months
Chino Basin	July 1 – June 30	January 1	6 Months
Santa Maria Basin	January 1 – December 31	April 30	4 Months
Seaside Basin	October 1 – September 30	November 15	1.5 Months

For future Annual Reports, subject to the Court’s approval of this proposal following its review of this Annual Report, it is proposed that Annual Reports be filed with the Court by February 15 following the end of each Water Year. This is 3.5 months after the end of the reporting period.

ATTACHMENT 1

GROUNDWATER EXTRACTIONS

2010 WATER YEAR

Seaside Groundwater Basin Watermaster

Reported Quarterly and Annual Water Production (in Acre Feet) From the Seaside Groundwater Basin
For All Producers Included in the Seaside Basin Adjudication
(All Values in Acre-Feet (AF))

Producer	Type	Quarters				Annual To-Date Reported Total	Base Operating Yield Allocation	Carry Over from 2009/09	Stored Water Credit for 2010
		Oct-Dec 2009	Jan-Mar 2010	Apr-Jun 2010	Jul-Sep 2010				
Coastal Subareas									
CAW (Coastal Subareas)	SPA	668.3	31.4	950.9	1,412.9	3283.5	3,086.7	495.9	1,710.5
Seaside (Municipal)	SPA	69.7	61.1	76.7	75.3	282.9	233.1	-	-
Granite Rock Company	SPA	Exempt	Exempt	Exempt	Exempt	0.0	23.8	90.9	-
D.B.O. Development No. 30*	SPA	Exempt	Exempt	Exempt	Exempt	0.0	43.3	172.6	-
City of Seaside (Golf Courses)	APA	62.8	21.7	16.1	0.0	100.6	540.0	-	-
Sand City	APA	0.0	0.0	0.1	-	0.1	9.0	-	-
Security National Guaranty	APA	-	-	-	-	0.0	149.0	-	-
Cypress Pacific Investors**	APA	Exempt	Exempt	Exempt	Exempt	0.0	14.0	-	-
Alderwoods Group (Mission Memorial)	APA	2.3	-	3.9	6.6	12.8	31.0	-	-
Coastal Subarea Totals		1,023.1	114.2	1,047.7	1,494.9	3,679.9	4,149.9	778.4	1,110.5
Previous Year Totals (2009)		1,128.4	113.3	912.8	1,991.5	3,514.0	4,265.2	224.1	0.0
Laguna Seca Subareas									
CAW (Inland Subareas)	SPA	101.1	66.5	110.7	151.7	430.0	246.1	-	-
Pasadena Country Club	APA	14.8	1.9	53.6	99.7	170.0	251.8	-	-
Laguna Seca/Bishop	APA	19.1	0.0	68.4	126.7	224.3	320.9	-	-
Turk School	APA	4.1	1.8	5.1	7.6	18.6	32.0	-	-
Laguna Seca Park (County)	APA	3.7	3.7	7.9	10.5	24.8	41.0	-	-
Laguna Seca Subarea Totals		142.8	72.9	245.7	406.3	867.7	890.1	-	-
Previous Year Totals (2009)		186.3	89.0	188.3	413.1	1,060.7	914.8	-	-
Subtotal Pumped (Not Including ASR)									
		1,165.9	187.1	1,293.4	136.7	4,547.6	5,040.0	-	-
Alternative Producers =						551.1			
Standard Producers =						3,996.4			
CAW ASR (Injection/Recovery)									
Monterey County District		(129.5)	(576.2)	(404.8)	0.0	(1,110.5)	-	-	-
Total Pumped (Including ASR)		1,036.4	(389.1)	888.6	1,901.2	3,437.1	5,040.0	-	-
Total Production by Alternative Producers =						551.1			
Total Production by Standard Producers =						2,885.9			
Grand Total Production =						3,437.0			

*Transfer of Parcel and Assignment of Rights from D.B.O. Development No. 27 to D.B.O. Development No. 30

**Referred to as "M.E. Calabrese 1987 Trust" in Decision

Notes:

- The Water Year (WY) begins October 1 and ends September 30 of the following calendar year. For example, WY 2010 began on October 1, 2009, and ended on September 30, 2010.
- "Type" refers to water right as described in Seaside Basin Adjudication decision as amended, signed February 9, 2007 (Monterey County Superior Court Case No. M66343).
- Values shown in the table are based on reports to the Watermaster as received by MPWMD by October 18, 2010.
- All values are rounded to the nearest tenth of an acre-foot. Where required, reported data were converted to acre-feet utilizing the relationships: 325,851 gallons = 43,560 cubic feet = 1 acre-foot.
- Each producer's total authorized production allocation is the sum of Base Operating Yield Allocation and Carry Over from Prior Year and is taken from the Watermaster Producer Allocations for this Water Year.
- Any minor discrepancies in totals are attributable to rounding.
- APA = Alternative Producer Allocation; SPA = Standard Producer Allocation; CAW = California American Water.
- During September 2010, CAW - Coastal Subareas provided 12.6 AF of water to City of Seaside (Municipal); the production volumes for both these producers were adjusted accordingly.

ATTACHMENT 2

**WATERMASTER DECLARATION
OF
UNAVAILABILITY
OF
ARTIFICIAL REPLENISHMENT WATER**

NOTICE TO ALL SEASIDE GROUNDWATER PRODUCERS:

Case No. M66343 Amended Decision Section III.B.2.

Commencing with the fourth Water Year, and triennially thereafter, the Operating Yield for both Subareas will be decreased by ten percent (10%) until Operating Yield is the equivalent of the Natural Safe Yield unless:

- a. The Watermaster has secured and is adding an equivalent amount of Non-Native water to the Basin on an annual basis; or*
- b. The Watermaster has secured reclaimed water in an equivalent amount and has contracted with one or more of the Producers to utilize said water in lieu of their Production Allocation, with the Producer agreeing to forego their right to claim a Stored Water Credit for such forbearance; or*
- c. Any combination of a and b above which results in the decrease in Production of Native Water required by this Decision; or*
- d. The Watermaster has determined that Groundwater levels within the Santa Margarita and Paso Robles aquifers are at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion.*

The Watermaster has determined that the conditions necessary to avoid the ten percent Operating Yield reduction have not been met as follows:

1. Watermaster has not secured water for adding an equivalent amount of Non-Native water to the Basin on an annual basis. The Watermaster and the City of Seaside have, however, entered into a Memorandum of Understanding for Seaside's In-lieu Replenishment Program which may, in future water years, provide sufficient water to avoid an Operating Yield reduction.
2. The Watermaster has not secured reclaimed water in an equivalent amount.
3. The Watermaster has not secured Non-Native water or reclaimed water which results in the decrease in Production of Native Water required by the Decision.
4. The firm contracted by Watermaster for technical analyses continued to report in 2010 that Groundwater levels within the Santa Margarita and Paso Robles aquifers are not at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion, so the requirement for this item continues to not be met.

Section III.L.3.j.iii: Watermaster declares that for Water Year 2011 Artificial Replenishment Water is not available to offset Operating Yield Over-Production and producers are limited in production to the following quantities of water:

Coastal Subarea Alternative Producers:

Seaside (Golf)	540.0 acre-feet
SNG	149.0 acre-feet
Cypress (Calabrese)	14.0 acre-feet
Mission Memorial (Alderwood)	31.0 acre-feet
Sand City	9.0 acre-feet

Laguna Seca Subarea Alternative Producers:

Pasadera	251.0 acre-feet
Bishop	320.0 acre-feet
York School	32.0 acre-feet
Laguna Seca County Park	41.0 acre-feet

Coastal Subarea Standard Producers:

California American Water	3,201.8 acre-feet*
Seaside (Municipal)	253.1 acre-feet
Granite Rock	138.6 acre-feet**
D.B.O. Development 30	279.2 acre-feet***

Laguna Seca Subarea Standard Producers:

California American Water	246.1 acre-feet
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-
- * Total includes 115.1 acre-feet of “not-free” carryover credit from previous water years.
In addition to its “not free” carryover credit, California American Water has 1,110.5 acre-feet of stored water credit in WY 2011 from injections into the Basin through the CAW/MPWMD ASR Program in 2010, being formalized through a Storage Agreement.
 - ** Total includes 56.4 acre-feet of “free” carryover and 58.4 acre-feet of “not-free” carryover credit from previous water years, plus the 2011 base allocation of 23.8 acre-feet.
 - *** Total includes 120.6 acre-feet of “free” carryover and 115.3 acre-feet of “not-free” carryover credit from previous water years, plus the 2011 base allocation of 43.3 acre-feet.

ATTACHMENT 3

**MEMORANDUM OF UNDERSTANDING REGARDING IN-LIEU
REPLENISHMENT WATER**

**MEMORANDUM OF UNDERSTANDING BETWEEN THE SEASIDE BASIN
WATERMASTER AND THE CITY OF SEASIDE**

This Memorandum of Understanding ("MOU") is entered into between the Seaside Groundwater Basin Watermaster ("Watermaster") and the City of Seaside ("City") (individually a "Party" and together the "Parties") this 7 day of April, 2010 ("Effective Date") with respect to the following:

RECITALS

A. The amended final decision ("Decision") entered in the lawsuit, California American Water v. City of Seaside et al., Monterey Superior Court, (Case No. M 66343) governs groundwater production within the Seaside Groundwater Basin (the "Basin").

B. The City is a party to the lawsuit and received groundwater production allocation pursuant to the Decision as follows: (1) 540 acre-feet of Alternative Production Allocation¹ in relation to the City-owned Blackhorse and Bayonet Golf Courses ("Golf Courses"); and (2) Standard Production Allocation in relation to the City Municipal Water System.²

C. The Decision provides that any party that exceeds its allocation of Natural Safe Yield is subject to a Replenishment Assessment for each acre-foot of Over-Production during each Water Year.

D. The City presently owes certain sums to Watermaster for previously accrued Replenishment Assessments.

E. The City projects that it will continue to engage in Over-Production to supply its Municipal Water System, and potentially its Golf Course System, and therefore anticipates that it will continue to incur additional Replenishment Assessment liability.

F. The Decision obligates the Watermaster to procure new sources of water for replenishment of the Basin to offset cumulative Over-Production.

G. The Parties have identified an in lieu replenishment program ("Program") involving the Golf Courses and the City's Alternative Production Allocation associated with the Golf Courses, which is a viable means to obtain some of the replenishment water that Watermaster is obligated to procure.

H. To implement the Program, the City has entered into an agreement with the Marina Coast Water District ("MCWD") to supply water to irrigate the Golf Courses in lieu of production of Basin groundwater for irrigation pursuant to the City's Alternative Production

¹ All capitalized terms used in this MOU are to be given the same meaning as set forth in the Decision, unless otherwise described.

² The Standard Production Allocation is set forth as a percentage of Operating Yield of the Coastal Subarea. The City's Standard Production Allocation is roughly 10.47% of the Operating Yield.

Allocation, thereby causing an in lieu replenishment of the Basin.³

I. The City desires to engage in the Program in exchange for a monetary credit against its Replenishment Assessment liability.

I. The Parties desire to enter into this MOU to memorialize the terms upon which the City shall engage in the Program, and the Watermaster shall provide the City with a monetary credit against its Replenishment Assessment liability.

AGREEMENT

The Parties agree as follows:

1. Term. This MOU shall commence upon the Effective Date and continue until the earlier of five (5) years from the Effective Date, or three (3) months following the end of the Water Year in which the Chief Executive Officer of Watermaster anticipates that the City shall have provided sufficient in lieu replenishment water pursuant to the Program to offset all of its then-accrued Replenishment Assessment liability.

2. Commencement and Scope of Program. The Program shall commence, if at all, only once the City deems it appropriate to commence the Program, in its sole discretion. The City shall notify the Watermaster CEO in writing of the date it intends to commence the program as far in advance as is feasible. The amount of in lieu replenishment that shall occur in any particular year pursuant to the Program, if at all, shall also be determined by the City in its sole discretion.

3. Accounting and Replenishment Assessment Credit.

3.1 Annual Accounting. During the term of this MOU, the City shall report to the Watermaster an accounting of the amount of water received from MCWD to be used in lieu of groundwater production from the Basin for the preceding calendar quarter, in writing, on or before January 15, April 15, July 15, and October 15 of each Water Year. The City shall record and report the MCWD deliveries based upon accurate meter readings. All meters used for such reporting shall be regularly calibrated and maintained by the City, or the City's representative, and at the City's expense to ensure accuracy. Prior to the commencement of the Program the City shall provide to the Watermaster an initial calibration report certifying the accuracy of the flowmeter which will measure the delivery of MCWD water to the City's golf courses. When and if requested by the Watermaster, the City will perform additional calibrations to verify meter accuracy. Such requests by the Watermaster will not be made more often than once every two years, unless metering data are indicative of metering inaccuracies. If the Watermaster disputes the reported quantity of MCWD deliveries, it shall inform the City of the basis of its objection within one (1) month of receipt of the City's accounting, and the Parties shall thereafter engage in good faith negotiations to attempt to resolve the dispute. Any dispute that cannot thereby be settled shall be referred to the Court for resolution.

3.2 Calculating Credit Against City's Replenishment Assessment Liability.

³ The water supply from Marina Coast Water District will initially be derived from Salinas Basin groundwater production and later reclaimed water, once available.

SB 542368 v1:006840.0001

At the end of each Water Year, the Watermaster shall determine the cumulative gross Replenishment Assessment liability owed by the City in accord with Section 6.5 of the Watermaster's Rules and Regulations. The Watermaster shall then apply a credit against the City's gross Replenishment Assessment liability, which shall equal the amount of all MCWD deliveries to the Golf Courses for irrigation during the proceeding Water Year, not to exceed the City's 540 acre-feet of Alternative Production Allocation, multiplied by the amount of the effective Replenishment Assessment Unit Cost for that Water Year. Watermaster shall then promptly notify the City of the cumulative net Replenishment Assessment liability owed.

4. Temporary and Contingent Stay of Enforcement Proceedings for Un Paid Replenishment Assessments. To accommodate the City's efforts to offset its accrued Replenishment Assessments through the Program, enforcement against the City for unpaid Replenishment Assessments shall be stayed through the end of WY 2010. At the end of WY 2010, Watermaster shall make a recommendation to the Court in its Annual Report as to whether the stay of enforcement should be continued beyond this initial period. Watermaster's recommendation shall be based upon its determination of the relative success of the Program, the likelihood of the City continuing to make meaningful progression toward full offset of its accrued Replenishment Assessments, and whether Watermaster believes there is any other source of replenishment water available that could be purchased on an acre-foot basis in an amount at or below its Replenishment Assessment rate. If the stay is continued, Watermaster shall make such recommendations in each Annual Report thereafter until the stay is terminated, the City offsets all of its prior Replenishment Assessments pursuant to this MOU, or this MOU terminates. Should Watermaster recommend against continuation of the stay, the stay shall terminate unless otherwise ordered by the Court, and any continuation of the stay recommended by Watermaster shall be contingent upon consent by the Court.

5. Good Faith Negotiation of Program Extension. Upon termination of the initial term of this MOU, as set forth in Section 1 above, the Parties shall engage in good faith negotiations to determine whether the Program may be extended pursuant to mutual agreeable terms. No Party shall be obligated to commit to a Program extension or any particular term of a subsequent MOU for a Program extension.

6. Miscellaneous Terms. This Agreement shall be governed by and construed in accordance with the laws of California, without regard to conflicts of law principles, with venue for all purposes to be proper only in the County of Monterey, California. If any actions are required to interpret or enforce the provisions of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees and costs. Any failure to enforce any provision of this Agreement shall not constitute a waiver thereof or of any other provision hereof. This Agreement constitutes the entire understanding and agreement of the Parties with respect to the subject matter of this Agreement, supersedes the earlier version of this Agreement, and there have been no promises, representations, agreements, warranties or undertakings by any of the Parties, either oral or written, of any character or nature hereafter binding except as set forth herein. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the Parties to this Agreement and by no other means. Each Party waives its future right to claim, contest or assert that this Agreement was modified, canceled, superseded, or changed by oral agreement, course of conduct, waiver or estoppel.

IN WITNESS WHEREOF the Parties hereby agree to perform pursuant to the terms set forth herein.

SEASIDE BASIN WATERMASTER


Dewey Evans, Chief Executive Officer
Date: April 7, 2010

CITY OF SEASIDE


Ray Corpuz, City Manager
Date: April 7, 2010

SB 542368 v1 006840 0001

ATTACHMENT 4

WATERMASTER ADMINISTRATIVE COSTS

VI.B
11/3/2010

Seaside Groundwater Basin Watermaster
Budget vs. Actual Administrative Fund
 Fiscal Year (January 1 - December 31, 2010)
 Balance through October 31, 2010

	<u>2010 Adopted Budget</u>	<u>Contract Amount</u>	<u>Year to Date Revenue / Expenses</u>
Available Balances & Assessments			
Dedicated Reserve	25,000.00		25,000.00
FY 2008 (Rollover)	43,000.00		47,416.90
FY 2008 Assessments	82,000.00		48,792.00
Available	150,000.00		121,208.90
Expenses			
Contract Staff	100,000.00	100,000.00	46,650.00
Legal Advisor	25,000.00	-	-
Total Expenses	125,000.00	100,000.00	46,650.00
Total Available	25,000.00		
Dedicated Reserve	25,000.00		
Net Available	-		
Administrative Fund Assessments owed by City of Seaside			
FY 2009 (Including 5% penalty)	16,444		
FY 2010 (Including 5% penalty)	8,618		

ATTACHMENT 5

**REPLENISHMENT ASSESSMENT UNIT COST
DETERMINATION FOR WATER YEAR 2011**

**SEASIDE GROUNDWATER BASIN
WATERMASTER**

TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager
MODIFIED AND APPROVED BY: Dewey D Evans, CEO

DATE: September 22, 2010

SUBJECT: Discussion/Consider Adoption of Proposed Unit Cost for Water Year 2010-2011 Over-Production Replenishment Assessment Amount

RECOMMENDATIONS:

It is recommended that the Board approve a Replenishment Assessment Unit Cost of \$2,780 per acre-foot of overproduction for WY 2011.

BACKGROUND:

The Replenishment Assessment Unit Cost is used in the calculation of Replenishment Assessments that are charged to any Standard Producer that exceeds its allocation during the Water Year. The approach that was approved by the Board last year is as follows:

1. All potential supplemental water supply projects that could bring water to the Seaside Basin any time within the next 10 years are to be included in the calculations, assuming sufficient information on those projects can be obtained.
2. Costs for each project are to be inflated to the first year in which it could potentially begin supplying water, to reflect the increase in costs that will be occurring before the projects actually come on-line.
3. Contingency allowances are to be included in these costs based on the level of project development for each project. This allowance is intended to provide for unforeseen cost impacts to the projects, particularly for projects that are only at the conceptual level of development.

When the TAC developed the Replenishment Assessment Unit Cost for WY 2010 it used 8 projects which the TAC felt had the potential to deliver water to the Seaside Basin within the next 10 years. These projects were:

1. CAW Moss Landing Desalination Plant
2. CAW North Marina Desalination Plant
3. MPWMD's 95-10 Desal Plant
4. Salinas River Surface Water Treatment Plant
5. Regional Desalination
6. Regional Urban Water Augmentation Project
7. MRWPCA Groundwater Replenishment Project for the Seaside Basin
8. Pacific Grove Stormwater Project

The Budget and Finance Committee determined that only three of the projects listed above should be considered to have the potential to deliver water within the next 10 years, and recommended to the Board that only the following three projects be used in the calculation of the WY 2010 Replenishment Assessment Unit Cost: 1. Salinas River Surface Water Treatment Plant, 2. Regional Desalination, and 3. Regional Urban Water Augmentation Project. The Board approved the Budget and Finance Committee's recommendation

DISCUSSION

The Board determined that these were the only three projects that had the potential to deliver water to the Seaside Basin within the next 10 years. Since there did not appear to be any new projects that were not considered by the TAC and the Board last year, at its August 11, 2010 meeting (at which a quorum was present) the TAC made the preliminary decision to develop the WY 2011 Replenishment Assessment Unit Cost using these same three projects. The projects were to be updated using whatever information could be obtained from the project proponents with regard to the characteristics of each of these three projects, e.g. estimated costs, water supply quantities, and the dates at which each project could start delivering water.

MCWRA, MRWPCA, MCWD, and CAW were contacted to seek this updated information. Here is what transpired:

- Mr. Sabolsice of CAW provided updated startup year and unit cost information for the Regional Desalination project which is a component of what is now referred to as the Regional Water Supply Project.
- Mr. True of MCWD said that he would contact his manager to seek permission to contact the consulting firm they are using as the project manager for the RUWAP to see if there was updated information that should be used. Mr. Israel of MRWPCA felt that the startup date for the RUWAP would be later than previously listed, due to the slowness of progress on some of the issues that will affect the startup date. However, Mr. True felt that it might still be possible for the listed startup date to be achieved. As of this date no updated information has been provided to the Watermaster by MCWD, so continuing to use the data that was used last year is recommended, based on Mr. True's comment.
- Mr. Weeks and Mr. Johnson, both of MCWRA, requested that the Salinas River Surface Water Treatment Plant not be used as one of the projects for calculating the Unit Cost, because the MCWRA Board has not identified that as a future project that MCWRA will be implementing, and because they have not closely examined the cost data or the proposed schedule for implementing the project to determine their reasonableness. Also, Supervisor Calcagno, in a recent conversation with MRWPCA personnel, mentioned that this project hasn't been vetted in the Salinas Valley and may cause controversy if it is included.

Based on this information and the lack of better and more concrete criteria, the Budget and Finance Committee unanimously agreed to recommend to the Board at leaving the unit cost for Water Year 2010-2011 over production replenishment assessment amount the same as the current water year amount or \$2,780.

ATTACHMENT 6

**REPLENISHMENT ASSESSMENT
CALCULATIONS FOR WY 2010**

**WATERMASTER PRODUCER ALLOCATIONS WATER YEAR 2010
INCLUDING A 10% REDUCTION FOR 100% OF THIS WATER YEAR**

Initial Basin-Wide Operating Yield ⁽¹⁾	6040.0	Coastal Operating Yield ⁽¹⁾	4149.9
Natural Safe Yield (NSY) ⁽²⁾	3000.0	Laguna Seca Operating Yield ⁽¹⁾	890.1

ALTERNATIVE PRODUCER ALLOCATIONS

Coastal Subarea ⁽³⁾	Acre-Feet	Laguna Seca Subarea ⁽³⁾	Acre-Feet
Seaside (Golf)	540.0	Pasadena	251.0
SNG	149.0	Bishop	320.0
Calabrese	14.0	York School	39.0
Mission Memorial (Alderwood)	31.0	Laguna Seca County Park	41.0
Sand City	9.0		
Total⁽⁴⁾	743.0	Total⁽⁴⁾	644.0

STANDARD PRODUCER ALLOCATIONS

Coastal Operating Yield Available to Standard Producers (AFY)			3406.90	Laguna Seca Operating Yield Available to Standard Producers (AFY)			246.10
Coastal Subarea	Standard Producer Allocations		AFY Available to This Producer	Laguna Seca Subarea	Standard Producer Allocations		AFY Available to This Producer
	Base Water Right % ⁽⁵⁾	Weighted % ⁽⁵⁾			Base Water Right % ⁽⁵⁾	Weighted % ⁽⁵⁾	
California American Water	77.55%	90.60%	3086.65	CAW	45.13%	100.00%	246.10
Seaside (Municipal)	6.36%	7.43%	253.13				
Granite Rock	0.60%	0.70%	23.85				
D.B.O. Development No. 27	1.09%	1.27%	43.27				
Total	85.6%	100.0%	3406.9	Total	45.1%	100.0%	246.1

Allocation of Available Operating Yield Among Standard Producers	Base Water Right Available to this Producer (AF)	% NSY to SPA (Base Water Right / Total Water Right)	NSY Available to Producers (AF) Current Water Year	Free Carryover Credits from Prior Water Year	Not-Free Carryover Credits from Prior Water Year	Water Rights Transferred / Sold / ASR (Injection) Extraction	Total Producer NSY (AF) (NSY Available + Free Carryover Credits)	Total Authorized Production in Current Water Year (Base Water Right Plus All Carryover)	Actual AFY Pumped by Producer in WY 2010	Free Carryover Credits to WY 2011	Not-Free Carryover Credits to WY 2011	Stored Water Credits to WY 2011
			WY'10 APA Pumped 201.9 AF									
		NSY 3000 - 553.1 AF = 2446.9										
California American Water	3332.75	91.2%	2234.05	0.00	-495.90	(1110.45)	2234.05	3028.65	3713.53	0.00	-115.13	1110.45
Seaside (Municipal)	253.10	6.9%	169.66	0.00	0.00	0.00	169.66	253.10	282.87	0.00	0.00	0.00
Granite Rock	23.85	0.7%	15.99	-40.39	50.47	0.00	56.37	114.71	0.00	56.37	58.34	0.00
D.B.O. Development No. 27	43.27	1.2%	29.01	91.60	101.03	0.00	120.60	235.90	0.00	120.60	115.30	0.00
Total	3652.97	100.00%	2448.70	131.98	647.40	(1110.45)	2680.68	4432.36	3996.39	176.97	288.76	1110.45

Footnotes:

- (1) From page 17 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007
 - (2) From page 14 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007
 - (3) From page 21 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007
 - (4) From Table 1 on page 19 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007
 - (5) Calculated from the Base Water Right percentages in the adjacent column
- Base Water Right plus Free and Not Free Carryover Credit = 2010 Production Allocation (see 2010 Declaration)

SEASIDE GROUNDWATER BASIN WATERMASTER 2010 REPLENISHMENT ASSESSMENTS

CALCULATION OF REPLENISHMENT ASSESSMENTS WY 2010									
Using the Basin-wide methodology approved by the Court on January 12, 2007, and as shown in detail on the spreadsheet contained in this attachment, Watermaster calculated the Water Year 2010 Replenishment Assessments as follows:									
	2010 Replenishment Assessment Unit Charge =					\$2,780.00			
	2010 NSY Available to Standard Producers =					2,448.70	AF (3,000 AF NSY - 551.1 APA 2010 Production)		
	WY 2010 Production (AF)	% of NSY Available	Volume of NSY Available (AF)	NSY Overproduction (AF)	NSY Overproduction Assessment	Operating Yield Available (AF)	Operating Yield Overproduction (AF)	Operating Yield Overproduction Assessment	Total Assessment
Standard Producers									
California American Water	3,713.52	91.23%	2,234.05	1,479.47	\$ 4,112,933.15	3,828.65	0.00	\$ -	\$ 4,112,933.15
Seaside (Municipal)	282.87	6.93%	169.66	83.44	\$ 231,960.82	253.10	29.77	\$ 82,760.60	\$ 314,721.42
Granite Rock	0.00	0.65%	15.99	0.00	\$ -	114.71	0.00	\$ -	\$ -
D.B.O. Development No. 27	0.00	1.18%	29.01	0.00	\$ -	235.90	0.00	\$ -	\$ -
Total Production	3,996.39	100.00%	2,448.70	1,562.91	\$ 4,344,893.97	4,432.36	29.77	\$ 82,760.60	\$ 4,427,654.57
	WY 2010 Production (AF)	% of NSY Available	Volume of NSY Available (AF)	NSY Overproduction (AF)	NSY Overproduction Assessment	Operating Yield Available (AF)	Operating Yield Overproduction (AF)	Operating Yield Overproduction Assessment	Total Assessment
Alternative Producers									
City of Seaside (Golf Courses)	100.61	N/A	540.00	0.00	\$ -	540.00	0.00	\$ -	\$0
Total Production	100.61	N/A	540.00	0.00	-	540.00	0.00	\$ -	\$0

ATTACHMENT 7

WATERMASTER BUDGETS

Seaside Groundwater Basin Watermaster Fiscal Year 2011 Administrative Fund Budget

Seaside Groundwater Basin Watermaster Administrative Fund Proposed Budget Administrative Years 2011 & 2012

	<u>2010 Adopted</u> <u>Budget</u>	<u>2010 Estimated</u> <u>Expenses</u>	<u>2011 Proposed</u> <u>Budget</u>	<u>2012 Proposed</u> <u>Budget</u>
Assessment Income				
Dedicated Reserve	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000
FY Rollover	43,000	43,000	60,000 *	-
Administrative Fund	<u>82,000</u>	<u>82,000</u> *	<u>45,000</u>	<u>105,000</u>
Totals	<u>150,000</u>	<u>150,000</u>	<u>130,000</u>	<u>130,000</u>
Proposed Budget				
Contractual Services - Administrativ	100,000	65,000	80,000	80,000
Contractual Services - Legal Advise	25,000	-	25,000	25,000
Total Expenses	<u>125,000</u>	<u>65,000</u>	<u>105,000</u>	<u>105,000</u>
Total Available	<u>25,000</u>	<u>85,000</u>	<u>25,000</u>	<u>25,000</u>
Less Dedicated Reserve	<u>25,000</u>	<u>25,000</u>	<u>25,000</u>	<u>25,000</u>
Net Available	<u>\$ -</u>	<u>\$ 60,000</u>	<u>\$ -</u>	<u>\$ -</u>

**Seaside Groundwater Basin Watermaster
Fiscal Year 2011 Monitoring & Management Plan
Adopted Operations Budget**

Management and Monitoring Plan Operations Budget For Tasks to be Undertaken in 2011⁽¹²⁾								
Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS ⁽³⁾			Total	
				MPWMD	MCWRA	Private Consultants		Contractors
Labor								
			Technical Project Manager	\$0	\$0	\$100,000	\$0	\$100,000
M.1 Program Administration								
	M.1.a		Project Budget and Controls	\$0	\$0	\$0	\$0	\$0
	M.1.b		Assist with Board and TAC Agendas	\$0	\$0	\$0	\$0	\$0
	M.1.c & M.1.d		Preparation for and Attendance at Meetings ⁽⁸⁾	\$0	\$0	\$5,150	\$0	\$5,150
	M.1.e		Peer Review of Documents and Reports ⁽⁸⁾	\$0	\$0	\$3,100	\$0	\$3,100
	M.1.f		QA/QC	\$0	\$0	\$0	\$0	\$0

Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS ⁽³⁾				Total
				MPWMD	MCWRA	Private Consultants	Contractors	
I.1 Initial Phase 1 Monitoring Well Construction (Task Completed in Phase 1)								
I.2 Production, Water Level and Quality Monitoring								
	I. 2. a.		Database Management					
		I. 2. a. 1.	Conduct Ongoing Data Entry/ Database Maintenance/Enhancement	\$9,900	\$0	\$3,100	\$0	\$13,000
		I. 2. a. 2.	Verify Accuracy of Production Well Meters	\$0	\$0	\$0	\$0	\$0
	I. 2. b.		Data Collection Program					
		I. 2. b. 1.	Site Representation and Selection ⁽⁷⁾	\$0	\$0	\$0	\$0	\$0
		I. 2. b. 2.	Collect Monthly Water Levels ⁽⁶⁾	\$3,450	\$0	\$0	\$0	\$3,450
		I. 2. b. 3.	Collect Quarterly Water Quality Samples ⁽¹⁾⁽⁵⁾⁽⁶⁾	\$39,800	\$0	\$0	\$28,800	\$68,600
		I. 2. b. 4.	Update Program Schedule and Standard Operating Procedures.	\$0	\$0	\$0	\$0	\$0
		I. 2. b. 5.	Monitor Well Construction ⁽⁷⁾	\$0	\$0	\$0	\$0	\$0
		I. 2. b. 6.	Reports	\$5,850	\$0	\$1,050	\$0	\$6,900

Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS ⁽³⁾				Total
				MPWMD	MCWRA	Private Consultants	Contractors	
I.3 Basin Management								
	I. 3. a.		Enhanced Seaside Basin Groundwater Model	(Costs Shown in Subtasks Below)				
		I. 3. a. 1	Update the Existing Model	\$0	\$0	\$0	\$0	\$0
		I. 3. a. 2	Develop Protective Water Levels ⁽¹¹⁾	\$0	\$0	\$25,000	\$0	\$25,000
		I. 3. a. 3	Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions	\$0	\$0	\$25,000	\$0	\$25,000
	I. 3. b.		Complete Preparation of Basin Management Action Plan	\$0	\$0	\$0	\$0	\$0
	I. 3. c.		Refine and/or Update the Basin Management Action Plan ⁽¹¹⁾	\$0	\$0	\$25,000	\$0	\$25,000
	I. 3. d.		Evaluate Coastal Wells for Cross-Aquifer Contamination Potential			\$10,000		\$10,000

Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS ⁽³⁾				Total
				MPWMD	MCWRA	Private Consultants	Contractors	
I.4 Seawater Intrusion Contingency Plan								
	I. 4. a.		Oversight of Seawater Intrusion Detection and Tracking	\$3,700	\$0	\$2,050	\$0	\$5,750
	I. 4. b.		Analyze and Map Water Quality from Coastal Monitoring Wells	(Costs Included Under I.4.a)				
	I. 4. c.		Annual Report- Seawater Intrusion Analysis	\$0	\$0	\$25,750	\$0	\$25,750
	I. 4. d.		Complete Preparation of Seawater Intrusion Response Plan ⁽²⁾⁽⁸⁾	\$0	\$0	\$0	\$0	\$0
	I. 4. e.		Refine and/or Update the Seawater Intrusion Response Plan ⁽²⁾⁽⁹⁾	\$0	\$0	\$0	\$0	\$0
	I. 4. f.		If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan ⁽²⁾	(No Costs are Included for This Task, as This Task Will Likely Not be Necessary During 2011. If it Does Become Necessary, Use of Contingency Funds or a Budget Modification Will Likely be Necessary)				
TOTALS CONSULTANTS & CONTRACTORS				\$62,700	\$0	\$225,200	\$28,800	
SUBTOTAL not including Technical Program Manager =								\$216,700
Contingency (not including Technical Program Manager) @ 20% ⁽⁴⁾ =								\$43,340
Technical Program Manager								\$100,000
TOTAL=								\$360,040

Footnotes:

- (1) An outside contractor would be used to perform the induction logging, and potentially to also collect some water quality samples in conjunction with doing the induction logging. MPWMD is expected to perform portions of the work of this Subtask, and would likely be the party that contracts with the Contractor to perform the induction logging and sample collection work on certain of the wells.
- (2) The response plan would only be implemented in the event sea water intrusion is determined to be occurring.
- (3) Within the context of this document the term "Consultant" refers either to a Private Consultant providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term "Contractor" refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.
- (4) Due to the uncertainties of the exact scopes of some of the Tasks listed above at the time of preparation of this Budget, e.g. Tasks I.3.a, I.3.c, and I.3.d, it is recommended that a 20% Contingency be included in the Budget.
- (5) Includes \$5,000 in potential well site retrofitting costs that may be necessary in order to make some of these wells available for use as monitoring wells.
- (6) Does not include costs for MPWMD to collect water level data or water quality samples from wells other than those that are part of the basic monitoring well network, i.e. for private well owners who have requested that the Watermaster obtain this data for them. Costs to obtain that data are to be reimbursed to the Watermaster by those well owners, so there should be no net cost to the Watermaster for that portion of the work under these Tasks.
- (7) No additional monitoring well is expected to be constructed in 2011.
- (8) For HydroMetrics to provide hydrogeologic consulting assistance to the Watermaster, beyond that associated with performing other specified Tasks, when requested to do so by the Technical Program Manager.
- (9) If work under this Task is found to be necessary, it will be funded through the Contingency line item in this Budget.
- (10) Does not include funds for Database enhancement, as it is assumed that all desired enhancements had been made in 2010.
- (11) If necessary to reflect knowledge gained from modeling work or other data sources. Provides funds for work originally budgeted for 2010, but which has rescheduled to 2011.
- (12) Includes approximately a 3% inflation factor on most 2010 Budget costs, rounded to the nearest \$50, except the Technical Program Manager cost which has no inflation factor applied to it.

**Seaside Groundwater Basin Watermaster
Fiscal Year 2010 Monitoring & Management Plan
Adopted Capital Fund Budget**

**Management and Monitoring Plan Capital Budget
For Tasks to be Undertaken in 2011**

The Capital projects and expenditures for 2011 are:

No Capital projects are anticipated to be undertaken in 2011, so this budget is \$0.

**Seaside Groundwater Basin Watermaster
Fiscal Year 2011 Adopted Replenishment Fund Budget**

Seaside Groundwater Basin Watermaster									
Replenishment Fund									
Water Year 2011 (October 1 - September 30) / Fiscal Year (January 1 - December 31, 2011)									
Proposed Budget									
Replenishment Fund	2006	2007	2008	2009	2010	Totals Through WY 2010	Proposed Budget 2011	Projected Totals Through WY 2011	
Assessments:	WY 05/06	WY 06/07	WY 07/08	WY 08/09	WY 09/10		WY 10/11		
Unit Cost:	\$1,132	\$1,132	\$2,485	\$3,040	\$2,780		\$2,780		
California American Water									
Exceeding Natural Safe Yield Considering Alternative Producers	2,106,652	2,484,533	5,164,969	3,773,464	4,112,933	\$ 17,642,552	3,319,320	\$ 20,961,872	
Operating Yield Overproduction Replenishment	-	80,938	34,045	-	-	\$ 114,983	-	\$ 114,983	
Total California American	2,106,652	2,565,471	5,199,014	3,773,464	4,112,933	\$ 17,757,535	3,319,320	\$ 21,076,855	
CAW Credit Against Assessment	(465,648)		(12,305,924)	\$ (3,741,714)	-	\$ (16,513,286)	-	\$ (16,513,286)	
CAW Unpaid Balance	\$ 1,641,004	\$ 2,565,471	\$ (2,900,435)	\$ (2,868,685)	\$ 1,244,249	\$ 1,244,249	\$ 3,319,320	\$ 4,563,569	
City of Seaside - Municipal									
Exceeding Natural Safe Yield Considering Alternative Producers	169,200	173,739	385,642	399,211	370,296	\$ 1,498,088	369,740	\$ 1,867,828	
Operating Yield Overproduction Replenishment	50,487	340	16,898	66,090	61,438	\$ 195,253	61,438	\$ 256,691	
Total Municipal	219,687	174,079	402,540	465,300	431,734	\$ 1,693,340	431,178	\$ 2,124,518	
City of Seaside - Golf Courses									
Exceeding Natural Safe Yield - Alternative Producer	-	-	131,705	69,701	-	\$ 201,406	-	\$ 201,406	
Operating Yield Overproduction	-	-	131,705	69,701	-	\$ 201,406	-	\$ 201,406	
Total Golf Courses	-	-	263,410	139,402	-	\$ 402,812	-	\$ 402,812	
Total City of Seaside*	219,687	174,079	665,950	604,702	431,734	2,096,152	431,178	2,527,330	
City of Seaside Late Payment 5%	10,984	8,704	26,712	26,750		73,150			
In-lieu Credit Against Assessment	-		-	\$ -	(888,349)	\$ (888,349)	-	\$ (888,349)	
City of Seaside Unpaid Balance	\$ 230,671	\$ 182,783	\$ 692,662	\$ 631,453	\$ (456,615)	\$ 1,280,954	\$ 431,178	\$ 1,712,132	
Total Replenishment Fund Balance	\$ 1,871,675	\$ 2,748,254	\$ (2,207,773)	\$ (2,237,232)	\$ 787,634	\$ 962,558	\$ 3,750,498	\$ 6,275,700	
Total Replenishment Assessments	2,337,323	2,748,254	5,891,676	4,404,917	4,544,667	19,926,837	3,750,498	\$ 23,677,335	
Total Replenishment Paid and/or Credited	(2,106,652)	(2,565,471)	(5,199,014)	(3,773,464)	(2,868,685)	(16,513,286)	-	\$ (16,513,286)	
MRWPCA GWRP Payment								\$ (100,000)	
Grand Total Replenishment Fund Balance	\$ 230,671	\$ 182,783	\$ 692,662	\$ 631,453	\$ 1,675,983	\$ 2,525,202	\$ 3,750,498	\$ 7,064,049	

ATTACHMENT 8

WATER QUALITY ANALYTICAL RESULTS



MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

5 HARRIS COURT, BLDG. G
POST OFFICE BOX 85
MONTEREY, CA 93942-0085 • (831) 658-5600
FAX (831) 644-9560 • <http://www.mpwmd.dst.ca.us>

SEASIDE BASIN WATERMASTER MEMORANDUM 2010-02

Date: October 25, 2010
To: Seaside Basin Watermaster
From: Jonathan Lear, PG, CHg, Senior Hydrogeologist
Joe Oliver, PG, CHg, Water Resources Division Manager
Tom Lindberg, Associate Hydrologist

Subject: Water Year 2010, Groundwater-Quality and Groundwater-Level Data
Collected for the Seaside Groundwater Basin Watermaster

SUMMARY

This memorandum transmits and summarizes groundwater-quality and groundwater-level data collected for the Seaside Groundwater Basin Watermaster Board (Watermaster) during Water Year (WY)¹ 2010. This report incorporates the data that were collected and reported for each quarter during the period from October 1, 2009 through September 30, 2010. This information is being provided to the Watermaster for information purposes, and is in compliance with the monitoring protocols described in the Watermaster's *Seaside Basin Monitoring and Management Program* (SBMMP, revision date September 5, 2006), which was prepared in response to the court decision filed March 27, 2006 (as amended by February 9, 2007 filing) in the Seaside Basin adjudication case. This document has been prepared by the Monterey Peninsula Water Management District (MPWMD) on behalf of the Watermaster.

This document is organized into the following four categories of data:

- Precipitation,
- Stream flow in Arroyo Del Rey,
- Water-quality data collected from MPWMD Quarterly wells, and
- Static water levels collected from MPWMD and other Watermaster basin wells.

¹ The WY begins on October 1, and ends September 30 of the indicated year.

PRECIPITATION

A continuous-recording precipitation gage is located at the south eastern corner of the Southern Coastal Sub-Area of the Seaside Groundwater Basin. Data from the precipitation gage are posted to the www.weatherunderground.com website and are available real time as well as archival data sets. **Figure 1** shows the location of the weather station and the average annual rainfall totals for the Seaside Groundwater Basin. **Figure 2** shows daily and cumulative rainfall recorded by the weather station for all four quarter of WY 2010. Average annual rainfall for the location of the weather station is 16 inches. As **Figure 2** illustrates, at the close of WY 2010, the weather station had already logged over 22 inches, which is approximately 130% of normal rainfall.

STREAMFLOW

There is a distinct lack of surface drainages in the Seaside Groundwater Basin due to the high infiltration capacities of the dune sands which overlie the aquifers. The overlying soils have the capacity to infiltrate large storm events; therefore, water is not concentrated into channels. The Arroyo Del Rey drainage is the one distinct drainage in the Seaside Groundwater Basin. The headwaters of the drainage are in the Laguna Seca Sub Area, which flow into the Southern Coastal Sub Area of the Groundwater Basin and collect in Roberts Lake.

A continuous stream flow gage was operated by the USGS in Del Rey Park from 1966 to 1978. MPWMD re-occupied the site in 2002 and data collection is ongoing. The catchment area above the gage is 13.8 square miles. **Figure 3** contains the average daily flow record for the Arroyo Del Rey at Del Rey Oaks gaging station for WY 2010.

WATER-QUALITY DATA: MPWMD AND OTHER BASIN WELLS

MPWMD Coastal Monitor-Well Network

Under the current monitoring program conducted for the Watermaster, the MPWMD collects *quarterly* samples from six monitor wells at three locations that are closest to the coastline, and *annually* from six additional wells at three locations that are farther from the coastline. The well numbers, names and sampling schedule for the MPWMD coastal monitor wells currently being sampled for the Watermaster are listed below.

MPWMD Coastal Monitor Wells

<u>Well Number</u>	<u>Well Name</u>	<u>Sample Interval</u>
15S01E15N3	MSC-Shallow	quarterly
15S01E15N2	MSC-Deep	quarterly
15S01E15F1	PCA-W-Shallow	quarterly
15S01E15F2	PCA-W-Deep	quarterly
15S01E11Pa	FO-09-Shallow	quarterly
15S01E11Pb	FO-09-Deep	quarterly
15S01E15K5	PCA-E-Shallow	annually
15S01E15K4	PCA-E-Deep	annually
15S01E23Ca	Ord Terrace-Shallow	annually
15S01E23Cb	Ord Terrace-Deep	annually
15S01E12Fa	FO-10-Shallow	annually
15S01E12Fc	FO-10-Deep	annually

These sites are shown on **Figure 4** and completion data for these wells are shown in **Table 1**. At each site, a “shallow” and “deep” monitor well have been installed (either in separate boreholes or as multiple completions in a single borehole), generally corresponding to well completions within the two principal aquifer units that have been historically recognized in the Seaside Basin, the Paso Robles Formation (QTp and QTc for undifferentiated Continental Deposits) and Santa Margarita Sandstone (Tsm), respectively. More recently, it has been recognized that the Tsm deposits transition to the Purisima Formation (Tp) in the northern coastal subarea of the Basin. The monitor wells are constructed of 2-inch PVC casing, with screens adjacent to the more permeable (i.e., based on lithologic and geophysical logging analyses) sand “packages” within each aquifer unit. The aquifer units are separated from each other in the wells by cement strata-isolation seals.

MPWMD Coastal Monitor Wells Water-Sample Collection

Water-sample collection from the MPWMD coastal monitor wells for WY 2010 was accomplished by the Low-Flow Method. As a means to investigate alternative water-quality sampling technologies, MPWMD staff completed a test of different “low-flow” sampling methodologies at Watermaster database Well No. 258 (MW-B-23-180) on June, 4, 2009. Results from the methodology comparison along with cost estimates for implementation of each methodology were presented to the Watermaster Technical Advisory Committee (TAC) at the June 10, 2009 meeting. Following the recommendation of the TAC, MPWMD staff purchased a Micro Purge well sampling pump and pump controller from QED Environmental Systems, Inc. Motivation behind changing the sampling method included a desire to: (a) switch to a less invasive sampling method to prolong the life of the monitoring wells and (b) implement a less labor-intensive method that will be more cost effective to the Watermaster in the long run. Details of this sampling methodology are discussed below.

- **Low-Flow Sampling Method**

Low-flow/low-volume purging method is sample collection using a pumping mechanism that produces low-flow rates [less than 1 liter per minute (lpm) or less than 0.26 gallon per minute (gpm)] that cause minimal drawdown of the static water table and usually employs a flow cell in which geochemical parameters are continuously monitored. These parameters may include dissolved oxygen content, oxidation-reduction potential (redox), conductivity, turbidity, and/or pH. The intent of this sampling protocol is to collect a representative sample from the monitored groundwater zone. A representative sample may be obtained when all the monitored chemical parameters have stabilized, thus quantitatively demonstrating that the sample being collected is in equilibrium with the groundwater system. The low-flow/low volume purging method (purging to parameter stability) tends to isolate the interval being sampled, which provides more accurate water-quality measurements and reduces the volume of purge water generated. This method has an advantage in that it can limit vertical mixing and volatilization of any volatile organic compounds (VOCs) in solution within the well casing or borehole, as compared to high-flow purging and sampling (e.g., air-lift sampling method).

Figure 5 illustrates the QED Environmental Systems, Inc. low-flow sampling equipment. The bladder pump is placed in the monitor well and powered by a fuel source of compressed gas. The peristaltic action of the pump lifts water from the well and initiates flow through the well screen at the location where the drop tube and intake assembly have been placed. An electric wire sounder is used to measure drawdown to insure minimal drawdown is caused by pumping the well. Water-quality parameters are monitored at the flow cell as the well is purged.

The low-flow/low-volume purging method of sample collection has been described in groundwater monitoring literature since the mid-1980s with a defined methodology being accepted by the U.S. EPA in 1995. These protocols are summarized below as adopted by MPWMD staff:

1. **Flow rate**

The flow rate used during purging must be low enough to avoid increasing the water turbidity. The following measures should be taken to determine the appropriate flow rate: (a) The flow rate shall be determined for each well, based on the hydraulic performance of the well; (b) The flow must be adjusted to obtain stabilization of the water level in the well as quickly as possible; (c) The maximum flow rate used should not exceed 1 liter per minute (0.26 gpm); (d) Once established, this rate should be reproduced with each subsequent sampling event; (e) If a significant change in initial water level occurs between events, it may be necessary to re-establish the optimum flow rate at each sampling event.

2. **Measurement of water level and drawdown**

Measurement of the water level in the well during purging is important when establishing the optimum flow rate for purging. The goal is to achieve a stabilized pumping water level as quickly as possible with minimal drawdown, to avoid stressing

the formation and mobilizing solids, and to obtain stabilized indicator parameters in the shortest time possible.

3. Measurement of indicator parameters

Continuous monitoring of water-quality indicator parameters is used to determine when purging is completed and sampling should begin. Measurement of indicator parameters (dissolved oxygen content, redox potential, specific conductance, temperature and pH) is required. This is most easily performed using an in-line flow cell (closed) system attached directly to the pump discharge tubing. For turbidity measurement, a separate field nephelometer should be used.

If portable systems are used, they must be placed carefully into the well and lowered into the screen zone as slowly as possible. Placement of the portable pump can disturb the groundwater flow conditions resulting in non-equilibrium conditions. As a result, longer purge times and greater purge volumes may be necessary to achieve indicator parameter stabilization. In general, this may require that after installation, the portable pump should remain in place for a minimum of 1-2 hours to allow settling of solids and re-establishment of horizontal flow through the screen zone. If initial turbidity readings are excessive (>50 NTU), pumping should cease and the well should rest for another 1-2 hours before initiating pumping again. In wells set in very fine-grained formations, longer waiting periods may be required. Continuous water-level measurement devices are preferred, such as down-hole pressure transducers, but electronic water-level tapes can be used. The devices used must be capable of measuring to 0.01-foot precision.

4. Sample Collection

Water samples for laboratory analyses must be collected before water has passed through the flow-through cell (use a by-pass assembly or disconnect cell to obtain sample). VOC samples should be collected first and directly into pre-preserved sample containers. All sample containers are filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence. During purging and sampling, the tubing should remain filled with water so as to minimize possible changes in water chemistry upon contact with the atmosphere.

MPWMD Coastal Monitor Wells Water-Quality Results

Water chemistry analytical results for the samples collected during WY 2010 are provided in the table in **Appendix 1**. This table and other water-level data tables was prepared utilizing the “report” feature of the groundwater resources database that was created for the Watermaster in 2007.

In general, the WY 2010 chemical data from these monitor wells do not show significant changes relative to the results provided in WY 2009, and are not indicative of seawater intrusion into the basin at the locations and depths of the monitor well completions. This is consistent with the

conclusions drawn in the Water Year 2010 Seawater Intrusion Analysis Report (SIAR WY2010) prepared by Hydrometrics, LLC.

Other Basin Monitor and Producer Wells Water-Quality Results

Water chemistry analytical results for the samples collected from other basin monitor wells and producer wells during WY 2010 are also provided in the table in **Appendix 1**. These include: (a) annual sample results from coastal and inland monitor wells that were added as part of the monitoring well network enhancement study that was conducted by MPWMD for the Watermaster in 2007; (b) annual sample results for the active Watermaster producer wells in the coastal subareas of the basin that are required to collect these samples under the Watermaster's MMP; and (c) annual sample results for the four dedicated coastal Watermaster Sentinel wells that were installed in 2007.

WATER-LEVEL DATA: BASIN MONITOR AND PRODUCER WELLS

Basin monitor wells and basin producer active and inactive wells with water-level data collected during WY 2010 are provided in **Appendix 2**. The general locations of these wells are shown on **Figure 6**. The Watermaster has requested that producers collect and report "static", i.e., non-pumping, water-level measurements. The purpose for this is so these measurements will more closely approximate ambient groundwater-level conditions, and facilitate the plotting and analysis of well water-level hydrographs. Occasionally, water-level measurements have been collected and reported while the well was in operation. In some cases, this may be due to the fact that the well can not be taken offline to collect a static water-level measurement because of pumping demand requirements. These occurrences have been recorded in the comments section of **Appendix 2**. These water-level data were collected primarily with manual water-level sounding devices by producers or by the MPWMD on behalf of the Watermaster.

These water-level data have been entered into the Watermaster database. The table in **Appendix 2** was generated by obtaining a data dump from the Watermaster database and using the report feature in MS Access. The new table format for this WY 2010 report includes additional information relative to each well and its monitoring schedule. This format will be used as a template to improve the web-based reporting feature of the database. Because this feature is still under development, future water-level tables may differ slightly from the one included in this report.

It should be noted that the table in **Appendix 2** includes the "reference-point elevations" that were surveyed in 2008 for each well, as part of work conducted for the Watermaster. The reference point elevations were established at the water-level data collection point at each wellhead. The reference point elevations are tied to the North American Vertical Datum of 1988 (NAVD88). The measurements in NAVD88 datum have been adjusted for the Watermaster's use by subtracting 2.97 feet to conform to local Mean Sea Level (MSL) reference, based on data provided by the surveyor. The "depth to water" measurement at each well is subtracted from the reference-point

elevation to obtain the “water elevation” relative to MSL, as shown in the column to the right of the “depth to water” column of the table.

Water-level hydrographs for the MPWMD monitor wells located in the Northern Coastal Subarea and the Watermaster Sentinel wells are included in **Appendix 3**. The long-term hydrograph figures for the MPWMD monitor wells were generated to provide historical static water-level data for the wells with longer data records in the Seaside Groundwater Basin. The Sentinel well hydrographs were included to comply with monthly water-level reporting requirements.

Appendix 4 contains graphs of the continuous water level records collected from the Sentinel Wells for the first and second quarters of WY 2010. It should be noted the instrument in Sentinel Well #4 malfunctioned during the second quarter which resulted in data corruption for the device. Therefore, data from this well is not included in this appendix. The device has been sent back to the manufacturer for repair.

CONCLUSIONS

- Due to actions by the Watermaster in WY 2009 to notify and remind basin producers of their obligations to collect required groundwater level and groundwater quality data from their wells, the availability of these data to assist in analysis of the basin’s groundwater resources has greatly improved compared to prior years.
- The chemical data from WY 2010 for the MPWMD dedicated coastal monitor wells do not show significant changes relative to previous samplings, and are not indicative of seawater intrusion into the basin at the locations and depths of these monitor wells. This conclusion continues to be supported by work completed this year for the Watermaster as documented in the WY 2010 Seawater Intrusion Analysis Report prepared by HydroMetrics, LLC.
- Based on the water-level data collected during WY 2010, water-level elevations varied from -51.06 feet mean sea level (MSL) (Well No. 107) to +55.48 feet MSL (Well No. 177) in the coastal subareas of the basin, and from -18.49 feet MSL (Well No. 119) to +252.78 feet MSL (Well No. 139) in the inland subareas of the basin.
- Based on the long-term water-level hydrographs for coastal monitor wells presented in **Appendix 3**, the trend of declining groundwater levels is continuing in the deeper Santa Margarita aquifer monitor wells, whereas groundwater levels have generally stabilized, and in a few cases displayed an overall increase in the shallower Paso Robles aquifer. The high water levels in the Santa Margarita monitoring wells for WY 2010 seen in these plates are higher than water levels from WY 2009. This increase is likely due to a wetter winter and the injection of a record volume of 1,111 AF of water into the Santa Margarita aquifer by the MPWMD and Cal-Am at the Phase 1 Aquifer Storage and Recovery site in Seaside..

RECOMMENDATIONS

- Groundwater quality samples should be obtained from the Camp Huffman well during the fourth quarter of WY 2011 to continue to establish a water quality baseline for these monitor wells.
- MPWMD staff should investigate the feasibility of deploying a continuous water quality monitoring data logger in a coastal monitoring well as a trial method of monitoring for seawater intrusion using this technology.
- Reporting of water levels and quality should be reduced to semi-annual. Quarterly water quality reporting is problematic due to the time required to process and analyze water quality samples.
- Consideration should be given to revising the boundary of the Seaside Groundwater Basin based on the more recent understanding of the basin boundaries than the depiction that is currently used by the Watermaster.

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Table 1. Summary of Well Completions, MPWMD Coastal Seaside Basin Watermaster Well.

SUMMARY OF MPWMD COASTAL SEASIDE BASIN GROUNDWATER QUALITY MONITOR WELLS													
Site	Well Name	Location Description	Well Number	Date Drilled	DWR Drillers Log	Hole Depth (feet)	Well Depth (feet)	Screened Interval (feet)	Strata Seal (feet)	Casing Type	Geologic Unit	E-Log	Elevation (feet AMSL)
MSC		former MSC mine north of Playa Ave. and west of Hwy. 1											
	MSC-Shallow	approx. 10' S of north property line	15S/1E-15N3	5/25/1990	338413	720	695	490 - - 680	95 - 275	2" pvc	QTp	- - -	80.1
	MSC-Deep	approx. 7' E of MSC-Shallow	15S/1E-15N2	5/25/1990	338425	920	865	810 - 850	725 - 775	2" pvc	Tsm	yes	80.29
PCA WEST		former PCA mine W of Hwy. 1											
	PCA-WShallow	approx. 200' SE of ocean bluff	15S/1E-15F1	3/28/1990	338400	600	585	525 - 575	120 - 150	2" pvc	QTp	- - -	64.22
	PCA-WDeep	approx. 50' E of PCA-WShallow	15S/1E-15F2	3/90	338401	900	885	825 - 875	760 - 790	2" pvc	Tsm	yes	65.38
PCA EAST		vacant lot NE of Seaside High baseball field											
	PCA-E Shallow	approx. 300' E Monterey Rd, 50" N fence	15S/1E-15K5	4/16/1990	338402	863	410	350 - 400	110 - 150	2" pvc	QTp	- - -	68.51
	PCA-E Deep	(same borehole as shallow well)	15S/1E-15K4	4/16/1990	338402	863	710	650 - 700	580 - 620	2" pvc	Tsm	yes	68.54
ORD TERRACE		Ord Terrace School property south of Ord Grove Ave.											
	OT-Shallow	1700 block Ord Grove Ave.	15S/1E-23Ca	8/5/1999	- - -	530	340	280 - 330	0 - 260	2" pvc	upper Tsm	- - -	228.65
	OT-Deep	(same borehole as shallow well)	15S/1E-23Cb	8/5/1999	- - -	530	450	390 - 440	350 - 377	2" pvc	lower Tsm	yes	228.63
MPWMD # FO-09		E of Hwy.1, SE of Okinawa Rd.											
	#9-Shallow	50' east of utility service rd.	15S/1E-11Pa	8/16/1994	- - -	1,110	660	610 - 650	500 - 540	2" pvc	QTp(?)	- - -	118.89
	#9-Deep	(same borehole as shallow well)	15S/1E-11Pb	8/16/1994	- - -	1,110	840	790 - 830	700 - 765	2" pvc	Tsm(?)	yes	118.85
MPWMD # FO-10		south of Light Fighter Drive, behind Barker Theater Building											
	#10-Shallow	20' north of access road curb	15S/1E-12Fa	9/3/1996	- - -	1,500	650	620 - 640	480 - 500	2" pvc	QTp	- - -	200.85
	#10-Deep	(same borehole as shallow well)	15S/1E-12Fc	9/3/1996	- - -	1,500	1,420	1,380 - 1,410	1,280 - 1,300	2" pvc	Tsm(?)	yes	201.03

- NOTES:
1. Official State well numbers end with a numeral; unofficial MPWMD well numbers end with a small case letter.
 2. Geologic Unit refers to the unit adjacent to the screened interval: QTp = Paso Robles Formation; Tsm = Santa Margarita Sandstone.
 3. Elevation refers to the water level reference point elevation surveyed by Central Coast Surveyors. For additional information, see "Documentation of 2008 Well Elevation Surveys", MPWMD Seaside Basin Watermaster Memorandum 2008-05.
 4. Well completion data at site MSC are documented in "Installation of Monitoring Well Cluster, Monterey Sand Company", Staal, Gardner & Dunne, Inc. (SGD), July 1990.
 5. Well completion data at sites PCA West and PCA East are documented in "Hydrogeologic Investigation, PCA Well Aquifer Test", SGD, July 1990.
 6. Well completion data at site MPWMD FO-09 are documented in "Summary of 1994 Fort Ord Monitor Well Installations", MPWMD Technical Memorandum 94-07.
 7. Well completion data at site MPWMD FO-10 are documented in "Summary of 1996 Seaside Basin Monitor Well Installations", MPWMD Technical Memorandum 97-04.
 8. Two dashes (i.e., "- -") indicate multiple screened intervals.
 9. Three dashes (i.e., "- - -") indicate not applicable or not available.



Monterey Peninsula Water Management District

Legend

Average Annual Rainfall (inches)

15

17

19

Seaside Groundwater Basin

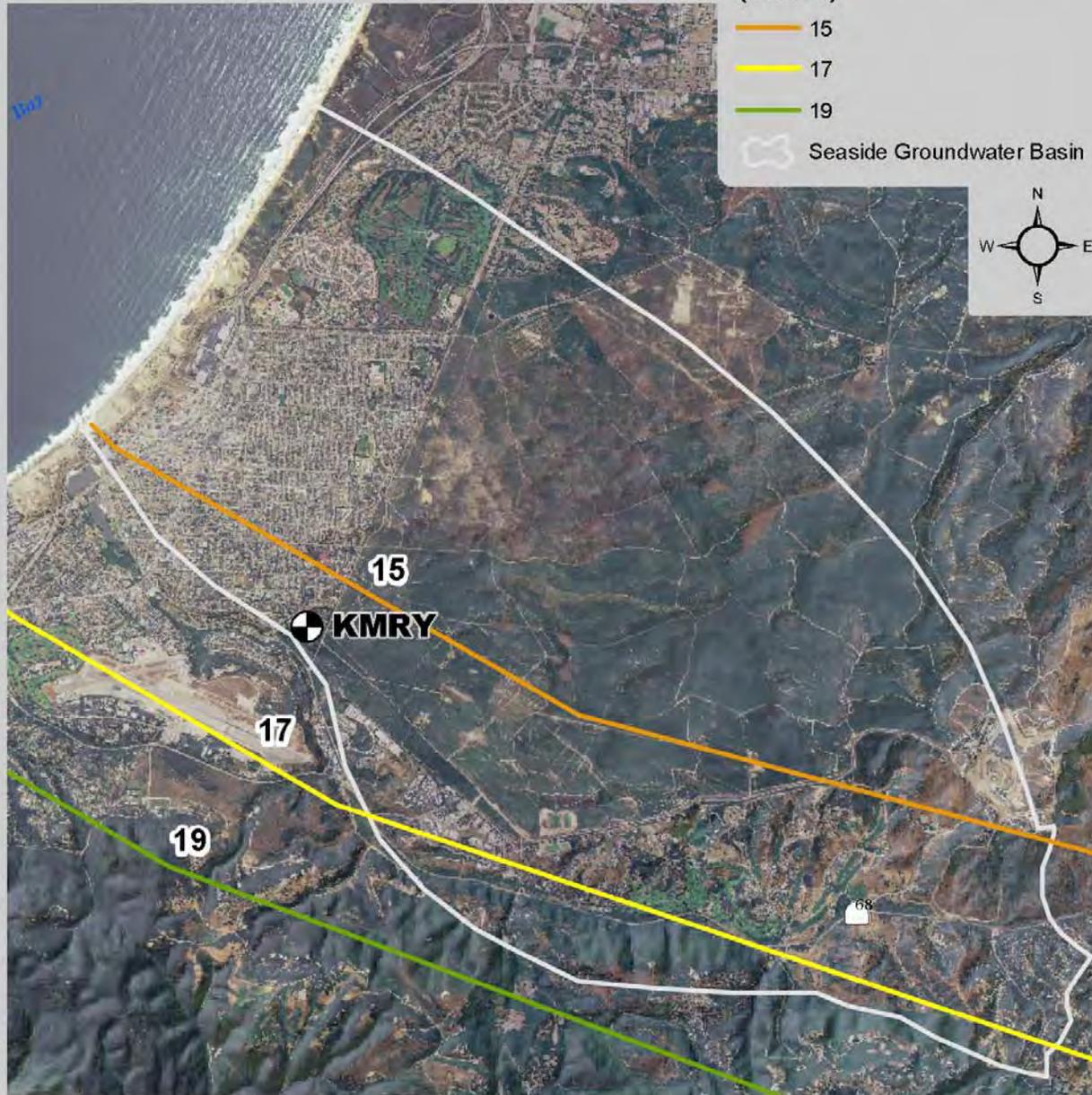
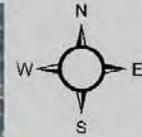


Figure 1. Location of Weather Station KMRY and Average Annual Rainfall for the Seaside Groundwater Basin, Seaside, CA

0 0.5 1 2 Miles

Datasources: Rainfall Totals - Monterey County
Photobase - AMBA G 2005

U:\j\earl\Watermaster\1stand\2nd\quarter\2010\rainfall.mxd

Locations are approximate based on MPVMD files.

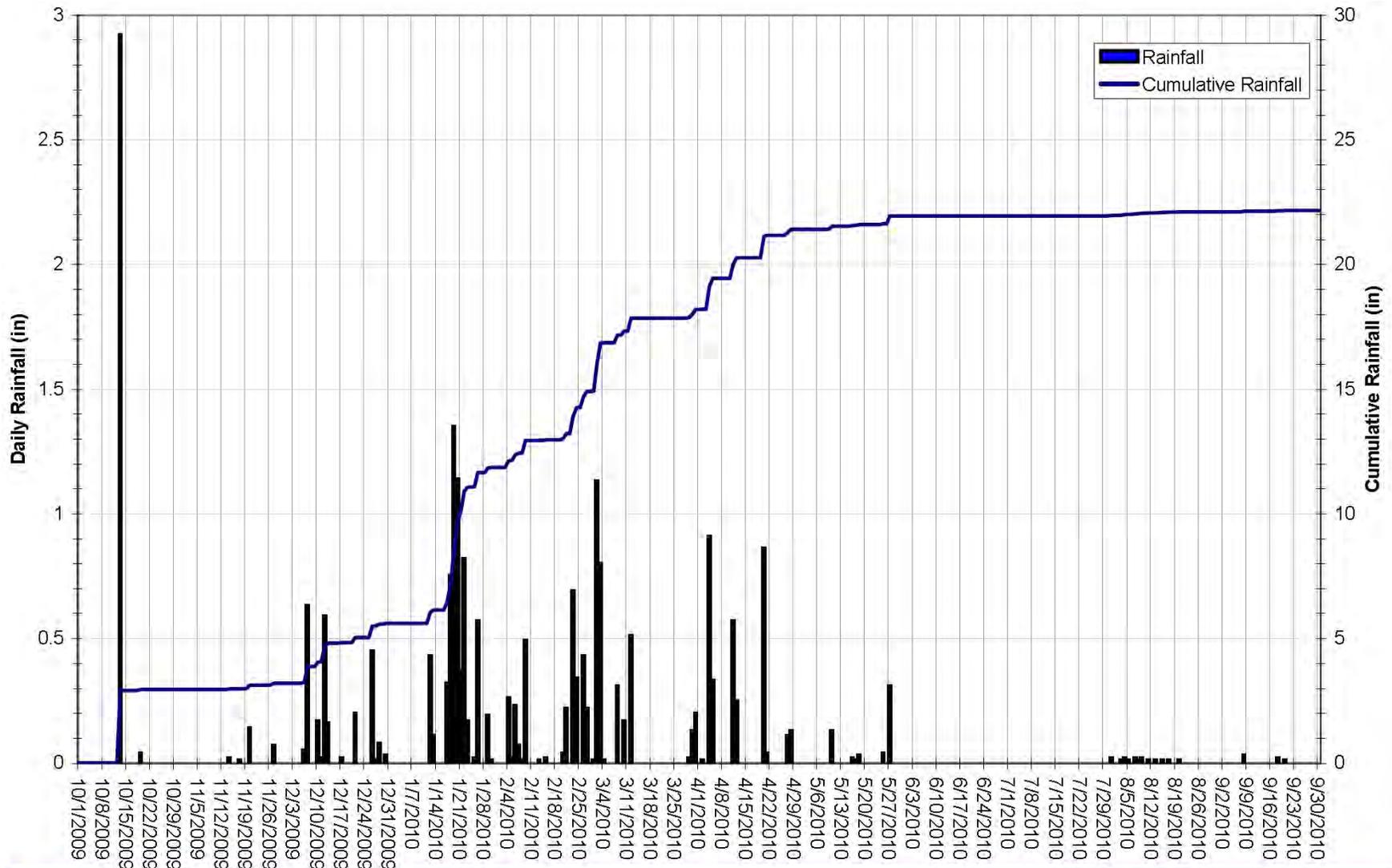
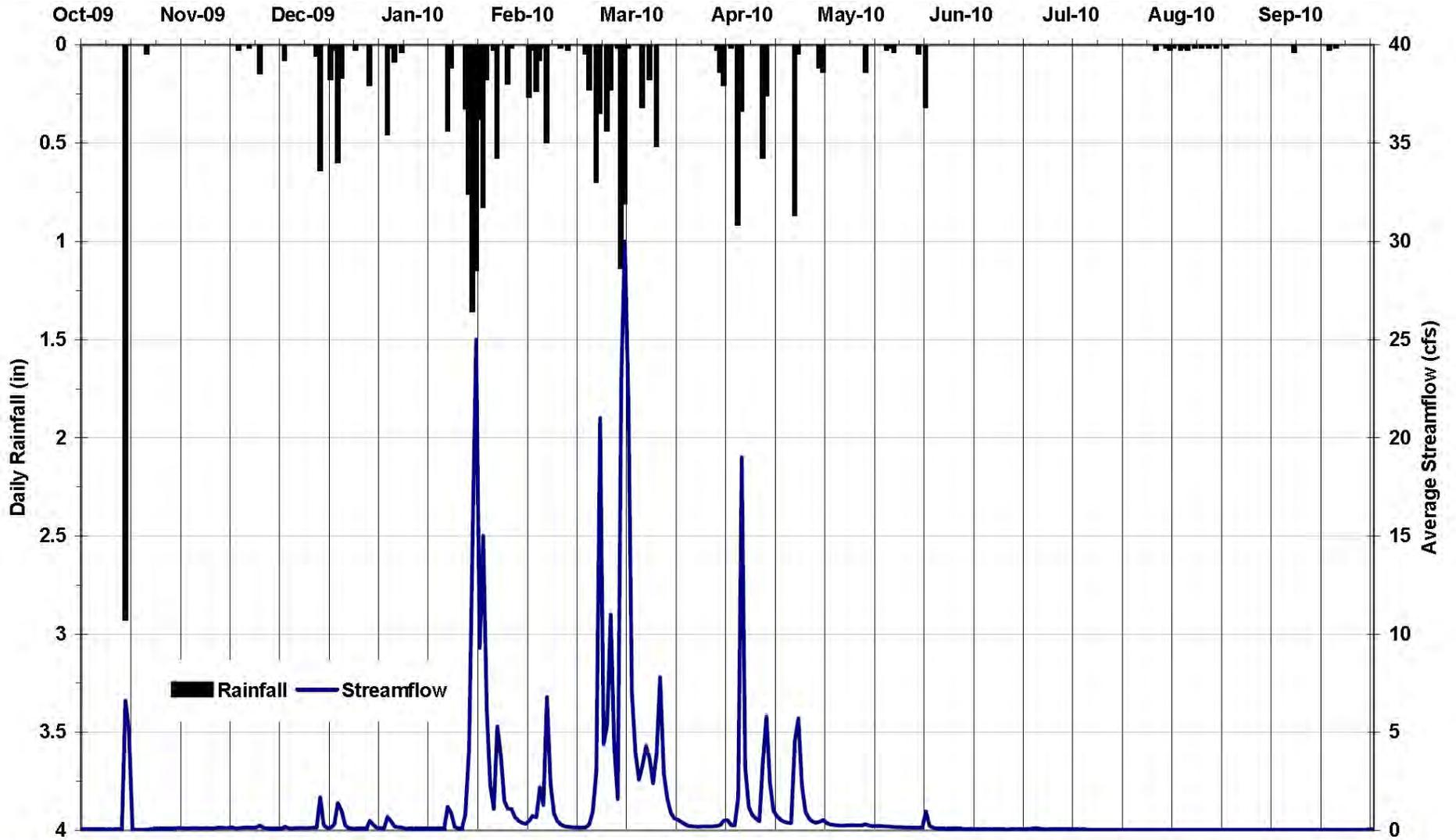


Figure 2. Daily and Cumulative Rainfall for Water Year 2010 recorded at Weather Underground Weather Station KMRY , Seaside, California



Data from www.weatherunderground.com
Station Coordinates 36.59, -121.84



**Monterey Peninsula
Water Management District**

Figure 3. Daily Rainfall at Weather Station KMRY and Average Daily Flow at Arroyo Del Rey at Del Rey Oaks Stream Gage for Water Year 2010 , Seaside, California

U:\jlear\Watermaster\Weather Station2

Monterey Peninsula Water Management District

Legend



Monitor Well

Data Type and Frequency

- Water Level - Monthly
- Water Level - Monthly, Water Quality - Annual
- Water Level - Monthly, Water Quality - Quarterly
- Water Level - Quarterly
- Seaside Groundwater Basin

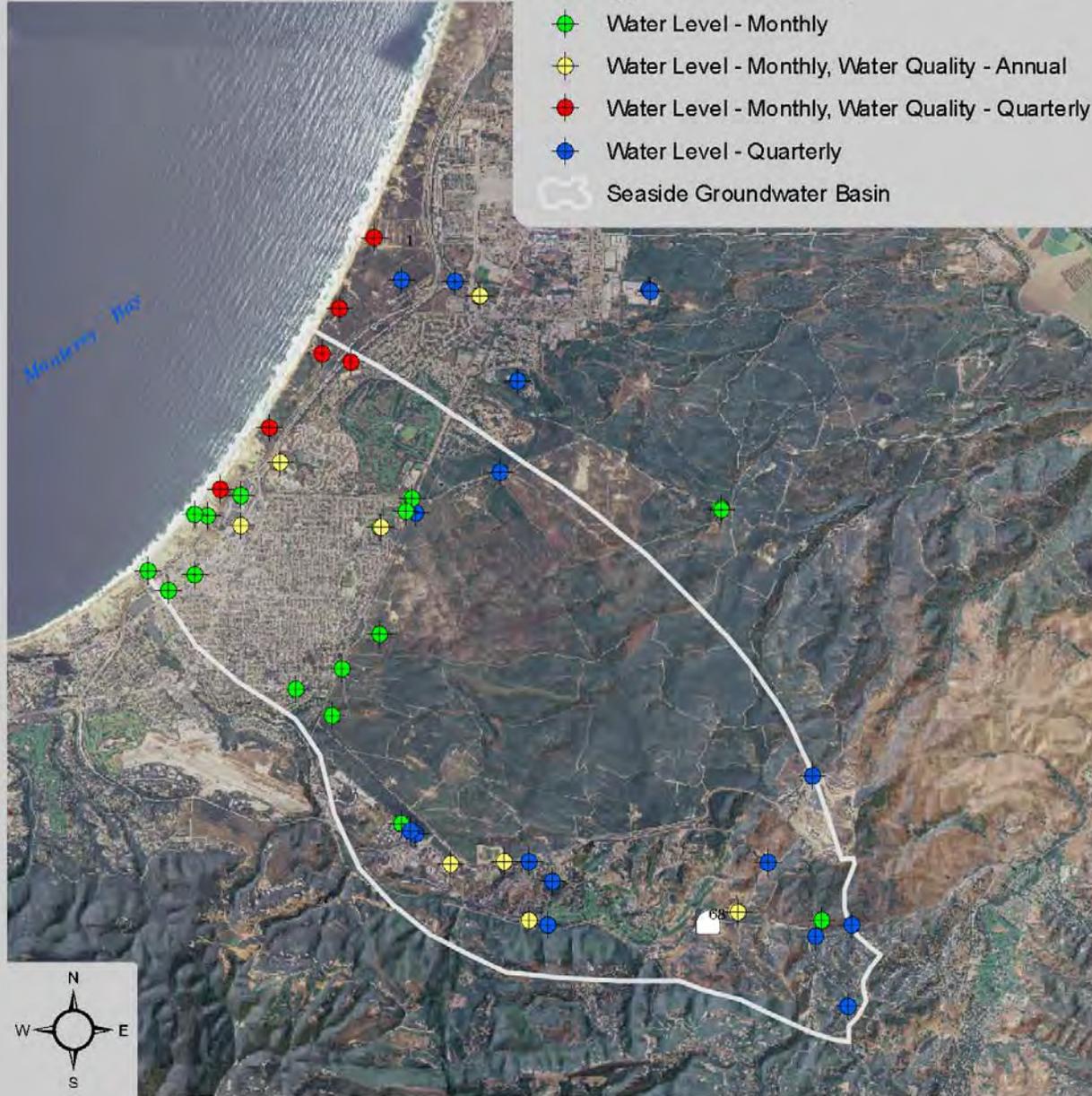


Figure 4. Seaside Groundwater Basin Watermaster Monitoring Well Network, Seaside, CA



Datasources: Rainfall Totals - Monterey County Photobase - AMBA G 2005

U:\j\earl\Watermaster\1stand2ndquarterly2010\Watermaster Wells Monitor.mxd

Locations are approximate based on MPWMD files.

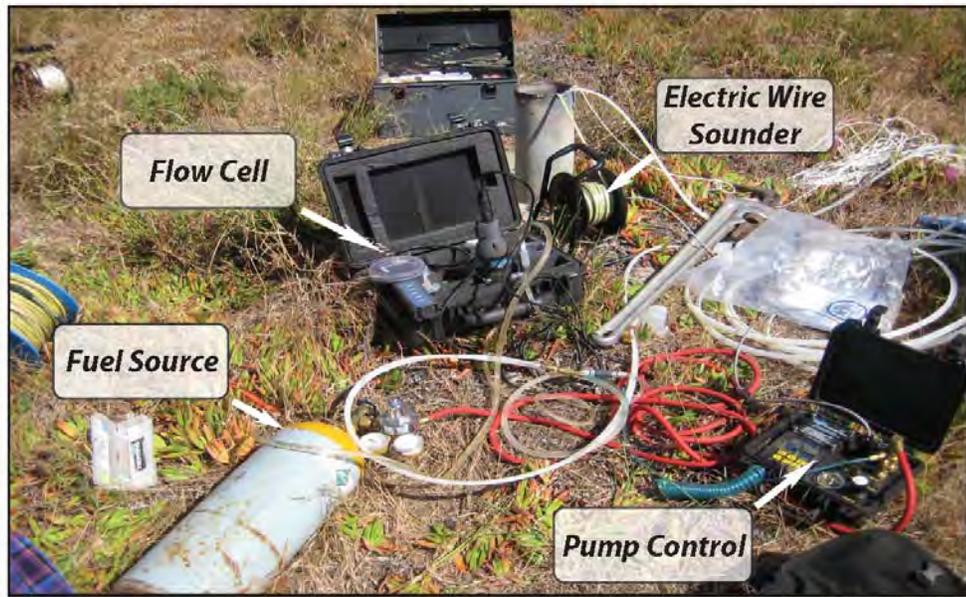
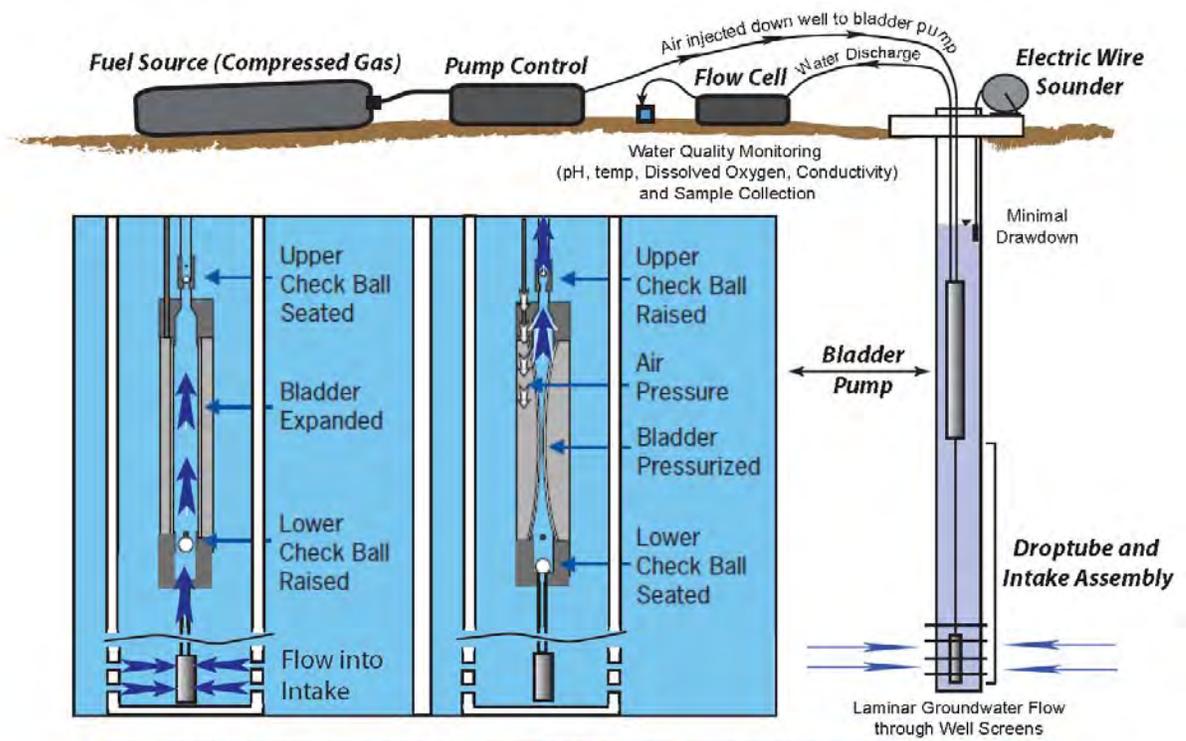


Figure • : Low Flow Groundwater Sampling System Presented in Cartoon and Photograph



Monterey Peninsula Water Management District

Legend

Watermaster Well

Category

- Monitor
- Producer
- Seaside Groundwater Basin

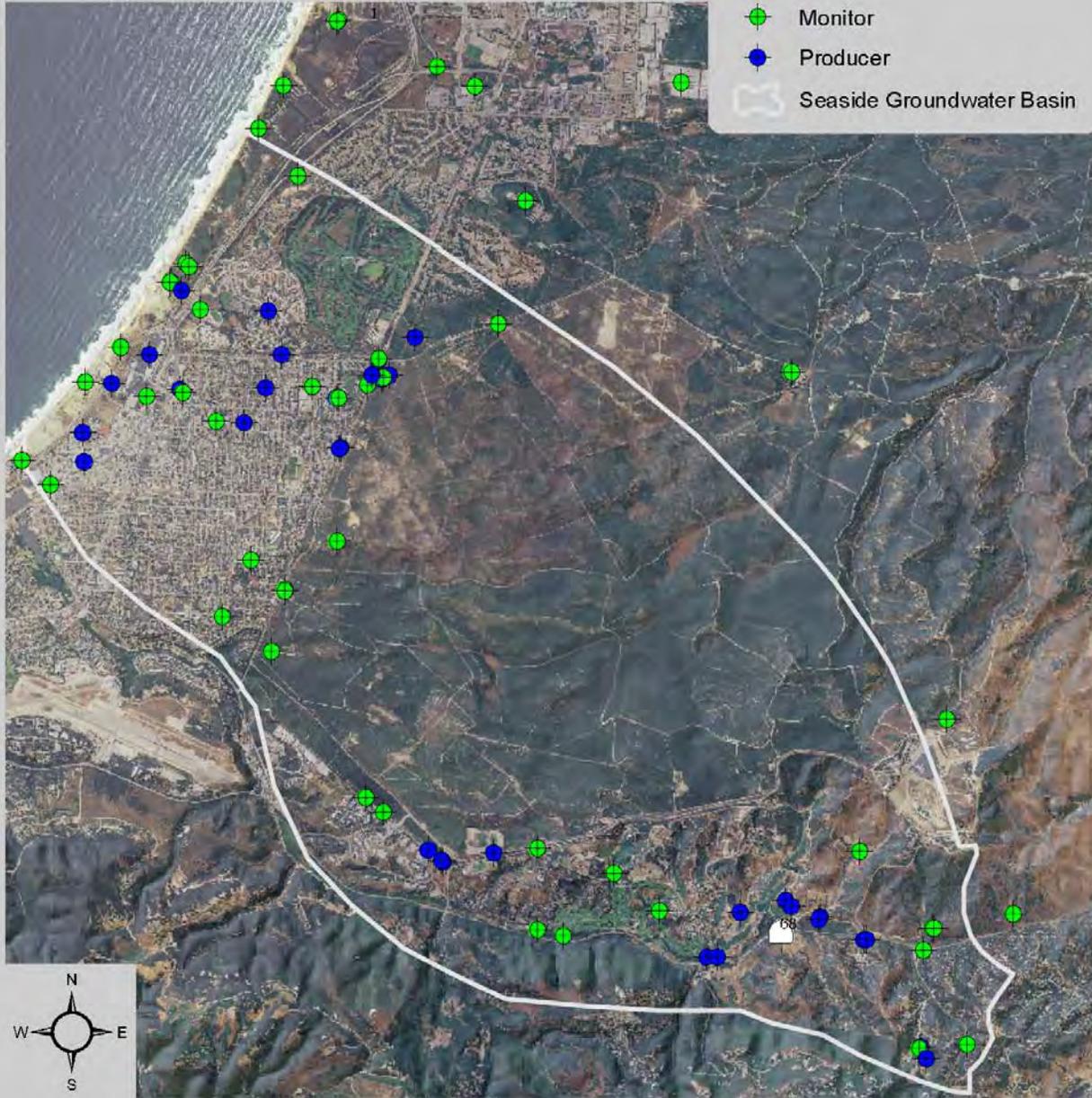


Figure 6. Seaside Groundwater Basin Watermaster Wells by Category, Seaside, CA

0 0.5 1 2 Miles

U:\jearl\Watermaster\1stand2ndquarter\2010\Watermaster Wells Monitor.mxd

Locations are approximate based on MPWMD files.

Appendix 1

Seaside Basin Groundwater Quality Monitoring Results for Water Year 2010

GROUNDWATER QUALITY MONITORING RESULTS FOR THE WY 2010

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH3)	Nitrate Nitrogen (as NO3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO3)	Boron	Bromide	Fluoride
All units in mg/L unless otherwise noted																				
Well Number: 101 Name: MSC-Shallow																				
7/27/2010	322	65	7.2	49	15	<0.05	<1	0.51	19	33	7	2.8	0.08	0.013	<0.05	215	76	0	<0.05	0.11
2/23/2010	305	74	7.8	34	16	<0.05	<1	0.45	18	33	5	2.9	<0.0	0.030	<0.1	205	66	0.04	<0.2	0.15
11/18/2009	313	74	7.4	44	18	0.19	2	1.2	18	40	5	3.3	0.07	<0.020	<0.1	198	66	0.06	<0.2	0.11
Well Number: 102 Name: MSC-Deep																				
7/27/2010	1048	267	7.0	135	30	0.11	1	0.75	80	119	12	4.9	0.16	0.089	<0.05	610	249	0.1	0.06	0.16
2/23/2010	1030	272	7.1	110	34	0.11	<1	0.65	78	107	15	4.8	0.07	0.108	<0.1	605	257	0.11	<0.2	0.24
11/18/2009	676	181	6.8	80	19	0.26	1	1.6	52	70	10	4.4	0.19	0.040	<0.1	443	171	0.06	0.2	0.14
Well Number: 103 Name: PCA-W Shallow																				
7/30/2010	310	76	7.4	49	11	<0.05	2	0.35	20	35	5	2.5	0.06	<0.020	<0.05	223	71	0	<0.05	0.12
3/1/2010	311	70	7.5	40	11	<0.05	4	0.47	18	34	5	2.3	<0.0	<0.020	<0.1	210	66	0.03	<0.2	0.16
11/20/2009	313	70	7.5	46	11	0.18	4	0.27	19	37	5	2.6	0.06	<0.020	<0.1	214	68	0.00	<0.2	0.11
Well Number: 104 Name: PCA-W Deep																				
7/30/2010	1057	268	7.1	173	40	<0.05	<1	0.67	86	114	18	5.3	0.20	0.198	<0.05	645	289	0.11	<0.05	0.32
3/1/2010	1042	260	7.3	148	40	<0.05	<1	0.65	81	110	18	5.0	<0.0	0.155	<0.1	590	276	0.12	<0.2	0.32
11/20/2009	1028	261	7.2	154	42	0.13	1	0.54	79	116	17	5.3	0.36	0.108	<0.1	625	267	0.13	0.5	0.23
Well Number: 105 Name: PCA-E (Multiple) Shallow																				
7/28/2010	409	110	7.1	57	19	0.07	<1	1.9	34	52	5	3.4	0.46	0.084	0.11	258	105	0.1	0.13	0.09
Well Number: 106 Name: PCA-E (Multiple) Deep																				
7/28/2010	610	156	6.8	74	22	<0.05	<1	0.48	41	77	7	3.5	0.24	0.027	<0.05	375	131	0.1	0.07	0.38
Well Number: 109 Name: Ord Terrace-Shallow																				
8/25/2010	795	204	7.5	99	37	<0.05	6	0.50	67	79	15	3.9	0.05	0.064	<0.05	495	229	0.05	0.24	0.16
Well Number: 111 Name: MPWMD #FO-09-Shallow																				
7/28/2010	358	73	7.8	56	15	<0.05	1	0.64	31	33	4	3.6	0.17	0.014	0.13	248	94	0	0.13	0.06
2/22/2010	340	75	7.9	42	20	<0.05	<1	0.44	22	40	4	3.3	<0.0	<0.020	<0.1	225	71	0.06	<0.2	0.21
11/17/2009	354	78	7.8	46	25	0.27	<1	0.74	26	45	3	3.8	0.05	<0.02	<0.1	203	77	0.1	<0.2	<0.10

GROUNDWATER QUALITY MONITORING RESULTS FOR THE WY 2010

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH3)	Nitrate Nitrogen (as NO3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO3)	Boron	Bromide	Fluoride
All units in mg/L unless otherwise noted																				
Well Number: 112 Name: MPWMD #FO-09-Deep																				
7/28/2010	445	97	6.5	73	14	<0.05	<1	0.51	27	57	4	3.7	2.40	0.022	<0.05	273	84	0.1	<0.05	0.12
2/22/2010	438	104	7.3	56	16	<0.05	<1	0.45	26	54	4	3.4	<0.6	<0.020	<0.1	263	81	0.07	<0.2	0.16
11/18/2009	420	96	6.5	58	16	0.05	<1	0.25	26	52	4	3.5	<0.0	0.020	<0.1	285	81	0.09	0.2	<0.10
Well Number: 113 Name: MPWMD #FO-10-Shallow																				
8/5/2010	357	64	7.4	63	11	<0.05	2	0.26	22	41	6	2.1	0.10	0.077	0.25	248	80	0	0.15	<0.10
Well Number: 114 Name: MPWMD #FO-10-Deep																				
8/3/2010	376	66	7.5	66	9	0.36	4	2.0	27	43	4	3.3	9.03	0.164	<0.05	255	84	0	0.16	0.07
Well Number: 141 Name: LS Driving Range (SCS Deep)																				
8/2/2010	1111	108	6.4	254	54	<0.05	1	0.44	39	145	26	5.1	0.15	<0.010	0.21			0.07	---	---
Well Number: 151 Name: CAW - Military																				
7/6/2010	750	94	7.48	106.9	117.3	<0.10	1.4	0.4	63	65.7	13	0	0.58	0.095	<1.2	440	211	0.054	0.33	<0.1
Well Number: 153 Name: CAW - Ord Grove #2																				
7/6/2010	890	185	6.92	130	63.9	<0.10	1.5	0.55	67	88	17	0	<0.0	0.018	<1.2	510	237	0.144	0.46	0.2
Well Number: 156 Name: PRTIW																				
8/2/2010	646	109	7.3	99	48	<0.05	15	1.2	41	67	12	3.2	0.71	<0.010	<0.05			0	---	---
Well Number: 159 Name: CAW - New Luzern																				
7/6/2010	900	155	7.02	130.7	81.3	<0.1	4.9	0.53	64	90.3	17	0	<0.0	0.015	<1.2	520	230	0.118	0.43	0.2
Well Number: 162 Name: CAW-Playa #3																				
7/6/2010	870	123	7.1	127.1	99	<0.1	6.2	0.73	60	90.2	18	0	<0.0	<0.010	<1.2	510	224	0.133	0.47	0.1
Well Number: 165 Name: Public Works Corp. Yard																				
7/30/2010	1207	108	7.2	232	125	0.58	29	0.92	42	196	9	5.5	0.01	<0.020	<0.05	735	142	0.67	0.39	2.17
Well Number: 169 Name: CAW - Paralta																				
7/6/2010	770	196	7.22	88.5	70.1	<0.10	0.2	0.59	62	74.1	14	0	<0.0	0.023	<1.2	430	212	0.09	0.28	0.3

GROUNDWATER QUALITY MONITORING RESULTS FOR THE WY 2010

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH3)	Nitrate Nitrogen (as NO3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO3)	Boron	Bromide	Fluoride
All units in mg/L unless otherwise noted																				
Well Number: 173 Name: City #4																				
7/19/2010	472	77	7.0	85	22	<0.10	7	0.39	25	52	7.2	2.2	<0.0	<0.0005	<0.03	292	92.1	0.329	0.23	0.12
10/1/2009	366	58	7.0	61	13	0.19	13	---	16	44	6	1.5	<0.0	<0.02	0.06	252	64.7	0.19	0.11	0.08
Well Number: 177 Name: CAW - Plumus #4																				
7/6/2010	1100	129	6.89	205.5	83.9	<0.10	2.5	0.59	52	124.8	24	0	<0.0	<0.010	<1.2	580	229	0.112	0.68	0.2
Well Number: 186 Name: CAW - Darwin																				
7/6/2010	440	51	6.96	66	33.5	<0.10	7.6	0.42	20	48.5	9	0	0.65	0.042	<0.60	260	87	0.059	0.2	<0.1
Well Number: 187 Name: Reservoir Well																				
7/21/2010	394	51	7.2	87	9	<0.10	5	0.57	17	51	5.5	1.8	0.36	<0.0005	0.07	252	65.1	0.399	<0.10	0.10
10/1/2009	359	48	7.4	73	8	0.30	5	---	60	69	16	2.6	0.28	<0.02	<0.2	240	216	0.27	0.14	0.07
Well Number: 189 Name: Coe Avenue																				
7/28/2010	488	89	7.4	83	24	<0.10	7	0.60	32	53	8.0	2.2	<0.0	<0.0005	0.04	312	113	0.377	0.19	0.09
10/1/2009	748	147	7.2	107	41	0.08	16	---	14	44	6	1.5	0.28	<0.02	<0.2	488	56.5	0.21	0.24	0.08
Well Number: 196 Name: MCPD #2																				
7/29/2010	506	104	6.6	84	12	<0.05	<1	1.0	12	84	8	2.2	3.80	0.112	0.10	315	63	0.09	0.10	0.16
Well Number: 203 Name: New #12																				
7/29/2010	1522	239	6.9	252	208	0.27	1	1.8	148	140	34	5.7	0.45	0.053	<0.05	1010	510	0.11	0.58	0.64
Well Number: 204 Name: New Paddock																				
7/30/2010	1345	237	7.3	201	198	0.06	6	1.6	128	122	31	4.8	0.30	0.028	<0.05	895	447	0.09	0.44	0.69
Well Number: 212 Name: York School 01-349																				
7/29/2010	1190	68	6.5	296	38	<0.05	5	0.44	36	156	27	4.1	0.45	<0.020	0.26	773	201	0.07	0.90	0.23
Well Number: 213 Name: Ryan Ranch #7																				
7/7/2010	1300	210	6.58	197.6	153.2	0.95	---	1.94	90	133	26	6	0.4	0.164	<1.8	750	332	0.135	0.72	0.6
Well Number: 215 Name: Ryan Ranch #11																				
7/7/2010	1500	181	6.47	293.4	160.7	0.13	0.2	1.95	99	173.4	28	5	0.76	0.127	<1.8	900	363	0.133	1.07	0.5

GROUNDWATER QUALITY MONITORING RESULTS FOR THE WY 2010

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO3)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH3)	Nitrate Nitrogen (as NO3)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO3)	Boron	Bromide	Fluoride
All units in mg/L unless otherwise noted																				
Well Number: 216 Name: Ryan Ranch #8																				
7/7/2010	1400	140	6.37	269.5	110.8	16	0.7	1.37	67	164.9	30	0	0.13	0.044	2.3	840	291	0.12	1.01	0.5
Well Number: 231 Name: Del Monte Test																				
7/6/2010	380	85	7.55	57.4	12.5	<0.10	0.3	<0.25	20	41.7	7	0	1.39	0.059	<0.60	220	79	0.06	0.19	0.1
Well Number: 245 Name: Sentinel MW #1 Sampled at 1140																				
9/8/2010	395	91	8.5	66	23	---	<1	---	10	79	1	3.3	1.67	0.018	<0.05	235	29	---	---	0.19
Well Number: 245 Name: Sentinel MW #1 Sampled at 1390																				
9/8/2010	395	96	8.7	63	23	---	<1	---	11	75	1	3.0	0.04	<0.010	<0.05	235	32	---	---	0.22
Well Number: 246 Name: Sentinel MW #2 Sampled at 1000																				
9/8/2010	418	95	8.4	68	16	---	<1	---	15	69	2	3.4	0.89	0.011	<0.05	238	46	---	---	0.19
Well Number: 246 Name: Sentinel MW #2 Sampled at 1470																				
9/8/2010	421	111	8.4	62	17	---	<1	---	15	73	2	3.3	0.04	<0.010	<0.05	250	46	---	---	0.22
Well Number: 247 Name: Sentinel MW #3 Sampled at 870																				
9/8/2010	401	81	8.0	68	16	---	<1	---	15	67	2	3.8	<0.0	<0.010	<0.05	248	46	---	---	<0.10
Well Number: 247 Name: Sentinel MW #3 Sampled at 1275																				
9/8/2010	401	81	8.0	68	16	---	<1	---	16	66	2	4.0	0.21	0.010	<0.05	253	48	---	---	<0.10
Well Number: 248 Name: Sentinel MW #4 Sampled at 715																				
7/9/2010	1440	294	7.3	215	44	---	2	---	74	190	19	8.6	0.06	0.119	<0.05	820	263	---	---	0.23
1/21/2010	1382	271	7.7	256	38	---	<1	---	77	180	19	8.6	0.2	0.089	<0.1	813	271	---	---	<0.10
Well Number: 248 Name: Sentinel MW #4 Sampled at 900																				
7/9/2010	848	214	7.5	98	38	---	<1	---	62	100	8	5.6	0.04	0.044	<0.05	512	188	---	---	0.21
1/20/2010	852	195	7.9	122	37	---	<1	---	56	100	10	7.6	0.1	0.038	<0.1	518	181	---	---	<0.10
Well Number: 249 Name: SBWM MW #5(s)																				
8/26/2010	713	103	8.2	145	18	0.05	3	1.10	46	79	14	3.4	0.04	<0.010	<0.05	478	173	0	0.48	0.16

GROUNDWATER QUALITY MONITORING RESULTS FOR THE WY 2010

Date Of Sample	Specific Conductance (micro mhos/cm)	Total Alkalinity (as CaCO ₃)	pH (units)	Chloride	Sulfate	Ammonia Nitrogen (as NH ₃)	Nitrate Nitrogen (as NO ₃)	Total Organic Carbon	Calcium	Sodium	Magnesium	Potassium	Iron	Manganese	Orthophosphate	Total Dissolved Solids	Hardness (as CaCO ₃)	Boron	Bromide	Fluoride
----------------	---	---	------------	----------	---------	---	---	----------------------	---------	--------	-----------	-----------	------	-----------	----------------	------------------------	-------------------------------------	-------	---------	----------

All units in mg/L unless otherwise noted

Well Number: 250 Name: SBWM MW #5(d)

8/26/2010	965	268	8.4	121	45	0.13	<1	0.95	77	104	21	5.5	0.56	0.187	<0.05	580	279	0.07	0.42	0.43
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Well Number: 258 Name: MW-B-23-180

7/27/2010	990	169	7.3	132	65	<0.05	44	0.94	50	109	29	4.0	<0.0	<0.020	0.07	595	244	0	0.13	<0.10
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Appendix 2

Seaside Basin Groundwater Level Monitoring Results

for Water Year 2010

Groundwater Level Monitoring Data

for the Seaside Groundwater Basin

Water Year 2010 All Quarters

Assembled by MPWMD for the Seaside Watermaster

Well Category: Producer

Subarea: Northern Coastal

Watermaster Well 151 Military

State Well No. 15S01E14N50 Owner: California American Water

Monitored: Monthly

Monitored by: CAW

Northern Coastal

Producer

Screen:

-

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	135.8	166	-30.20	
10/29/2009	135.8	172	-36.20	
11/25/2009	135.8	171	-35.20	
12/31/2009	135.8	173	-37.20	
1/28/2010	135.8	171	-35.20	
2/25/2010	135.8	170	-34.20	
3/25/2010	135.8	167	-31.20	
4/29/2010	135.8	128	7.80	
5/28/2010	135.8	150	-14.20	
6/24/2010	135.8	150	-14.20	
7/29/2010	135.8	170	-34.20	
8/26/2010	135.8	163	-27.20	

Watermaster Well 152 Target Well

State Well No. 15S01E22C50 Owner: DBO Development

Monitored: Monthly

Monitored by: MPWMD

Northern Coastal

Producer

Screen:

360 - 390

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	44.42	57.5	-13.08	
10/29/2009	44.42	59.96	-15.54	

12/1/2009	44.42	59.69	-15.27
1/7/2010	44.42	59.72	-15.30
1/28/2010	44.42	59.67	-15.25
2/23/2010	44.42	59.59	-15.17
4/9/2010	44.42	59.50	-15.08
5/5/2010	44.42	59.60	-15.18
6/4/2010	44.42	59.49	-15.07
7/2/2010	44.42	59.54	-15.12
8/12/2010	44.42	59.66	-15.24
9/1/2010	44.42	59.61	-15.19

Watermaster Well 153 Ord Grove #2

State Well No. 15S01E23B02 Owner: California American Water

Northern Coastal

Producer

Screen:

-

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	292.39			Well Running
10/29/2009	292.39	324	-31.61	
11/25/2009	292.39			Well Running
12/31/2009	292.39			Well Running
1/28/2010	292.39	319	-26.61	
2/25/2010	292.39	312	-19.61	
3/25/2010	292.39	310	-17.61	
4/29/2010	292.39			
5/28/2010	292.39			Well Running
6/24/2010	292.39	363	-70.61	Well Running
7/29/2010	292.39	373	-80.61	Well Running
8/26/2010	292.39	375	-82.61	Well Running

Watermaster Well 159 Luzern #2

State Well No. 15S01E23De Owner: California American Water

Northern Coastal Producer

Screen: -

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	156.99			Well Running
10/29/2009	156.99	182.0	-25.01	
11/25/2009	156.99	183.0	-26.01	
12/31/2009	156.99	183.0	-26.01	
1/28/2010	156.99	179.0	-22.01	
2/25/2010	156.99	175	-18.01	
3/25/2010	156.99	172.5	-15.51	
4/29/2010	156.99	172.6	-15.61	
5/28/2010	156.99			Well Running
6/24/2010	159.99	196.6	-36.61	Well Running
7/29/2010	159.99	204	-44.01	Well Running
8/26/2010	159.99	203	-43.01	Well Running

Watermaster Well 162 Playa #3

State Well No. 15S01E22B50 Owner: California American Water

Northern Coastal Producer

Screen: -

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	53.02			Well Running
10/29/2009	53.02			Well Running
11/25/2009	53.02	56	-2.98	
12/31/2009	53.02	54	-0.98	
1/28/2010	53.02	52	1.02	
2/25/2010	53.02	52	1.02	
3/25/2010	53.02	51	2.02	
4/29/2010	53.02			Well Running
5/28/2010	53.02			Well Running

6/24/2010	53.02	154	-100.98	Well Running
7/29/2010	56.02	55	1.02	
8/26/2010	56.02	163	-106.98	Well Running

Watermaster Well 169 Paralta

State Well No. 15S01E14R50 Owner: California American Water

Northern Coastal

Producer

Screen:

-

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	324.49			Well Running
10/29/2009	324.49	346	-21.51	
11/25/2009	324.49			Well Running
12/31/2009	324.49			Well Running
1/28/2010	324.49	324	0.49	
2/25/2010	324.49	326	-1.51	
3/25/2010	324.49	325	-0.51	
4/29/2010	324.49			Well Running
5/28/2010	324.49			Well Running
6/24/2010	324.49	368	-43.51	Well Running
7/29/2010	324.49	372	-47.51	Well Running
8/26/2010	324.49	371	-46.51	Well Running

Watermaster Well 186 Darwin

State Well No. 15S01E22H01 Owner: California American Water

Northern Coastal

Producer

Screen:

-

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	134.05	116	18.05	
10/29/2009	134.05	123.0	11.05	
11/25/2009	134.05	120.0	14.05	
12/31/2009	134.05	118.6	15.45	
1/28/2010	134.05	115	19.05	
2/25/2010	134.05	113	21.05	

3/25/2010	134.05	111	23.05
4/29/2010	134.05	113	21.05
5/28/2010	134.05	114	20.05
6/24/2010	134.05	114	20.05
7/26/2010	134.05	123	11.05
8/26/2010	134.05	119	15.05

Well Category: Producer

Subarea: Southern Coastal

Watermaster Well 150 Cypress Pacific

State Well No. 15S01E22Dd Owner: King Venture

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: QTc

Southern Coastal Producer Screen: -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	50.23	47.04	3.19	
10/29/2009	50.23	46.82	3.41	
12/1/2009	50.23	46.51	3.72	
1/7/2010	50.23	46.55	3.68	
1/28/2010	50.23	46.51	3.72	
2/23/2010	50.23	45.97	4.26	
4/9/2010	50.23	45.87	4.36	
5/5/2010	50.23	45.95	4.28	
6/4/2010	50.23	46.46	3.77	
7/2/2010	50.23	46.51	3.72	
8/12/2010	50.23	46.55	3.68	
9/1/2010	50.23	46.50	3.73	

Watermaster Well 165 Public Works Corp. Yard

State Well No. 15S01E22T59 Owner: City of Sand City

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Qod/Qar/QTc

Southern Coastal Producer Screen: -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
---------------	-----------------	----------------	--------------------	----------

9/29/2009	47.25	42.13	5.12
10/29/2009	47.25	41.78	5.47
12/1/2009	47.25	41.44	5.81
1/7/2010	47.25	41.73	5.52
1/26/2010	47.25	41.42	5.83
2/25/2010	47.25	41.40	5.85
4/9/2010	47.25	41.52	5.73
5/5/2010	47.25	41.59	5.66
6/4/2010	47.25	42.02	5.23
7/2/2010	47.25	41.95	5.30
8/12/2010	47.25	42.05	5.20
9/1/2010	47.25	42.09	5.16

Watermaster Well 167 Robinette -Design Ctr.

State Well No. 15S01E22Mc Owner: City of Sand City

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Qod/Qar/QTc

Southern Coastal	Producer	Screen:	-	
Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/29/2009	21.31	13.42	7.89	
12/1/2009	21.31	13.61	7.70	
1/7/2010	21.31	13.62	7.69	
1/26/2010	21.31	13.30	8.01	
2/25/2010	21.31	13.37	7.94	
4/9/2010	21.31	13.42	7.89	
5/5/2010	21.31	13.46	7.85	
6/4/2010	21.31	13.35	7.96	
7/2/2010	21.31	12.99	8.32	
8/12/2010	21.31	13.07	8.24	
9/1/2010	21.31	13.01	8.30	

Watermaster Well 177 Plumas #4

State Well No. 15S01E27Jg Owner: California American Water

Monitored: Monthly

Monitored by: CAW

Southern Coastal Producer

Screen: -

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	161.48			Well Running
10/29/2009	161.48			Well Running
11/25/2009	161.48	171	-9.52	
12/31/2009	161.48	113	48.48	
1/28/2010	161.48	109	52.48	
2/25/2010	161.48	107	54.48	
3/25/2010	161.48	106	55.48	
4/29/2010	161.48			Well Running
5/28/2010	161.48			Well Running
6/24/2010	161.48	155	6.48	Well Running
7/29/2010	161.48	193.60	-32.12	Well Running
8/26/2010	161.48	172	-10.52	Well Running

Well Category: Producer**Subarea: Southern Inland****Watermaster Well 196 MCPD #2**

State Well No. 16S02E05Gf Owner: Monterey County Parks Department

Monitored: Monthly

Monitored by: MCPD

Southern Inland Producer

Screen: -

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/4/2009	391.04	193	198.04	
11/9/2009	391.04	186	205.04	
12/9/2009	391.04	175	216.04	
2/5/2010	391.04	173	218.04	
3/10/2010	391.04	173	218.04	

Watermaster Well 197 MCPD #1

State Well No. 16S02E05Ge Owner: Monterey County Parks Department

Monitored: Monthly

Southern Inland Producer

Screen: -

Monitored by: MCPD

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/4/2009	392.86	208	184.86	
11/9/2009	392.86	193	199.86	
12/9/2009	392.86	190	202.86	
2/5/2010	392.86	188	204.86	
3/10/2010	392.86	186	206.86	

Watermaster Well 204 New Paddock

State Well No. 16S02E05Mf Owner: Pasadera Country Club, LLC

Monitored: Monthly

Southern Inland Producer

Screen: 306 - 498

Monitored by: Pasadera

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/30/2009	352.69	229.59	123.10	
11/30/2009	352.69	221.98	130.71	
12/31/2009	352.69	217.89	134.80	
2/1/2010	352.69	214.08	138.61	
3/1/2010	359.69	214.68	145.01	
3/31/2010	359.69	212.94	146.75	

Watermaster Well 208 Main Gate

State Well No. 16S02E05Mg Owner: Pasadera Country Club, LLC

Monitored: Monthly

Southern Inland Producer

Screen: -

Monitored by: Pasadera

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/30/2009	345.42	229.49	115.93	
11/30/2009	345.42	222.13	123.29	
12/31/2009	345.42	222.79	122.63	
2/1/2010	345.42	222.74	122.68	
3/1/2010	345.42	222.86	122.56	
3/31/2010	345.42	220.94	124.48	
4/30/2010	345.42	220.41	125.01	

Watermaster Well 209 Bishop #1 (west)

State Well No. 16S02E05Ea Owner: California American Water

Southern Inland Producer

Screen: -

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	398.81			Well Running
10/29/2009	398.81			Well Running
11/25/2009	398.81	264	134.81	
12/31/2009	398.81			Well Running
1/28/2010	398.81	250	148.81	
2/25/2010	398.81			Well Running
3/25/2010	398.81	248	150.81	

Watermaster Well 210 Bishop #2 (east)

State Well No. 16S02E05Fb Owner: California American Water

Southern Inland Producer

Screen: -

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	418.34			Not Visited
10/28/2009				Not Visited
11/25/2009				Not Visited
12/31/2009				Not Visited
1/18/2010				Not Visited
2/25/2010	418.34	248	170.34	
3/25/2010	418.34	248	170.34	

Watermaster Well 212 York School 01-349

State Well No. 15S01E36Qa Owner: York School

Southern Inland Producer

Screen: -

Monitored: Monthly

Monitored by: MPWMD

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/25/2009	384.3	223.7	160.60	
10/28/2009	384.3	231.03	153.27	
12/2/2009	384.3	224.05	160.25	
1/7/2010	384.3	278.22	106.08	Well Running

1/26/2010	384.3	220.08	164.22
2/25/2010	384.3	221.12	163.18
3/22/2010	384.3	231.36	152.94
4/9/2010	384.3	219.90	164.40
5/5/2010	384.3	224.95	159.35
6/4/2010	384.3	239.35	144.95
7/2/2010	384.3	288.99	95.31
8/12/2010	384.3	226.09	158.21
9/2/2010	384.3	233.03	151.27

Watermaster Well 213 Ryan Ranch #7

State Well No. 16S01E01E50 Owner: California American Water

Monitored: Monthly

Monitored by: CAW

Southern Inland

Producer

Screen:

-

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	294			Well Running
10/29/2009	294	248	46.00	
11/25/2009	294	225.6	68.40	
12/31/2009	294	210	84.00	
1/28/2010	294	198	96.00	
2/25/2010	294	206.6	87.40	
3/25/2010	294	203	91.00	

Watermaster Well 215 Ryan Ranch #11

State Well No. 16S01E01Cd Owner: California American Water

Monitored: Monthly

Monitored by: CAW

Southern Inland

Producer

Screen:

-

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	307.59			Well Running
10/29/2009	307.59	204	103.59	
11/25/2009	307.59	196.9	110.69	
12/31/2009	307.59	210	97.59	
1/28/2010	307.59	199	108.59	

1/26/2010	384.3	220.08	164.22
2/25/2010	384.3	221.12	163.18
3/22/2010	384.3	231.36	152.94
4/9/2010	384.3	219.90	164.40
5/5/2010	384.3	224.95	159.35
6/4/2010	384.3	239.35	144.95
7/2/2010	384.3	288.99	95.31
8/12/2010	384.3	226.09	158.21
9/2/2010	384.3	233.03	151.27

Watermaster Well 213 Ryan Ranch #7

State Well No. 16S01E01E50 Owner: California American Water

Monitored: Monthly

Monitored by: CAW

Southern Inland

Producer

Screen:

-

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	294			Well Running
10/29/2009	294	248	46.00	
11/25/2009	294	225.6	68.40	
12/31/2009	294	210	84.00	
1/28/2010	294	198	96.00	
2/25/2010	294	206.6	87.40	
3/25/2010	294	203	91.00	

Watermaster Well 215 Ryan Ranch #11

State Well No. 16S01E01Cd Owner: California American Water

Monitored: Monthly

Monitored by: CAW

Southern Inland

Producer

Screen:

-

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	307.59			Well Running
10/29/2009	307.59	204	103.59	
11/25/2009	307.59	196.9	110.69	
12/31/2009	307.59	210	97.59	
1/28/2010	307.59	199	108.59	

2/25/2010	307.59	209	98.59
3/25/2010	307.59	202	105.59

Watermaster Well 216 Ryan Ranch #8

State Well No. 16S01E01T54 Owner: California American Water
 Southern Inland Producer Screen: -

Monitored: Monthly
 Monitored by: CAW
 Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	306.86	234	72.86	
10/29/2009	306.86	200.9	105.96	
11/25/2009	306.86	203.7	103.16	
12/31/2009	306.86	210	96.86	
1/28/2010	306.86	198.6	108.26	
2/25/2010	306.86	208	98.86	
3/25/2010	306.86	203	103.86	
4/29/2010	306.86	213	93.86	
5/28/2010	306.86	245	61.86	
6/24/2010	306.86	250	56.86	
7/29/2010	306.86	260	46.86	
8/26/2010	306.86	254	52.86	

Watermaster Well 226 Bay Ridge

State Well No. 16S02E09Cd Owner: California American Water
 Southern Inland Producer Screen: -

Monitored: Monthly
 Monitored by: CAW
 Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	545.92			Well Running
10/29/2009	545.92	375	170.92	
11/25/2009	545.92	376	169.92	
12/31/2009				Well Running
2/25/2010	545.92	365	180.92	
3/25/2010	545.92	368.6	177.32	

Watermaster Well 101 MSC-Shallow

State Well No. 15S01E15N3 Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Northern Coastal

Monitor

Screen: 490 - 680

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	80.1	77.28	2.82	
10/29/2009	80.1	77.29	2.81	
11/18/2009	80.1	76.67	3.43	
12/2/2009	80.1	76.15	3.95	
1/7/2010	80.1	77.20	2.90	
1/26/2010	80.1	77.47	2.63	
2/22/2010	80.1	76.72	3.38	
4/9/2010	80.1	75.19	4.91	
5/4/2010	80.1	75.39	4.71	
5/10/2010	80.1	75.89	4.21	
6/4/2010	80.1	75.22	4.88	
7/27/2010	80.1	76.00	4.10	
9/1/2010	80.1	75.54	4.56	
9/28/2010	80.1	75.66	4.44	

Watermaster Well 102 MSC-Deep

State Well No. 15S01E15N2 Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Northern Coastal

Monitor

Screen: 810 - 850

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	80.29	96.98	-16.69	
10/29/2009	80.29	96.33	-16.04	
11/18/2009	80.29	96.88	-16.59	
12/2/2009	80.29	97.30	-17.01	

1/7/2010	80.29	97.23	-16.94
1/26/2010	80.29	95.21	-14.92
2/22/2010	80.29	91.42	-11.13
4/9/2010	80.29	87.79	-7.50
5/4/2010	80.29	88.02	-7.73
5/10/2010	80.29	89.26	-8.97
6/4/2010	80.29	90.13	-9.84
7/2/2010	80.29	94.28	-13.99
7/27/2010	80.29	95.69	-15.40
9/1/2010	80.29	95.92	-15.63
9/28/2010	80.29	97.51	-17.22

Watermaster Well 103 PCA-W Shallow

State Well No. 15S01E15F1 Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Northern Coastal Monitor

Screen: 525 - 575

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
11/20/2009	64.22	60.42	3.80	
3/1/2010	64.22	59.48	4.74	
9/28/2010	64.22	59.59	4.63	

Watermaster Well 104 PCA-W Deep

State Well No. 15S01E15F2 Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Northern Coastal Monitor

Screen: 825 - 875

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
11/20/2009	65.18	84.68	-19.50	
3/1/2010	65.18	74.47	-9.29	
9/28/2010	65.18	85.79	-20.61	

Watermaster Well 105 PCA-E (Multiple) Shallow

State Well No. 15S01E15K5 Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Northern Coastal Monitor

Screen: 350 - 400

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	68.51	66.41	2.10	

10/28/2009	68.51	65.98	2.53
12/1/2009	68.51	65.42	3.09
1/7/2010	68.51	64.91	3.60
1/28/2010	68.51	64.69	3.82
2/1/2010	68.51	64.48	4.03
2/25/2010	68.51	64.13	4.38
4/2/2010	68.51	63.45	5.06
5/10/2010	68.51	63.51	5.00
6/9/2010	68.51	63.5	5.01
7/1/2010	68.51	63.88	4.63
7/28/2010	68.51	60.60	7.91
9/1/2010	68.51	60.56	7.95

Watermaster Well 106 PCA-E (Multiple) Deep

State Well No. 15S01E15K4 Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Northern Coastal

Monitor

Screen: 650 - 700

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	68.54	89.78	-21.24	
10/28/2009	68.54	87.31	-18.77	
12/1/2009	68.54	89.86	-21.32	
1/7/2010	68.54	87.23	-18.69	
1/28/2010	68.54	82.80	-14.26	
2/1/2010	68.54	81.42	-12.88	
2/25/2010	68.54	78.78	-10.24	
4/2/2010	68.54	77.34	-8.80	
5/10/2010	68.54	79.88	-11.34	
6/9/2010	68.54	83.82	-15.28	
7/1/2010	68.54	86.33	-17.79	

7/28/2010	68.54	87.72	-19.18
9/1/2010	68.54	88.98	-20.44

Watermaster Well 107 Ord Grove Test

State Well No. 15S01E23B1 Owner: California American Water

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: QTc/Tsm

Northern Coastal Monitor Screen: 355 - 480

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	294.14	345	-50.86	
9/29/2009	294.14	344.28	-50.14	
10/22/2009	294.14	325.83	-31.69	
12/1/2009	294.14	343.30	-49.16	
1/7/2010	294.14	324.64	-30.50	
1/28/2010	294.14			innaccessible
2/25/2010	294.14	315.09	-20.95	
4/9/2010	294.14	310.78	-16.64	
5/10/2010	294.14	331.90	-37.76	production well on
6/4/2010	294.14	337.15	-43.01	production well on
7/1/2010	294.14	331.91	-37.77	
8/6/2010	294.14	343.83	-49.69	production well on
9/1/2010	294.14	345.2	-51.06	production well on

Watermaster Well 108 Paralta Test

State Well No. 15S01E14Ra Owner: MPWMD

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: QTc/Tsm

Northern Coastal Monitor Screen: 430 - 800

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	330.72	345	-14.28	
9/29/2009	330.72	352.1	-21.38	
10/21/2009	330.72	339.89	-9.17	
12/1/2009	330.72	348.20	-17.48	
1/7/2010	330.72	339.34	-8.62	
1/28/2010	330.72	323.0	7.72	

2/25/2010	330.72	327.62	3.10	
3/29/2010	330.72	331.78	-1.06	
5/11/2010	330.72	340.32	-9.60	production well on
6/3/2010	330.72	340.98	-10.26	production well on
7/2/2010	330.72	345.60	-14.88	production well on
8/6/2010	330.72	347.63	-16.91	
9/2/2010	330.72	345.95	-15.23	production well on

Watermaster Well 109 Ord Terrace-Shallow

State Well No. 15S01E23Ca Owner: MPWMD

Monitored: Annually

Monitored by: MPWMD

Northern Coastal

Monitor

Screen: 280 - 330

Aquifer: Tsm (upper)

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/21/2009	228.65	260.02	-31.37	
12/1/2009	228.65	264.14	-35.49	
1/7/2010	228.65	257.85	-29.20	
1/28/2010	228.65	253.36	-24.71	
2/1/2010	228.65	252.39	-23.74	
2/25/2010	228.65	248.95	-20.30	
4/9/2010	228.65	244.91	-16.26	
5/10/2010	228.65	249.81	-21.16	
6/4/2010	228.65	254.14	-25.49	
7/1/2010	228.65	258.98	-30.33	
8/3/2010	228.65	262.02	-33.37	
9/1/2010	228.65	263.8	-35.15	

Watermaster Well 110 Ord Terrace-Deep

State Well No. 15S01E23Cb Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Northern Coastal

Monitor

Screen: 390 - 440

Aquifer: Tsm (lower)

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	228.63	264.25	-35.62	

Watermaster Well 111 FO-09-Shallow

State Well No. 15S01E11Pa Owner: MPWMD

Northern Coastal Monitor

Screen: 610 - 650

Monitored: Monthly

Monitored by: MPWMD

Aquifer: QTc/Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	118.89	116.16	2.73	
10/28/2009	118.89	115.81	3.08	
11/17/2009	118.89	115.38	3.51	
12/2/2009	118.89	115.22	3.67	
1/7/2010	118.89	115.03	3.86	
1/28/2010	118.89	114.39	4.50	
2/22/2010	118.89	114.43	4.46	
4/9/2010	118.89	113.48	5.41	
5/10/2010	118.89	113.43	5.46	
6/3/2010	118.89	113.40	5.49	
7/1/2010	118.89	113.41	5.48	
7/28/2010	118.89	113.60	5.29	
9/2/2010	118.89	113.48	5.41	
9/28/2010	188.89	133.32	55.57	

Watermaster Well 112 FO-09-Deep

State Well No. 15S01E11Pb Owner: MPWMD

Northern Coastal Monitor

Screen: 790 - 830

Monitored: Monthly

Monitored by: MPWMD

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	118.85	139.95	-21.10	
10/28/2009	118.85	137.37	-18.52	
11/17/2009	118.85	139.77	-20.92	
12/2/2009	118.85	140.19	-21.34	
1/7/2010	118.85	137.43	-18.58	
1/28/2010	118.85	132.59	-13.74	
2/1/2010	118.85	131.42	-12.57	

2/22/2010	118.85	129.44	-10.59
4/9/2010	118.85	127.47	-8.62
5/10/2010	118.85	130.27	-11.42
6/3/2010	118.85	132.12	-13.27
7/1/2010	118.85	136.46	-17.61
7/28/2010	118.85	137.83	-18.98
9/2/2010	118.85	138.89	-20.04
9/28/2010	118.85	140.94	-22.09

Watermaster Well 113 FO-10-Shallow

State Well No. 15S01E12Fa Owner: MPWMD

Northern Coastal Monitor

Screen: 620 - 640

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	200.85	204.81	-3.96	
10/29/2009	200.85	204.42	-3.57	
12/2/2009	200.85	204.46	-3.61	
1/7/2010	200.85	203.91	-3.06	
1/26/2010	200.85	202.54	-1.69	
2/25/2010	200.85	202.63	-1.78	
4/9/2010	200.85	202.59	-1.74	
5/4/2010	200.85	202.59	-1.74	
6/3/2010	200.85	203.55	-2.70	
7/2/2010	200.85	204.30	-3.45	
7/29/2010	200.85	204.45	-3.60	
9/2/2010	200.85	204.52	-3.67	

Watermaster Well 114 FO-10-Deep

State Well No. 15S01E12Fc Owner: MPWMD

Northern Coastal Monitor

Screen: 1380 - 1410

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	201.03	205.92	-4.89	

10/29/2009	201.03	205.39	-4.36
12/2/2009	201.03	205.61	-4.58
1/7/2010	201.03	204.51	-3.48
1/26/2010	201.03	204.40	-3.37
2/25/2010	201.03	202.97	-1.94
4/9/2010	201.03	203.41	-2.38
5/4/2010	201.03	203.3	-2.27
6/3/2010	201.03	203.29	-2.26
7/2/2010	201.03	204.52	-3.49
7/29/2010	201.03	204.70	-3.67
9/2/2010	201.03	204.78	-3.75

Watermaster Well 154 Mission Memorial Monitor

State Well No. 15S01E23Aa Owner: Mission Memorial Park

Monitored: Monthly

Monitored by: MPWMD

Northern Coastal

Monitor

Screen:

-

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	315.42	343.91	-28.49	
10/28/2009	315.42	339.93	-24.51	
12/1/2009	315.42	344.38	-28.96	
1/7/2010	315.42	339.90	-24.48	
1/28/2010	315.42	329.39	-13.97	
2/25/2010	315.42	320.68	-5.26	
4/9/2010	315.42	318.93	-3.51	
5/10/2010	315.42	334.18	-18.76	
6/4/2010	315.42	331.65	-16.23	
7/1/2010	315.42	339.93	-24.51	
8/6/2010	315.42	343.15	-27.73	
9/1/2010	315.42	342.4	-26.98	

Watermaster Well 163 Playa #4

State Well No. 15S01E22B51 Owner: California American Water

Northern Coastal Monitor

Screen: -

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc/Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	52.53	62	-9.47	
10/29/2009	52.53	62	-9.47	
11/25/2009	52.53	60	-7.47	
12/31/2009	52.53	60	-7.47	
1/28/2010	52.53	61	-8.47	
2/25/2010	52.53	60	-7.47	
3/25/2010	52.53	58.5	-5.97	
4/29/2010	52.53	58.6	-6.07	
5/28/2010	52.53	51.6	0.93	
6/24/2010	52.53	59	-6.47	
7/29/2010	52.53	55.4	-2.87	
8/26/2010	52.53	NA	#Error	Not Visited

Watermaster Well 231 Del Monte Test

State Well No. 15S01E22Cd Owner: California American Water

Northern Coastal Monitor

Screen: -

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	32.62	30	2.62	
10/29/2009	32.62	30	2.62	
11/25/2009	32.62	30	2.62	
12/31/2009	32.62	30	2.62	
1/28/2010	32.62	30	2.62	
2/25/2010	32.62	30	2.62	
3/25/2010	32.62	30	2.62	
4/29/2010	32.62	29	3.62	
5/28/2010	32.62	28.6	4.02	

6/24/2010	32.62	29	3.62
7/29/2010	32.62	29	3.62
8/26/2010	32.62	29	3.62

Watermaster Well 243 Luxton

State Well No. 15S01E22Ha Owner: California American Water

Northern Coastal

Monitor

Screen:

-

Monitored: Monthly

Monitored by: CAW

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	89.12	93.1	-3.98	
10/29/2009	89.12	94.0	-4.88	
11/25/2009	89.12	97.0	-7.88	
12/31/2009	89.12			
1/28/2010	89.12	94.0	-4.88	
2/25/2010	89.12	92.0	-2.88	
3/25/2010	89.12	92.0	-2.88	
4/29/2010	89.12	90.0	-0.88	
5/28/2010	89.12	90.0	-0.88	
6/24/2010	89.12	90.6	-1.48	
7/29/2010	89.12	91	-1.88	
8/26/2010	89.12	93	-3.88	

Watermaster Well 245 Sentinel MW #1

State Well No. 15S01E02Pb Owner: Seaside Groundwater Basin Watermaster

Northern Coastal

Monitor

Screen:

-

Monitored: Monthly

Monitored by: MPWMD

Aquifer: Tsm/Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
1/20/2010	96.00	109.0	-13.00	
4/2/2010	96.00	104.19	-8.19	
6/3/2010	96.00	106.22	-10.22	
7/6/2010	96.00	109.21	-13.21	
8/6/2010	96.00	110.53	-14.53	
9/2/2010	96.00	111.17	-15.17	

Watermaster Well 246 Sentinel MW #2

State Well No. 15S01E11Ea Owner: Seaside Groundwater Basin Watermaster
 Northern Coastal Monitor Screen: -

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
4/2/2010	73.7	80.73	-7.03	
6/3/2010	73.7	84.01	-10.31	
7/6/2010	73.7	87.71	-14.01	
8/6/2010	73.7	89.23	-15.53	
9/2/2010	73.7	89.73	-16.03	

Watermaster Well 247 Sentinel MW #3

State Well No. 15S01E11Eb Owner: Seaside Groundwater Basin Watermaster
 Northern Coastal Monitor Screen: -

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
4/2/2010	59.5	65.76	-6.26	
6/3/2010	59.5	68.93	-9.43	
7/6/2010	59.5	72.44	-12.94	
8/6/2010	59.5	73.89	-14.39	
9/2/2010	59.5	74.32	-14.82	

Watermaster Well 248 Sentinel MW #4

State Well No. 15S01E15Gb Owner: Seaside Groundwater Basin Watermaster
 Northern Coastal Monitor Screen: -

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Tsm/Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
4/2/2010	62.4	68.71	-6.31	
6/16/2010	62.4	74.85	-12.45	
7/6/2010	62.4	76.6	-14.20	
8/6/2010	62.4	78.38	-15.98	
9/2/2010	62.4	78.88	-16.48	

Watermaster Well 251 CDM MW-1

State Well No. 15S01E02Pa Owner: MPWMD
 Northern Coastal Monitor Screen: -

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Qod/Qar

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/28/2009	93.53	89.62	3.91	

12/1/2009	93.53	89.32	4.21
1/7/2010	93.53	89.35	4.18
1/20/2010	93.53	89.1	4.43
2/26/2010	93.53	88.65	4.88
3/29/2010	93.53	89.18	4.35
6/3/2010	93.53	89.79	3.74
7/6/2010	93.53	87.71	5.82
8/6/2010	93.53	89.23	4.30
9/2/2010	93.53	89.73	3.80

Watermaster Well 252 CDM MW-2

State Well No. 15S01E15Ga Owner: MPWMD

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Qod/Qar

Northern Coastal	Monitor	Screen:	-	
Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/28/2009	63.83	59.37	4.46	
12/1/2009	63.83	58.49	5.34	
1/7/2010	63.83	59.43	4.40	
1/20/2010	63.83	58.5	5.33	
2/26/2010	63.83	58.32	5.51	
3/29/2010	63.83	59.59	4.24	
6/3/2010	63.83	60.01	3.82	
7/6/2010	63.83	60.02	3.81	
8/6/2010	63.83	60.79	3.04	
9/2/2010	63.83	60.62	3.21	

Watermaster Well 254 MW-B-22-180

State Well No. 15S01E12Da Owner: U.S.A. Fort Ord

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Qod/Qar

Northern Coastal	Monitor	Screen:	-	
Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/25/2009	168.1	157.23	10.87	
10/28/2009	168.1	157.25	10.85	

12/1/2009	168.1	157.28	10.82
1/7/2010	168.1	157.26	10.84
1/26/2010	168.1	157.27	10.83
2/26/2010	168.1	157.31	10.79
3/29/2010	168.1	157.23	10.87
5/5/2010	168.1	157.29	10.81
6/3/2010	168.1	157.29	10.81
7/6/2010	168.1	157.38	10.72
8/6/2010	168.1	157.41	10.69
9/1/2010	168.1	157.46	10.64

Watermaster Well 258 MW-B-23-180

State Well No. 15S01E11Ba Owner: U.S.A. Fort Ord

Monitored: Monthly
 Monitored by: MPWMD
 Aquifer: Qod/Qar

Northern Coastal Monitor Screen: -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
10/28/2009	113.81	110.05	3.76	
12/1/2009	113.81	109.81	4.00	
1/7/2010	113.81	109.47	4.34	
1/20/2010	113.81	109.6	4.21	
2/26/2010	113.81	109.00	4.81	
3/29/2010	113.81	109.15	4.66	
6/3/2010	113.81	109.73	4.08	
7/6/2010	113.81	109.89	3.92	
7/27/2010	113.81	110.01	3.80	
9/2/2010	113.81	110.29	3.52	

Well Category: Monitor

Subarea: Northern Inland

Watermaster Well 115 FO-01-Shallow

State Well No. 15S01E26Ba Owner: MPWMD

Northern Inland Monitor

Screen: 310 - 320

Monitored: Quarterly

Monitored by: MPWMD

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	362.61	200.9	161.71	
3/22/2010	362.61	201.88	160.73	
8/16/2010	362.61	202.02	160.59	

Watermaster Well 116 FO-01-Deep

State Well No. 15S01E26Bb Owner: MPWMD

Northern Inland Monitor

Screen: 450 - 460

Monitored: Quarterly

Monitored by: MPWMD

Aquifer: Tm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	362.57	338.58	23.99	
3/22/2010	362.57	338.12	24.45	
8/16/2010	362.57	338.89	23.68	

Watermaster Well 118 FO-07-Shallow

State Well No. 15S01E13La Owner: MPWMD

Northern Inland Monitor

Screen: 600 - 640

Monitored: Monthly

Monitored by: MPWMD

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	473.44	460.16	13.28	
10/21/2009	473.44	456.67	16.77	
12/1/2009	473.44	456.69	16.75	
1/6/2010	473.44	456.17	17.27	
1/28/2010	473.44	455.73	17.71	
2/1/2010	473.44	455.63	17.81	
3/5/2010	473.44	455.28	18.16	
4/9/2010	473.44	455.47	17.97	
5/7/2010	473.44	455.28	18.16	
6/3/2010	473.44	454.96	18.48	
7/1/2010	473.44	464.91	8.53	
8/6/2010	473.44	464.80	8.64	

9/1/2010 473.44 464.63 8.81

Watermaster Well 119 FO-07-Deep

State Well No. 15S01E13Lb Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Northern Inland Monitor

Screen: 800 - 840

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	473.44	494.78	-21.34	
10/21/2009	473.44	489.93	-16.49	
12/1/2009	473.44	491.93	-18.49	
1/6/2010	473.44	489.06	-15.62	
1/28/2010	473.44	483.88	-10.44	
2/1/2010	473.44	482.80	-9.36	
3/5/2010	473.44	479.08	-5.64	
4/9/2010	473.44	479.33	-5.89	
5/7/2010	473.44	481.58	-8.14	
6/3/2010	473.44	484.19	-10.75	
7/1/2010	473.44	487.80	-14.36	
8/6/2010	473.44	489.62	-16.18	
9/1/2010	473.44	490.03	-16.59	

Watermaster Well 120 FO-08-Shallow

State Well No. 15S01E12Qa Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Northern Inland Monitor

Screen: 740 - 780

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	378.04	376.73	1.31	
10/21/2009	378.04	376.50	1.54	
12/2/2009	378.04	376.53	1.51	
1/6/2010	378.04	376.30	1.74	
1/28/2010	378.04	373.83	4.21	
2/26/2010	378.04	374.10	3.94	
4/9/2010	378.04	373.78	4.26	

5/7/2010	378.04	374.4	3.64
6/4/2010	378.04	373.19	4.85
9/2/2010	378.04	374.11	3.93

Watermaster Well 121 FO-08-Deep

State Well No. 15S01E12Qb Owner: MPWMD

Northern Inland Monitor

Screen: 900 - 940

Monitored: Monthly

Monitored by: MPWMD

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	378.1	398.23	-20.13	
10/21/2009	378.1	389.18	-11.08	
12/2/2009	378.1	398.82	-20.72	
1/6/2010	378.1	396.43	-18.33	
1/28/2010	378.1	392.02	-13.92	
2/1/2010	378.1	390.91	-12.81	
2/25/2010	378.1	388.54	-10.44	
4/9/2010	378.1	387.22	-9.12	
5/7/2010	378.1	389.19	-11.09	
6/4/2010	378.1			inaccessible
9/2/2010	378.1	397.01	-18.91	

Watermaster Well 122 FO-11-Shallow

State Well No. 15S02E7Ba Owner: MPWMD

Northern Inland Monitor

Screen: 700 - 730

Monitored: Monthly

Monitored by: MPWMD

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	332.93	343.75	-10.82	
10/29/2009	332.93	343.51	-10.58	
12/2/2009	332.93	343.54	-10.61	
1/7/2010	332.93	343.33	-10.40	
1/26/2010	332.93	342.13	-9.20	
2/25/2010	332.93	342.40	-9.47	
4/9/2010	332.93	341.65	-8.72	

5/4/2010	332.93	341.73	-8.80
6/3/2010	332.93	341.95	-9.02
7/2/2010	332.93	342.08	-9.15
8/6/2010	332.93	342.26	-9.33
9/2/2010	332.93	343.36	-10.43

Watermaster Well 123 FO-11-Deep

State Well No. 15S02E7Bb Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Northern Inland

Monitor

Screen: 1090 - 1120

Aquifer: Tp

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	332.96	331.83	1.13	
10/29/2009	332.96	331.73	1.23	
12/2/2009	332.96	332.02	0.94	
1/7/2010	332.96	331.55	1.41	
1/26/2010	332.96	330.75	2.21	
2/25/2010	332.96	330.60	2.36	
4/9/2010	332.96	329.98	2.98	
5/4/2010	332.96	330.07	2.89	
6/3/2010	332.96	331.45	1.51	
7/2/2010	332.96	332.21	0.75	
8/6/2010	332.96	333.01	-0.05	
9/2/2010	332.96	332.27	0.69	

Watermaster Well 188 ASR - 1

State Well No. 15S01E23Ad Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Northern Inland

Monitor

Screen: -

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	337.23	367.78	-30.55	
12/30/2009	337.23	NA	#Error	Active Injection
4/18/2010	337.23	NA	#Error	Active Injection

Watermaster Well 256 ASR - 2

State Well No. 15S01E23Af Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Northern Inland

Monitor

Screen:

-

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	356	385.36	-29.36	
12/30/2009	356	NA	#Error	Active Injection
4/10/2010	356	NA	#Error	Active Injection

Well Category: Monitor**Subarea: Southern Coasal****Watermaster Well 125 K-Mart**

State Well No. 15S01E21Re Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Southern Coasal

Monitor

Screen:

40 - 60

Aquifer: Qod/Qar

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
1/7/2010	30.65	23.13	7.52	
1/26/2010	30.65	23.10	7.55	
2/25/2010	30.65	23.04	7.61	
4/9/2010	30.65	22.38	8.27	
5/5/2010	30.65	22.45	8.20	
6/4/2010	30.65			Well Head Obstructed
7/2/2010	30.65	22.70	7.95	
8/12/2010	30.65	22.85	7.80	
9/1/2010	30.65	22.88	7.77	

Well Category: Monitor**Subarea: Southern Coastal****Watermaster Well 124 Plumas '90 Test**

State Well No. 15S01E27J6 Owner: MPWMD

Monitored: Monthly

Monitored by: MPWMD

Southern Coastal

Monitor

Screen:

430 - 470

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	157.83	106.22	51.61	
10/28/2009	157.83	106.53	51.30	production well on

12/1/2009	157.83	106.22	51.61	
1/7/2010	157.83	105.53	52.30	
1/26/2010	157.83	105.12	52.71	
2/25/2010	157.83	104.57	53.26	
6/4/2010	157.83	105.26	52.57	production well on
7/2/2010	157.83	105.82	52.01	production well on
8/6/2010	157.83	106.46	51.37	production well on
9/1/2010	157.83	107.10	50.73	production well on

Watermaster Well 238 CDM MW-4

State Well No. 15S01E21Ka Owner: MPWMD

Southern Coastal

Monitor

Screen:

-

Monitored: Monthly

Monitored by: MPWMD

Aquifer: Qod

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	18.69	15.14	3.55	
10/29/2009	18.69	14.73	3.96	
11/30/2009	18.69	14.02	4.67	
1/7/2010	18.69	14.59	4.10	
1/28/2010	18.69	14.62	4.07	
2/25/2010	18.69	14.58	4.11	
4/9/2010	18.69			innaccessible
5/5/2010	18.69	14.93	3.76	
6/4/2010	18.69	14.72	3.97	
7/2/2010	18.69	15.08	3.61	
8/12/2010	18.69	15.16	3.53	
9/1/2010	18.69	15.10	3.59	

Watermaster Well 239 CDM MW-3

State Well No. 15S01E22De Owner: MPWMD

Southern Coastal

Monitor

Screen:

-

Monitored: Monthly

Monitored by: MPWMD

Aquifer: Qod

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/29/2009	33.81	32.06	1.75	

10/29/2009	33.81	31.66	2.15
12/1/2009	33.81	29.60	4.21
1/7/2010	33.81	31.53	2.28
1/28/2010	33.81	31.49	2.32
2/23/2010	33.81	30.39	3.42
4/9/2010	33.81	31.28	2.53
5/5/2010	33.81	31.42	2.39
6/4/2010	33.81	32.23	1.58
7/2/2010	33.81	32.36	1.45
8/12/2010	33.81	32.44	1.37
9/1/2010	33.81	32.25	1.56

Watermaster Well 240 MW-BW-08-A

State Well No. 15S01E26Fb Owner: U.S.A. Fort Ord

Monitored: Monthly
Monitored by: MPWMD
Aquifer: Qod/Qar

Southern Coastal Monitor Screen: -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/30/2009	205.18	59.17	146.01	
10/28/2009	205.18	59.76	145.42	
12/1/2009	205.18	59.05	146.13	
1/7/2010	205.18	59.10	146.08	
1/26/2010	205.18	59.8	145.38	
2/25/2010	205.18	59.12	146.06	
4/9/2010	205.18	58.57	146.61	
5/5/2010	205.18	59.39	145.79	
6/4/2010	205.18	58.59	146.59	
7/2/2010	205.18	58.63	146.55	
7/2/2010	205.18	58.78	146.40	
8/6/2010	205.18	58.78	146.40	

9/1/2010

205.18

58.76

146.42

Watermaster Well 241 MW-BW-09-180

State Well No. 15S01E26Fa Owner: U.S.A. Fort Ord

Monitored: Monthly

Monitored by: MPWMD

Southern Coastal

Monitor

Screen:

-

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/30/2009	206.22	205.57	0.65	
10/28/2009	206.22	205.52	0.70	
12/1/2009	206.22	205.90	0.32	
1/7/2010	206.22	205.49	0.73	
1/26/2010	206.22	205.59	0.63	
2/25/2010	206.22	205.95	0.27	
4/9/2010	206.22	205.72	0.50	
5/5/2010	206.22	206.40	-0.18	
6/4/2010	206.22	205.85	0.37	
7/2/2010	206.22	206.01	0.21	
8/6/2010	206.22	206.20	0.02	
9/1/2010	206.22	206.61	-0.39	

Watermaster Well 244 Hilby MGT

State Well No. 15S01E26Da Owner: California American Water

Monitored: Monthly

Monitored by: CAW

Southern Coastal

Monitor

Screen:

-

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/24/2009	248.04	244	4.04	
10/29/2009	248.04	245	3.04	
11/25/2009	248.04	245	3.04	
12/31/2009	248.04	245	3.04	
1/28/2010	248.04	244	4.04	
2/25/2010	248.04	245	3.04	
3/25/2010	248.04	245	3.04	
4/29/2010	248.04	245	3.04	

Well Category: Monitor**Subarea: Southern Inland****Watermaster Well 127 FO-03-Deep**

State Well No. 15S02E33Ca Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 630 - 640

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	774.74	636.25	138.49	
3/22/2010	774.74	636.02	138.72	
8/31/2010	774.74	637.31	137.43	

Watermaster Well 129 FO-04-Shallow (E)

State Well No. 15S01E26Na Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 260 - 300

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	168.23	111.91	56.32	
3/22/2010	168.23	109.38	58.85	
8/16/2010	168.23	112.51	55.72	

Watermaster Well 130 FO-04-Deep (W)

State Well No. 15S01E26Nb Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 500 - 560

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	167.44	111.7	55.74	
3/22/2010	167.44	110.57	56.87	
8/16/2010	167.44	112.51	54.93	

Watermaster Well 131 FO-05-Shallow

State Well No. 16S02E04Ha Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 690 - 730

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	478.97	245.64	233.33	
3/22/2010	478.97	242.00	236.97	
8/16/2010	478.97	245.81	233.16	

Watermaster Well 132 FO-05-Deep

State Well No. 16S02E04Hb Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 1147 - 1187

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	479.29	311	168.29	
3/22/2010	479.29	306.18	173.11	

Watermaster Well 133 FO-06-Shallow

State Well No. 16S02E04Fa Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 650 - 690

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	470.13	232.77	237.36	
3/22/2010	470.13	230.82	239.31	
8/16/2010	470.13	234.44	235.69	

Watermaster Well 134 FO-06-Deep

State Well No. 16S02E04Fb Owner: MPWMD

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 1050 - 1090

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	470.63	231.93	238.70	
3/22/2010	470.63	226.62	244.01	
8/16/2010	470.63	233.51	237.12	

Watermaster Well 135 Justin Court (RR M2S)

State Well No. 15S01E35Jb Owner: California American Water

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 135 - 155

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	240.28	142.66	97.62	
3/23/2010	240.28	142.57	97.71	
8/16/2010	240.28	124.66	115.62	

Watermaster Well 136 LS Pistol Range (Mo Co TH-1)

State Well No. 15S02E32Ra Owner: County of Monterey

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland Monitor

Screen: 430 - 470

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	514.39	285.47	228.92	
3/22/2010	514.39	284.32	230.07	

Watermaster Well 137 York Rd-West (Mo Co MW-1 D)

State Well No. 15S01E36Rb Owner: County of Monterey

Southern Inland

Monitor

Screen: 560 - 600

Monitored: Quarterly

Monitored by: MPWMD

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	490.28	313.27	177.01	
3/22/2010	490.28	311.27	179.01	
8/2/2010	490.28	313.03	177.25	

Watermaster Well 138 Seca Place (Mo Co MW-2)

State Well No. 16S02E04Lc Owner: County of Monterey

Southern Inland

Monitor

Screen: 930 - 980

Monitored: Quarterly

Monitored by: MPWMD

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/16/2009	427.58	260.41	167.17	
3/22/2010	427.58	251.74	175.84	
8/16/2010	427.58	260.12	167.46	

Watermaster Well 139 Robley Shallow (North) (Mo Co MW-3S)

State Well No. 16S02E09Bb Owner: County of Monterey

Southern Inland

Monitor

Screen: 380 - 420

Monitored: Quarterly

Monitored by: MPWMD

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	566.54	316.84	249.70	
3/22/2010	566.54	318.55	247.99	
8/16/2010	566.54	313.76	252.78	

Watermaster Well 140 Robley Deep (South) (Mo Co MW-3D)

State Well No. 16S02E09Bc Owner: County of Monterey

Southern Inland

Monitor

Screen: 750 - 800

Monitored: Quarterly

Monitored by: MPWMD

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	566.44	386.13	180.31	
3/22/2010	566.44	378.94	187.50	
8/16/2010	566.44	386.9	179.54	

Watermaster Well 141 LS Driving Range (SCS Deep)

State Well No. 16S02E06C2 Owner: County of Monterey

Southern Inland

Monitor

Screen: -

Monitored: Quarterly

Monitored by: MPWMD

Aquifer: QTc

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
---------------	-----------------	----------------	--------------------	----------

9/15/2009	491	333.39	157.61
10/28/2009	491	329.49	161.51
3/22/2010	491	332.72	158.28
8/2/2010	491	333.10	157.90

Watermaster Well 142 LS No. 1 Subdivision

State Well No. 16S02E06M1 Owner: Laguna Seca Resorts

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland

Monitor

Screen:

-

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	277.13	123.83	153.30	
3/23/2010	277.13	125.27	151.86	
8/16/2010	277.13	126.19	150.94	

Watermaster Well 143 Blue Larkspur-East End

State Well No. 16S01E01Hx Owner: Laguna Seca Resorts

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland

Monitor

Screen:

-

Aquifer:

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	253.29	101.9	151.39	
3/23/2010	253.29	102.05	151.24	
8/16/2010	253.29	102.77	150.52	

Watermaster Well 242 Granite Construction

State Well No. 15S01E35Jc Owner: California American Water

Monitored: Quarterly

Monitored by: MPWMD

Southern Inland

Monitor

Screen:

-

Aquifer: Tsm

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
9/15/2009	226.43	134.28	92.15	
3/23/2010	226.43	134.28	92.15	
8/16/2010	226.43	134.28	92.15	

Well Category:

Subarea:

Watermaster Well 173 City #4

State Well No. 15S01E23Gc Owner: City of Seaside

Monitored:

Monitored by:

Screen:

-

Aquifer:

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
---------------	-----------------	----------------	--------------------	----------

11/3/2009	not measured
1/4/2010	not measured
2/1/2010	not measured
3/1/2010	not measured
4/5/2010	not measured
5/4/2010	not measured
6/3/2010	not measured
7/6/2010	not measured
8/3/2010	not measured
9/2/2010	not measured

Watermaster Well 174 City #3

State Well No. 15S01E23T55 Owner: City of Seaside

Monitored:

Monitored by:

Aquifer:

Screen: -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
11/3/2009	307.19	276	31.19	
12/1/2009	307.19	277	30.19	
1/4/2010	307.19	277	30.19	
2/1/2010	307.19	275	32.19	
3/1/2010	307.19	277	30.19	
4/5/2010	307.19	275	32.19	
5/4/2010	307.19	276	31.19	
6/3/2010	307.19	275	32.19	
7/6/2010	307.19	275	32.19	
8/3/2010	307.19	276	31.19	
9/2/2010	307.19	276	31.19	

Watermaster Well 189 Coe Avenue

State Well No. 15S01E14M50 Owner: City of Seaside

Monitored:

Monitored by:

Aquifer: QTc

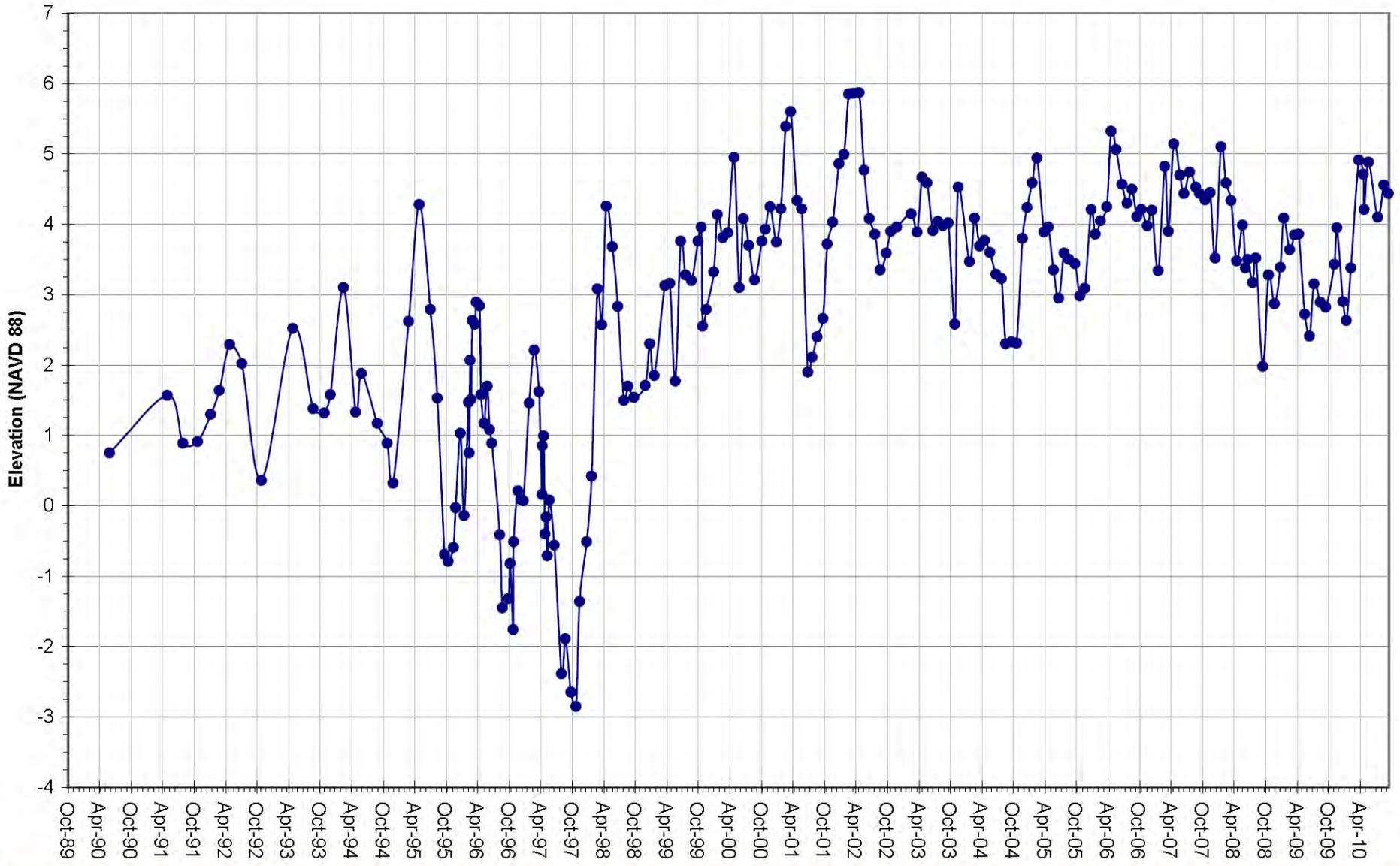
Screen: -

Date Measured	Reference Point	Depth to Water	Static Water Level	Comments
---------------	-----------------	----------------	--------------------	----------

11/2/2009	110.15	107	3.15
12/1/2009	115.15	107	8.15
1/4/2010	115.15	106	9.15
2/1/2010	115.15	101	14.15
3/1/2010	115.15	105	10.15
4/5/2010	115.15	105	10.15
5/4/2010	115.15	105	10.15
6/3/2010	115.15	104	11.15
7/6/2010	115.15	104	11.15
8/3/2010	115.15	104	11.15
9/2/2010	115.15	104	11.15

Appendix 3

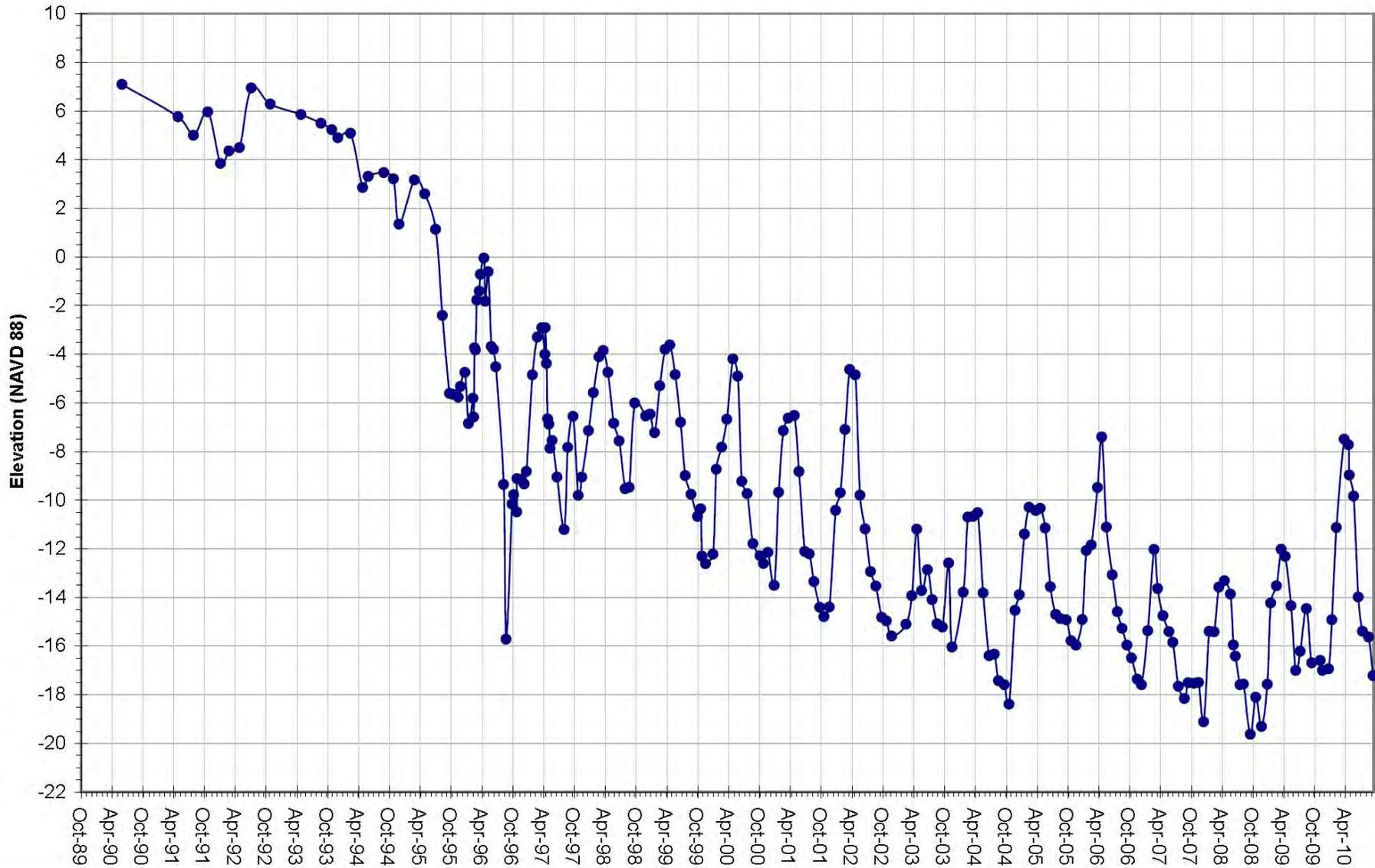
Selected Hydrographs



**Monterey Peninsula
Water Management District**

Watermaster Well Number 101 - MSC-Shallow (15S/1E-15N3)

Screened from 490-680 in the Paso Robles Formation (QTp)
Wellhead Elevation 80.1 MSL
DWR Driller Log No. 338413



**Monterey Peninsula
Water Management District**

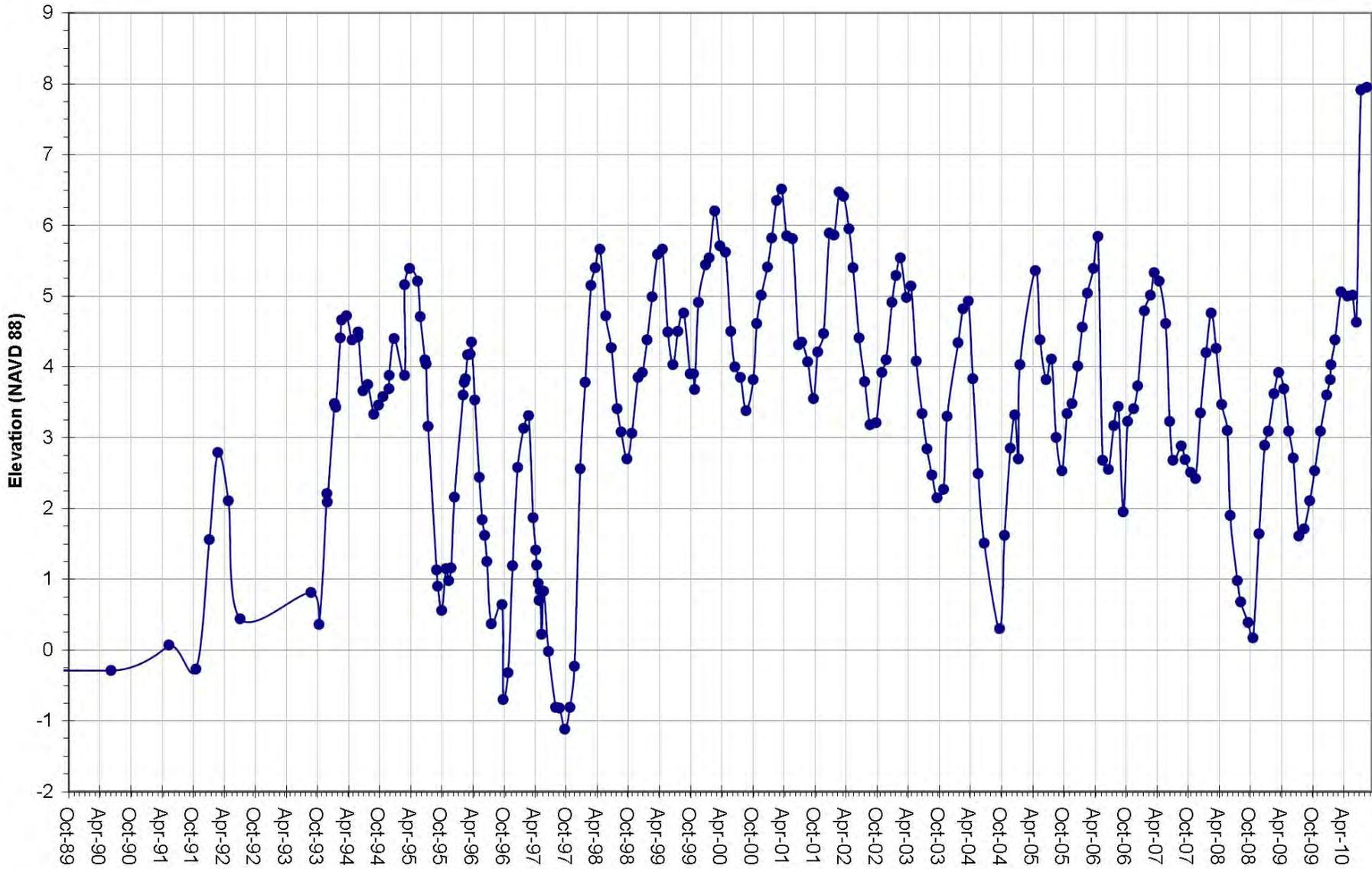
Watermaster Well Number 102 - MSC-Deep (15S/1E-15N2)

Screened from 810-850 in the Santa Margarita Formation (Tsm)

Wellhead Elevation 80.29 MSL

DWR Driller Log No. 338425

Datasource: MPWMD



**Monterey Peninsula
Water Management District**

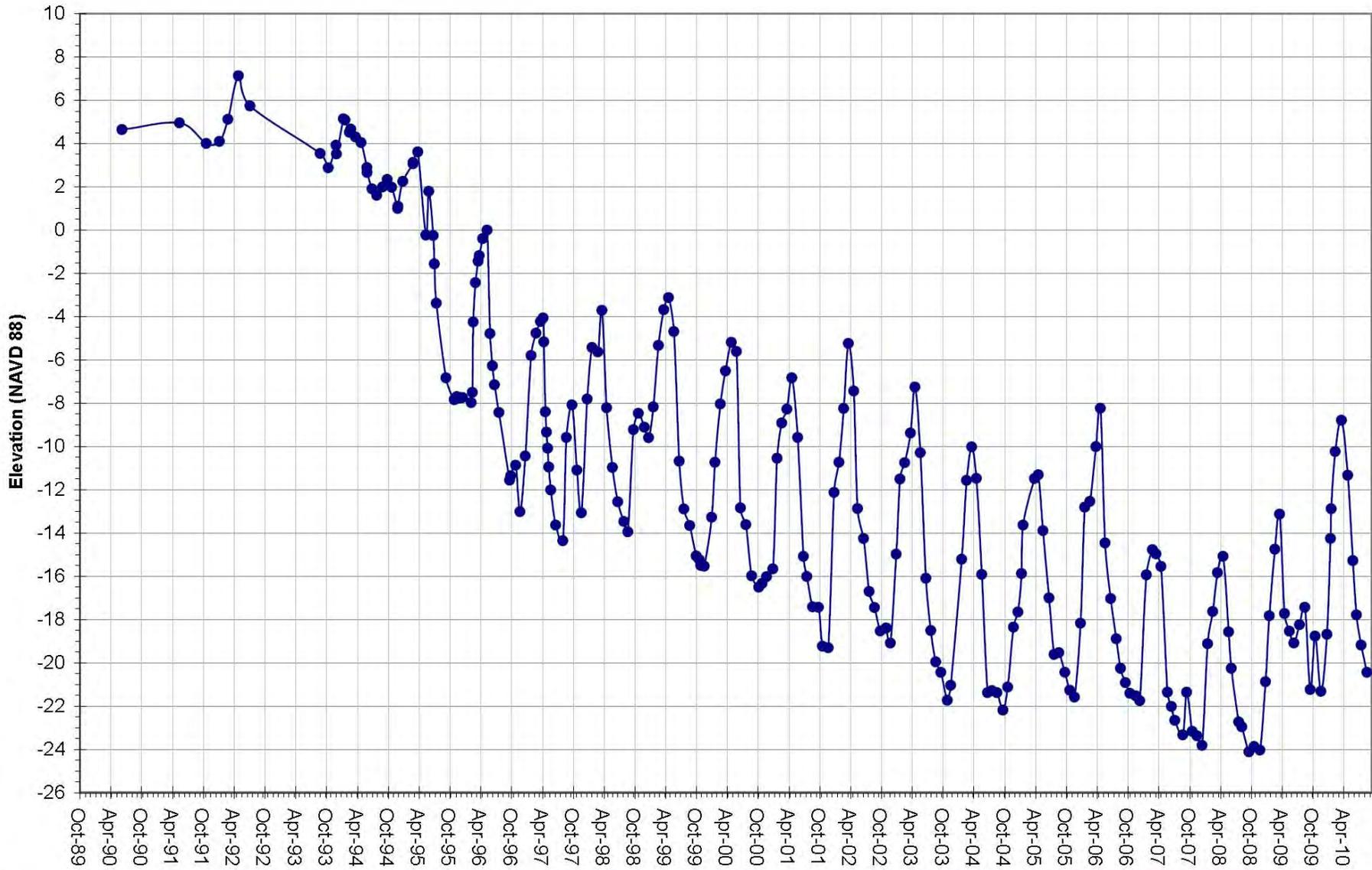
Watermaster Well No. 105 - PCA East (Shallow) (15S/1E-15K5)

Screened from 350-400 in the Paso Robles Formation (QTp)

Wellhead Elevation 68.51 MSL

DWR Driller Log No. 338402

Datasource: MPWMD



**Monterey Peninsula
Water Management District**

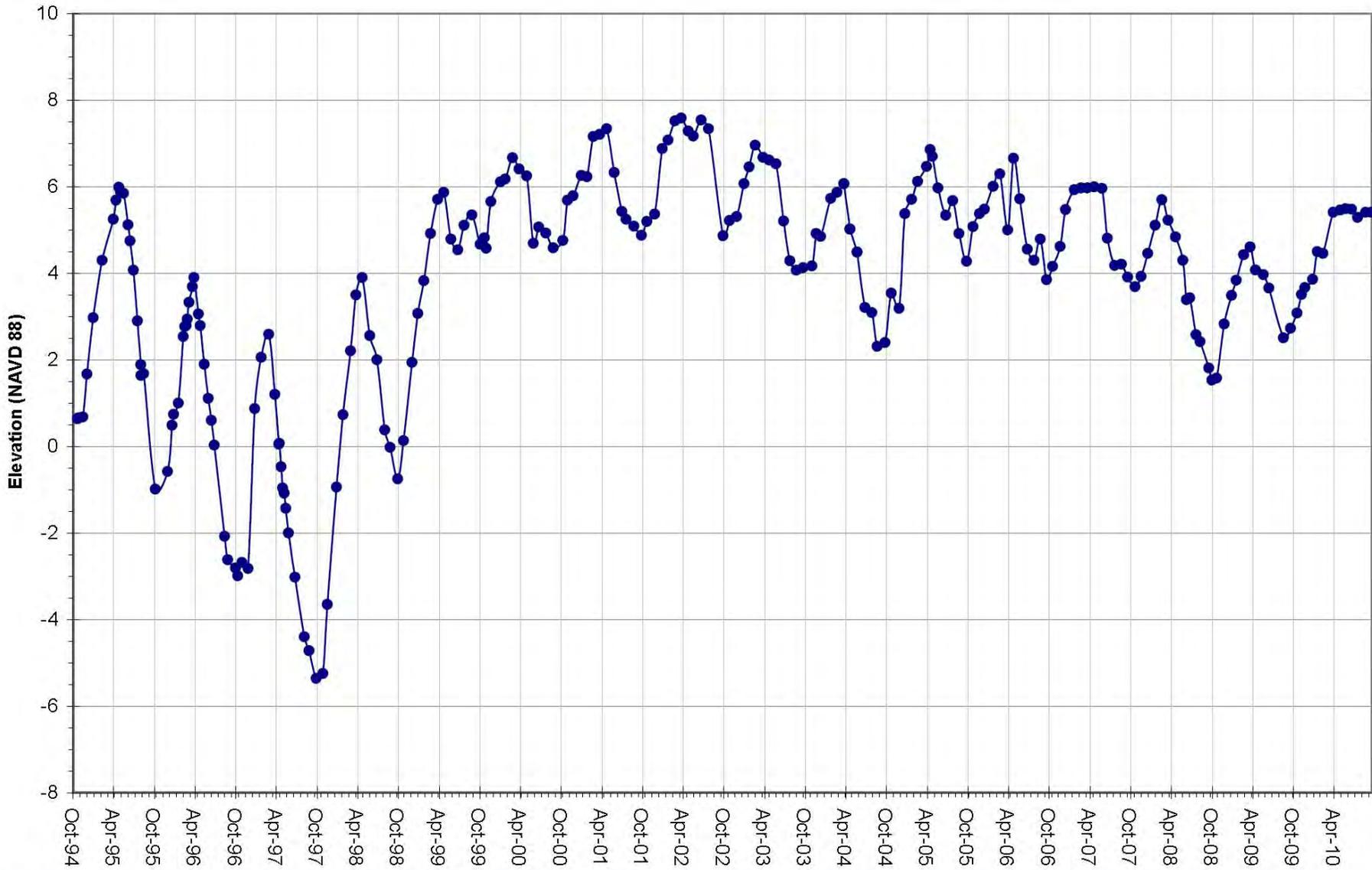
Watermaster Well No. 106 - PCA East (Deep) (15S/1E-15K4)

Screened from 650-700 in the Santa Margarita Formation (Tsm)

Wellhead Elevation 68.54 MSL

DWR Driller Log No. 338402

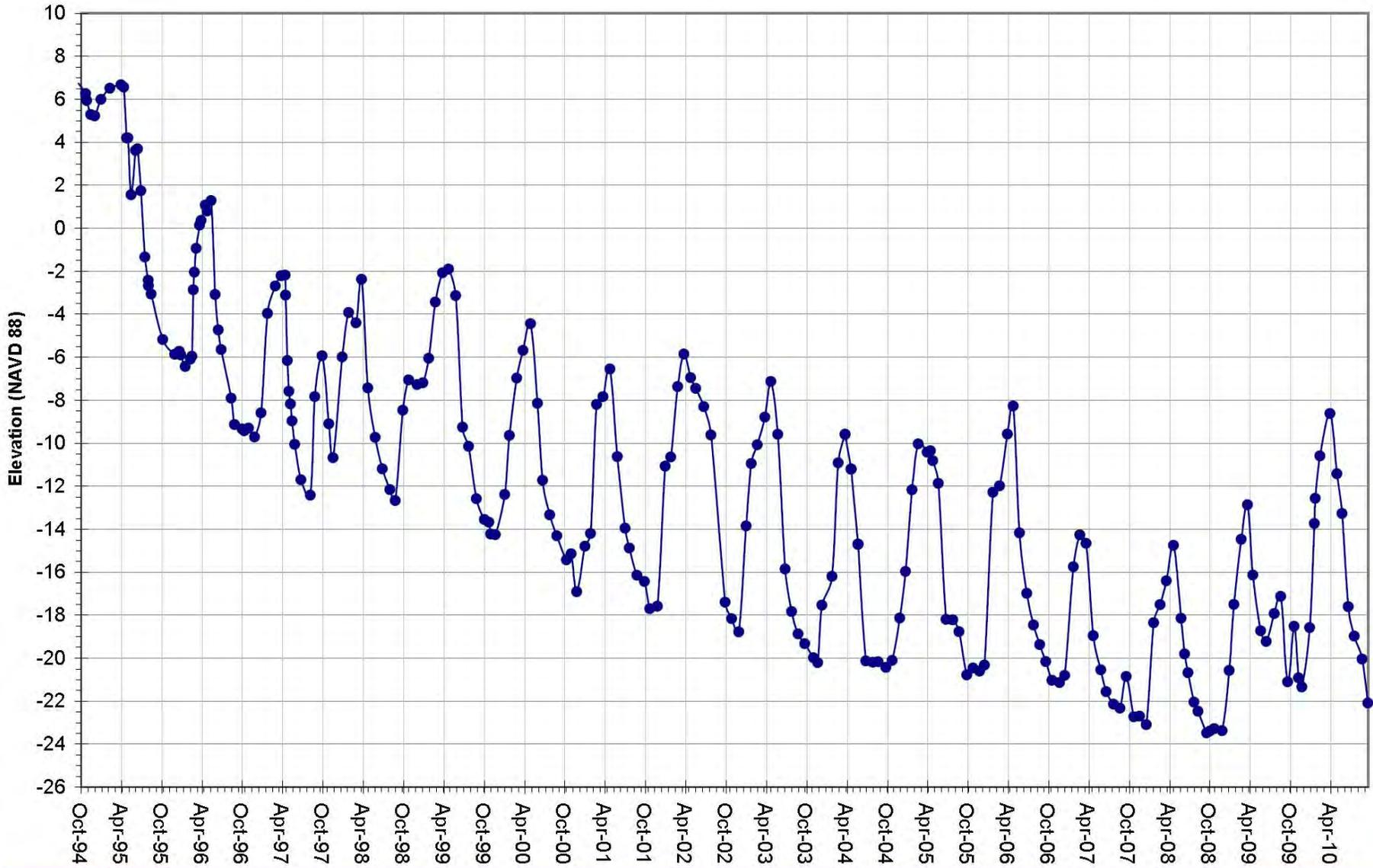
Datasource: MPWMD



**Monterey Peninsula
Water Management District**

Watermaster Well No. 111 - MPWMD FO-09 (shallow) (15S/1E-11Pa)

Screened from 610-650 in the Paso Robles (QTp)
Wellhead Elevation 118.89 MSL
DWR Driller Log No. N/A
Datasource: MPWMD



**Monterey Peninsula
Water Management District**

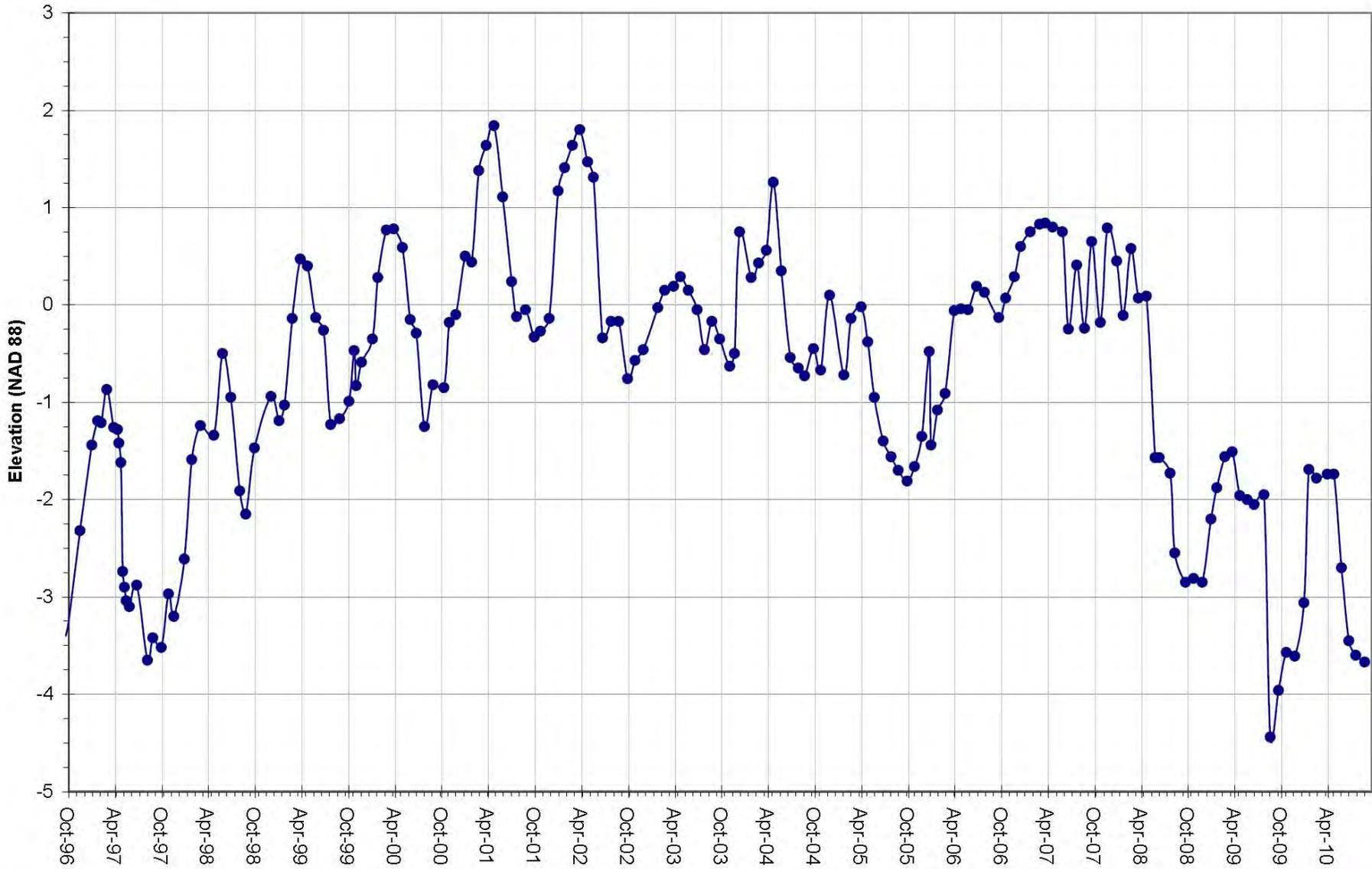
Watermaster Well No. 112 - MPWMD FO-09 (Deep) (15S/1E-15Pb)

Screened from 790-830 in the Santa Margarita Formation (Tsm)

Wellhead Elevation 188.85 MSL

DWR Driller Log No. N/A

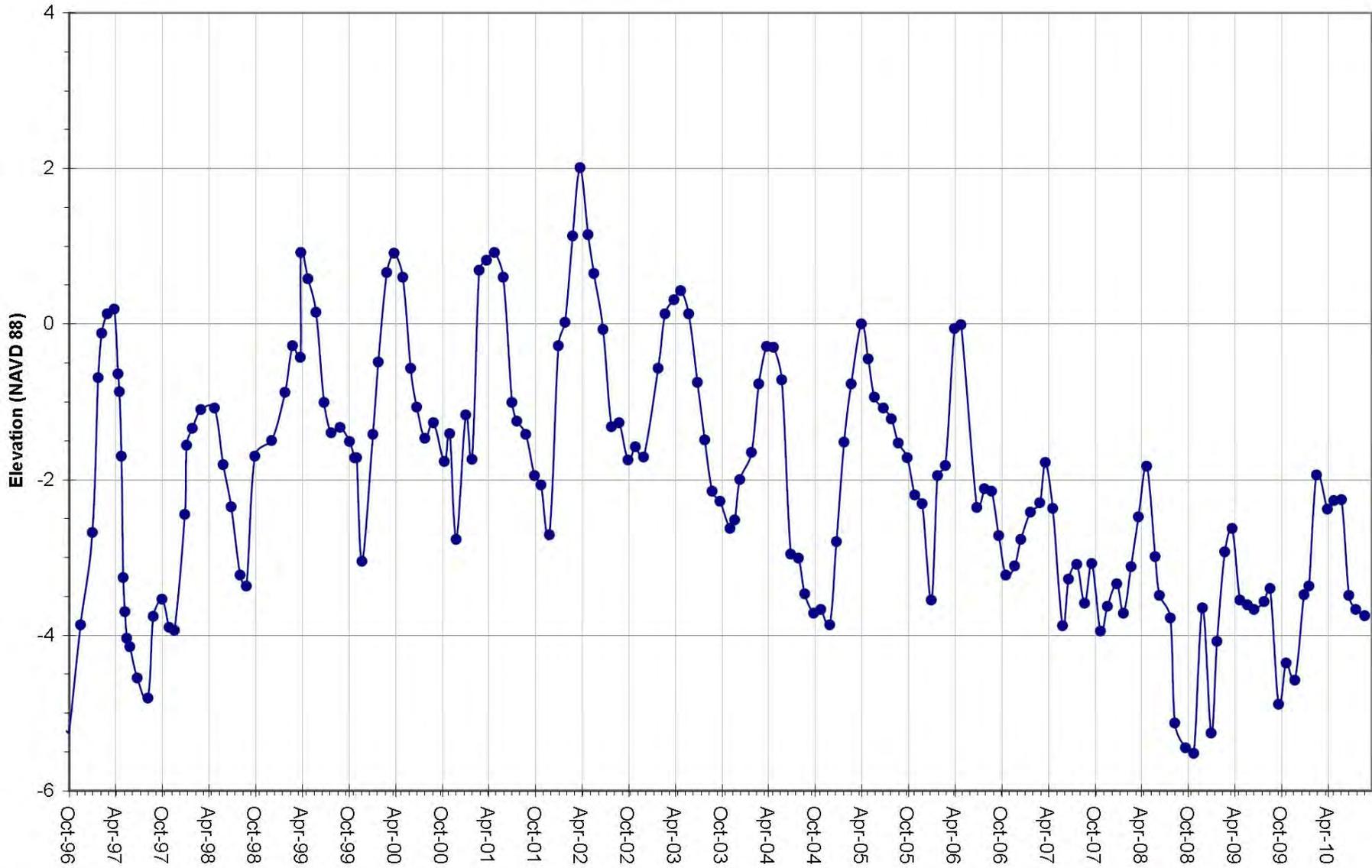
Datasource: MPWMD



**Monterey Peninsula
Water Management District**

Watermaster Well No. 113 - MPWMD FO-10 (Shallow) (15S/1E-11Fa)

Screened from 480-500 in the Paso Robles (QTP)
Wellhead Elevation 200.85 MSL
DWR Driller Log No. N/A
Datasource: MPWMD



**Monterey Peninsula
Water Management District**

Watermaster Well No. 114 - MPWMD FO-10 (Deep) (15S/1E-15Fc)

Screened from 790-830 in the Santa Margarita Formation (Tsm)

Wellhead Elevation 201.03 MSL

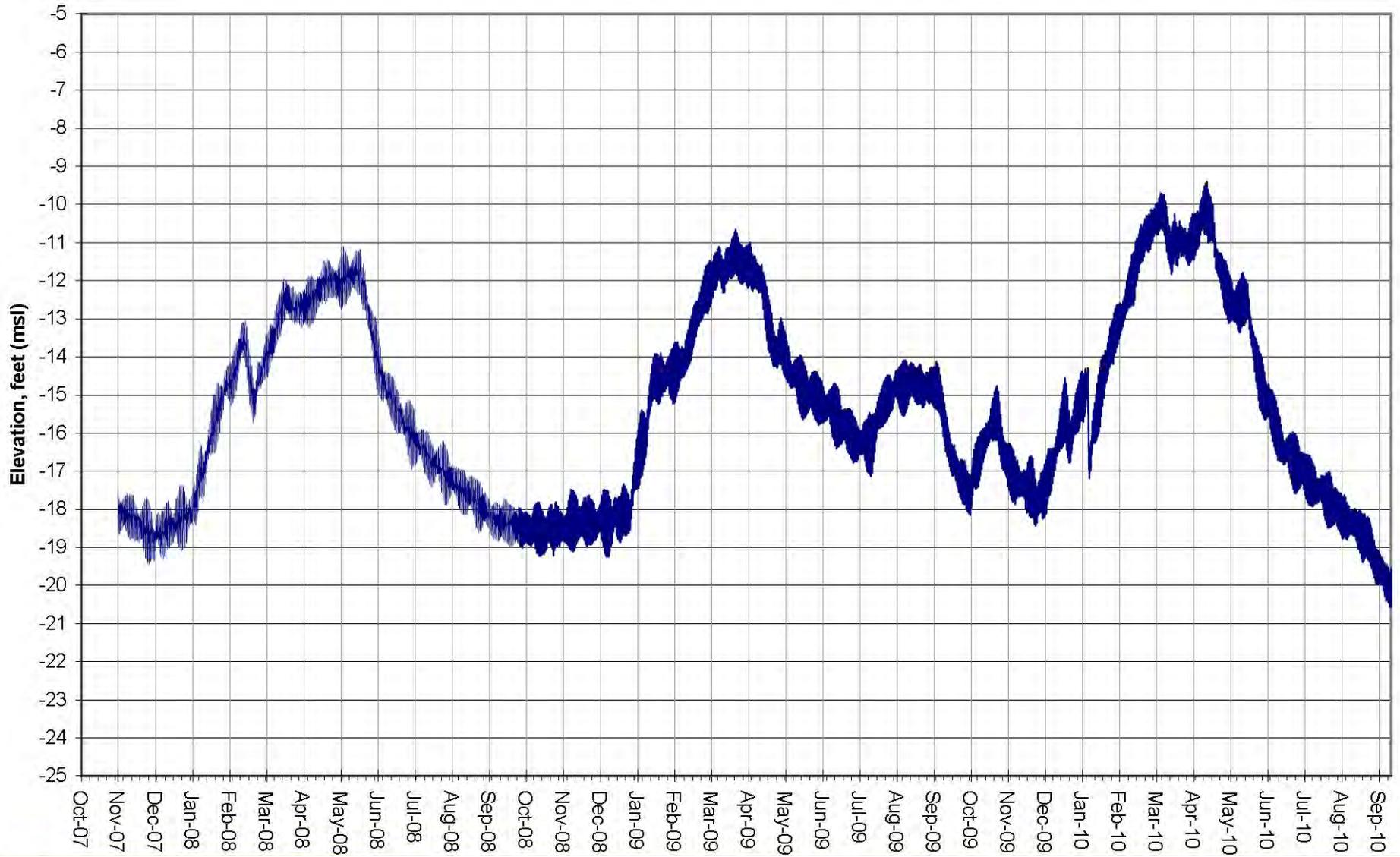
DWR Driller Log No. N/A

Datasource: MPWMD

Appendix 4

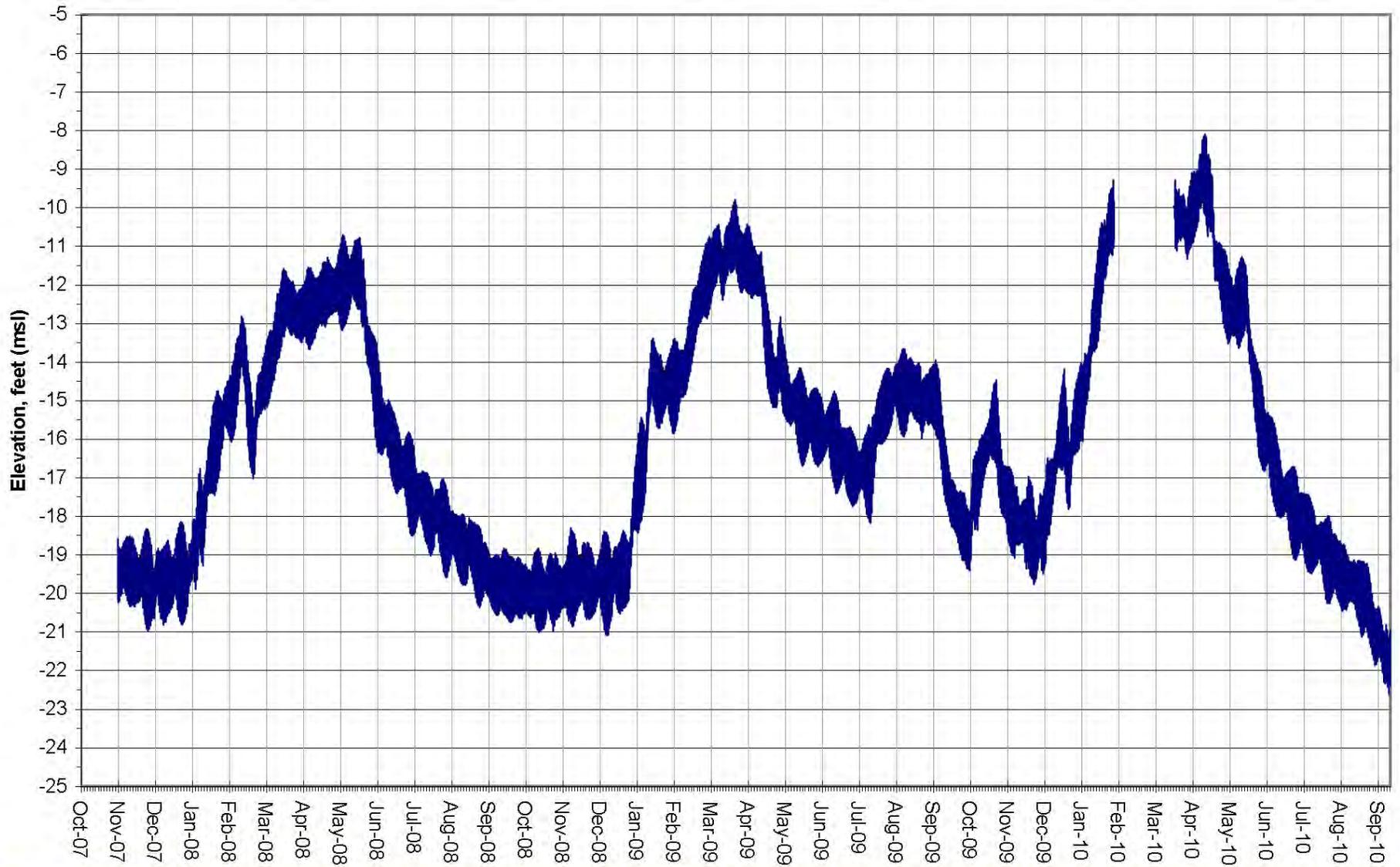
Watermaster Sentinel Well Hydrographs

Water Year 2010



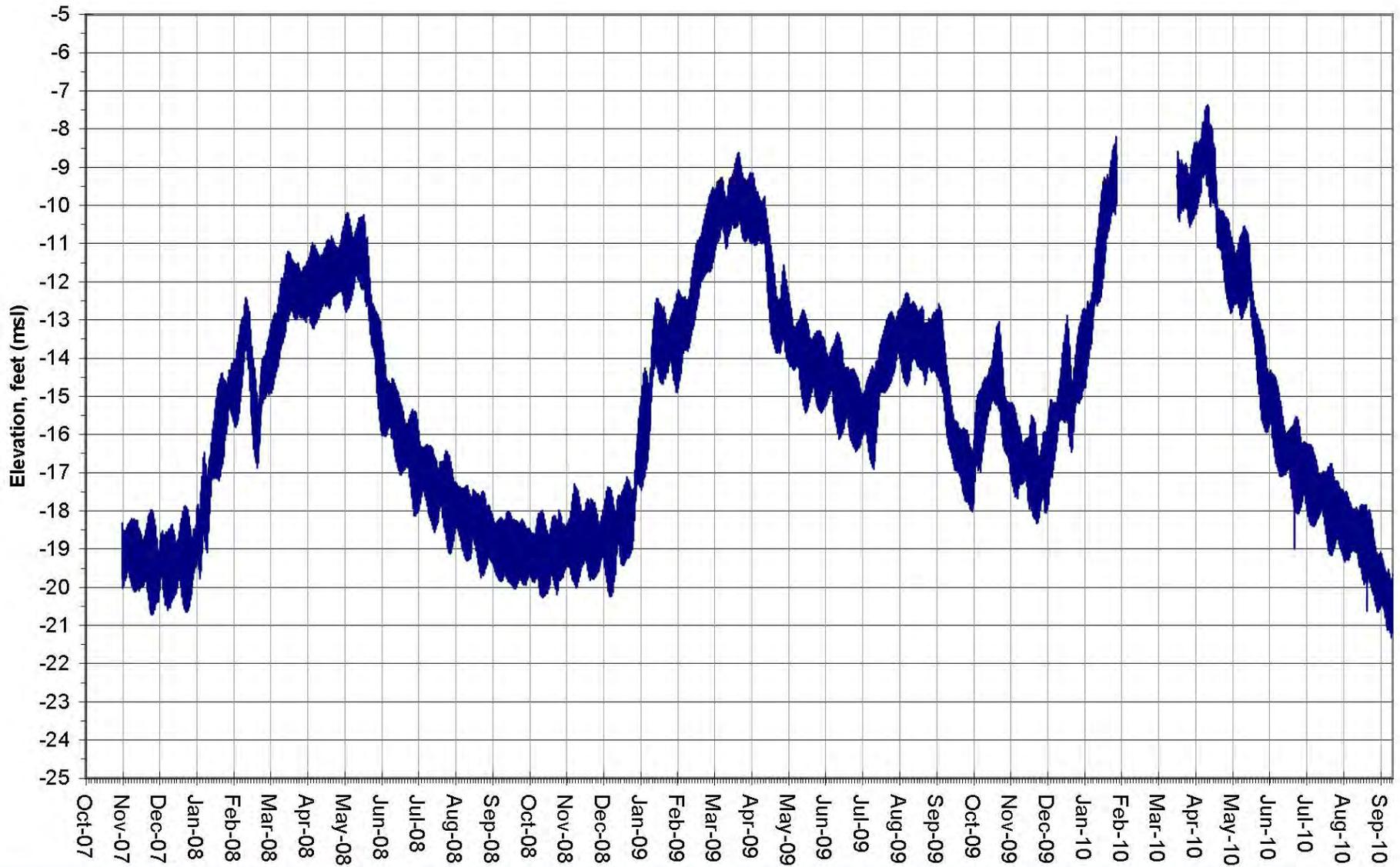
**Monterey Peninsula
Water Management District**

**Water Level Elevation for Seaside Groundwater Basin
Watermaster Sentinel Well 1, Seaside, CA**



**Monterey Peninsula
Water Management District**

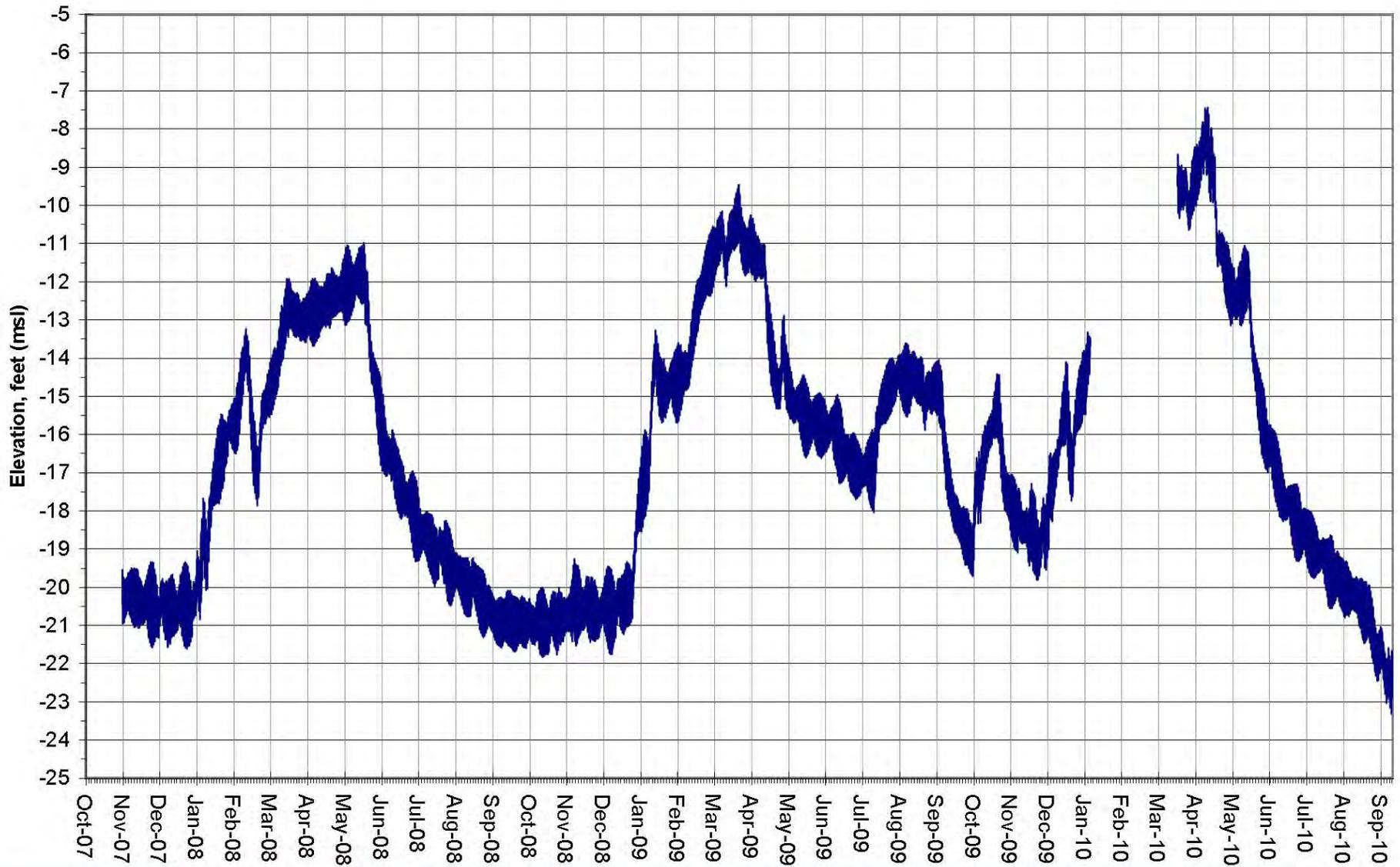
**Water Level Elevation for Seaside Groundwater Basin Watermaster
Sentinel Well 2, Seaside, CA**



Water Level Elevation for Seaside Groundwater Basin Watermaster
Sentinel Well 3, Seaside, CA



**Monterey Peninsula
Water Management District**



Water Level Elevation for Seaside Groundwater Basin Watermaster
Sentinel Well 4, Seaside, CA



**Monterey Peninsula
Water Management District**

ATTACHMENT 9

**CONSTRUCTION OF NORTHERN INLAND
MONITORING WELL**

Martin B. Feeney
Consulting Hydrogeologist

P.G. 4634
C.E.G. 1454
C.Hg 145

SEASIDE GROUNDWATER BASIN WATERMASTER
INLAND MONITORING WELL PROJECT
Construction of SGBWM Monitoring Well #5
Summary of Operations

For
Seaside Groundwater Basin Watermaster



Prepared by

Martin B. Feeney PG, CHg
with assistance from Pueblo Water Resources, Inc.

December 2009

P.O. Box 23240, Ventura, CA 93002 ♦ Phone: 805/643-7710 ♦ e-mail mfeeney@ix.netcom.com

Table of Contents

TABLE OF FIGURES..... 2

INTRODUCTION..... 4

SCOPE 4

BACKGROUND..... 5

PROJECT COMPONENTS 6

PERMITTING.....6

WELL CONSTRUCTION6

 Drilling6

 Well Completion.....7

 Well Construction.....9

 Well Development.....11

INITIAL DATA COLLECTION.....11

 Baseline Data Collection11

 Water Level Data.....11

 Water Quality Data.....11

 Water Quality Interpretation.....12

CONCLUSIONS AND RECOMMENDATIONS..... 14

CONCLUSIONS.....14

RECOMMENDATIONS15

Additional Monitoring Wells:.....15

Data Collection:.....15

CLOSURE 15

APPENDIX A - LITHOLOGIC AND GEOPHYSICAL LOGS..... 16

APPENDIX B - WATER QUALITY DATA..... 23

APPENDIX C - SUPPORTING DOCUMENTS 28

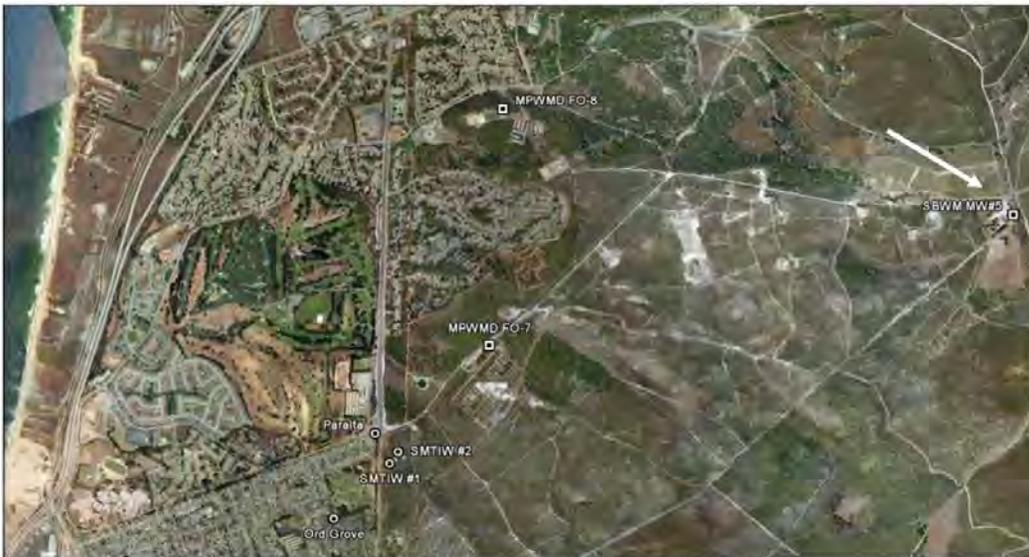
Table of Figures

Figure 1 - Location Map..... 4
Figure 2 - Site Location Map..... 6
Figure 3 - Geophysical Log/Well Completion..... 8
Figure 4 -Well Schematic 10
Figure 5 – Piper Diagram..... 12
Figure 6 – Schoeller Nomographs 13

INTRODUCTION

This report documents the installation of a deep dual-completion monitoring well in the inland portion of the Seaside Groundwater Basin. The well is located at the Bureau of Land Management (BLM) Fort Ord Office on Parker Flats Road on the former Fort Ord Military Reservation. The well was constructed by the Seaside Groundwater Basin Watermaster (Watermaster) as part of a court-ordered monitoring program for the Seaside Basin. The installation of the well is to provide additional understanding of the inland hydrogeology and provide for on-going water level and water quality data collection. The report provides a description of construction activities, summarizes hydrogeologic data collected, provides conclusions based on the data collected, and provides recommendation for the on-going monitoring of the well as it supplements the existing network of monitoring wells. The generalized location of the well site is shown on Figure 1.

Figure 1 - Location Map



SCOPE

The scope of work for this project was developed through discussion with Watermaster representatives and is documented in the scope of work prepared and authorized in June 2009. The work performed included:

- On-going support to Watermaster Technical Advisory Committee (TAC) and Watermaster Board throughout project duration.
- Permitting for the monitoring well construction project. This included: 1) Negotiation and meetings with Bureau of Land Management (BLM) personnel; 2) Acquisition of Well Construction Permits from Monterey County Environmental Health.
- Drilling of an exploratory borehole to the top of the Monterey Formation.
- Collection of lithologic and geophysical data from the borehole.

- Completion of borehole as two monitoring wells.
- Air-development of the wells.
- Collection and laboratory analysis of the water quality samples from the wells.
- Surveying of well location to establish wellhead elevation
- Acquisition and installation of continuous water level monitoring equipment (data loggers).
- Preparation of this report documenting construction of the wells and presenting our conclusions developed from the data collected and recommendations for future monitoring of the well.

BACKGROUND

Pursuant to the Seaside Groundwater Basin Watermaster's (Watermaster) obligations under the court settlement, the Watermaster is moving ahead with installation of inland monitoring wells to better understand the inland hydrogeology of the basin. The subject well at the BLM site is the initial step in this process.

The BLM site was selected for the initial inland well for several reasons. Firstly, the BLM site is located at the site of the original Camp Huffman on Fort Ord. There was a water well drilled at this location in 1912. This now-destroyed water well had been used by previous investigators for gradient control that was critical in the interpretations of the regional ground water flow regime. This well was destroyed in the early 1990's and re-establishment of this inland control for water level is considered critical to continued refinement of the understanding of the Seaside Basin. Secondly, the geologic structure and hydrostratigraphy of the inland portion of the basin is poorly understood and the drilling of a deep borehole at an inland location would provide valuable understanding. The location of the well on the BLM compound is shown on Figure 2.

This report documents the second attempt to construct a monitoring well at the subject site. The basis-of-design (included in Appendix C) for the subject well recommended the construction of a three-completion well cluster (three wells separated by 5 to 10 feet). Work on the well cluster began in mid-August 2009. The initial borehole was drilled to a depth of 1320 feet at which depth the drill rig suffered complete failure of the hydraulic system. Before the equipment could be repaired, the drill pipe had become stuck in the borehole. Efforts to free and remove the pipe failed and the drilling contractor had to resort to "shooting off" the pipe and abandoning the pipe and hole in place. While the hole was lost, lithologic and geophysical data were collected as part of drilling operations. The failure at the originally permitted site required that the Watermaster renegotiate with BLM for a new well site at the facility. As part of this negotiation, the Watermaster agreed to construct a nested well (two casings in single borehole) rather than the originally proposed well cluster. Fortunately, the lithologic and geophysical data from the first failed attempt documented significant hydrogeologic separation between the aquifer units which negated the previous concerns discussed in the basis-of-design document regarding whether a nested well could be constructed without leakage between the various aquifer units.

Figure 2 - Site Location Map

PROJECT COMPONENTS

PERMITTING

The permitting for the well construction and siting was relatively straight-forward. Permitting was limited to acquisition of a Right of Entry/License Agreement to construct and maintain a well-site on BLM land. This document was issued in July 2009. Subsequent to the receipt of the documents from BLM, the County of Monterey issued well construction permits in early August 2009.

WELL CONSTRUCTION

Bradley and Sons, Inc. of Del Rey, California was the Contractor for the drilling and well construction. Drilling was performed using an Ingersoll-Rand Top Head Drive (TH-60) drilling rig. The well was drilled by the direct rotary method, with a bentonite based fluid. Fluid was circulated and conditioned in a system equipped with mechanical separators for solids. Well construction was performed in late October 2009.

Drilling

The pilot boring was 8.75 inches. Drill pipe lengths were twenty feet, and following advancement of each joint of pipe the fluid was circulated and cleaned to provide representative cutting samples and a balanced column of fluid. Cutting samples were collected throughout the pilot drilling and a lithologic log of the borehole was prepared. Representative cutting samples for each ten-foot depth interval were placed in labeled, compartmentalized sample trays.

The pilot boring was advanced to a depth of 1,338 feet where the material became very indurated slowing the rate of penetration. Based on the lithologic samples it was inferred that the bottom of the borehole was within 30 to 40 feet of the Monterey Formation. To reduce risk of damage to, or loss of, the drill string the decision was made to remove the drill string from the hole, inspect the drill string, and geophysically log the hole.

Geophysical logging was performed by Welenco, Inc. The geophysical logs include measurements of natural gamma radiation, spontaneous potential, short-and long-normal resistivities, and single point resistance. Review of the geophysical log and comparison of the geophysical log with proximate geophysical logs, confirmed the conclusion from the lithologic data – that the bottom of the borehole was within 30 to 40 feet of the top of the Monterey Formation. Based on this confirmation, and consideration of the risks associated with additional drilling, the borehole was terminated at the current depth.

The lithologic log, photographic documentation of the cutting samples, and geophysical logs for the boring are included in Appendix A.

Well Completion

Review of the lithologic and geophysical data allowed interpretation of the geologic conditions and the development of a completion plan for the well. The completion plan (total depth, placement of well screens, and annular seal depth) was developed for wells through consultation between project geologists (Martin Feeney PG, CHg and Mike Burke PG, CHg) and Mr. Joe Oliver PG, CHg of the Monterey Peninsula Water Management District.

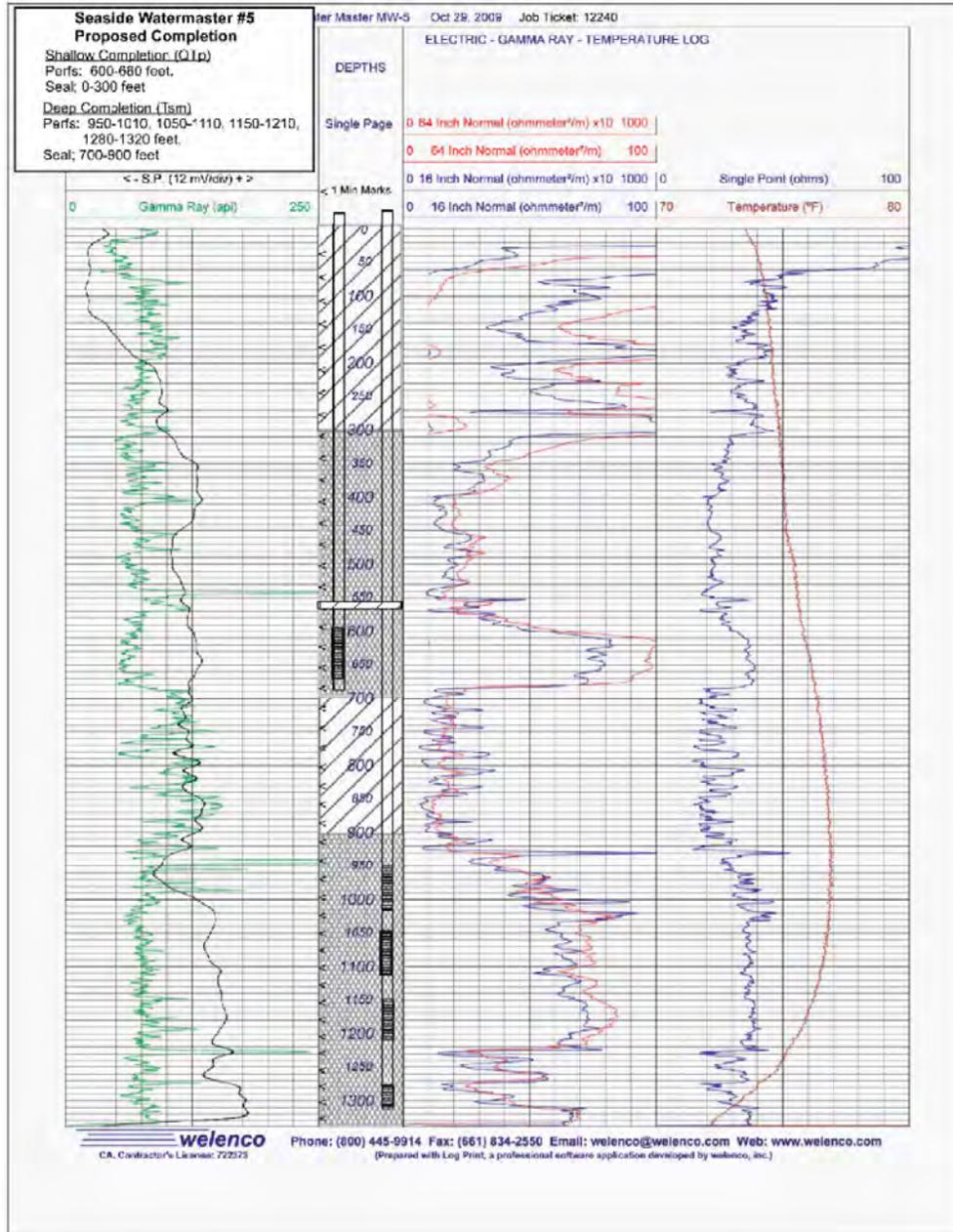
Hydrostratigraphy. The geologic and geophysical data from this well revealed the expected sequence of geologic materials. The Dun/Aromas Sands, underlain, in turn, by the Paso Robles Formation, the Santa Margarita Sandstone and the Monterey Formation. However, the depth to the Monterey Formation was significantly deeper than had been inferred. Both the Santa Margarita Sandstone and the Paso Robles Formation are significantly thicker than where encountered at other locations in the Seaside Basin. The geologic interpretations are as follows:

Geologic Unit	Depth to Top of Geologic Unit (feet)
Dunes Sands Deposits	0
Aromas Sand	50
Paso Robles Formation	250
Santa Margarita Sandstone	900
Monterey Formation	1,360 ¹

¹ – Although the borehole only extended to a depth of 1,338 feet, the depth to the Monterey Formation can be projected from the geophysical log signature.

From the geologic interpretations, a well completion plan was developed. The details of the completion plan presented on the geophysical log are presented in Figure 3.

Figure 3 - Geophysical Log/Well Completion



Well Construction

The first step in the well construction process was the reaming of the pilot bore to a diameter of 12-1/4 inches. Once the ream was complete, a temporary construction tremie was installed in the boring. The deeper casing was then installed, and centered in the boring using plastic centralizers. Centralizers were placed immediately above and below each screen zone, and at intervals of 80 feet within the upper blank section. Gravel pack was installed using the construction tremie, in lifts of approximately 60 feet, to the depth of the bottom of the first seal interval. The bottom seal consisted of benonite pellets and Holeplug™ and was also placed with the construction tremie. After the seal material was established to be at the top of the sealed interval, the second casing string was installed and gravel pack placed up to the bottom of the surface seal depth. An intermediate 10-foot isolation seal of bentonite pellets was installed from depth 560 to 570 feet in the upper gravel pack to isolate the perforated interval. A cement grout annular seal was placed from the top of the gravel pack to ground surface.

A schematic of the as-built well is presented as Figure 4.

Once the annular seal was complete and cured, the monitoring well was provided with a water-tight, flush-mounted, traffic-rated circular well vault set in place with concrete. A reference point elevation and coordinates were established for the well vault by Central Coast Surveyors.

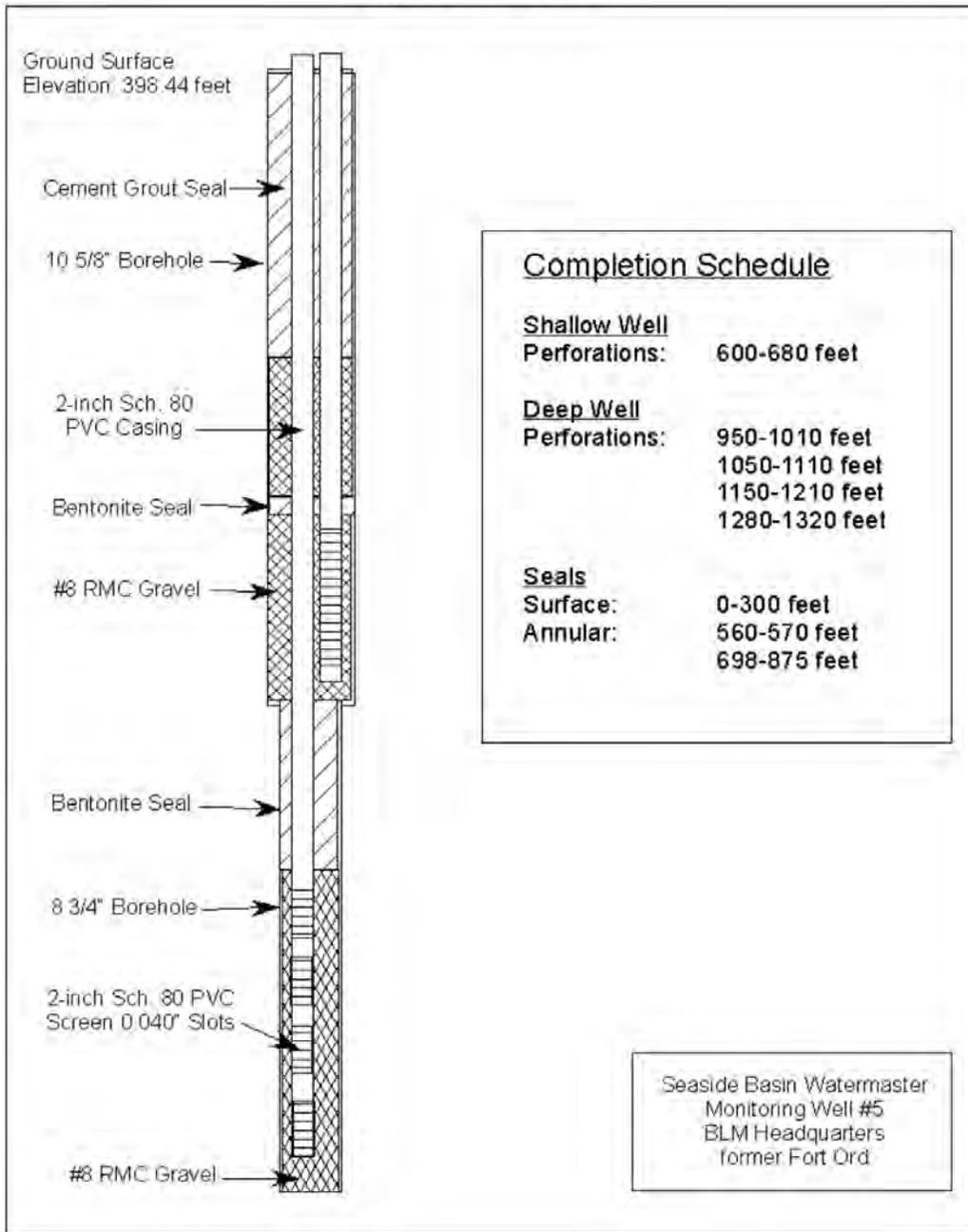
Coordinates	N: 2120743.13 feet E: 5748971.05 feet
Ground Surface Elevation	398.44 feet, msl
Datums: Horizontal: California State Plane Coordinate System, Zone IV Vertical: NAVD 88	

A summary of well construction details for the well is presented in Table 1.

Table 1 – Well Completion Summary

	SBWM-5 Shallow	SBWM-5 Deep
Casing Depth, ft.	690	1320
Screen Depths, ft.	600-680	950-1010 1050-1110 1150-1210 1280-1320
Annular Seal Depth, ft.	560-570, 0-300	698-875

Figure 4 -Well Schematic



Well Development

Well development was performed immediately following the construction of the well. Initial development was performed by airlifting, with the well casings serving as the eductor pipe. Final development was accomplished by airlifting through a 1-1/2 inch eductor pipe that was lowered to the total completed depth of each casing string. The purpose of the final development and the use of the eductor pipe was to develop the lower portions of the wells to ensure that the casings were clean and open through total depth in order to provide access to total casing depth for future geophysical monitoring, and to clear and clean all portions of the well screen for water quality sampling.

INITIAL DATA COLLECTION

Baseline Data Collection

The successful construction of the monitoring well allowed for the completion of baseline data collection. Lithologic and geophysical data were acquired through the drilling of the pilot borings. The completed monitoring wells provided for the collection of water quality data and water level data.

Water Level Data

Static water levels were measured in both of the wells on November 19, 2009. The reference point elevation established by Central Coast Surveyors was used to determine the water surface elevation in each well. Water level data are summarized in the Table 2.

Table 2 – Water Level Data Summary

	SBWM-5 Shallow	SBWM-5 Deep
Approx. Ground Surface Elevation, ft, (msl)	398.44	398.44
Depth to Water, ft.	387.2	410.1
Water Surface Elevation, ft. from MSL	11.24	-11.66

The water surface elevation in the Paso Robles Formation (shallow) well is approximately 11.2 feet above sea level whereas water surface elevation in the Santa Margarita Sandstone (deep) well is below sea level at - 11.7 feet, msl. The wells display more than 22 feet of head differential demonstrating the effectiveness of the annular seal.

Water Quality Data

Once airlift development was believed to be sufficiently complete, and water produced by airlifting was clear, water quality samples were collected. The samples likely represent a composite of groundwater produced from all sections of the well screen. Samples were delivered to the Monterey Bay Analytical Services laboratory in Monterey for analysis. Laboratory program consisted of general mineral analysis. Laboratory reports are included in Appendix B, and the data are summarized in Table 3.

Table 3 – Summary of Water Quality Data, Composite Samples

	SBWM-5 Shallow	SBWM-5 Deep
Sample Date	11/11/2009	11/11/2009
Specific Conductance, $\mu\text{mhos/cm}$	816	808
Total Dissolved Solids, mg/l	475	525
Calcium, mg/l	43	44
Magnesium, mg/l	16	10
Sodium, mg/l	100	119
Potassium, mg/l	3.5	4.2
Bicarbonate, mg/l (as HCO₃)	157	272
Sulfate, mg/l	33	64
Chloride, mg/l	157	76
Arsenic ($\mu\text{g/l}$)	2	1

Water Quality Interpretation

Water quality data from the two completions have been presented graphically in two forms. Figure 5 presents the data as a Piper diagram whereas Figure 6 presents the data as Schoeller nomographs. Both presentations also utilize data from the Santa Margarita Test Injection Well (SMTIW #1) for comparison to the deep completion. Data from the injection well is from a period prior to injection. No proximate data were available for comparison with the shallow completion.

Figure 5 – Piper Diagram

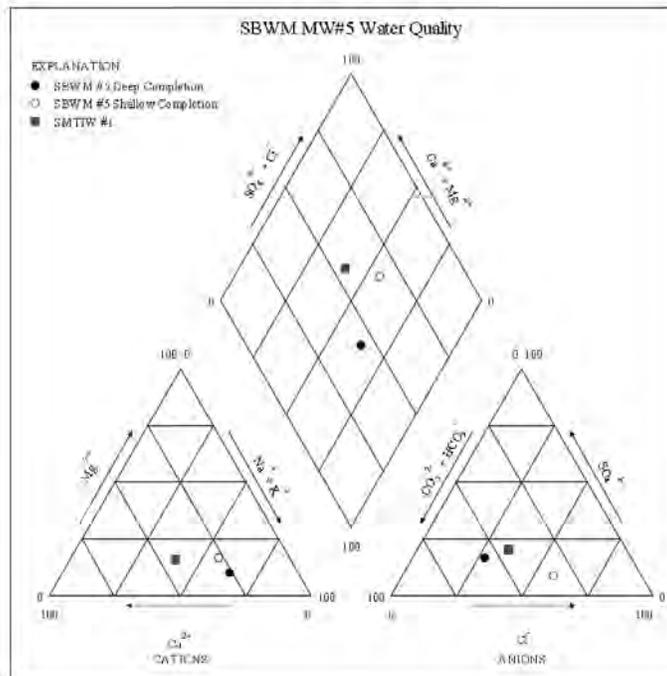
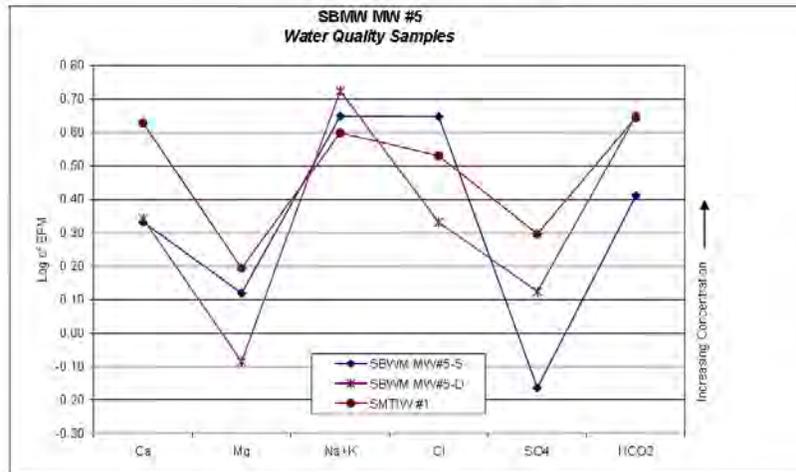


Figure 6 – Schoeller Nomographs



Water quality data from the well completions supplement and complement the geologic and geophysical data from the borehole. The water quality findings are as follows:

- The water quality data from the both the wells are not completely comparable with other wells assigned to the same aquifer units in the Seaside area. In particular, the total dissolved solids concentration of the shallow completion is significantly higher than other wells in the Paso Robles Formation and the chloride ion concentration in the deep completion is low for the Santa Margarita Sandstone.
- As can be seen in both of the graphical presentations, the water chemistries have unique signatures relative to each other and the sample from the SMTIW #1. Direct comparison of the water quality with those in the Seaside area may be misleading as the new wells are a significant distance from other wells with water quality data. SMTIW #1 is over 2 miles from the new well.
- Previous experience has shown that initial water quality samples from newly constructed monitoring wells are sometimes not representative. Before additional analysis of the water quality data is undertaken, the wells, after water in the casings equilibrates with aquifer water, should be resampled.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The geologic, geophysical and hydrogeologic data from the new well have provided significant additional understanding of the hydrogeology of the inland portion of the Seaside Groundwater Basin. However, like any new set of data, the data also raise new questions.

- The most significant geologic finding was the greater depth to the Monterey Formation, the adopted base of freshwater for the Seaside Basin. Interpretation of existing data sources had placed the top of the Monterey Formation at an elevation of more than -500 feet msl, or about 900 feet below ground surface at the site. Based on data from the subject borehole, the Monterey Formation is interpreted to be at a depth of approximately 1,350 feet or an elevation of approximately -950 feet, msl.
- Overlying the Monterey Formation are materials that are tentatively assigned to the Santa Margarita Sandstone and Paso Robles Formation. However, the thickness of both these units is significantly thicker than have been encountered at other locations in the basin. In particular, the Santa Margarita Sandstone unit at the site is approximately 450 feet in thickness. This compares with typical thicknesses of 250 feet encountered at other locations.
- The greater depth to the Monterey Formation and increased thickness of the overlying units at the subject location does not fit well into the existing understanding of subsurface structure of the inland portion of the Seaside Basin. Resolving the complexities that arise from the new data will require additional boreholes in the inland area.
- The BLM site was selected for the subject well to re-establish water level data from a previously existing well that had been used by previous investigators of the Seaside Basin hydrogeology. The well, the so-called Camp Huffman Well, was relatively shallow extending to a depth of 485 feet or an elevation of about - 90 feet, msl. Water level records from the old well are confusing. A water level from Army records in 1939 suggests at water surface elevation of 89 feet, msl. The 1982 USGS report suggests a value of 215 feet, msl. The shallow completion at the new well displays a water surface elevation of approximately 11 feet, msl. Comparing these historical values with the elevation from the shallow completion suggests: 1) The USGS value is erroneous, possibly due to a collapsed casing at the time of measurement, 2) Comparison with the old Army value suggests 78 feet of dewatering in the shallow aquifer zone. This value is not unreasonable, available records document 50 feet of dewatering in the City of Seaside since the 1950's.
- Water surface elevation in the deep monitor at the subject site is -11 feet, msl. It is likely that the deep aquifer at the site is impacted by pumping in the highly-confined Santa Margarita Sandstone from wells in Seaside proper. It is also likely that water levels will be influenced by injection operations in the Santa Margarita Sandstone.
- Water quality data from the new wells documents slightly different water chemistries than are typical for similar wells in the Seaside Basin. However, there is a possibility that the water quality data is not representative and the water in the casing is not yet equilibrated with the aquifer water.

RECOMMENDATIONS

Additional Monitoring Wells:

- While data from the subject borehole raises many questions about the inland hydrogeology that can only be answered with additional boreholes, the nature of many of these questions are academic and do not necessarily need to be answered to effectively manage a coastal basin.
- The most relevant data for basin management are water level data. The water level data from the new wells, while surprising, was predicted by the recently completed groundwater model.
- While more borehole data are almost always useful, it is not believed to be necessary or cost-effective to speed-up the Watermaster's established schedule for installation of additional monitoring wells. In the interim, other tools such as the model, for example, are likely adequate.

Data Collection:

- To minimize disruption to BLM activities, the new monitoring wells were equipped with continuous water-level data loggers to record water level fluctuations. Continuous water level data collection will allow characterization of both pumping and recharge stresses imposed by regional activities. These data will assist in understanding: (1) the nature and degree of connectivity of this portion of the basin with the area of extraction and injection; (2) the regional gradients and groundwater flow directions; and (4) long-term trends in ground water levels.
- The wells should be resampled until water quality is established and confirmed. After water quality has been established, additional periodic water quality sampling is not considered necessary. Given the location of the new wells, away from basin boundaries and other pumps, changes to water quality are not to be expected. Changes in water quality, if any, will be extremely slow to emerge. If deemed important for compliance with monitoring requirements, wells could be sampled on a 5 year basis. This would provide for detection of changes, if any.

CLOSURE

This letter-report has been prepared for the exclusive use of the Seaside Groundwater Basin Watermaster for the specific application to the Inland Monitoring Well Project. This report documents the hydrogeologic conditions encountered at the time of construction and initial sampling. The report also documents the physical condition of the wells at the time of construction. Environmental changes, either naturally-occurring or artificially induced, may cause damage to the wells over time. This report expressly does not constitute a guarantee of future performance. The findings, conclusions, and recommendations presented were prepared in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the fields of engineering geology and hydrogeology. No other warranty, express or implied, is made.

I appreciate the opportunity to be of service. Please call if you have any questions.

Sincerely,



Martin B. Feeney, PG, CEG, CHg

Attachments: Appendices A-C

APPENDIX A - LITHOLOGIC AND GEOPHYSICAL LOGS

Contents:

SBWM #5
Lithologic Log
Electric Log
DWR Well Completion Report

Well I.D.: Seaside Basin Watermaster MW-5	Logger: Michael Burke	
Owner: Seaside Basin Watermaster	Date: October 2009	
Location: Fort Ord, BLM Facility, Monterey County N 36 37' 14.03"; W 121 46' 10.97"	Driller: Bradley and Sons; Madera, CA	
Method/Fluid: Direct, Bentonite		
Other: Welenco eelog; dual completion - deep (Tsm) - TD 1320 ft.; shallow (QTp) TD - 690 ft.; deep mw is nw casing.		

CLAY
 SILT
 SAND
 GRAVEL

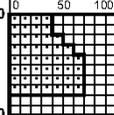
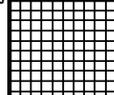
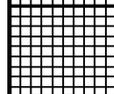
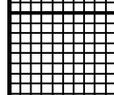
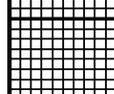
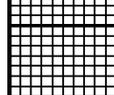
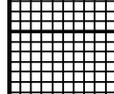
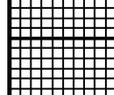
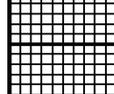
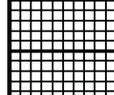
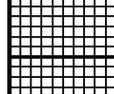
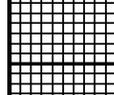
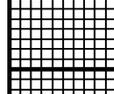
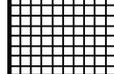
Depth	Lithology % Sand Concentration	Grain Size Distribution			Rig Activity, Bit Sizes, Mud Additives & Properties	Description of Lithology
		% Coarse	% Medium	% Fine		
0		5	5	90		SAND: Yellowish, grayish brown; fine grained; well sorted; minor fine gravel; silty.
50						CLAYEY SAND: pale brown; fine grained sand; silty
100		30	30	40		SAND: grayish brown; fine to coarse grained; silty/clayey; w/ some fine gravel fragments (porc.)
150		10	20	70		More clay.
200		30	30	40		
250		5	5	90		SILTY SAND: grayish brown; fine grained; w. soft, light gray clay.
300				100		SAND: grayish brown, fine grained; well sorted; silty. Gravel fragments, chert/porcellanite (Tm). Gray clay. Dark brown silt.
350		15	25	60		
400		40	30	30		SANDY CLAY: grayish brown, coarse grained sand; large subrounded grains; abdt. quartz; w/ brown, gray, and white clay.
450		25	25	50		
500		30	30	40		SAND/GRAVEL: brown to tan, fine to coarse grained sand; fine gravel and gravel frags (porc/chert); w/ brown clay.
550		20	30	50		SILTY SAND: dark grayish brown; predom. fine sand; some clay. CLAYEY, SILTY SAND: dark brownish gray; fine sand predom., some coarser grains; porc. gravel.
600		5	20	75		SILTY CLAY; grayish brown. Bluish gray and brown clay.
650		5	15	80		CLAY: very dark gray/bluish gray; firm; sticky; silty; w/ some sand and gravel frags. SANDY CLAY: olive gray/bluish gray; fine to medium grained sand. SILTY, SANDY CLAY: olive gray to bluish gray. SANDY CLAY/CLAYEY SAND: pale gray; fine to medium grained sand; moderately well sorted; w/ gray, bluish gray, brown, yellowish brown and white clay. SAND: pale gray; fine grained, well sorted; porc. and chert gravel, rounded intact edges; gray, blue, brown, yellow and white clay.

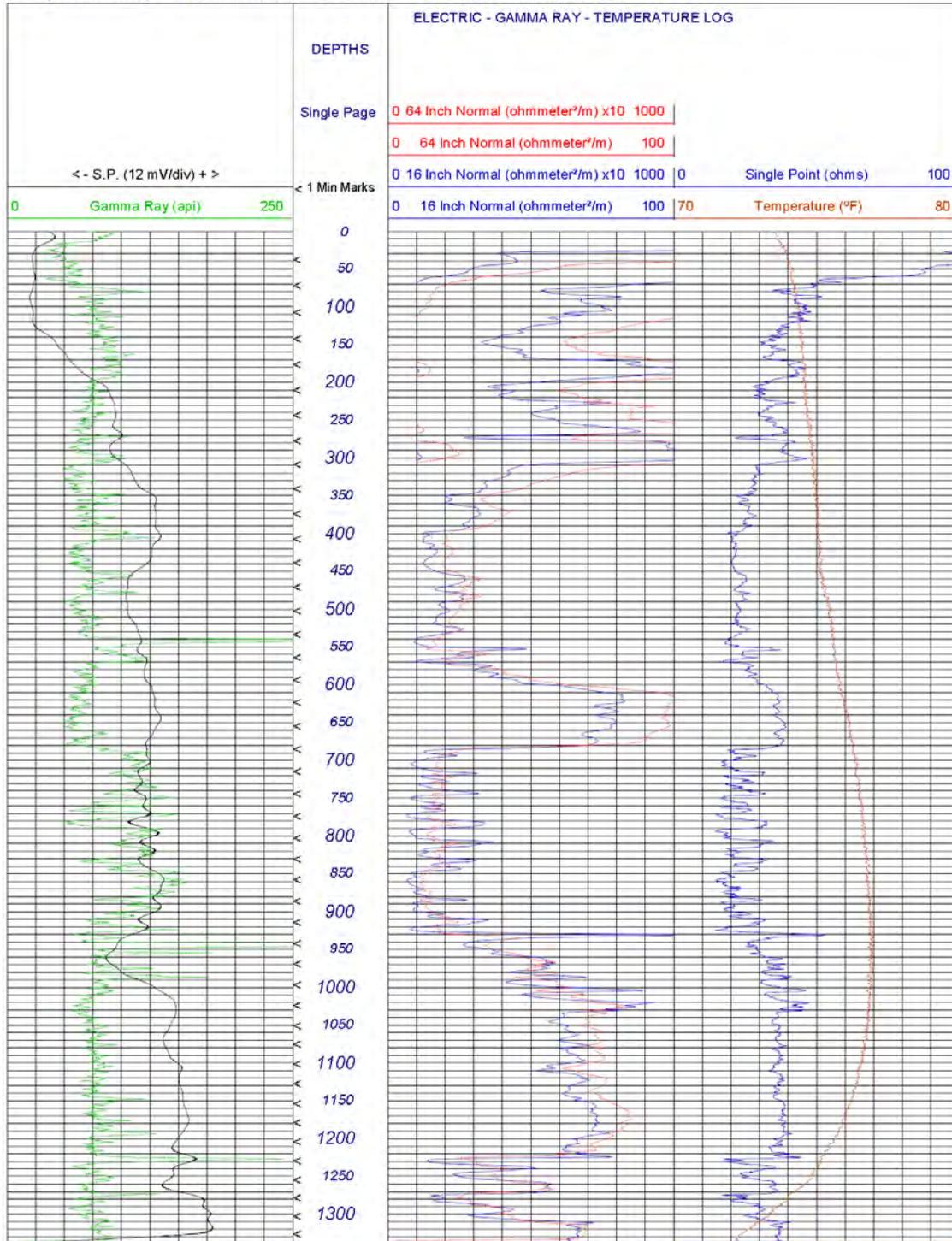
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Owner: Seaside Basin Watermaster	Date: October 2009	
Location: Fort Ord, BLM Facility, Monterey County N 36 37' 14.03"; W 121 46' 10.97"	Driller: Bradley and Sons; Madera, CA	
Method/Fluid: Direct, Bentonite		
Other: Welenco eelog; dual completion - deep (Tsm) - TD 1320 ft.; shallow (QTp) TD - 690 ft.; deep mw is nw casing.		

Depth	Lithology % Sand Concentration	Grain Size Distribution			Rig Activity, Bit Sizes, Mud Additives & Properties	Description of Lithology
		% Coarse	% Medium	% Fine		
650						SAND: pale gray; fine grained, well sorted; porc. and chert gravel, rounded intact edges; gray, blue, brown, yellow and white clay.
700		5	5	90		SAND: gray/pale brownish gray; fine grained.
750		5	15	80		SANDY CLAY: grayish brown, fine grained gray sand. CLAYEY SAND: pale grayish brown; fine grained gray sand.
800		30	30	40		SAND: grayish brown; fine to coarse grained; poorly sorted; w/ brownish gray clay; w/ some gravel frags (porc./chert). SILTY CLAY: pale brown; some sand (fine to coarse); some orange/brown oxidized silt.
850						
900		25	25	50		CLAY: brownish gray; sandy; silty; w/ chert/porc sand and gravel frags. SAND: pale brownish gray; fine to coarse grained; abundant pale olive/cream porc and chert grains and gravel frags.
950		10	15	75		SAND: pale brownish gray; fine to coarse grained; abundant pale olive/cream porc and chert SAND: dark bluish gray; fine to coarse grained; abundant porc/chert; abundant dark colored grains (blue, green, turquoise); w/ brown clay. Much soft white clay/brown clay. SAND/CLAY: pale brown, pale gray fine sand; brown to pale brown clay/claystone; some small chert fragments; abundant 'flakes' of white rock(?); some soft white clay, some gray clay.
1000		5		95		SAND: pale grayish brown; fine grained; well sorted; with brown clay/claystone (small cuttings). Abundant 'flakes' of white material.
1050		5	5	90		SAND: very pale gray to white; fine grained; well sorted; with very small pieces of brown claystone, and white 'flakes'. White sand (coarser), w/ soft pale brown clay, and darker brown claystone.
1100		15	25	60		
1150		15	25	60		SAND: very pale gray to white; fine to medium grained; w/ small claystone (brown) cuttings.
1200						SAND: white/gray, fine to coarse grained sand; w/ brown, bluish gray, gray and white clay.
1250		5	15	80		SAND: white/gray; predom. fine grained; w/ very pale bluish gray clay.
1300						

Well I.D.: Seaside Basin Watermaster MW-5	Logger: Michael Burke	
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Location: Fort Ord, BLM Facility, Monterey County N 36 37' 14.03"; W 121 46' 10.97"	Driller: Bradley and Sons; Madera, CA	
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CLAY
 SILT
 SAND
 GRAVEL

Depth	Lithology % Sand Concentration	Grain Size Distribution			Rig Activity, Bit Sizes, Mud Additives & Properties	Description of Lithology
		% Coarse	% Medium	% Fine		
1300					TD 1338 ft.	SAND: white/gray; predom. fine grained; w/ very pale bluish gray clay. SAND: pale gray to white; fine grained; with very pale bluish gray clay.
1350						
						
						
						
						
						
						
						
						
						
						
						
						



welenco
CA. Contractor's License: 722373

Phone: (800) 445-9914 Fax: (661) 834-2550 Email: welenco@welenco.com Web: www.welenco.com
(Prepared with Log Print, a professional software application developed by Welenco, Inc.)

TRIPLICATE
Owner's Copy

Page 2 of 6

Owner's Well No. FT ORD #5

Date Work Began 11/1/2009, Ended 11/5/2009

Local Permit Agency ENVIRO HEALTH, MONTEREY

Permit No. 09-11667

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **EO100613**

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG			WELL OWNER																																																					
ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE _____ (SPECIFY)			Name U.S. BUREAU OF LAND MGMT																																																					
DEPTH FROM SURFACE			Mailing Address 20 HAMELTON COURT																																																					
DRILLING METHOD _____ FLUID _____			City HOLLISTER CA 95023																																																					
DESCRIPTION			CITY _____ STATE _____ ZIP _____																																																					
Describe material, grain, size, color, etc.			WELL LOCATION																																																					
<table border="1"> <thead> <tr> <th>Fl.</th> <th>to</th> <th>Fl.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td>960</td><td>980</td><td></td><td>BLACK CLAY, SOME SMALL GRAVEL</td></tr> <tr><td>980</td><td>1000</td><td></td><td>MEDIUM/FINE SANDS, WHITE CLAY</td></tr> <tr><td>1000</td><td>1060</td><td></td><td>FINE SAND, WHITE CLAY</td></tr> <tr><td>1060</td><td>1100</td><td></td><td>WHITE/BROWN CLAY, MEDIUM/COARSE SAND</td></tr> <tr><td>1100</td><td>1120</td><td></td><td>SOME WHITE CLAY, MEDIUM/COARSE SAND AND SHALE</td></tr> <tr><td>1120</td><td>1180</td><td></td><td>BROWN-WHITECLAY, MEDIUM/COARSE SAND</td></tr> <tr><td>1180</td><td>1200</td><td></td><td>SOME BROWN CLAY, MEDIUM/COARSE SAND</td></tr> <tr><td>1200</td><td>1220</td><td></td><td>SOME BROWN CLAY, MEDIUM/COARSE SAND</td></tr> <tr><td>1220</td><td>1260</td><td></td><td>LIGHT BROWN, DARK BROWN CLAY, SOME SHALE</td></tr> <tr><td>1260</td><td>1280</td><td></td><td>BROWN-WHITE CLAY, SOME MEDIUM COARSE SANDS</td></tr> <tr><td>1280</td><td>1300</td><td></td><td>FINE SAND, BLUE CLAY</td></tr> <tr><td>1300</td><td>1338</td><td></td><td>WHITE-BLUE CLAY, COARSE SAND WITH COBBLE</td></tr> </tbody> </table>			Fl.	to	Fl.	DESCRIPTION	960	980		BLACK CLAY, SOME SMALL GRAVEL	980	1000		MEDIUM/FINE SANDS, WHITE CLAY	1000	1060		FINE SAND, WHITE CLAY	1060	1100		WHITE/BROWN CLAY, MEDIUM/COARSE SAND	1100	1120		SOME WHITE CLAY, MEDIUM/COARSE SAND AND SHALE	1120	1180		BROWN-WHITECLAY, MEDIUM/COARSE SAND	1180	1200		SOME BROWN CLAY, MEDIUM/COARSE SAND	1200	1220		SOME BROWN CLAY, MEDIUM/COARSE SAND	1220	1260		LIGHT BROWN, DARK BROWN CLAY, SOME SHALE	1260	1280		BROWN-WHITE CLAY, SOME MEDIUM COARSE SANDS	1280	1300		FINE SAND, BLUE CLAY	1300	1338		WHITE-BLUE CLAY, COARSE SAND WITH COBBLE	Address FORT ORD	
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			CATHODIC PROTECTION																																																					
			<input type="checkbox"/> HEAT EXCHANGE																																																					
			<input type="checkbox"/> DIRECT PUSH																																																					
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<i>May not be representative of a well's long-term yield.</i>																																																								
TOTAL DEPTH OF BORING 1338 (Feet)																																																								
TOTAL DEPTH OF COMPLETED WELL _____ (Feet)																																																								

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)				ANNULAR MATERIAL				
Fl.	to		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE	TYPE		
1050	1010		<input checked="" type="checkbox"/>	PVC	2"	SCH 80		1337	900		#8 SAND
1010	950		<input checked="" type="checkbox"/>	PVC	2"	SCH 80	.040	900	700	<input checked="" type="checkbox"/>	
950	0		<input checked="" type="checkbox"/>	PVC	2"	SCH 80		#2			
								700	300		#8 SAND
680	600	10 5/8"	<input checked="" type="checkbox"/>	PVC	2"	SCH 80	.040	300	0	<input checked="" type="checkbox"/>	
600	0	10 5/8"	<input checked="" type="checkbox"/>	PVC	2"	SCH 80					

<p>ATTACHMENTS (✓)</p> <p><input type="checkbox"/> Geologic Log</p> <p><input type="checkbox"/> Well Construction Diagram</p> <p><input type="checkbox"/> Geophysical Log(s)</p> <p><input type="checkbox"/> Soil/Water Chemical Analysis</p> <p><input type="checkbox"/> Other _____</p> <p>ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.</p>	<p>CERTIFICATION STATEMENT</p> <p>I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.</p> <p>NAME BRADLEY & SONS</p> <p>(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)</p> <p>3625 S. HIGHLAND DEL REY CA 93616</p> <p>ADDRESS CITY STATE ZIP</p> <p>Signed _____ WELL DRILLER/AUTHORIZED REPRESENTATIVE</p> <p>11/23/09 DATE SIGNED 414178 C-57 LICENSE NUMBER</p>
---	---

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

TRIPLICATE
Owner's Copy

Page 1 of 6

Owner's Well No. FT ORD #5

Date Work Began 11/1/2009, Ended 11/5/2009

Local Permit Agency ENVIRO HEALTH, MONTEREY

Permit No. 09-11667 Permit Date 11/9/2009

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **EO100613**

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓)		DRILLING METHOD	FLUID
DEPTH FROM SURFACE		DESCRIPTION	
FL	to	Describe material, grain, size, color, etc.	
0	80	FINE SAND	
80	100	FINE/MEDIUM SANDS	
100	160	F/W, MEDIUM/COARSE SANDS	
160	200	MEDIUM/FINE/COARSE SANDS, CLAY, SMALL GRAVEL	
200	280	MEDIUM/FINE/COARSE SANDS, SOME GRAVEL	
280	300	FINE/MEDIUM/COARSE SANDS, W/SILTY CLAY	
300	320	MEDIUM/COARSE SANDS	
320	380	FINE/MEDIUM COARSE SAND	
380	400	FINE SANDS	
400	440	FINE SAND, SOME MEDIUM/COURSE, CLAY	
440	460	BROWN SILTY CLAY	
460	480	BROWN CLAY, SHALE, MEDIUM/FINE SANDS	
480	500	CEMENTED SANDS	
500	520	BROWN CLAY	
520	540	BROWN CLAY, SOME SHALE, MEDIUM/FINE SAND	
540	560	DARK BLUE CLAY, SOME MEDIUM SAND & SHALE	
560	580	BROWN CLAY, DARK BLUE CLAY, SOME SHALE	
580	600	BROWN & DARK BLUE CLAY, SOME SHALE	
600	620	LIGHT BROWN CLAY, FINE/MEDIUM SANDS	
620	660	LIGHTBROWN CLAY, SHITE/FINE/MEDIUM SANDS	
660	680	SILTY WHITE SAND, BROWN CLAY	
680	720	BROWN/WHITE CLAY, SOME MEDIUM SAND AND SHALE	
720	820	BROWN CLAY, SHALE	
820	840	SOME CLAY, SHALE, MEDIUM SAND	
840	940	MEDIUM/FINE/COARSE CEMENTED SANDS, SOME BROWN CLAY	
940	960	MEDIUM/COARSE/FINE SANDS, WHITE CLAY,	
TOTAL DEPTH OF BORING		1338	(Feet)
TOTAL DEPTH OF COMPLETED WELL			(Feet)

WELL OWNER

Name U.S. BUREAU OF LAND MGMT

Mailing Address 20 HAMELTON COURT
HOLLISTER CA 95023

CITY STATE ZIP

WELL LOCATION

Address FORT ORD
City SEASIDE CA
County MADERA

APN Book Page Parcel
Township Range Section

Latitude

LOCATION SKETCH

NORTH SOUTH EAST WEST

ACTIVITY (✓)

NEW WELL

MODIFICATION/REPAIR

Deepen
Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic Public
Irrigation Industrial

MONITORING

TEST WELL
CATHODIC PROTECTION
HEAT EXCHANGE
DIRECT PUSH
INJECTION
VAPOR EXTRACTION
SPARGING
REMEDATION
OTHER (SPECIFY)
BRACKISH WAT

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL (Ft) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft)

May not be representative of a well's long-term yield

DEPTH FROM SURFACE		BORE HOLE DIA. (Inches)	CASING (S)				ANNULAR MATERIAL TYPE				
FL	to		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
1338	680	8 3/4"									#8 SAND
1320	1280		✓	PVC	2"	SCH 80	.040				
1280	1210		✓	PVC	2"	SCH 80					
1210	1150		✓	PVC	2"	SCH 80	.040				#8 SAND
1150	1110		✓	PVC	2"	SCH 80					
1110	1050		✓	PVC	2"	SCH 80	.040				

ATTACHMENTS (✓)

Geologic Log
Well Construction Diagram
Geophysical Log(s)
Soil/Water Chemical Analysis
Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME BRADLEY & SONS
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

3625 S. HIGHLAND DEL REY CA 93616
ADDRESS CITY STATE ZIP

Signed *Donna Badie* WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED 11/23/09 C-57 LICENSE NUMBER 414179

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

APPENDIX B - WATER QUALITY DATA

Laboratory Reports



4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS

montereybayanalytical@usa.net
ELAP Certification Number: 2385

Tuesday, December 01, 2009

Martin Feeney
P.O. Box 23240
Ventura, CA 93002

Lab Number: AA62052

Collection Date/Time: 11/11/2009 12:00 Sample Collector: BURKE, M
Submittal Date/Time: 11/11/2009 14:22 Sample ID

Sample Description: Seaside Basin Water Master, MW-5 Shallow

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	2320B	mg/L	129		2		11/11/2009
Arsenic, Total	200.8	ug/L	2		1	10	11/23/2009
Bicarbonate (as HCO3-)	2320B	mg/L	157		10		11/11/2009
Calcium	3111B	mg/L	43		1		11/20/2009
Carbonate as CaCO3	2320B	mg/L	Not detected		10		11/11/2009
Chloride	300.0	mg/L	157		1	250	11/12/2009
Fluoride	300.0	mg/L	0.12		0.10	2.0	11/12/2009
Hardness (as CaCO3)	2340B	mg/L	173		10		11/20/2009
Iron, Total	3111B	ug/L	Not detected		50	300	11/23/2009
Langlier Index (15 deg. C)	2330B		0.41				11/30/2009
Langlier Index (60 deg. C)	2330B		1.01				11/30/2009
Magnesium	3111B	mg/L	16		1		11/20/2009
Manganese, Total	3111B	ug/L	141		20	50	11/23/2009
Nitrate as NO3	300.0	mg/L	3		1	45	11/12/2009
Nitrite as Nitrogen	300.0	mg/L	Not detected		0.1	1.00	11/12/2009
o-Phosphate-P	300.0	mg/L	Not detected		0.1		11/12/2009
pH (Laboratory)	4500-H+B	STD. Units	8.2				11/11/2009
Potassium	3111B	mg/L	3.5		0.5		11/20/2009
QC Anion Sum x 100	Calculation	%	95%				11/20/2009
QC Anion-Cation Balance	Calculation	%	1				11/20/2009
QC Cation Sum x 100	Calculation	%	97%				11/20/2009
QC Ratio TDS/SEC	Calculation		0.58				11/30/2009
Sodium	3111B	mg/L	100		1		11/20/2009
Specific Conductance (E.C)	2510B	umhos/cm	816		1	900	11/11/2009
Sulfate	300.0	mg/L	33		1	250	11/12/2009
Total Diss. Solids	2540C	mg/L	475		10	500	11/18/2009

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside of hold time

E = Analysis performed by External Laboratory; See External Laboratory Report attachments.

D = Method deviates from standard method due to insufficient sample for MS/MSD



4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS

montereybayanalytical@usa.net
ELAP Certification Number: 2385

Tuesday, December 01, 2009

Martin Feeney
P.O. Box 23240
Ventura, CA 93002

Lab Number: AA62051

Collection Date/Time: 11/11/2009 11:00 Sample Collector: BURKE, M
Submittal Date/Time: 11/11/2009 14:22 Sample ID

Sample Description: Seaside Basin Water Master, MW-5 Deep

Analyte	Method	Unit	Result	Qual	PQL	MCL	Date Analyzed
Alkalinity, Total (as CaCO3)	2320B	mg/L	223		2		11/11/2009
Arsenic, Total	200.8	ug/L	1		1	10	11/23/2009
Bicarbonate (as HCO3-)	2320B	mg/L	272		10		11/11/2009
Calcium	3111B	mg/L	44		1		11/20/2009
Carbonate as CaCO3	2320B	mg/L	Not detected		10		11/11/2009
Chloride	300.0	mg/L	76		1	250	11/12/2009
Fluoride	300.0	mg/L	0.27		0.10	2.0	11/12/2009
Hardness (as CaCO3)	2340B	mg/L	151		10		11/29/2009
Iron, Total	3111B	ug/L	Not detected		50	300	11/23/2009
Langlier Index (15 deg. C)	2330B		0.75				11/30/2009
Langlier Index (60 deg. C)	2330B		1.34				11/30/2009
Magnesium	3111B	mg/L	10		1		11/20/2009
Manganese, Total	3111B	ug/L	83		20	50	11/23/2009
Nitrate as NO3	300.0	mg/L	2		1	45	11/12/2009
Nitrite as Nitrogen	300.0	mg/L	Not detected		0.1	1.00	11/12/2009
o-Phosphate-P	300.0	mg/L	Not detected		0.1		11/12/2009
pH (Laboratory)	4500-H+B	STD. Units	8.3				11/11/2009
Potassium	3111B	mg/L	4.2		0.5		11/20/2009
QC Anion Sum x 100	Calculation	%	99%				11/20/2009
QC Anion-Cation Balance	Calculation	%	2				11/29/2009
QC Cation Sum x 100	Calculation	%	103%				11/29/2009
QC Ratio TDS/SEC	Calculation		0.65				11/30/2009
Sodium	3111B	mg/L	119		1		11/20/2009
Specific Conductance (E.C)	2510B	umhos/cm	808		1	900	11/11/2009
Sulfate	300.0	mg/L	64		1	250	11/12/2009
Total Diss. Solids	2540C	mg/L	525		10	500	11/18/2009

Sample Comments:

Report Approved by:

David Holland, Laboratory Director

mg/L: Milligrams per liter (=ppm)

ug/L : Micrograms per liter (=ppb)

PQL : Practical Quantitation Limit

H = Analyzed outside of hold time

E = Analysis performed by External Laboratory; See External Laboratory Report attachments.

D = Method deviates from standard method due to insufficient sample for MS/MSD

APPENDIX C - SUPPORTING DOCUMENTS

1. Technical Memorandum -- Basis of Design – Seaside Basin Groundwater Watermaster's 2009 Inland Monitoring Well, dated June 29, 2009, 2007 prepared by Martin B. Feeney PG, CHg

TECHNICAL MEMORANDUM

To: Seaside Groundwater Basin Watermaster
Date: June 29, 2009

From: Martin Feeney, PG, CHg
Project No:

Subject: Basis of Design – Seaside Basin Groundwater Watermaster's
2009 Inland Monitoring Well

INTRODUCTION

Pursuant to the Seaside Groundwater Basin Watermaster's (Watermaster) obligations under the court settlement, the Watermaster is moving ahead with installation of inland monitoring wells to better understand the inland hydrogeology of the basin. The Watermaster has budgeted for the installation of one new monitoring well in 2009. This document presents a basis-of-design for the proposed well. Presented in this document is a review of the regional hydrogeologic setting, a summary of available site-specific data, a preliminary design, construction approach and cost estimate.

PROJECT GOALS

The purpose of the monitoring well installation project is to further understand the hydrogeology of the inland portion of the Seaside Groundwater Basin. Data will be developed from both the drilling of the monitoring well and from the longer-term record from the established monitoring well.

The information from the borehole will provide for the following:

- Allow identification of aquifer units in the inland portion of the Seaside Groundwater Basin.
- Allow for delineation of depths, thickness and characteristics of the underlying aquifer units.
- Collect lithologic and geophysical data that will assist in better delineation of aquifer units and basin structure

The completed monitoring well will allow for the following:

- Allow for on-going collection of aquifer-specific water level data
- Allow for on-going collection of aquifer-specific water quality data

DESIGN CONSIDERATIONS**Location**

Two potential locations are being considered for the inland monitoring well. One site is located on land that is to be developed as Monterey Peninsula College's (MPC) Fort Ord Campus. The other site is at the current Bureau of Land Management (BLM) Headquarters on Fort Ord. The BLM Headquarters is located at the site of the old Camp Huffman, a predecessor to Fort Ord. Camp Huffman previously had a water well that has subsequently been destroyed. However, data from this well has been used to support much of the hydrogeologic analysis of the Seaside Basin. The locations of the sites under consideration are shown on Figure 1 – Well Site Location Map.

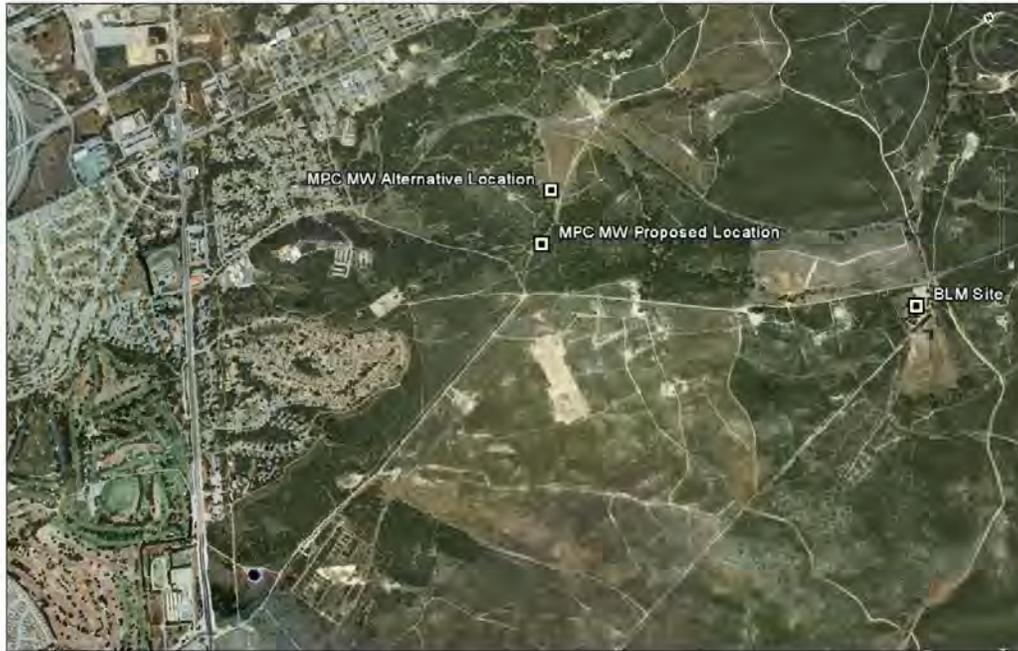


Figure 1 - Well Site Location Map

Hydrogeology

Regional Hydrogeology

Due to the surficial dune sand deposits that cover most of the Seaside Basin indications of the subsurface geology is largely obscured. As such, subsurface data in the Basin is limited to areas where water wells have been historically drilled. Very few water wells have been drilled in the inland portion. The wells that have been drilled are limited to the historical well at the BLM site and the monitoring wells installed by the MPWMD.

Based on data from adjacent areas, the hydrogeology underlying both sites is anticipated to be consistent with conditions observed in the other portions of the Seaside Groundwater Basin. That is, a sedimentary sequence of water-bearing materials that overlie the non-water-bearing Monterey Shale. The Monterey Shale is considered the bottom of the Seaside Ground Water Basin due to its low-permeability and poor water quality. The sedimentary materials overlying the Monterey Shale are assigned to three stratigraphic units — the Aromas Sand/Older Dunes, Paso Robles Formation and the underlying Santa Margarita Sandstone/Purisima Formation. Structural deformation of the basin has resulted in varying thickness and depths of these units across the basin.

The three upper stratigraphic units constitute the three aquifers in the Seaside Basin. The upper aquifer consists of the Aromas Sand/Older Dunes. This aquifer is of minor importance in the basin as it is unconfined, in direct hydraulic communication with the ocean, and is saturated only in the extreme coastal portion of the basin. The Aromas Sand/Older Dune aquifer is underlain by the Paso Robles Formation. This formation consists of a complex sequence of interbedded sand, gravel and clay deposits. These deposits are more than 600 feet thick in some portions of the basin. The water bearing portions of this formation are thick sand gravel lenses of limited areal extent. The Santa Margarita Sandstone underlies the Paso Robles Formation. The Santa Margarita Sandstone is a loose to weakly

cemented arkosic sandstone with a stratigraphic thickness of approximately 200 to 250 feet. The upper portion of this formation is clean sand. With increasing depth and proximity to the underlying Monterey Shale, the clay content of the formation increases. Recent exploration suggests that in the northern portion of the Seaside Groundwater Basin, the Santa Margarita Sandstone is replaced in the stratigraphic sequence by the Purisima Formation.

In the inland area of the Seaside Basin, the understanding of the areal and vertical distribution of the various hydrostratigraphic units described above is limited. However, regional analysis of the area has allowed investigators (Clark and Rosenberg 1994, Rosenberg 2007) to infer regional structure of the area. Presented in Figure 2 – Contours on Top of Monterey Shale are contours on the top of the Monterey Shale from these two sources overlaid on a regional airphoto showing existing well control and proposed well sites.

Site Specific Data

Camp Huffman Well – This now-destroyed well was located at what is now the BLM headquarters on Fort Ord. The well was drilled in 1912 to 485 feet and was at an elevation of approximately 390 feet. As constructed the well bottom was at an elevation of approximately 95 feet below sea level. The wellbore encountered sand, gravel and clay horizons to total depth. The available geologic data are inadequate to precisely define the producing aquifer unit but analysis of the regional hydrogeology suggests that the well was in the Paso Robles Formation, the top of the Santa Margarita Sandstone being inferred to be approximately 55 deeper than the well at a depth of approximately 540 feet.

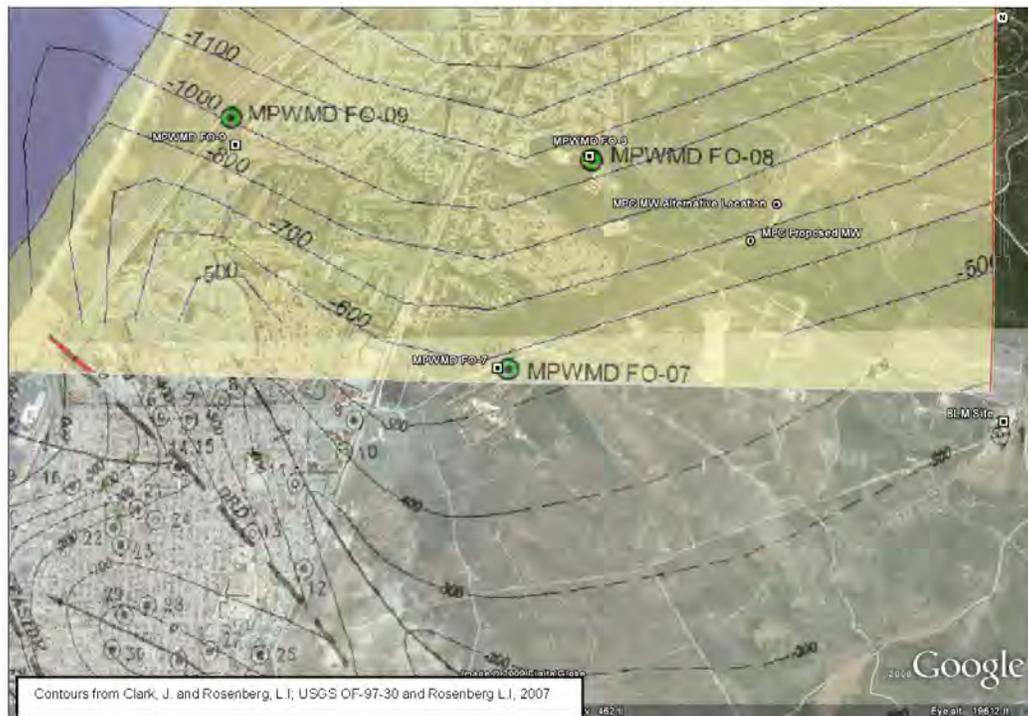


Figure 2 - Contours on Top of Monterey Shale

Based on the above preliminary well designs can be developed for each of the sites. Proposed for each well site are three casing strings; one perforated in the Santa Margarita Sandstone the other two perforated in the upper and lower portions of the overlying Paso Robles Formation. Assuming a multiple completion at the selected site, the well particulars are as presented below:

Site	Elevation (feet, mgl)	Projected Depth to Water (feet, bgs)	Estimated Elevation QTP Water Surface (feet, msl)	Estimated Elevation of Top of Monterey Shale (feet, msl)	Estimated Depth to Top of Santa Margarita (feet, bgs)	Estimated Elevation of Top of Santa Margarita (feet, msl)	Saturated Thickness of QTP (feet)	Estimated Depth of Deep Boring (feet, bgs)	Estimated Depth of Tsm Well (feet, bgs) ^c	Estimated Depth of Deep QTP Boring/Well (feet, bgs) ^b	Estimated Depth of Shallow QTP Boring/Well (feet, bgs) ^a	Total Drilled Footage (feet)	Total Well Footage (feet)
BLM	394	300	80	-400	544	-150	230	794	694	469	414	1677	1577
MPC	343	273	70	-700	793	-450	520	1043	943	718	373	2134	2034
MPC Alt	296	231	65	-735	781	-485	550	1031	931	706	331	2068	1968

notes
 a Shallow QTP Completion 100 below saturation
 b Deep QTP Completion 75 above Tsm/QTP contact
 c Tsm Completion 100 above Tm contact

Monitoring Well Functional Requirements

The adopted well design must include the flexibility to allow the well to accommodate all the intended and potential uses. Although the primary data interest is water level and there are no reasons to anticipate rapid changes in water quality, periodic water quality sampling is still likely to be performed. The adopted design therefore needs allow for aquifer-specific collection of water level and water quality data. Well casings must be of sufficient diameter to allow for anticipated sampling and monitoring equipment.

With minor exception, all water level monitoring equipment, either manual or automated, is designed to fit within 1-inch diameter casings. As such, this criterion is not particularly limiting. Collection of water quality samples is more complicated. The proposed wells are to be as deep as 900 feet. Water levels in the wells are anticipated to be between 200 and 300 feet below ground surface. For the deeper wells, this will result in a standing water column of 600 to 700 feet of water in the well under static conditions. Some sampling guidelines suggest that as much as three casing volumes should be removed prior to collecting representative samples. Assuming a 2.5 inch diameter PVC casing, this can be more than 500 gallons of purge water. Removal of this amount of water with a pump that will fit in this size casing and pump from the anticipated depths can take significant time (100 minutes at 5 gpm). Increasing the casing diameter to 4-inch would allow for a larger pump, however, increasing the casing diameter will increase costs significantly. Alternatively, the well could be outfitted for airlift pumping. This is the method used by the Monterey Peninsula Water Management District to purge their monitoring wells. An additional alternative would be to adopt the use of “zero-purge” sampling methods that utilize downhole tools that sample directly opposite the well screen. This is the method utilized for the Sentinel Wells.

CONCEPTUAL WELL DESIGN/WORKPLAN

Overall workplan includes drilling a borehole to the top of the Monterey Shale. After reaching Monterey Shale the borehole will be geophysically logged. These geophysical data, along with lithologic data from the borehole will be used to determine the depth, perforated intervals and seal depths for the monitoring wells.

Potential Monitoring Well Designs

At locations where there is an interest in monitoring hydrogeologic conditions two or more underlying aquifer units, there are two common monitoring well designs. The nested well consist of a single borehole containing two or more separate casing strings. Each casing string is perforated at differing depths and is hydraulically separated from other perforated intervals with low-permeability seals. The other common design is a well cluster. This design utilizes a separate smaller diameter borehole for each casing string. In comparison, a nested well designed to monitor three separate hydrogeologic units would have three casings in a single borehole whereas; a well cluster designed for the same purpose would consist of three separate wells of varying depths. The two designs are presented on Figure 3 – Monitoring Well Designs.

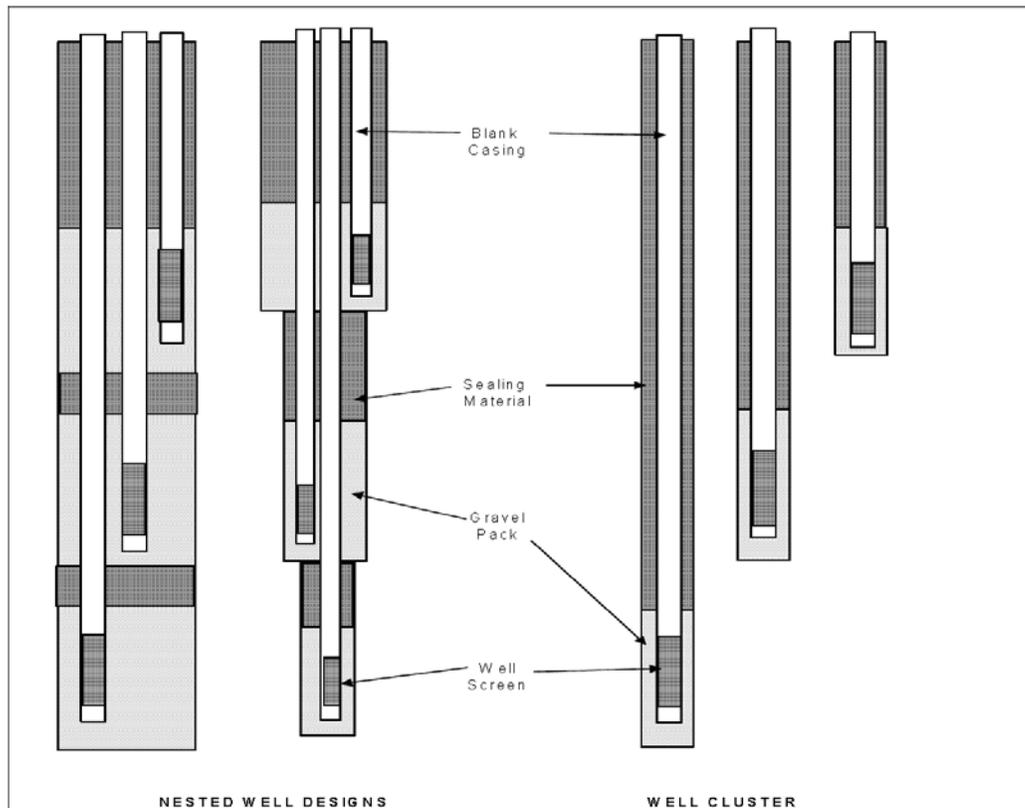


Figure 3 - Monitoring Well Designs

Both of the designs have pros and cons. The primary advantage of the nested well design is that its surface footprint is more limited than the well cluster. The surface expression of a 3-aquifer zone nested

well is typically a single large diameter surface mounted vault. In comparison, the surface expression of a comparable well cluster would consist of three smaller diameter surface mounted vaults separated by 10 or more feet.

The primary advantage of the well cluster is the increased confidence in the hydraulic separation between aquifer units. Although nested wells are routinely constructed and typically can display significant differences in water level between the casings, there is always the possibility that the seals within the borehole are less than perfect and the some minor leakage between aquifer units is occurring.

The cost differences between the approaches are not significant. Whereas there is significantly more drilled footage in a clustered design, the boreholes are smaller in diameter reducing the volume of fluid and cuttings. Comparison of the volume of cuttings and fluids from a 14 ¾ inch diameter 1,000 foot borehole for a triple completion nested well verses three 8 ¾ inch diameter wells (say 1,000, 700 and 400 feet in depth) comprising a cluster reveals the three well cluster comprised of three separate holes to have a third less cuttings and fluids. Given that disposal of cuttings and fluids are significant costs, this difference in volume of cuttings and fluids can balance out the cost of the more drilled footage in the cluster design over the nested.

Additionally, construction of a nested well takes significantly more time than construction of a single casing well. Each casing needs to be installed, gravel packed, an intermediate seal placed and allowed to harden, a second casing string installed, gravel packed and sealed and repeated. This process can typically take several days. This extended construction time increases risk of hole stability problems and formation damage. This compares to single casing construction that allows installation of casing, gravel pack and final seal as continuous process; a process that can take less than a day for each well.

Bradley and Sons Drilling, the Contractor that constructed the Watermaster's Sentinel Wells, provided estimates for the two designs under consideration that confirms the assertions above. The estimated cost for the nested design is \$212,000 while the clustered design is estimated at \$202,000. The increased cost for the nested design derives from the fluid and disposal costs and the increased diameter of the conductor casing. The well bid documents and bid results are attached.

CONCLUSIONS/RECOMMENDATIONS

Given the above it is recommended that the subject monitoring well be established as a well cluster. The recommended design and methods are summarized below:

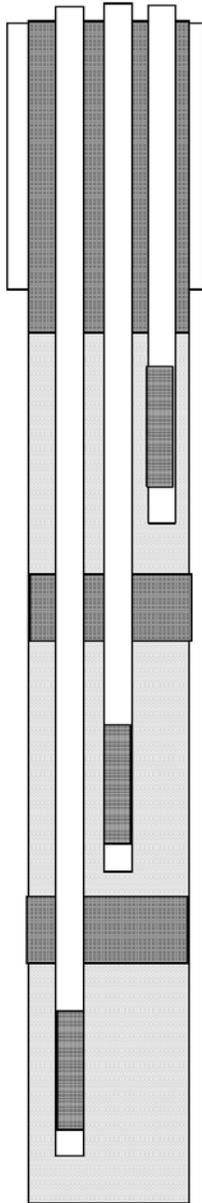
Recommended Design and Methods

Design:	Well Cluster (3 boreholes, 3 wells)
Drilling Method:	Direct Rotary Method
Casing:	2 inch Sch. 80 PVC casing (2.375 inch OD)
Screen:	2 inch diameter Sch. 80 PVC horizontally slotted (0.032 inch slots)
Borehole size:	9 7/8 or 10 5/8 inch diameter
Gravel Pack:	8 x 16 or Aquarium #3
Sealing Material:	Concrete or as permitted by local agency
Development:	Swabbed and air-lifted clean to bottom

-/-

SEASIDE BASIN WATERMASTER 2009 Monitoring Well

Alternative A - Nested Well - 3 completions



Cross Sectional View

Proposed Well Design

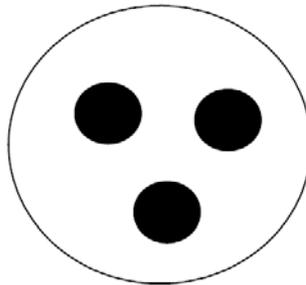
- 2 -inch diameter casings
- 8-16 Gravel Pack
- Cement Seals (or as allowed by regulators)
- 0.032" slots

Methods:

- Drilling: Direct Rotary
- Construction: Casings seperated by 2 inches
- Development: Swabbed and air-lifted to bottom
- Surface: Traffic Rated Grade-level vault

Assume:

- 200 foot conductor
- Borehole Depth: 1,000
- Well Depths: 900, 600, 400 - Total 1900
- 50 foot Screens
- 100 foot Isolation Seals
- 300 Annular Seal



Plan View

SEASIDE BASIN WATERMASTER 2009 Monitoring Well**Alternative A - Nested Well - 3 completions**

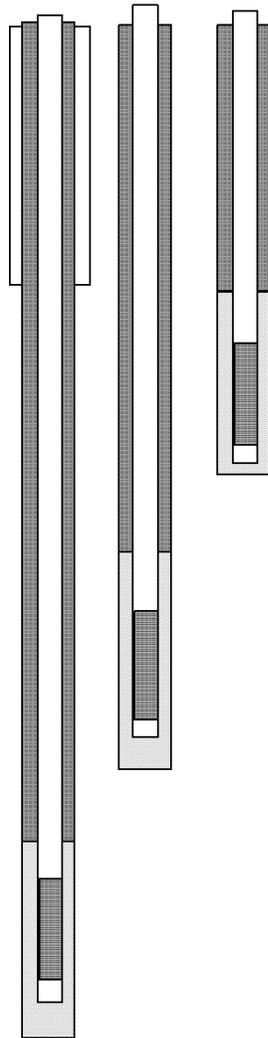
ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL
1	Mobilization , Permits, Per Diem	Lump Sum	1	\$25,000.00	\$25,000.00
2	16-Inch Diameter Carbon Steel Conductor Casing	Linear Feet	200	\$250.00	\$50,000.00
3	Pilot Bore Drilling	Linear Feet	1,000	\$25.00	\$25,000.00
4	Geophysical Log	Lump Sum	1	\$2,500.00	\$2,500.00
5	Reaming Borehole 14" diameter	Linear Feet	900	\$20.00	\$18,000.00
6	Furnish and Install 2" diameter Sch. 80 PVC Blank Casing	Linear Feet	1,750	\$12.00	\$21,000.00
7	Furnish and Install of 2" Sch. 80 PVC Well Screen	Linear Feet	150	\$14.00	\$2,100.00
8	Gravel Pack	Linear Feet	225	\$30.00	\$6,750.00
9	Furnish and Install Isolation Seals and Annular Seal - Cement Grout	Linear Feet	675	\$30.00	\$20,250.00
10	Fluid and Cuttings Containment and Disposal	Lump Sum	1	\$30,000.00	\$30,000.00
11	Well Development	Lump Sum	1	\$6,000.00	\$6,000.00
12	Surface Completion	Lump Sum	1	\$1,500.00	\$1,500.00
13	Clean Up and Demobilization	Lump Sum	1	\$4,000.00	\$4,000.00

TOTAL

\$212,100.00Bidder: BRADLEY & SON'S, INC.License: 414178By: Doug BradleyTitle PRESDate: 6/25/2009

SEASIDE BASIN WATERMASTER 2009 Monitoring Well

Alternative B - Well Cluster -- 3 Wells



Cross Sectional View

Proposed Well Design

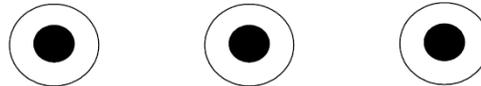
- 2 -inch diameter casings
- 8-16 Gravel Pack
- Cement Seals (or as allowed by regulators)
- 0.032" slots

Methods:

- Drilling: Direct Rotary
- Construction: Centralizers
- Development: Swabbed and air-lifted to bottom
- Surface: Traffic Rated Grade-level vault

Assume:

- 200 foot conductor on deep borehole
- Borehole Depths: 1000, 620, 420 Total = 2040
- Well Depths: 900, 600, 400 - Total 1900
- 50 foot Screens
- Annular Seals: 825, 525, 325 Total 1675
- Gravel Pack: 75 feet per well



Plan View

SEASIDE BASIN WATERMASTER 2009 Monitoring Well**Alternative B - Well Cluster – 3 Wells**

ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL
1	Mobilization , Permits, Per Diem	Lump Sum	1	\$25,000.00	\$25,000.00
2	10-Inch Diameter Carbon Steel Conductor Casing	Linear Feet	200	\$185.00	\$37,000.00
3	Borehole Drilling (8.75" diameter)	Linear Feet	2,040	\$25.00	\$51,000.00
4	Geophysical Log	Lump Sum	1	\$2,500.00	\$2,500.00
5	Installation of 2" Sch. 80 PVC Blank Casing	Linear Feet	1,750	\$12.00	\$21,000.00
6	Installation of 2" Sch. 80 PVC Well Screen	Linear Feet	150	\$14.00	\$2,100.00
7	Gravel Pack	Linear Feet	225	\$14.00	\$3,150.00
8	Cement Grout	Linear Feet	1675	\$14.00	\$23,450.00
9	Fluid and Cuttings Containment and Disposal	Lump Sum	1	\$25,000.00	\$25,000.00
10	Well Development	Lump Sum	1	\$6,000.00	\$6,000.00
11	Surface Completions	Lump Sum	1	\$2,000.00	\$2,000.00
12	Clean Up and Demobilization	Lump Sum	1	\$4,000.00	\$4,000.00
TOTAL					\$202,200.00

Bidder: BRADLEY & SON'S, INC.

License: _____ 414178

By: Doug BradleyTitle PRESDate: 6/25/2009

ATTACHMENT 10

DATABASE ENHANCEMENTS

IMPROVEMENTS BEING MADE TO THE WATERMASTER'S DATABASE

ITEM NO.	LOCATION WITHIN THE DATABASE	DESCRIPTION
1	Compliance Report (new report)	A Compliance Report will be developed that lists for each type of reporting data (i.e., Water Level, Water Quality, and Water Production): (a) what data each well owner is required to submit to the Watermaster, and (b) whether or not the required data have been submitted (i.e., entered into the database). This improvement will be accessible to all User Access Levels (1 through 4).
2	Well List Screen (well status improvement)	Currently, the Well List screen has only one checkbox to filter for “Only Watermaster Producers” and when checked, the list shows <u>all</u> of the Watermaster Production wells including those that are “inactive.” The programming will be revised to provide the capability to list just the “active” Producer Wells. This will require modifications to the Well Details screen, as there are currently no data fields for “Well Status”, i.e., Active, Inactive, Destroyed. At present in the Contacts screen, a user must select whether or not a particular Contact is a “Watermaster Producer”. Once a user does that and clicks on the checkbox on the Well List screen, all wells associated with that Contact are listed. However, some of the Producers have either active, inactive and/or destroyed wells, and we would like to be able to make this distinction. For example, we would only want to include the “active” Producer wells in the Production Report. This improvement will be accessible to all User Access Levels (1 through 4).

ITEM NO.	LOCATION WITHIN THE DATABASE	DESCRIPTION
3	Well List Screen (custom views improvement)	<p>The programming will be revised to provide the capability, by selecting checkboxes, to use the Well List screen to filter the data to allow various “custom views”. For example, we might want to create a “Well Information Report” view which would display selected fields from the database and would include the Watermaster Well ID No. and the Well Name. The following is a list of the data fields that will be included as checkboxes in a pull-down menu on the Well List screen (in addition to the columns currently listed) to allow custom views:</p> <ul style="list-style-type: none"> • Company Name, Address, City, State, Zip, Contact Person, Telephone, Email, Owner Type, Assessor’s Parcel Number, Subarea, Northing, Easting, Reference Point Elevation, Well Casing Diameter, Total Depth of Completed Well, Date Well Completed, DWR Well Completion Report No. (Construction), Date Well Destroyed, DWR Well Completion Report No. (Destruction), Geologic Unit, Meter Unit. <p>Because this improvement will include certain data regarding well location and completion, this improvement will only be accessible to User Access Levels 3 and 4.</p>
4	Production Screen (format improvement)	<p>The current individual well Production screen (accessible from the Well Details screen) will be modified to match the monthly production reporting template the Watermaster has requested that Producers use to report their well production. This improvement will be accessible to users who enter production data at User Access Levels 3 and 4.</p>

ITEM NO.	LOCATION WITHIN THE DATABASE	DESCRIPTION
5	<u>Detailed</u> Production Report (existing report)	Currently, when Production is selected from the Report pull-down menu that is accessible in the upper left of most screens, a production report can be produced that shows actual recorded meter readings for a specified time period (i.e., a detailed report). The purpose of this report is to allow users to easily review detailed production data from the database. The user has options to select an individual well owner or ALL well owners, and an individual well or ALL wells. The problems with this structure format include: (a) the report lists a column called “Begin Date” but data that show up in this column do not seem to be tied in any meaningful way to entries in the database; (b) accordingly, the report will not produce a “Begin Reading” to allow an initial meter reading to be used to make the proper production calculation; and (c) for cases when ALL wells of an individual well owner are selected, the report does not show which calculation is attributable to which well. The programming will be revised to correct these problems to facilitate efficient review of the detailed production data. This report will be accessible to all User Access Levels (1 through 4).
6	<u>Summary</u> Production Report (new report)	Currently, it is not possible to generate a Production Report that is similar in format to the one that has historically been used by the Watermaster for reporting to the Board, and also in the Annual Report that is filed with Court (i.e., a summary report). The proper summary report format will not show actual meter dates and readings, but rather will be a Water Year report that breaks down production quarterly within the year, by each producer within each subarea. The programming will be revised so that the Summary Production Report matches the format being used by the Watermaster Board. This improvement will be accessible to users who enter production data at User Access Levels 3 and 4.
7	Water Quality screen (format improvement)	Some of the Water Quality analytical results that are being provided by the labs include two extra parameters that would be useful to add to the data entry page of the database. These are: <ol style="list-style-type: none"> 1. Bicarbonate 2. Carbonate <p>The Water Quality data entry screen will be expanded to include these parameters.</p>

ITEM NO.	LOCATION WITHIN THE DATABASE	DESCRIPTION
8	Contacts Screen (new column)	The programming will be revised to add a column next to "Company Name" titled "Common Name" to enter the Producers' names as they are more commonly known. This "Common Name" will also be added to the list of check box items shown in Item 3 above.
9	Most Screens and Reports (format improvement)	Where feasible, cross-linking will be provided between the "Well Names" and "Watermaster Well ID Nos."

ATTACHMENT 11

**EXECUTIVE SUMMARY
FROM THE
WY 2010 SEAWATER INTRUSION ANALYSIS REPORT**

Executive Summary

This annual report addresses the potential for, and extent of, seawater intrusion in the Seaside Groundwater Basin. Continued pumping in excess of recharge and fresh water inflows, pumping depressions near the coast, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin. Fortunately, no seawater intrusion is currently observed in existing monitoring wells, as demonstrated by the different tools and analyses that were used to investigate for evidence of seawater intrusion:

- Piper diagrams for groundwater samples collected from depth-discreet monitoring wells during Water Year 2010 show no changes towards seawater.
- No groundwater samples analyzed with Stiff diagrams are indicative of incipient seawater intrusion.
- Wells with chloride concentration increases over the past year are: PCA-W deep, PCA-E shallow, MSC shallow, FO-09 shallow, FO-9 deep, FO-10 deep, Sentinel Well 1 at 1,140 ft, Sentinel Well 1 at 1,390 ft, Sentinel Well 3 at 870 ft, and Sentinel Well 3 at 1,275 ft. Although the increases mentioned above do not indicate seawater intrusion, their future trends must be continued to be followed. Stiff and Piper diagrams for these wells do not indicate seawater intrusion, and it is likely that the increase is merely a localized fluctuation that is unrelated to seawater intrusion. No additional monitoring is warranted.
- Of the wells from last year's SIAR that had increasing chloride concentrations, the deep Fort Ord 10 well is the only monitoring well that continued with an increase over the past year. Stiff and Piper diagrams for this well do not indicate seawater intrusion, and it is likely that the increase is merely a localized fluctuation that is unrelated to seawater intrusion. No additional monitoring is warranted.
- No wells display decreasing sodium/chloride ratios that would indicate seawater intrusion.
- Maps of chloride concentrations do not show chlorides increasing towards the coast.
- Although production wells have a different water quality than the monitoring wells, this is probably as a result of them being screened across both shallow and deep zones. The production well water qualities are not indicative of seawater intrusion.
- Groundwater production in the Seaside Groundwater Basin remained the same as Water Year 2009. The amount pumped, 4,547.6 acre-feet, is less than the Court-mandated operating yield of 5,600 acre-feet per year. The lower than historic pumping is a result of implementing the Court-mandated triennial reduction in an effort to bring the basin closer to hydrologic balance which is necessary to prevent seawater intrusion.

- Groundwater levels continue to be below preliminary protective elevations in all deep target monitoring wells (MSC deep, PCA-W, and Sentinel Well 3). Two of the three shallow wells' groundwater levels are above protective elevations: PCA-W shallow and CDM-MW4. MSC shallow remains below preliminary protective elevations.

Based on the findings of this report, the following recommendations should be implemented to continue to monitor and track potential seawater intrusion.

1. Semi-Annual Water Quality Sampling in Well SBWM-4

Continue to collect semi-annual samples at sentinel well SBWM-4 because chloride concentrations from a depth of 900 feet below surface remain greater than 250 mg/L.

2. Continue to Analyze and Report on Water Quality Annually

Seawater intrusion is a threat, and data must be analyzed regularly to identify incipient intrusion. Maps, graphs, and analyses similar to what are found in this report should continue to be developed every year.

3. Refine Preliminary Protective Groundwater Elevations

It is recommended that the preliminary protective groundwater elevation estimated during modeling (HydroMetrics LLC, 2009b) be refined using final calibrated aquifer properties from the Seaside Basin groundwater flow model. It is expected that the protective elevations will be decreased up to a few feet, which will make them more practical to meet.

ATTACHMENT 12

**SEASIDE GROUNDWATER BASIN
MANAGEMENT AND MONITORING PROGRAM
ANTICIPATED 2011 WORK PLAN**

Seaside Groundwater Basin Management and Monitoring Program FY 2011 Work Plan

The tasks outlined below are those that are anticipated to be performed during 2011. Some Tasks listed below are specific to 2011, while others Tasks recur throughout the program, such as data collection and database entry, and Program Administration Tasks.

Within the context of this document the term "Consultant" refers either to a firm providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term "Contractor" refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.

M.1 Program Administration

M. 1. a. Project Budget and Controls (\$0)	Consultants will provide monthly or bimonthly invoices to the Watermaster for work performed under their contracts with the Watermaster. Consultants will perform maintenance of their internal budgets and schedules, and management of their subconsultants. The Watermaster will perform management of its Consultants.
M. 1. b. Assist with Board and TAC Agendas (\$0)	Watermaster staff will prepare Board and TAC meeting agenda materials. No assistance from Consultants is expected to be necessary to accomplish this Task.
M. 1. c. & M. 1. d Preparation for and Attendance at Meetings (\$5,150)	<p>The Consultants' work will require internal meetings and possibly meetings with outside governmental agencies and the public. For meetings with outside agencies, other Consultants, or any other parties which are necessary for the conduct of the work of their contracts, the Consultants will set up the meetings and prepare agendas and meeting minutes to facilitate the meetings. These may include planning and review meetings with Watermaster staff. The costs for these meetings will be included in their contracts, under the specific Tasks and/or subtasks to which the meetings relate. The only meeting costs that will be incurred under Tasks M.1.c and M.1.d will be:</p> <ul style="list-style-type: none"> • Those associated with attendance at TAC meetings (either in person or by teleconference connection), including providing written monthly progress reports to the Watermaster for inclusion in the agenda packets for the TAC meetings, when requested by the Watermaster to do so. These progress reports will typically include project progress that has been made, problem identification and resolution, and planned upcoming work. and • From time-to-time when Watermaster staff asks Consultants to make special presentations to the Watermaster Board and/or the TAC, and which are not included in the Consultant's contracts for other tasks. <p>Appropriate Consultant representatives will attend TAC meetings when requested to do so by Watermaster Staff (either in person or by teleconference connection), but will not be asked to prepare agendas or meeting minutes. As necessary, Consultants may provide oral updates to their progress reports (prepared under Task M.1.d) at the TAC meetings.</p>
M. 1. e. Peer Review of Documents and Reports (\$3,100)	When requested by the Watermaster staff, Consultants may be asked to assist the TAC and the Watermaster staff with peer reviews of documents and reports prepared by various other Watermaster Consultants and/or entities.
M. 1. f. QA/QC (\$0)	A Consultant (MPWMD) will provide general QA/QC support over the Seaside Basin Monitoring and Management Program.

I. 2 Comprehensive Basin Production, Water Level and Water Quality Monitoring Program

I. 2. a. Database Management

- | | |
|---|---|
| <p>I. 2. a. 1
 Conduct Ongoing Data Entry and Database Maintenance/Enhancement (\$13,000)</p> | <p>The database will be maintained by a Consultant performing this work for the Watermaster. Either one of the other Consultants or the Watermaster staff will enter new data into the consolidated database. Such data will include water production volumes, water quality and water level data, and such other data as may be appropriate. The database programming was enhanced in 2010 at the direction of the Watermaster to improve the usefulness and "user friendliness" of the database. No further enhancements are anticipated during 2011.</p> |
| <p>I. 2. a. 2
 Verify Accuracy of Production Well Meters (\$0)</p> | <p>To ensure that water production data is accurate, the well meters of the major producers were verified for accuracy during 2009. No additional work of this type is anticipated during 2011.</p> |

I. 2. b. Data Collection Program

- | | |
|--|---|
| <p>I. 2. b. 1.
 Site Representation and Selection. (\$0)</p> | <p>The monitoring well network review that was started in 2008 has been completed, and sites have been identified where future monitoring well(s) could be installed, if it is deemed necessary to do so in order to fill in data gaps. No further work of this type is anticipated in 2011.</p> |
| <p>I. 2. b. 2.
 Collect Monthly Manual Water Levels. (\$3,450)</p> | <p>Each of the monitoring wells will be visited on a monthly basis. Water levels will be determined by either taking manual water levels using an electric sounder, or by dataloggers.</p> |
| <p>I. 2. b. 3.
 Collect Quarterly Water Quality Samples. (\$68,600)</p> | <p>Water quality data will be collected quarterly from certain of the monitoring wells. This data may come from water quality samples that are taken from these wells and submitted to a State Certified analytic laboratory for general mineral and physical suite of analyses, or the data may come from induction logging of these wells and/or other data gathering techniques. The Consultant selected to perform this work will make this judgment based on consideration of costs and other factors. This Task includes \$5,000 to retrofit the wells that are sampled on an annual basis to use the new low-flow purge approach for getting water quality samples. The wells that are sampled quarterly have previously been retrofitted.</p> |
| <p>I. 2. b. 4.
 Update Program Schedule and Standard Operating Procedures. (\$0)</p> | <p>The TAC, with assistance from Consultants, has conducted periodic reviews of the data collection program. Only a few small improvements have been recommended in recent years, and these recommendations have been implemented. No additional work of this type is anticipated in 2011.</p> |
| <p>I. 2. b. 5.
 Monitor Well Construction (\$0)</p> | <p>An additional monitoring well was installed in 2009. No further work of this type is anticipated in 2011.</p> |
| <p>I. 2. b.6
 Reports (\$6,900)</p> | <p>The groundwater level and quality monitoring will be conducted on a monthly, quarterly, and annual basis, as described in the Consultant's Scope of Work. Reports summarizing data collected and analyzed will be submitted to the Watermaster on a schedule to be established during the year. Reports will include:</p> <ul style="list-style-type: none"> • Water Quality and Water Level Quarterly Reports <p>An Annual Water Quality and Water Level Report</p> |

I. 3 Basin Management

**I. 3. a.
Enhanced Seaside Basin
Groundwater Model
(Costs listed in subtasks
below)**

As a result of the data obtained during Phase 1, including constructing new coastal sentinel monitoring wells and developing a consolidated database of groundwater production, water levels, and water quality, it was concluded that at that time it was not necessary to develop a new Model. Preliminary conclusions from work performed on preparing the Basin Management Action Plan in 2008, along with comments and questions from Technical Advisory Committee and Board members, indicated that it was desirable to update the existing Model during 2009, so that it could be used as more data becomes available.

**I.3.a.1
Update the Existing
Model (\$0)**

The existing Model, described in the report titled "Groundwater Flow and Transport Model" dated October 1, 2007, was updated in 2009 in order to develop protective water levels, and to evaluate replenishment scenarios and develop answers to Basin management questions (Tasks I.3.a.2 and I.3.a.3). This work was done by a Consultant hired by the Watermaster. No further work of this type is anticipated in 2011.

**I. 3. a. 2
Develop Protective Water
Levels (\$25,000)**

A series of cross-sectional models was created in order to develop protective water levels for selected production wells, as well as for the Basin as a whole. This work was done in 2009 by a Consultant hired by the Watermaster (HydroMetrics), and is discussed in Hydrometrics' "Seaside Groundwater Basin Protective Water Elevations Technical Memorandum." In 2010 further work was scheduled and budgeted to be done to refine these protective water levels to find the most cost-effective approach to provide the desired degree of protection. However, not all of the information needed to perform the refinements was available in 2010, so this Task has been rescheduled to occur in 2011.

**I. 3. a. 3
Evaluate Replenishment
Scenarios and Develop
Answers to Basin
Management Questions
(\$25,000)**

The updated Model was used to evaluate different scenarios to determine such things as the most effective methods of using supplemental water sources to replenish the Basin and/or to assess the impacts of pumping redistribution. This work was done in 2009 by a Consultant hired by the Watermaster (HydroMetrics), and is described in HydroMetrics' "Seaside Groundwater Basin Groundwater Model Report." In 2010 HydroMetrics used the updated Model to develop answers to some questions associated with Basin management. In 2011 if requested by the Watermaster additional work may be performed to answer additional questions.

**I. 3. b.
Complete Preparation of
Basin Management Action
Plan (\$0)**

The Watermaster's Consultant completed preparation of the Basin Management Action Plan (BMAP) in February 2009. The BMAP serves as the Watermaster's long-term seawater intrusion prevention plan. The Sections that are included in the BMAP are:

- Executive Summary
- Section 1 – Background and Purpose
- Section 2 – State of the Seaside Groundwater Basin
- Section 3 – Supplemental Water Supplies
- Section 4 –Groundwater Management Actions
- Section 5 – Recommended Management Strategies
- Section 6 – References

The only work which is anticipated to be performed on the BMAP in 2011 is discussed under Task I. 3. c.

<p>I. 3. c. Refine and/or Update the Basin Management Action Plan (\$25,000)</p>	<p>During 2011 it may be beneficial to update the BMAP based on new data, and/or knowledge that is gained from the work described under Tasks I. 3. a. 2 and/or I. 3. a. 3. Such work might involve issues pertaining to Basin storage capacity, water storage rights, or pumping redistribution strategies. This work was originally scheduled and budgeted for 2010, but not all of the information needed to update the BMAP was available, so the updating has been rescheduled to occur in 2011. This task is included primarily for budgeting purposes in the event such work is deemed necessary.</p>
<p>I. 3. d. Evaluate Coastal Wells for Cross-Aquifer Contamination Potential (\$10,000)</p>	<p>If seawater intrusion were to reach any of the coastal wells in any aquifer, and if a well was constructed without proper seals to prevent cross-aquifer communication, or if deterioration of the well had compromised these seals, it would be possible for the intrusion to flow from one aquifer to another. In 2010 a preliminary review of the well construction records for each of the coastal wells was made. As a result of that review it was deemed desirable to further evaluate certain higher-risk wells in 2011 to determine whether or not they were properly constructed so as to prevent such cross-aquifer contamination from occurring. As part of this further evaluation, records will also be reviewed to determine whether there is any indication of well seal deterioration that would lead to the potential for cross-aquifer contamination. A report summarizing the findings of this further evaluation will be prepared, with recommendations for any further followup work that should be done.</p>

I. 4 Seawater Intrusion Response Plan (formerly referred to as the Seawater Intrusion Contingency Plan)

<p>I. 4. a. Oversight of Seawater Intrusion Detection and Tracking (\$5,750)</p>	<p>A Consultant will provide general oversight over the Seawater Intrusion detection program.</p>
<p>I. 4. b. Analyze and Map Water Quality from Coastal Monitoring Wells (costs included above under Task I. 4. a)</p>	<p>Annual chloride concentration maps will be produced incorporating the data from the coastal wells. Data from the Phase 1 coastal sentinel wells will be used to develop time series graphs.</p>
<p>I. 4. c. Annual Report- Seawater Intrusion Analysis (\$25,750)</p>	<p>At the end of each water year, a Consultant will reanalyze all water quality data. Semi-annual chloride concentration maps will be produced for each aquifer in the basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. The annual EM logs will be analyzed to identify changes in seawater wedge locations. All analyses will be incorporated into an annual report that follows the format of the initial, historical data report. Potential seawater intrusion will be highlighted in the report, and if necessary, recommendations will be included. The annual report will be submitted for review by the TAC and the Board. Modifications to the report will be incorporated based on input from these bodies, as well as Watermaster staff.</p>
<p>I. 4. d. Complete Preparation of Seawater Intrusion Response Plan (\$0)</p>	<p>The Watermaster's Consultant (HydroMetrics) completed preparation of the long-term Seawater Intrusion Response Plans (SIRP) in February 2009. The Sections that are included in the SIRP are:</p> <ul style="list-style-type: none"> • Section 1 – Background and Purpose • Section 2 – Consistency with Other Documents • Section 3 – Seawater Intrusion Indicators and Triggers • Section 4 – Seawater Intrusion Contingency Actions • Section 5 - References <p>No further work on the SIRP is anticipated in 2011.</p>

I. 4. e. Refine and/or Update the Seawater Intrusion Response Plan (\$0)	At the beginning of 2009 it was thought that it might be beneficial or necessary to perform work to refine the SIRP and/or to update it based on new data or knowledge that was gained subsequent to the preparation of the SIRP. However, this did not prove to be necessary, and no further work of this type is anticipated in 2011.
I. 4. f. If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan (\$0)	The SIRP will be implemented if seawater intrusion, as defined in the Plan, is determined by the Watermaster to be occurring.

ATTACHMENT 13

**DOCUMENTS PERTAINING TO REAL PROPERTY AND WATER
RIGHTS ACTIVITIES DURING 2010
(SUPPORTING DOCUMENTS TO SECTION D)**

GARY S. FARRER
JOHN S. BRIDGES
DENNIS G. MCCAULEY
JACQUELINE P. MCMANUS
CHRISTOPHER E. RANETTA
DAVID C. SWEIGERT
SARA B. BOYNS
SHARILYN E. PAYNE
BRIAN E. TURLINGTON
AMBER D. PASSNO
CAROL S. HILBURN
SHERYL L. AINSWORTH
TROY A. KINGSHAVEN
IAN H. TOSINA

FENTON & KELLER

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

2401 MONTEREY SALINAS HIGHWAY
POST OFFICE BOX 791
MONTEREY, CALIFORNIA 93942-0791
TELEPHONE (831) 373-1241
FACSIMILE (831) 373-7219
www.FentonKeller.com

LEWIS L. FENTON
1925-2005

OF COUNSEL

CHARLES R. KELLER
THOMAS H. JAMISON
GARY W. SAWYERS

RETIRED

RONALD F. SCHOLL

September 29, 2010

DAVID C. SWEIGERT

Dsweigert@FentonKeller.com
ext. 202

Dewey D. Evans
Seaside Basin Watermaster
2600 Garden Road, Suite 228
Monterey, CA 93940

Re: Notice of Transfer of Parcel and Assignment of Rights
Our File: 30646.29192

Dear Mr. Evans:

This is to inform the Watermaster that D.B.O. Development No. 27 ("D.B.O. No. 27"), a party to the Seaside Basin Adjudication, has conveyed the real property it owned that is subject to the Judgment and Amended Decision rendered by the Court in California American Water v. City of Seaside, et al. to D.B.O. Development No. 30 ("D.B.O. No. 30"). In addition, D.B.O. No. 27 has assigned to D.B.O. No. 30 all its right, title, and interest under Judgment and Decision, including but not limited to its water rights, water allocations, carryover credits, storage rights, and all other rights defined in the Judgment and Decision. D.B.O. No. 27 has also delegated, and D.B.O. No. 30 has agreed to assume, all D.B.O. No. 27's duties and obligations under the Judgment and Decision.

Please modify the records of the Watermaster to reflect D.B.O. No. 30 as the party and rights holder under the Judgment and Amended Decision rather than D.B.O. No. 27. In the future, please direct all notices, assessments, agendas, agenda packets, reports, and other communications from the Watermaster to D.B.O. No. 30 rather than D.B.O. No. 27. Please continue to include Patrick Orosco as the agent contact and me as the attorney of record for D.B.O. No. 30. Mail should be addressed to Mr. Orosco in care of the Orosco Group, 10 Harris Court, Suite B-1, Monterey CA, 93940.

Under paragraph III.P.3 of the Amended Decision, the Judgment and Decision become binding on D.B.O. No. 30 as a successor in interest to D.B.O. No. 27. This transfer and assignment includes all rights and obligations under the Judgment and Decision, and not just a portion of a production allocation. Therefore, as we discussed, Rule 9.0 of the Watermaster's Rules and Regulations is inapplicable to this transfer and assignment. We understand the

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Dewey D. Evans
September 29, 2010
Page Two

Watermaster has not required compliance with Rule 9.0 in the past in similar circumstances when a party to the Judgment and Amended Decision has transferred all of its right, title, and interest to a property to which the water rights under the Judgment and Amended Decision are attached.

Please contact me with any questions or comments.

Very truly yours,

FENTON & KELLER
A Professional Corporation

A handwritten signature in blue ink that reads "David C. Sweigert". The signature is written in a cursive style with a large, looped "S" at the end.

David C. Sweigert

DCS:tob

cc: Patrick Orosco

DAMON LAW OFFICES

July 28, 2010

Via Email

Dewey Evans
Watermaster

RE: SNG/Cal Am Front Loading Agreement

Dear Dewey:

Attached please find a Front Loading Agreement between Security National Guaranty and California American Water which is a form of wheeling agreement moving SNG adjudicated water pumping to be produced from Cal Am's more inland wells. We have previously provided a copy of this agreement to the Watermaster in various documents that were submitted to the Courts in 2009.

The Watermaster Board previously approved the wheeling and relocation of production in September 2008. Judge Randall in his May 11, 2009 order outlined that where there was a front loading delivery agreement there are no issues with the Carmel River. While we believe this Agreement falls within the previously approved Watermaster action of September 2008, we request that the Watermaster find this agreement is adequate and conforms with any appropriate Watermaster rules and regulations and the Court's May 11, 2009 Order at your August 4, 2010 meeting.

Sincerely,
Damon Law Offices



Sheri L. Damon

Enc.

RTR SWANTON ROAD DAVENPORT CA 95017

**AGREEMENT BETWEEN SECURITY NATIONAL GUARANTY, INC.
AND CALIFORNIA AMERICAN WATER
REGARDING FRONT-LOADING DELIVERY OF WATER**

This Agreement dated May 16, 2009, made by and between Security National Guaranty, Inc. (SNG) and California American Water (collectively, the "Parties") and is entered into with respect to the following:

WHEREAS, California American Water (CAW) is a utility which owns and operates wells and infrastructure and a water distribution system which serves properties located within the Seaside Basin and generally on the Monterey Peninsula;

WHEREAS, SNG is the owner and developer of property in Sand City, California;

WHEREAS, the Amended Decision governing the Seaside Basin Adjudication, (*California American v. City of Seaside*, et al., Monterey County Superior Court, Case No. M66343) established that SNG has the right and title to produce and use 149 acre-feet of Seaside Basin water per year;

WHEREAS, CAW and SNG filed a co-application with the Monterey Peninsula Water Management District (WMD) on or about September 15, 2008 requesting an amendment to the CAW water distribution system permit to acknowledge the delivery of SNG of up to 90 acre feet per year of SNG's Court-adjudicated 149 acre-feet of entitled Seaside Basin water to CAW for the purpose of moving the production of such water to the inland wells operated by CAW and for delivery back to the SNG property; and

WHEREAS, the permit application is being reheard pursuant to an order issued by the Monterey Court;

WHEREAS, the Parties enter into this Agreement (1) to make clear that they intend to comply with the terms of the Amended Decision, as clarified by the Monterey Court in its ruling on April 29, 2009 and subsequent order filed on May 11, 2009 in Monterey County Superior Court, case number M66343; (2) to ensure operationally that only Seaside Basin water is produced and stored for the benefit of the SNG property in advance of the SNG demand for such water, and (3) to provide assurance (in addition to accounting and reporting requirements) that there will be no temporal or other impact on waters produced or stored from other sources, including without limitation, the Carmel River.

NOW THEREFORE, the Parties agree as follows:

1. Upon satisfaction of the conditions of approval and issuance of the CAW/SNG water distribution system permit by the WMD (or, alternatively issuance of said permit or authorization granted by order of an applicable

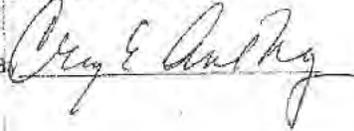
court) and installation of the master water meter connection to the SNG property by CAW, SNG agrees to lease up to 90 acre feet per year of its allocated water production under the Seaside Basin Adjudication to CAW. CAW agrees to use water produced in its inland Seaside Wells to serve the SNG property with SNG's adjudicated water, up to 90 acre-feet per year.

- 2. CAW agrees to commence pumping for the SNG property from its inland Seaside Wells and storage of said water at least one month prior to the setting (for accounting purposes) of the master meter on the SNG property. After the first day after the setting of the SNG meter, CAW will pump an estimated amount of Seaside Basin water into the Hilby tanks, or other existing CAW storage facility. CAW shall take whatever steps necessary to ensure that the amount of SNG adjudicated water produced exceeds the amount of SNG adjudicated water delivered to the SNG property (defined as "front-loading" delivery).
- 3. CAW shall as frequently as necessary produce SNG's Seaside Basin adjudicated water in an amount that ensures that the SNG property will be supplied only with Seaside Basin water. SNG and Cal Am mutually agree to provide such notification and cooperation to one another as may be necessary to achieve the purposes and implementation of this Agreement.
- 4. Nothing in this Agreement shall be construed to prohibit the "mixing of molecules" from different sources or supplies of water, which is a practice recognized and allowed by California law and by the Amended Decision, as clarified by the Monterey Court on April 29, 2009, and memorialized in the Court's May 11, 2009 Order.
- 5. The Parties shall provide further assurances in writing or other documentation as necessary in order to achieve the purposes and implementation of this Agreement.

DATED:

May 20, 2009

California American Water

By: 

DATED:

May 18, 2009

Security National Guaranty, Inc.

By: 
EDMOND GHANDOUR
President

ATTACHMENT 14

**GROUNDWATER MODELING REPORT FOR
SCENARIO 1**



519 17th Street, Suite 500
Oakland, CA 94612

TECHNICAL MEMORANDUM

To: Bob Jaques
From: Derrick Williams
Date: September 1, 2010
Subject: Results from Scenario 1 – Increased Laguna Seca Alternative Producer Pumping

HydroMetrics WRI was asked to use the calibrated Seaside Basin Groundwater Model to simulate the anticipated groundwater impacts of the Alternative Producers in the Laguna Seca subarea increasing their current pumping rates by either 10% or 20%. These simulations were referred to as the 2010 Scenario 1 simulations. Although the 10% and 20% pumping rate increases are not currently planned, the Watermaster was interested in investigating the sensitivity of groundwater flows between subareas to potential pumping changes. This memorandum summarizes the results of those simulations.

Simulations

Three simulations were run as part of Scenario 1. The first simulation was a baseline simulation that repeated the Water Year 2009 pumping throughout the entire Seaside Basin for 22 years. The second simulation held the pumping from all Standard Producers and all Alternative Producers outside the Laguna Seca subarea constant at Water Year 2009 pumping rates: pumping rates for Alternative Producers in the Laguna Seca area were increased by 10% over Water Year 2009 rates. The pumping rate for the only Standard Producer in the Laguna Seca subarea, California American Water, was held constant at the Water Year 2009 rate. The third simulation was similar to the second simulation, but pumping rates for Alternative Producers in the Laguna Seca area were increased by 20% over Water Year 2009 rates. Recharge rates were maintained at a constant rate for all three simulations; representing the average recharge for the 1987 through 2008 period.

Water Budgets

Figure 1 shows the generalized water budget for the Laguna Seca subarea during the baseline simulation. The amount of water pumped out of the Laguna Seca subarea is approximately 1,127 acre-feet per year, and is represented by the dark blue line with diamond data markers. It is worth noting that in 2017, due to falling groundwater levels some wells dry out and pumping ceases at those wells for the remainder of the

simulation. The total pumping in the Laguna Seca subarea is therefore reduced from 1,127 acre feet per year to 1,106 acre-feet per year from 2017 onwards.

The other two groundwater losses are groundwater flow from the Laguna Seca subarea to the Northern Inland subarea, represented by the green line with triangular data markers; and groundwater flow to the Southern Coastal subarea, represented by the purple line with cross-shaped data markers. The sources of groundwater for the Laguna Seca subarea include: groundwater recharge from deep percolation of precipitation, represented by the orange line with diamond data markers; groundwater flowing into the Seaside Basin from outside the basin boundaries, represented by the cyan line with round data markers; and groundwater extracted from storage, represented by the red line with square data markers. The groundwater extracted from storage is manifested by lowered groundwater levels.

Although the flows into and out of the Laguna Seca subarea vary over time due to falling groundwater levels, on average 53% of the groundwater leaving the subarea is extracted by pumping, 32% of the groundwater leaving the subarea flows into the Northern Inland subarea, and 15% of the groundwater leaving the subarea flows into the Southern Coastal subarea. Of the two groundwater sources, shown on the upper half of Figure 1, that provide water to Laguna Seca subarea, 52% of the water comes from falling water levels (storage), and 48% of the water comes from outside the Basin.

Figures 2 and 3 summarize the results from simulations 2 and 3 in Scenario 1. Figure 2 shows water budget changes caused by increasing alternative producer pumping in the Laguna Seca subarea by 10%. Figure 3 shows water budget changes after increasing pumping by Laguna Seca subarea alternative pumpers by 20%.

The top blue line with diamond data markers on each chart represents the amount of additional pumping by the Laguna Seca subarea alternative producers. Increasing the alternative producer's pumping by 10% translates into an annual pumping increase of 54.4 acre-feet. Increasing the alternative producer's pumping in the Laguna Seca subarea by 20% translates into an annual pumping increase of 108.8 acre-feet. Note that the sharp dips in pumping difference on Figures 2 and 3 are due to wells that dried out in 2017 in simulation 1, drying out earlier in the two simulations of increased pumping. Specifically, the dips on the chart are due to the following: in simulation 1, wells start drying out in 2017, in simulation 2 (10% increase) wells start drying out in 2016, and in simulation 3 (20% increase) wells start drying out in 2015. When comparing the pumping difference in Figure 2 between simulation 2 and simulation 1, and Figure 3 between simulation 3 and simulation 1, the different timing of wells drying out is evident. During the years where simulation 1 has all wells pumping and simulation 2 or 3 has dried up wells, a dip will be observed. In 2017, the line representing pumping increases again because at that time, all simulations have the same number of wells that have gone dry.

The other four lines on each graph represent the sources of water that supply the additional pumping. The amount of additional pumping equals the sum of the four sources. In early years, water for increased pumping is supplied by a lowering of groundwater levels in the Laguna Seca subarea. Lower groundwater levels are shown on the two graphs as water extracted from storage. In later years, groundwater levels do not fall as quickly, and the relative amount of groundwater supplied by storage diminishes. This is offset by a reduction in the amounts of water flowing out of the Laguna Seca subarea and into the Southern Coastal and Northern Inland subareas. While water continues to flow from the Laguna Seca subarea into these other two subareas under both the 10% and 20% pumping increase simulations, it flows at reduced rates and thus provides less recharging benefit to those subareas than would be the case if there were no increases in pumping.

The light blue lines with round data markers on Figures 2 and 3 show that the most significant source of water in later years comes from outside the Seaside Basin. This is water that is captured from the Toro area or other surrounding areas. The second most significant source of water is water from the Northern Inland subarea. The decreased amount of flow to the Northern Inland subarea is shown on Figures 2 and 3 with the green lines with triangular data markers. As described in the paragraph above, the additional pumping by the alternative producers causes a reduction in groundwater flow that previously flowed from the Laguna Seca subarea, into the Northern Inland subarea. Similarly there is also a decrease in flow to the Southern Coastal subarea, although a much smaller amount of decrease than the decrease in flow to the Northern Inland subarea. This is shown on Figures 2 and 3 with the lavender lines and the “X” data markers.

Figure 4 shows the location of alternative producer wells in the Laguna Seca subarea, and supports the data shown on the two charts. The map shows that the alternative producer wells are located between the Northern Inland subarea and the Toro area; and are relatively distant from the Southern Coastal subarea. The cone of depression from these alternative producer wells will therefore reach into the Northern Inland subarea and Toro area well before they reach into the Southern Coastal subarea. Therefore, most of the water supplying the increased pumping is expected to come from storage, the Toro area, and a decrease in the amount of water flowing to the Northern Inland subarea. To supply the increased pumping there will also be a slight decrease in the amount of water flowing to the Southern Coastal subarea.

Figures 5 through 8 show the predicted amounts of additional groundwater drawdown that will occur after 5 and 22 years of pumping at the 10% and 20% increased rates.

Conclusions

Results from Scenario 1 lead to the following conclusions regarding pumping in the Laguna Seca subarea:

- At current pumping rates, groundwater levels in the Laguna Seca subarea will continue to decline. This is supported by the continued extraction of groundwater from storage shown in Figure 1.
- After 5 years of pumping at 10% increased rates, the groundwater levels in the vicinity of the two Pasadera wells, which is where the greatest drop in groundwater levels occurs, will be 3 feet lower than they would be without this increase in pumping. This grows to 5 feet lower after 22 years of 10% increased pumping rates.
- After 5 years of pumping at 20% increased rates, the groundwater levels in the vicinity of the two Pasadera wells will be 5 feet lower than they would be without this increase in pumping. This grows to 10 feet lower after 22 years of 20% increased pumping rates.
- Continued pumping even at current (Water Year 2009) rates is unsustainable because groundwater levels will eventually fall low enough to cause some wells to no longer be operational. This problem would be accelerated by increasing the pumping rates of the Alternative Producers within the Laguna Seca subarea.
- Increasing Alternative Producer's pumping rates by 10% or 20% reduces groundwater flow to the Southern Coastal subarea by only a minor amount because of the wells' distance from the Southern Coastal subarea. However, it considerably reduces groundwater flow into the Northern Inland subarea.
- The Laguna Seca subarea is not isolated. Although increasing pumping has only minor impacts on the Southern Coastal subarea, it has more significant impacts on groundwater flows into the Northern Inland subarea. Increasing Laguna Seca pumping also significantly impacts areas outside the Seaside Groundwater Basin, including the Toro area.

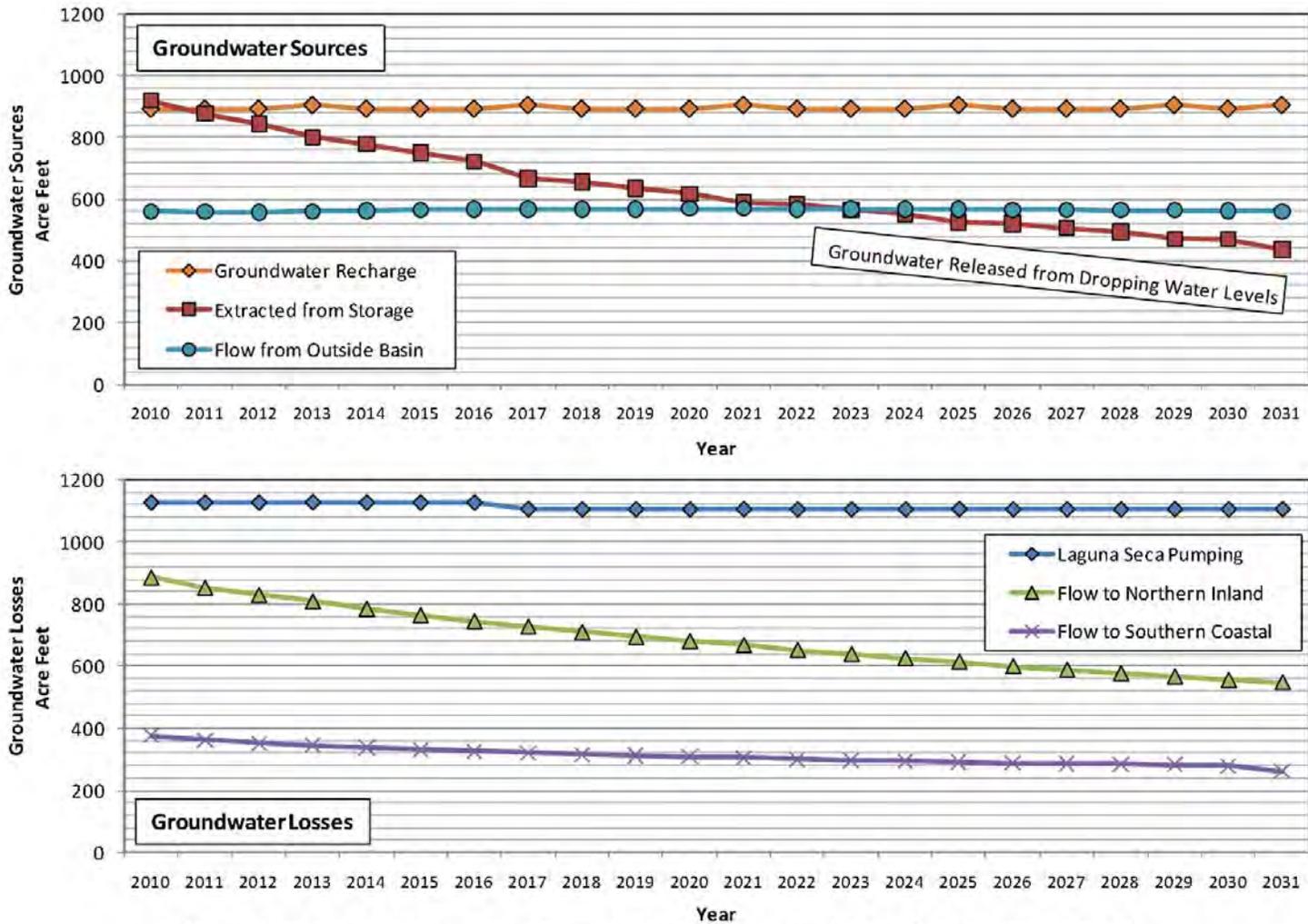


Figure 1: Generalized Laguna Seca Groundwater Budget under Existing Pumping (Simulation 1)

HydroMetrics Water Resources Inc. • 519 17th Street, Suite 500 • Oakland, CA 94612
 (510) 903-0458 • (510) 903-0468 (fax)

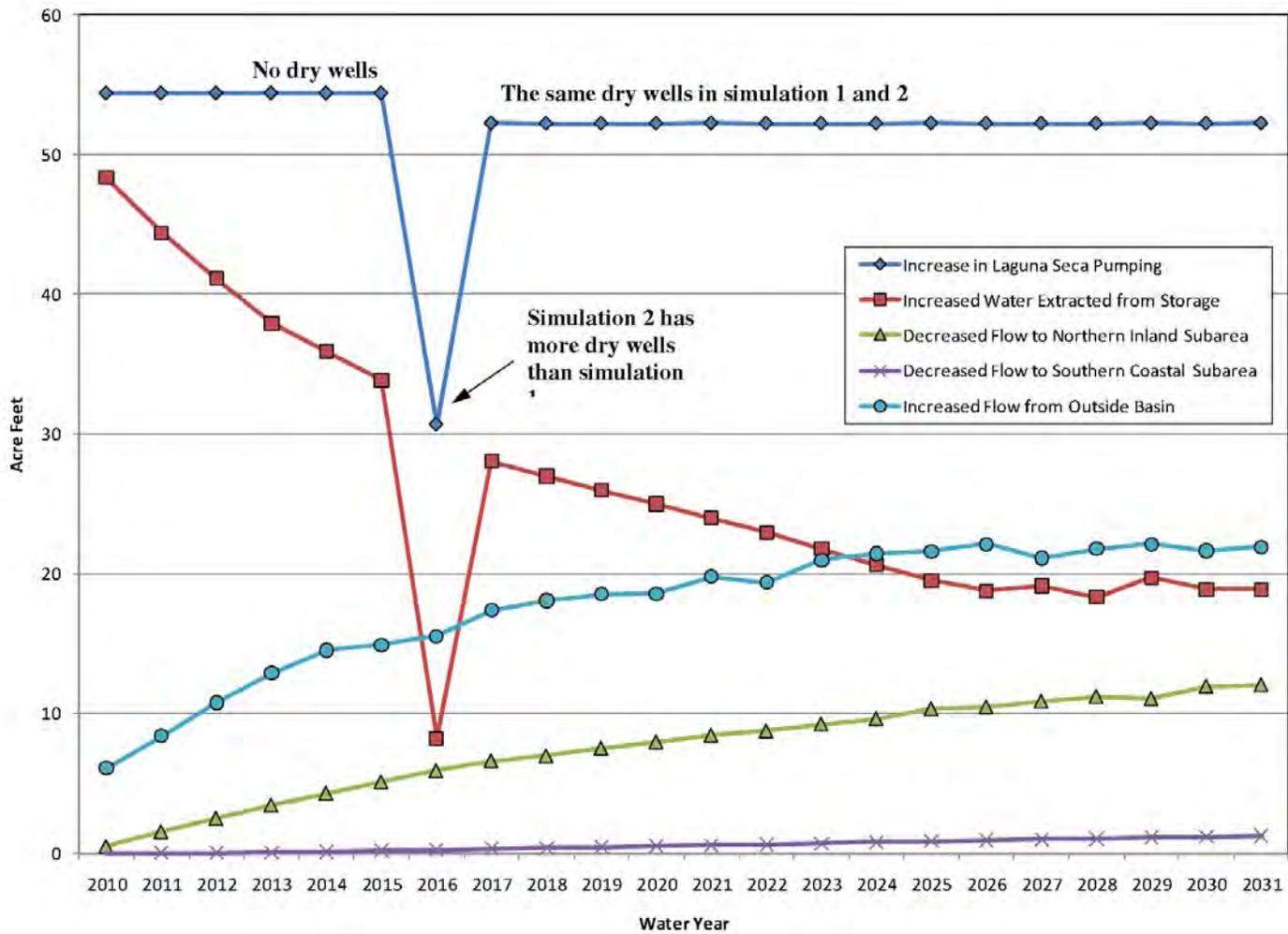


Figure 2: Changes in Water Budget Components from 10 Percent Pumping Increase (Simulation 2 less Simulation 1)

HydroMetrics Water Resources, Inc. • 519 17th Street, Suite 500 • Oakland, CA 94612
 (510) 903-0458 • (510) 903-0468 (fax)

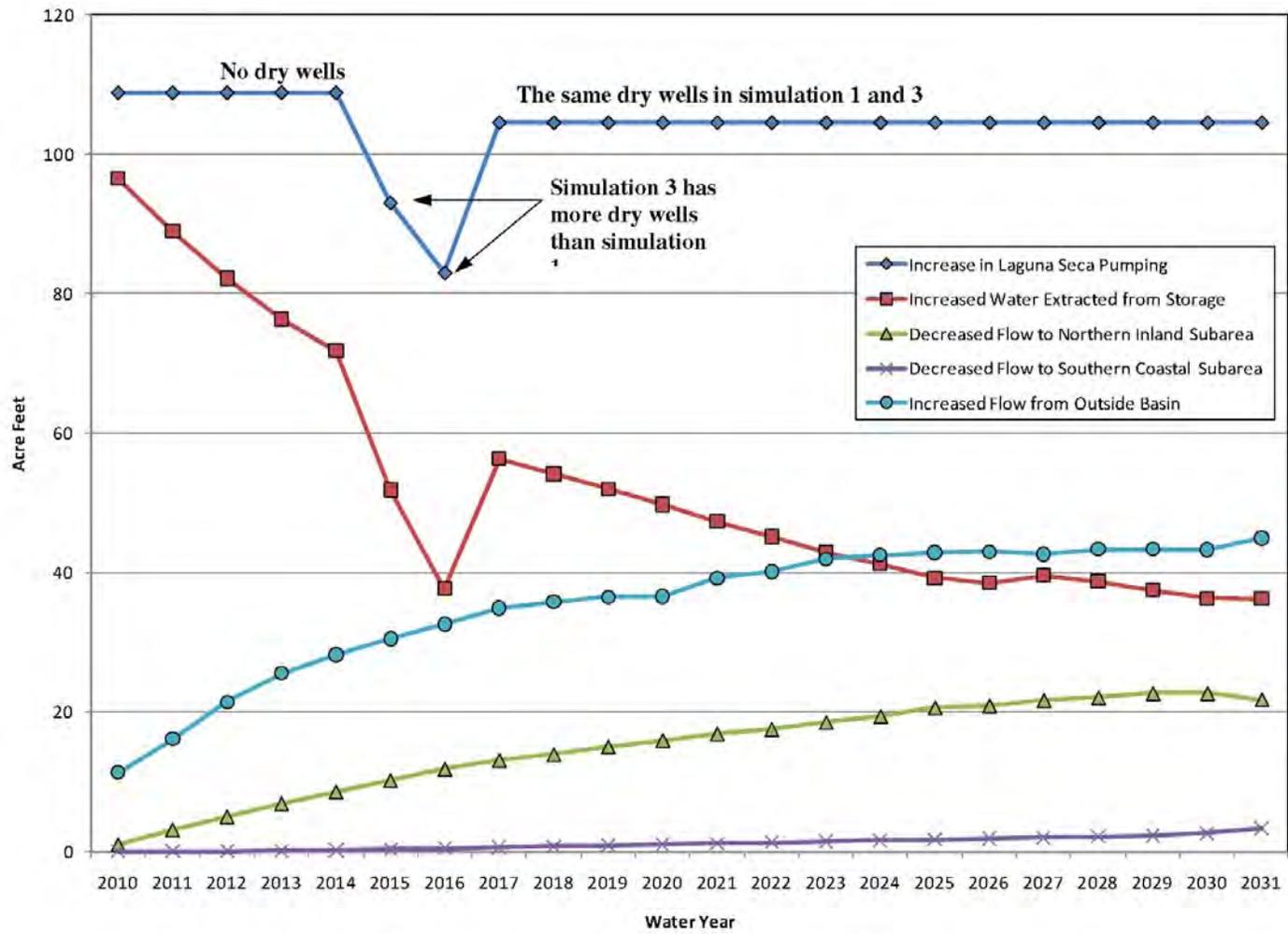


Figure 3: Changes in Water Budget Components from 20 Percent Pumping Increase (Simulation 3 less Simulation 1)

HydroMetrics Water Resources, Inc. • 519 17th Street, Suite 500 • Oakland, CA 94612
 (510) 903-0458 • (510) 903-0468 (fax)

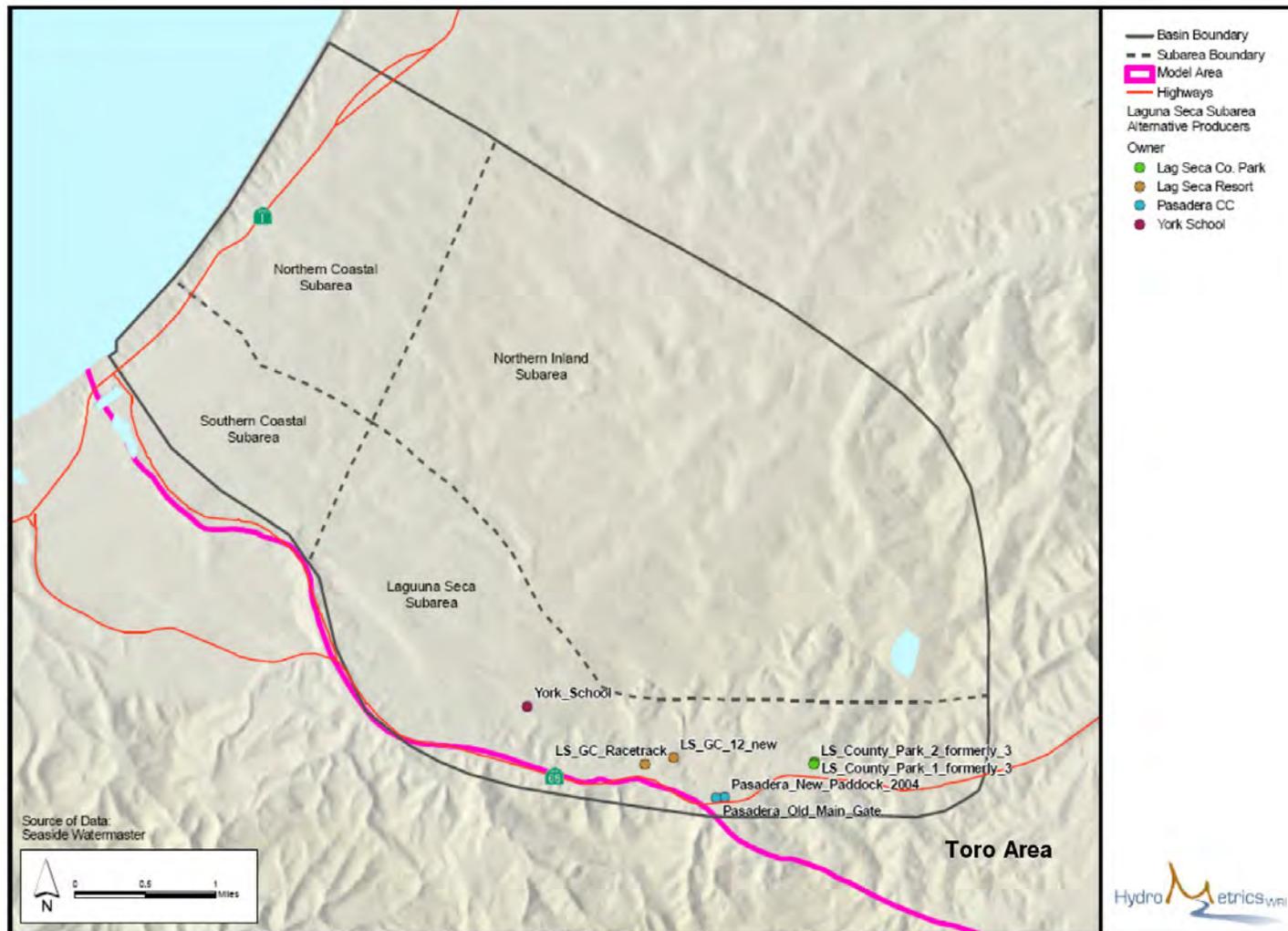


Figure 4: Location of Laguna Seca Subarea Alternative Producer Wells

*HydroMetrics Water Resources, Inc. • 519 17th Street, Suite 500 • Oakland, CA 94612
 (510) 903-0458 • (510) 903-0468 (fax)*

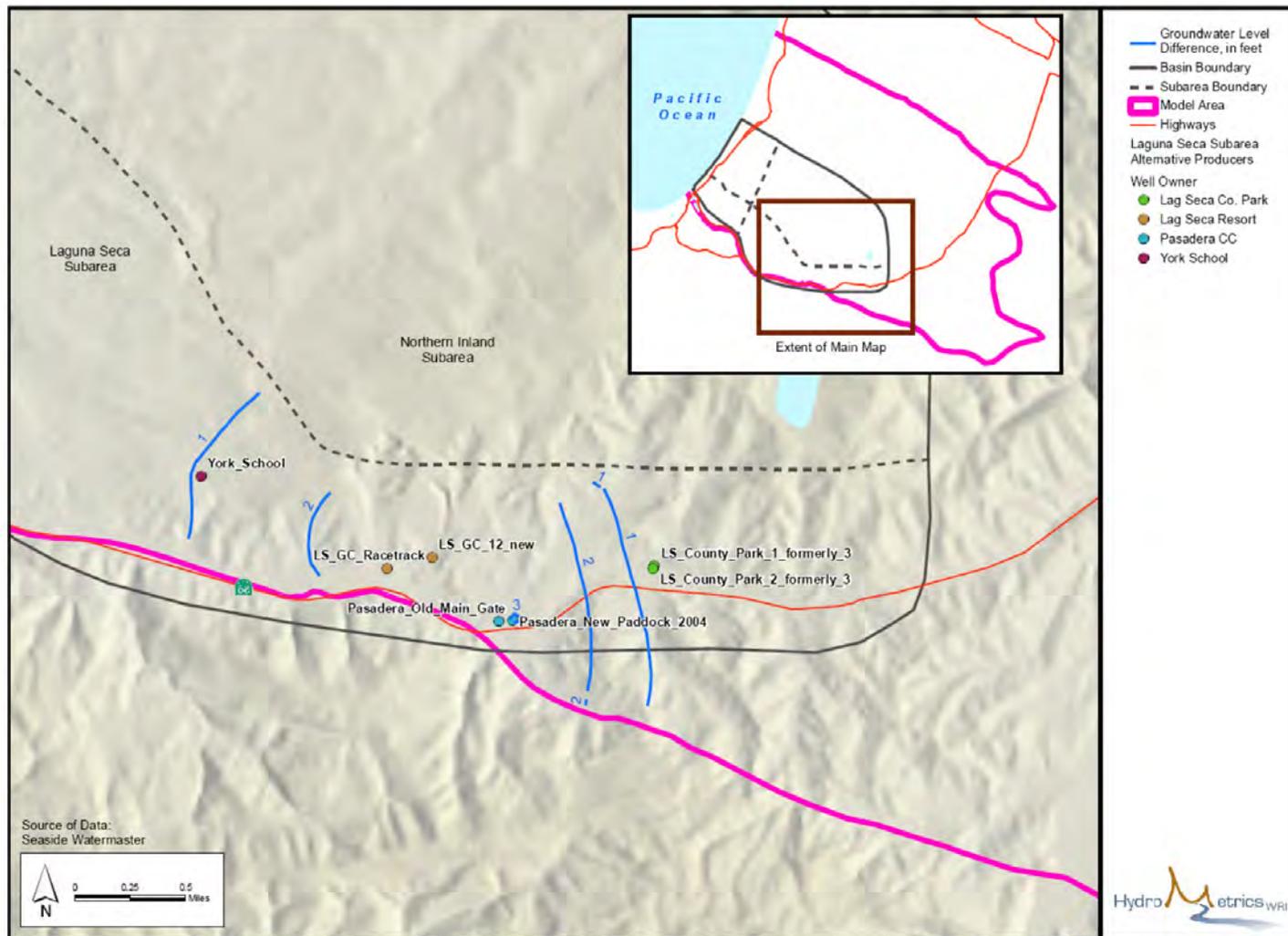


Figure 5: Five Year Prediction of Head Difference with 10% Increase in Laguna Seca Subarea Alternative Production

*HydroMetrics Water Resources, Inc. • 519 17th Street, Suite 500 • Oakland, CA 94612
 (510) 903-0458 • (510) 903-0468 (fax)*

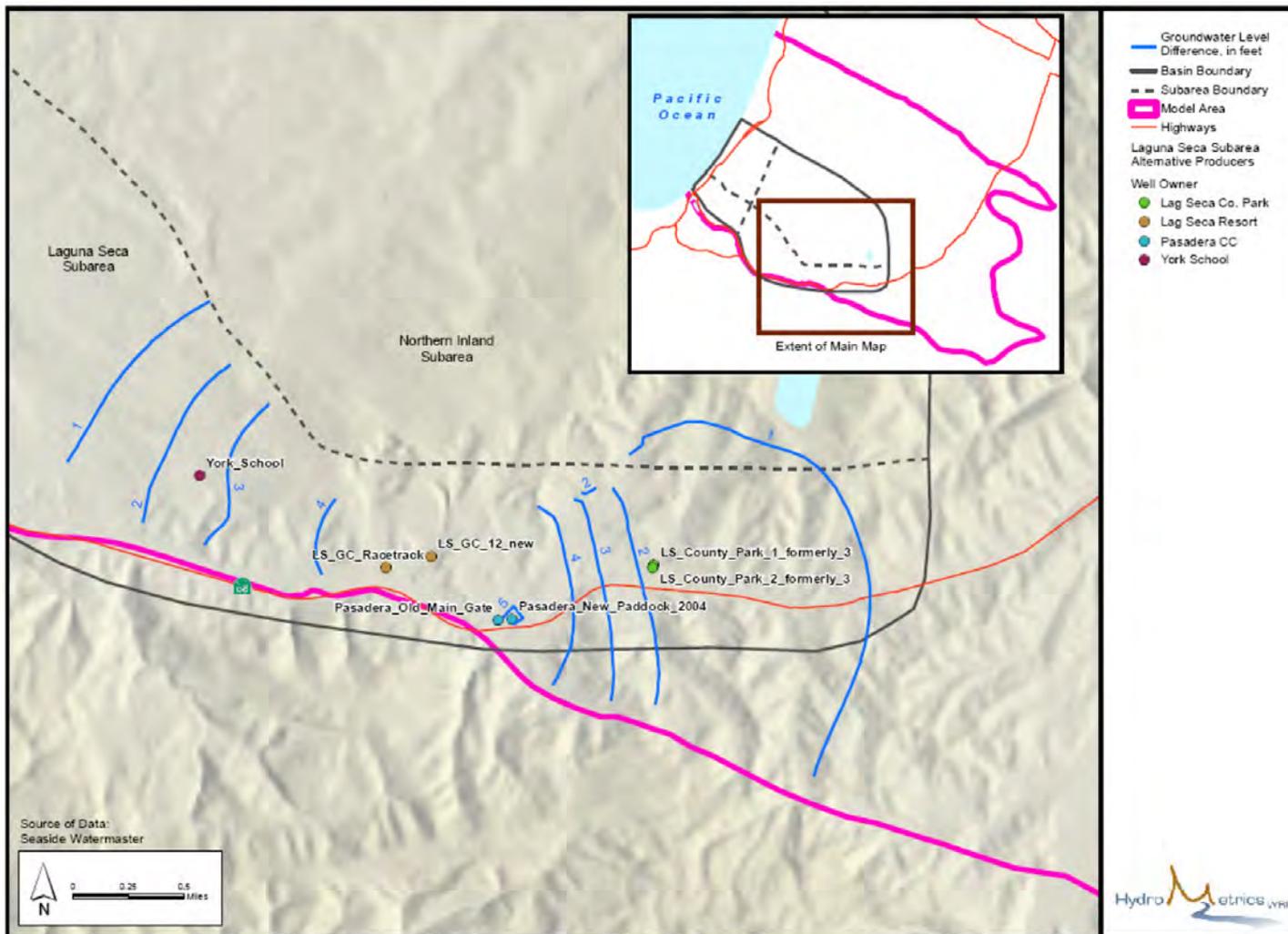


Figure 6: Twenty-two Year Prediction of Head Difference with 10% Increase in Laguna Seca Subarea Alternative Production

HydroMetrics Water Resources, Inc. • 519 17th Street, Suite 500 • Oakland, CA 94612
(510) 903-0458 • (510) 903-0468 (fax)

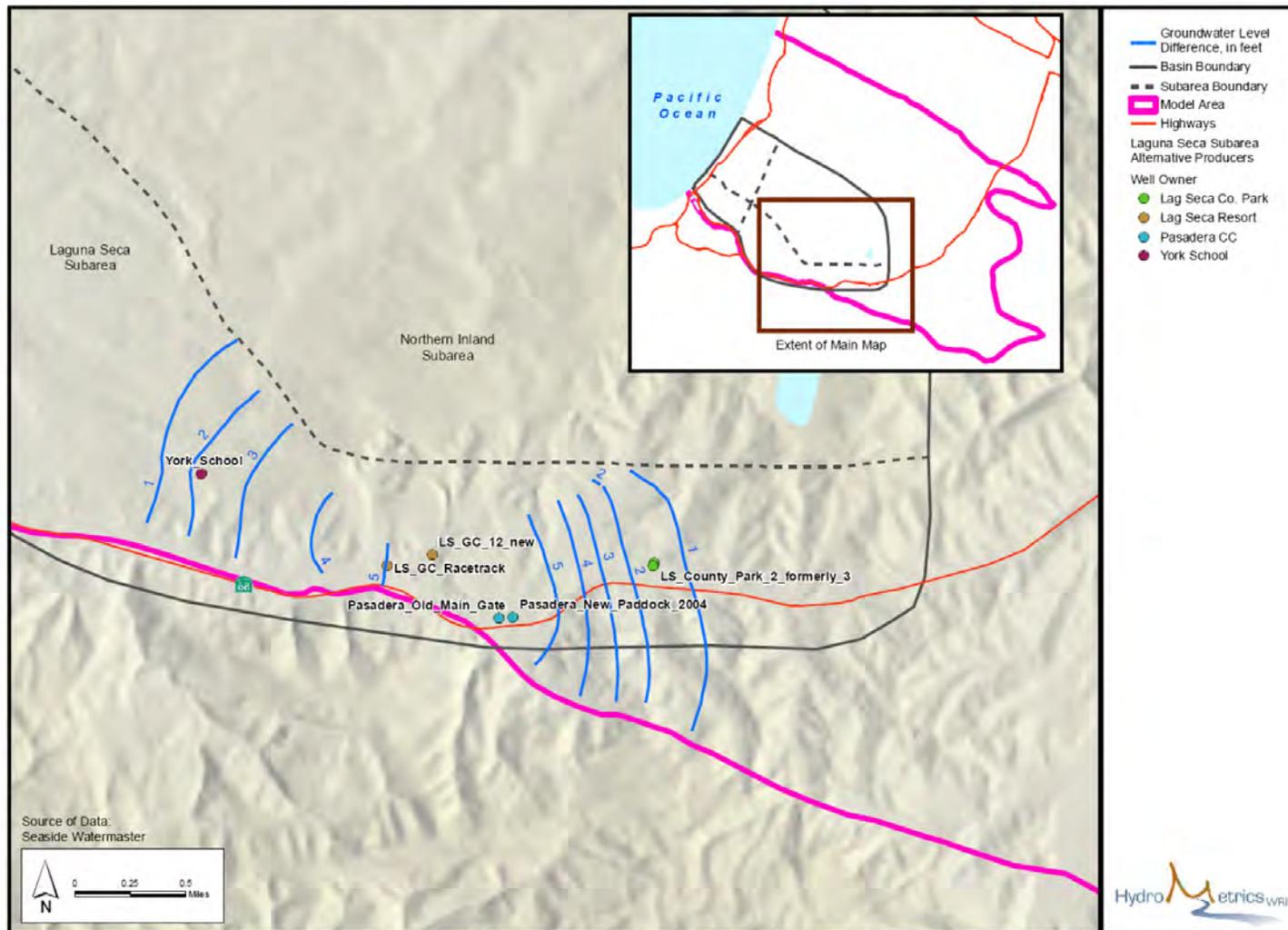


Figure 7: Five Year Prediction of Head Difference with 20% Increase in Laguna Seca Subarea Alternative Production

*HydroMetrics Water Resources, Inc. • 519 17th Street, Suite 500 • Oakland, CA 94612
 (510) 903-0458 • (510) 903-0468 (fax)*

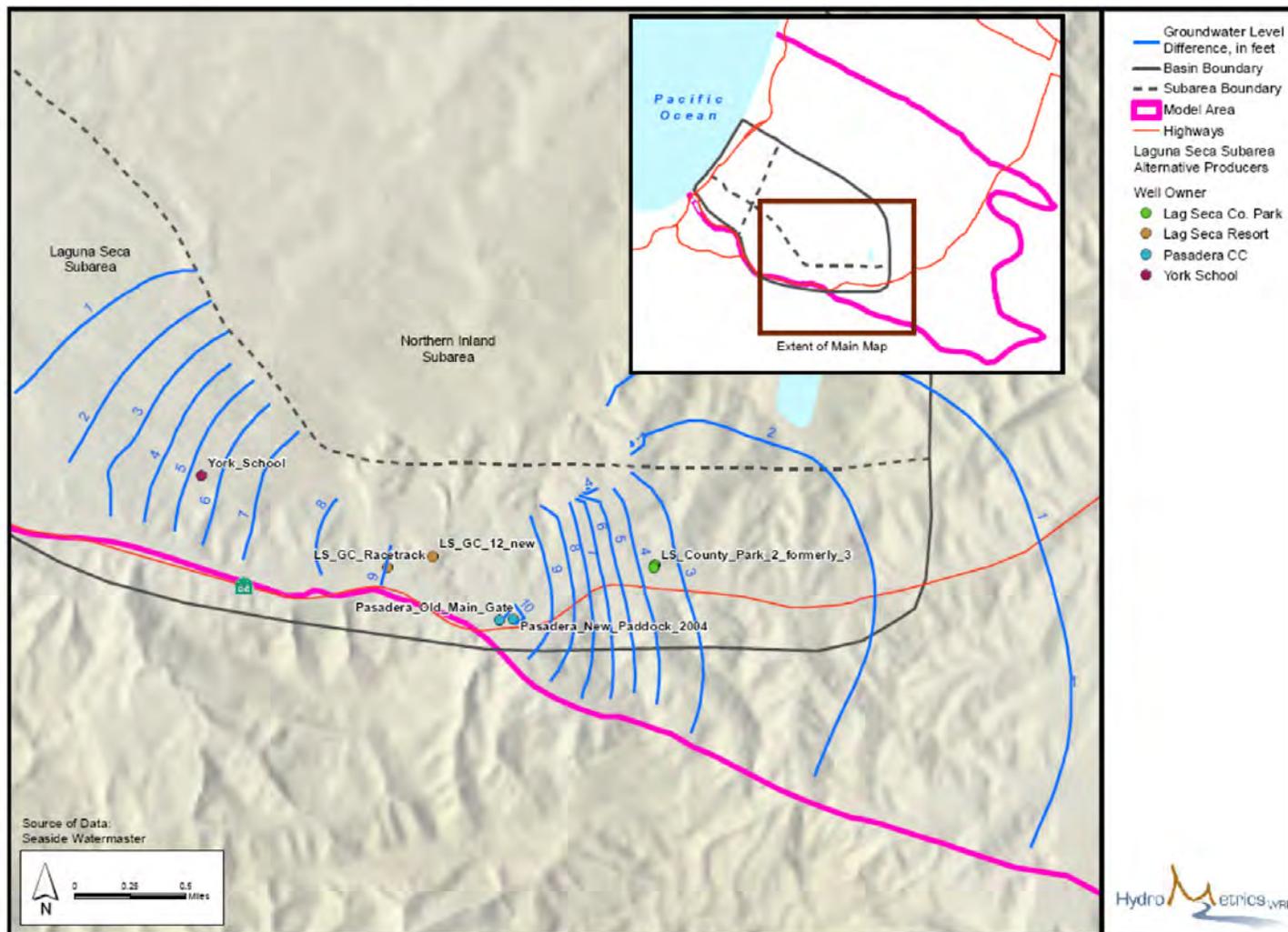


Figure 8: Twenty-two Year Prediction of Head Difference with 20% Increase in Laguna Seca Subarea Alternative Production

HydroMetrics Water Resources, Inc. • 519 17th Street, Suite 500 • Oakland, CA 94612
 (510) 903-0458 • (510) 903-0468 (fax)

ATTACHMENT 15

**WATERMASTER COURT FILING FOR
EXTENSION OF DEADLINE FOR FILING
THE ANNUAL REPORT TO COURT**

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

1 RUSSELL M. MGLOTHLIN (State Bar No. 208826)
2 RYAN C. DRAKE (State Bar No. 262580)
3 BROWNSTEIN HYATT FARBER SCHRECK, LLP
4 21 East Carrillo Street
5 Santa Barbara, CA 93101
6 Telephone: (805) 963-7000
7 Facsimile: (805) 965-4333
8
9 Attorneys for Defendant, CITY OF SEASIDE

10 SUPERIOR COURT OF THE STATE OF CALIFORNIA
11 FOR THE COUNTY OF MONTEREY

12 CALIFORNIA AMERICAN WATER,

13 Plaintiff,

14 vs.

15 CITY OF SEASIDE, et al.,

16 Defendants.

Case No. M66343

Assigned for All Purposes to the
Honorable Roger D. Randall (Ret.)

**REQUEST FOR EXTENSION OF TIME TO
FILE ANNUAL REPORT**

17 MONTEREY PENINSULA WATER
18 MANAGEMENT DISTRICT,

19 Intervenor,

20 MONTEREY COUNTY WATER
21 RESOURCES AGENCY,

22 Intervenor,

23 AND RELATED CROSS-ACTION.

24
25
26
27
28
SB 503928 v2-006640.0001

1

REQUEST OF EXTENSION OF TIME

1 **TO ALL PARTIES AND TO THEIR RESPECTIVE COUNSEL OF RECORD:**

2 **PLEASE TAKE NOTICE** that the City of Seaside, at the request and on behalf of the
3 Board of Directors of the Seaside Basin Watermaster (“Watermaster”),¹ hereby requests an
4 extension of time to file Watermaster’s 2009/2010 Water Year Annual Report until December 31,
5 2010. Watermaster requires an extension of time to file its Annual Report because it needs
6 additional time to prepare and have the Watermaster Board of Directors review, analyze, discuss
7 and approve the Annual Report, as well as to allow for public review.

8 Due to differing interpretations as to what constitutes “Available Replenishment Water” for
9 the Basin, the Declaration of Replenishment Water Available for Water Year 2010/11
10 (“Declaration”) that was on the Board’s November 3, 2010 Board of Directors agenda, was
11 disputed. (Declaration of Dewey Evans, attached hereto (“Evans Decl.”), at ¶ 4.) As such, the
12 Declaration was not approved by the Board. As a result, the Annual Report that was also on the
13 same agenda for Board consideration, was also not approved. (Evans Decl., at ¶ 4.)

14 The Board has asked Watermaster staff to reconsider the definition of “Available
15 Replenishment Water” and rework the Declaration and the Annual Report for the Board’s
16 December 1, 2010 regular Board meeting. The time between the end of the Water Year, September
17 30th, to the court’s deadline for the Annual Report under section III.L.3.x of the Decision,
18 November 15th, will not allow Watermaster staff sufficient time to organize necessary information
19 from the water producers in the Seaside Basin. Watermaster also needs additional time to organize
20 the necessary reports from consultants, other agencies, as well as standing and ad hoc committees,
21 to adequately prepare the Annual Report and have it reviewed by the Board before the filing
22 deadline. (Evans Decl., at ¶ 6.)

23 For all of the foregoing reasons, the City of Seaside on behalf of Watermaster requests an
24 extension of time until December 31, 2010, in which to file its Annual Report.

25
26
27 ¹ This filing is made as an accommodation to Watermaster, which has not retained separate legal
28 counsel. The City of Seaside, as a member of Watermaster, desires to assist Watermaster as
necessary, but does not assert any special or unique interest in this request for extension beyond that
of one of the numerous members of Watermaster.

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Canby Street
Santa Barbara, CA 93101

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Dated: November 12, 2010

BROWNSTEIN HYATT FARBER SCHRECK,
LLP

By: 

RUSSELL M. MCGLOTHLIN
RYAN C. DRAKE
Attorneys for Defendant, CITY OF SEASIDE
Filing on Behalf of Watermaster Pursuant to
the Watermaster's Request

SB 563928 v2:006840.0001

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

1 RUSSELL M. MGLOTHLIN (State Bar No. 208826)
2 RYAN C. DRAKE (State Bar No. 262580)
3 BROWNSTEIN HYATT FARBER SCHRECK, LLP
4 21 East Carrillo Street
5 Santa Barbara, CA 93101
6 Telephone: (805) 963-7000
7 Facsimile: (805) 965-4333
8 Attorneys for Defendant, CITY OF SEASIDE

8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 FOR THE COUNTY OF MONTEREY

10 CALIFORNIA AMERICAN WATER,
11 Plaintiff,
12 vs.
13 CITY OF SEASIDE, et al.,
14 Defendants.

Case No. M66343
Assigned for All Purposes to the
Honorable Roger D. Randall (Ret.)

**DECLARATION OF DEWEY EVANS
(CEO OF WATERMASTER) IN SUPPORT
OF THE CITY OF SEASIDE'S REQUEST
FOR EXTENSION OF TIME TO FILE
ANNUAL REPORT**

16 MONTEREY PENINSULA WATER
17 MANAGEMENT DISTRICT,
18 Intervenor,

19 MONTEREY COUNTY WATER
20 RESOURCES AGENCY,
21 Intervenor,

22 AND RELATED CROSS-ACTION.

24 I, Dewey Evans declare as follows:
25 1. I am the Chief Executive Officer of the Seaside Basin Watermaster ("Watermaster").
26 I report directly to the Watermaster Board of Directors. I have personal knowledge of the
27 following, and, if called as a witness, I would and could testify competently to the following:
28

1 2. The Watermaster Board of Directors has requested that the City of Seaside, on behalf
2 of Watermaster, file an application for an extension of time for Watermaster to file its Annual
3 Report for Water Year 2009/2010.

4 3. An extension of time would allow Watermaster more time to prepare and have the
5 Board of Directors time to review, analyze, discuss and approve the Watermaster's Annual Report
6 for Water Year 2009/2010. It would also allow time for public review and input into that process.

7 4. Due to differing interpretations of what constitutes "Available Replenishment
8 Water" for the Seaside Basin, the "Declaration of Replenishment Water Available for Water Year
9 2010/11" that was on the Board's November 3, 2010 Board of Director's agenda was disputed and
10 as such the Declaration was not approved by the Board. As a result, the Annual Report that was
11 also on the same agenda for Board consideration was also not approved.

12 5. The Board has requested that the definition of "Available Replenishment Water" be
13 clarified and that once this is done, the Declaration and the Annual Report be revised accordingly
14 for their December 1, 2010 regular Board meeting.

15 6. The time allowed between the end of the Water Year, September 30th to the court's
16 deadline for the Annual Report, November 15th, does not allow Watermaster staff enough time to
17 organize necessary information from the water producers in the Seaside Basin. Watermaster also
18 needs more time to organize the necessary reports from consultants, other agencies, standing and ad
19 hoc committees and others to adequately prepare the Annual Report and have it reviewed by the
20 Board and the public before the filing deadline.

21 I declare under a penalty of perjury under the laws of the State of California that the
22 forgoing is true and correct, and that this declaration is executed this 12th day of November, 2010 at
23 Seaside, California.
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BROWNSTEIN HYATT FARRER SCHRECK, LLP
71 East Capitol Street
Santa Barbara, CA 93101

Dated: November 12, 2010


DEWEY EVANS

BROWNSTEIN HYATT FARBER SCHRECK, LLP
21 East Carrillo Street
Santa Barbara, CA 93101

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PROOF OF SERVICE

STATE OF CALIFORNIA)
) ss
COUNTY OF
SANTA BARBARA)

I am employed by Brownstein Hyatt Farber Schreck in the County of Santa Barbara, State of California. I am over the age of 18 and not a party to the within action; my business address is: 21 East Carrillo Street, Santa Barbara, California 93101. On November 11, 2010, I served the within documents:

REQUEST FOR EXTENSION OF TIME TO FILE ANNUAL REPORT

**DECLARATION OF DEWEY EVANS
(CEO OF WATERMASTER) IN SUPPORT OF THE CITY OF SEASIDE'S REQUEST
FOR EXTENSION OF TIME TO FILE ANNUAL REPORT**

- By placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, in the United States mail at Santa Barbara, addressed as set forth below.
- By placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, (with billing directed to sender) picked up by or delivered to an overnight delivery service in Santa Barbara, California, addressed as set forth below.
- By personally sending a true copy via e-mail to the parties at the e-mail addresses listed on the attached Service List, on the date below.

SEE ATTACHED SERVICE LIST

I am readily familiar with the firm's practice of collection and processing correspondence for mailing. Under that practice it would be deposited with the U.S. Postal Service on that same day with postage thereon fully prepaid in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than on day after the date of deposit for mailing in affidavit.

I declare under penalty of perjury under the laws of the State of California that the above is true and correct. Executed on November 11, 2010, at Santa Barbara, California.



Maria Klachko-Blair

BROWNSTEIN, HYATT, FARBEN, SCHRECK
31 East Camino Blanco
Carmel, CA 93913

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SERVICE LIST

Judge Roger D. Randall
907 Mesa Street
Morro Bay, California 93442

JUDGE'S COPY

Carrie L. Gleeson
Tim Miller
303 H. Street, Suite 250
Chula Vista, California 91910

CALIFORNIA AMERICAN WATER

Telephone No: (619) 409-7726
Facsimile No: (619) 409-7701
carrie.gleeson@amwater.com
tim.miller@amwater.com

CITY OF SEASIDE

Donald G. Freeman, Esq.
Law office of Perry & Freeman
P.O. Box 805
Carmel, CA 93921-0805

Telephone No: (831) 624-5339
Facsimile No. (831) 624-5839
klglegal@hotmail.com

CITY OF MONTEREY

Deborah Mall, Esq.
Monterey City Attorney
City Hall
399 Madison Streets
Monterey, CA 93940

Telephone No: (831) 646-3915
Facsimile No. (831) 373-1634
mall@ci.Monterey.ca.us

CITY OF SAND CITY

James G. Heisinger, Jr., Esq.
Heisinger, Buck & Morris
P.O. Box 5427
Carmel, CA 93921-5427

Telephone No: (831) 624-3891
Facsimile No. (831) 625-0145
hbm@carmellaw.com
jim@carmellaw.com

CITY OF DEL REY OAKS

Robert Wellington, Esq.
Wellington Law Offices
857 Cass Street, Suite D
Monterey, CA 93940

Telephone No: (831) 373-8733
Facsimile No. (831) 373-7106
attys@wellingtonlaw.com

BROWNSTEIN, HYATT, FARBEN, SCHRECK
33 East Capitol Street
San Jose, CA 95111

1
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Brian Finegan, Esq.
Law Office of Brian Finegan
P.O. Box 2058
Salinas, CA 93902

GRANITE ROCK COMPANY

Telephone No: (831) 757-3641
Facsimile No. (831) 757-9329
brian@bfinegan.com

David C. Sweigert, Esq.
Fenton & Keller
2801 Monterey Salinas Highway
P.O. Box 791
Monterey, California 93940-0791

**D.B.O. DEVELOPMENT COMPANY
NO. 27**

Telephone No. (831) 373-1241 Ext: 202
Facsimile No. (831) 373-7219
dsweigert@fentonkeller.com

John M. Garrick, Esq.
Larson Garrick & Lightfoot LLP
US Bank Tower
633 West Fifth Street, Suite 1750
Los Angeles, CA 90017

**ALDERWOOD GROUP, INC. dba
MISSION MEMORIAL PARK**

Telephone No: (213) 404-4100
Facsimile No: (213) 404-4123
jgarrick@lgl-law.com
mpearson@lgl-law.com

Robert A. Goodin, Esq.
James D. Squeri, Esq.
Vidhya Prabhakaran (**Responsible attorney**)
Goodin, MacBride, Squeri, Ritchie & Day
505 Sansone Street, Suite 900
San Francisco, CA 94111

PASADERA COUNTRY CLUB, LLC

Telephone No: (415) 398-4321
Fax No. (415) 398-4321
jsqueri@goodinmacbride.com
ahartman@goodinmacbride.com
rgoodin@goodinmacbride.com

Eric Robinson
Krnovich, Moskovits, Tiedemann & Girard
400 Capitol Mall, 27th Floor
Sacramento, California 95814

LAGUNA SECA RESORT, INC.

Telephone No: (916) 321-4500
Facsimile No: (916) 321-4555
erobinson@kmtg.com

BROWNSTEIN, HYATT, FARBEN, SCHRECK
33 East Camino Street
San Jose, CA 95131

1 David Laredo, Esq.
2 DeLay & Laredo
3 606 Forest Avenue
4 Pacific Grove, CA 93950

**MONTEREY PENINSULA WATER
MANAGEMENT DISTRICT**

4 Telephone No: (831) 646-1502
5 Facsimile No. (831) 646-0377
6 dave@laredolaw.net

6 Kevin M. O'Brien, Esq.
7 Steven P. Saxton, Esq.
8 Downey Brand LLP
9 555 Capitol Mall, 10th Floor
10 Sacramento, CA 95814-4684

**MONTEREY COUNTY WATER
RESOURCES AGENCY**

9 Telephone No: (916) 444-1000
10 Facsimile No. (916) 444-2100
11 kobrien@downeybrand.com
12 ssaxton@downeybrand.com

11 Janet K. Goldsmith, Esq.
12 Eric N. Robinson, Esq.
13 Kronick, Moskovitz, Tiedemann & Gurrard
14 400 Capitol Mall, 27th Floor
15 Sacramento, CA 95814-4416

BISHOP, McINTOSH & McINTOSH

14 Telephone No: (916) 321-4500 Ext: 5754
15 Facsimile No: (916) 321-4555
16 erobinson@kmtg.com

16 Elizabeth Gianola
17 Horan, Lloyd, Karachale, Dyer,
18 Schwartz, Law & Cook
19 499 Van Buren Street
20 P.O. Box 3350
21 Monterey, CA 93942-3350

YORK SCHOOL, INC.

20 Telephone No: (831) 373-4131
21 Facsimile No. (831) 373-8302
22 gianola@horanlegal.com

22
23 Thomas D. Roth, Esq.
24 Law Office of Thomas D. Roth
25 One Market, Spear Tower, Suite #3600
26 San Francisco, CA 94105

SECURITY NATIONAL GUARANTY, INC.

26 Telephone No: (415) 293-7684
27 Facsimile No: (415) 435-2086
28 Rothlaw1@comcast.net

28 Sheri L. Damon

BROWNSTEIN, HYATT, FARBEN, SCHRECK
31 East Camino Sur
Santa Barbara, CA 93101

1 Damon Law Offices
618 Swanton Road
2 Davenport, California 95017

3 Telephone No: (831) 345-3610
Facsimile No: (831) 423-8382

4 Charles J. McKee, Esq.
5 Dennis E. Le Clere, Esq.
Irv Grant, Esq.
6 Office of County Counsel, County of Monterey
168 West Alisal Street, 3rd Floor
7 Salinas, CA 93901-2680

COUNTY OF MONTEREY

8 Telephone No: (831) 755-5045
Facsimile No. (831) 755-5283
9 coatsir@co.monterey.ca.us
mckeecj@co.monterey.ca.us
10 granti@co.monterey.ca.us

WATERMASTER EXECUTIVE OFFICER

11 Dewey Evans
Watermaster Executive Officer
12 2600 Garden Road, Suite 228
Monterey, California 93940
13 watermasterscaside@sbcglobal.net

14
15
16
17
18
19
20
21
22
23
24
25
26
27
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