

**MEETING NOTICE AND AGENDA**  
**TECHNICAL ADVISORY COMMITTEE**  
**OF THE**  
**SEASIDE BASIN WATER MASTER**

**DATE: Wednesday, January 11, 2017**

**MEETING TIME: 1:30 p.m.**

**Monterey Regional Water Pollution Control Agency Offices  
5 Harris Court, Building D (Ryan Ranch)  
Monterey, CA 93940**

*If you wish to participate in the meeting from a remote location, please call in on the Watermaster Conference Line by dialing (712) 432-1212. Use the Meeting ID 355890617. Please note that if no telephone attendees have joined the meeting by 10 minutes after its start, the conference call will be ended.*

**OFFICERS**

**Chairperson: Roger Hulbert, California American Water Company**

**Vice-Chairperson: Jon Lear, MPWMD**

**MEMBERS**

California American Water Company	City of Del Rey Oaks	City of Monterey
City of Sand City	City of Seaside	Coastal Subarea Landowners
Laguna Seca Property Owners	Monterey County Water Resources Agency	
Monterey Peninsula Water Management District		

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The next regular meeting will be held on Wednesday February 8, 2017 at 1:30 p.m. at the MRWPCA Board Room.	

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	2.A
<b>AGENDA TITLE:</b>	Approve Minutes from the November 16, 2016 Meeting
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	<p>Draft Minutes from this meeting was emailed to all TAC members. Any changes requested by TAC members have been included in the attached version.</p>
<b>ATTACHMENTS:</b>	Minutes from this meeting
<b>RECOMMENDED ACTION:</b>	Approve the minutes

**D-R-A-F-T**  
**MINUTES**

**Seaside Groundwater Basin Watermaster  
Technical Advisory Committee Meeting  
November 16, 2016**

**Attendees: TAC Members**

City of Seaside – Rick Riedl (via telephone)  
California American Water – Roger Hulbert  
City of Monterey – Laurie Williamson (via telephone)  
Laguna Seca Property Owners – Bob Costa  
MPWMD – Jon Lear  
MCWRA – Howard Franklin  
City of Del Rey Oaks – No Representative  
City of Sand City – Todd Bodem  
Coastal Subarea Landowners – No Representative

**Watermaster**

Technical Program Manager - Robert Jaques

**Consultants**

HydroMetrics – Georgina King (via telephone)

**Others**

California American Water – Eric Sabolsice and Nina Miller

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The meeting was convened at 1:36 p.m. after a quorum had been established.

**1. Public Comments**

There were no public comments.

**2. Administrative Matters:**

**A. Approve Minutes from the September 14, 2016 Meeting**

On a motion by Mr. Lear, seconded by Mr. Franklin, the minutes from this meeting were unanimously approved as presented.

**B. Update on MRWPCA's Title 22 Engineering Report for the Pure Water Monterey Groundwater Replenishment Project**

Mr. Jaques summarized the agenda packet materials for this item. Mr. Riedl asked how long it would take water that is injected into the vadose zone wells to reach the Santa Margarita aquifer. Mr. Jaques responded that it was his understanding that because of the aquacludes separating the Paso Robles aquifer from the Santa Margarita aquifer that little if any of the water injected into the vadose zone wells would get into the Santa Margarita aquifer.

**C. Sustainable Groundwater Management Act (SGMA) Update**

Mr. Jaques summarized the agenda packet materials for this item. There were no questions or discussion of the item.

**D. Progress Update on Salinas River Groundwater Basin Investigation Model TAC**

Mr. Jaques summarized the agenda packet materials for this item. There were no questions or discussion of the item.

### **3. Approve PSA for Martin Feeney and Initial RFSs for MPWMD, HydroMetrics, and Martin Feeney for 2017**

Mr. Jaques summarized the agenda packet materials for this item.

Mr. Sabolsice asked why Mr. Feeney was being proposed for performing the induction logging and water quality sampling from the Sentinel Wells. Mr. Jaques and Mr. Lear responded that MPWMD had suggested it would be more cost-effective for the Watermaster to contract directly with Mr. Feeney rather than having him contract with MPWMD. Also, MPWMD no longer has the staff resources to manage the contract with Mr. Feeney. There is a cost saving to the Watermaster by contracting directly with Mr. Feeney and the cost of that work was deleted from the contract with MPWMD.

On a motion by Mr. Lear, seconded by Mr. Bodem, these contracts were unanimously approved as presented.

### **4. Discuss and Provide Input on the Draft 2016 Seawater Intrusion Analysis Report (SIAR)**

Mr. Jaques introduced this item, and Ms. King made a Power Point presentation on it. Copies of the PowerPoint slides are attached.

In her presentation Ms. King noted:

- Some of the near-coastal monitoring wells showed increases in chloride levels.
- Well SBWM-2 also had a significant drop in the Na:Cl molar ratio.
- Verification resampling is recommended in accordance with the Seawater Intrusion Response Plan.
- Both the Ord Terrace wells (shallow and deep) are actually in the deep (Santa Margarita) aquifer.
- Wells SBWM-2 and 4 Piper diagrams are starting to show movement toward seawater quality.
- Wells SBWM-2 and 4 Stiff diagrams are showing a change toward Stiff diagrams of known seawater intruded Salinas Basin wells.
- The second quarter SBWM-4 Piper diagram also showed a change in shape from its previous ones.
- The induction logging does not show any indication of seawater intrusion, so it may be that the water quality samples were not representative or there was an error in the lab analysis.
- Shallow groundwater elevations are relatively stable, but the deep groundwater elevations are continuing to drop as they have for many years.
- Wells SBWM-2 and 4 have the lowest groundwater elevations they have ever had in prior years.
- The Laguna Seca groundwater level rate of decline has slowed a little, but the levels are still falling.
- In the coastal area groundwater levels in the deep aquifer (Santa Margarita) dropped more this year than in prior years, even though production pumping was considerably less than in prior years.
- Wells SBWM-2 and 4 are showing some indications of seawater intrusion in the deeper aquifer, but the induction logs do not show this. In the shallow aquifer there are no such indications.
- Mr. Feeney may be able to resample these wells in mid-December.
- Whether or not to undertake Recommendations 2 through 5 in the SIAR will depend on the results of the verification resampling.

Mr. Hulbert asked some questions about the water quality data and the Piper and Stiff diagrams and Ms. King responded to them.

Mr. Hulbert said the first order of business is to resample.

Mr. Lear said that dataloggers cost about \$600 apiece. He recommended getting two dataloggers, one to install and one to keep on hand in case one fails.

Mr. Sabolsice said this could be a serious finding. Submitting the report to the Board without knowing the results of the verification resampling would leave the Board uncertain about what to do.

There was discussion about the sampling methodology and some alternative protocols that could be used. Mr. Franklin said using a different methodology introduces the potential for data inconsistency with historical data. Ms. King concurred.

Ms. King said it would be desirable to expedite the lab analyses of the verification samples.

Mr. Hulbert led a further discussion of what should be reported to the Board. Mr. Franklin said he felt the reported findings should be moved forward to the Board, but also that efforts should be taken with regard to sampling procedures, chain of custody, quality assurance/quality control, duplicate samples, etc. to ensure there is no chance of lab error.

Mr. Sabolsice noted that the induction logs are not showing seawater intrusion which raises the question of how useful/valid the induction logging data is. He went on to ask if the resampling and the lab analysis of the samples could be done any sooner. Mr. Jaques and Mr. Lear responded they did not believe so. However, Mr. Lear said it is possible to pay extra to have the lab work expedited.

Mr. Lear wondered if Mr. Feeney could find a different contractor to get the water quality sampling done sooner. Mr. Jaques asked Mr. Lear if he could resample the Ord Terrace well sooner. Mr. Lear and Ms. King said they did not consider that well to be an indicator of seawater intrusion.

Mr. Franklin said he concurred with doing the resampling as quickly as possible.

Mr. Sabolsice said he would like to get the lab reports on the July 2016 well sampling for review. Mr. Lear said he would try to obtain them and would provide them to Cal Am if he is able to obtain them.

Mr. Lear provided a brief description with regard to the suite of constituents that are sampled.

Ms. King will talk with Mr. Feeney about what might be the cause of the induction logs and the water quality samples not showing the same findings.

Mr. Hulbert recommended moving forward with the verification resampling.

Mr. Sabolsice said he was concerned that the SIAR gives the impression that seawater intrusion is already occurring. He recommended that the conclusions in the SIAR be revised to emphasize that there is no conclusion that seawater is occurring at this point in time, rather some of the parameters that are measured indicate seawater intrusion might be starting to be observed, while other measured parameters indicate that seawater intrusion is not occurring.

Mr. Riedl asked Mr. Lear if the Ord Terrace well could be improved to avoid the potential for contamination from surface water leaking in. Mr. Lear said that MPWMD is working on getting the monitoring wells upgraded as necessary to prevent this from happening.

A motion by Mr. Franklin, seconded by Mr. Lear, to forward the SIAR to the Board with recommendations for follow-up verification resampling, and with editing to clarify that there is conflicting data at this point which prevents drawing any conclusions regarding the possible onset of seawater intrusion, passed unanimously.

Mr. Jaques asked Ms. King if she would please get him a draft copy of the PowerPoint slides that Mr. Williams will be using for his SIAR presentation to the Board, so these can be sent to the TAC for their review before the Board meeting.

#### **5. Discuss and Provide Input on the Preliminary Draft Watermaster 2016 Annual Report**

Mr. Jaques briefly summarized the agenda packet materials for this item and invited questions/comments from the TAC regarding the content of the Draft Report.

Mr. Hulbert said he had reviewed the wording on page 93 with regard to the SIAR and that he felt it made clear that the data at this point only indicates the potential for seawater intrusion, but it is not conclusive that seawater intrusion is occurring. He also questioned whether there was an error in the next-to-last bullet on page 95 of the agenda packet regarding the 2012 date. Mr. Jaques said he would discuss that with Ms. King and see if any correction or clarification needs to be made.

On a motion by Mr. Lear, seconded by Mr. Bodem, the Preliminary Draft 2016 Annual Report was unanimously approved as presented, with a possible revision to be made on page 95 as noted above.

#### **6. Set Next Meeting Date**

Mr. Jaques explained that there was no TAC business that needed to be conducted in December, and therefore no December TAC meeting would be necessary. The next TAC meeting would therefore be in January 2017.

A motion by Ms. Williamson, seconded by Mr. Lear, to skip having a December TAC meeting and to have the next TAC meeting on January 11, 2017 was approved unanimously.

#### **7. Schedule**

Mr. Jaques briefly reviewed the agenda packet material for this item as contained on page 100 of the agenda packet. There was no other discussion of this item.

#### **8. Other Business**

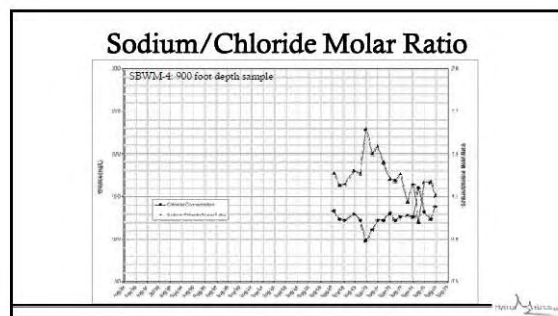
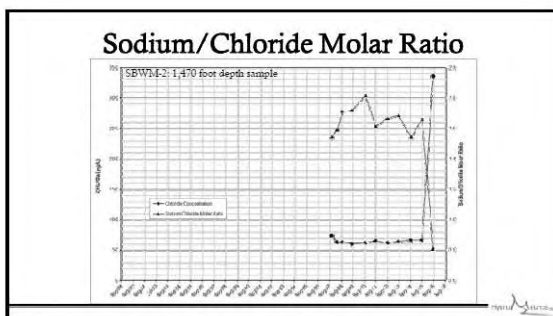
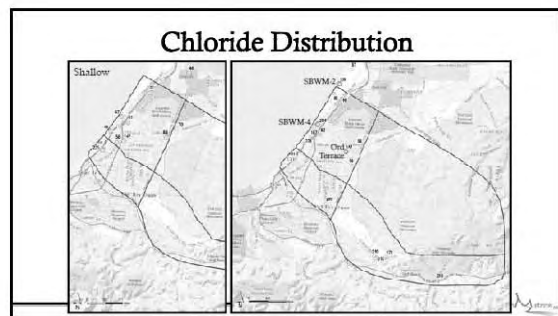
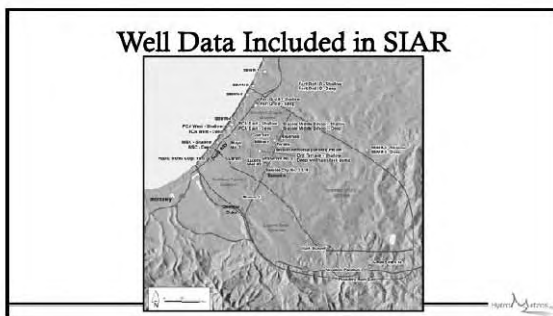
There was no other business to discuss.

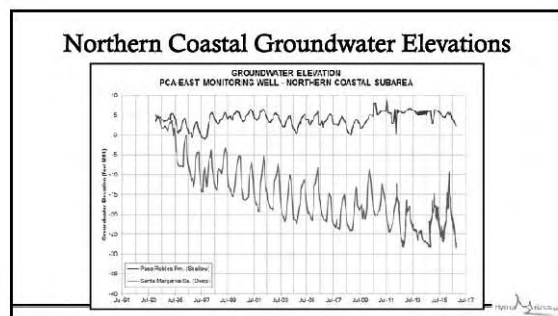
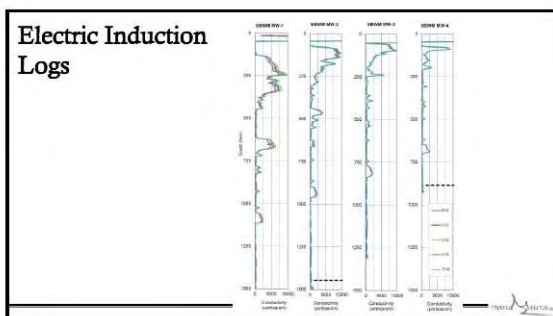
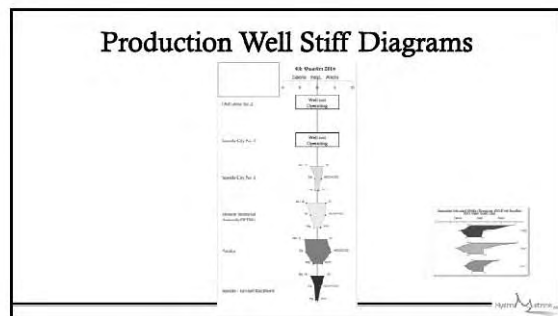
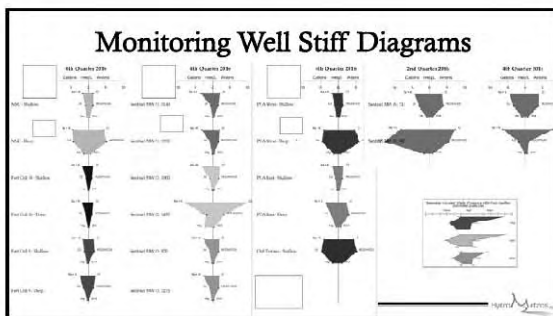
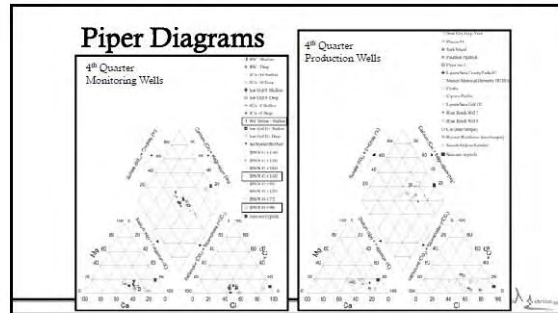
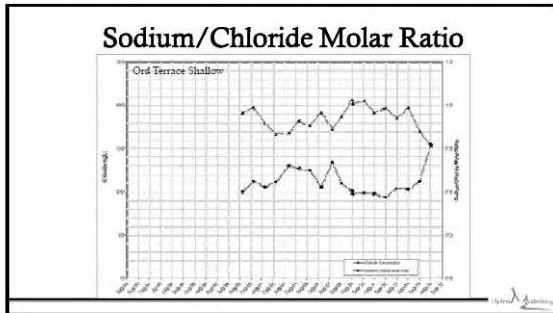
The meeting adjourned at 4:01 p.m.

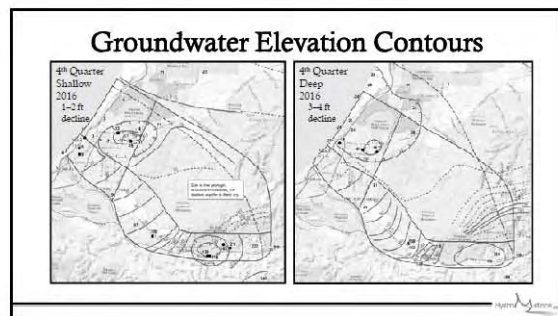
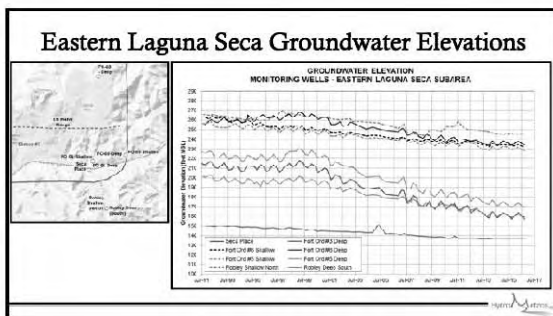
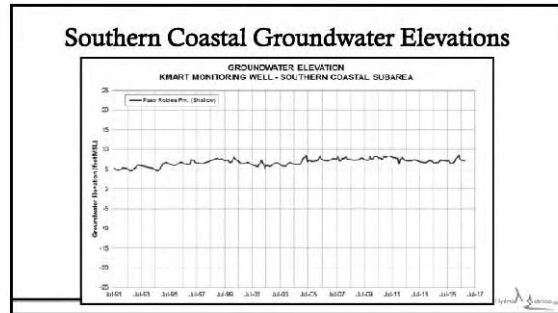
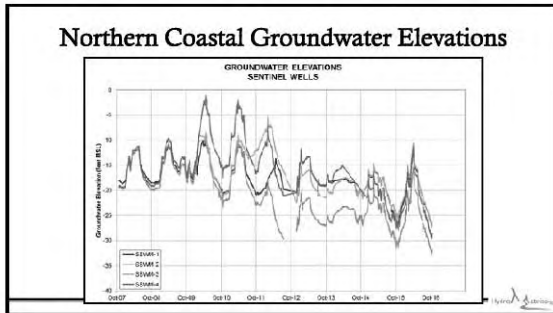
## Seaside Groundwater Basin 2016 Seawater Intrusion Analysis Report

Presented to the Seaside Basin Technical Advisory Committee  
November 16, 2016

- ### Analysis
- ◆ Chloride Distribution and Na/Cl Molar Ratio
  - ◆ Cation/Anions – Piper and Stiff Diagrams
  - ◆ Electric Induction Logs
  - ◆ Groundwater Elevations
  - ◆ Protective Groundwater Elevations
  - ◆ Groundwater Production

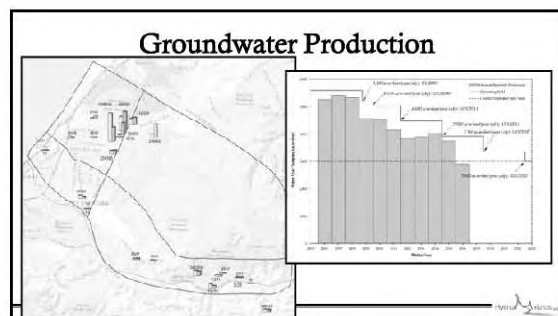






### Protective Groundwater Elevations

Subarea	Well	Depth	Protective Elevation, feet amsl	Above or Below
Northern Coastal	MSC	Deep	17	Below
		Shallow	11	Below
	PCA-W	Deep	17	Below
		Shallow	2	Above
Sentinel 3	Deep	4	Below	
Southern Coastal	CD34-MW4	Shallow	2	Above



### Conclusions

- ◆ There are multiple lines of evidence that Sentinel wells SBWM-2 (1,470 ft) and SBWM-4 (900 ft) are indicating seawater intrusion:
  - ◆ Increased chlorides and decreased sodium/chloride molar ratios
  - ◆ Samples plot closer to seawater on Piper diagrams
  - ◆ Chloride spikes on Stiff diagrams
  - ◆ Groundwater elevations in these wells are at historical lows
- ◆ Induction logs do not indicate seawater intrusion at these depths
- ◆ Shallow coastal groundwater does not show any evidence of seawater intrusion

### Recommendations

1. Verification water quality sampling and analysis for sentinel wells SBWM-2 and SBWM-4, and the Ord Terrace Shallow monitoring well
2. Potentially analyze additional water quality constituents for seawater intrusion
3. Increase water quality sampling and analysis for sentinel well SBWM-2
4. Potentially increase water quality monitoring and analysis for sentinel well SBWM-2 and SBWM-4 through conductivity monitoring
5. Potentially implement follow up actions outlined in the seawater intrusion response plan
6. Install a data logger in the monitoring well PCA West shallow
7. Continue to document declining groundwater levels in the Laguna Seca subarea as done since WY 2015

Questions?

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	2.B
<b>AGENDA TITLE:</b>	Elect New Chairperson
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b> Cal Am has informed us that Roger Hulbert, the current TAC Chairperson, is moving into a different position with Cal Am and will no longer be on the TAC to represent them. His TAC replacement is Nina Miller. With the departure of Mr. Hulbert, it would be appropriate for the TAC to elect a new Chairperson.  The TAC should seek nominations from its members to fill this position, and then vote to select the Vice Chairperson.  The newly elected Chairperson would assume the position immediately following his or her election.	
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	Elect a new Chairperson

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	2.C
<b>AGENDA TITLE:</b>	Update on MRWPCA's Title 22 Engineering Report for the Pure Water Monterey Groundwater Replenishment Project
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<p><b>SUMMARY:</b>            The Division of Drinking Water (DDW) has issued an approved Title 22 Engineering Report for this project and it has been used by the Regional Water Quality Control Board (RWQCB) to prepare Draft Waste Discharge Requirements (WDR) for the project. There is a public comment period on the Draft WDR, which ends on January 20, 2017. The RWQCB has agendized this item for a public hearing at its Board's March 7, 2017 meeting, and may adopt the WDR, with possible revisions, at that meeting.</p> <p>The complete WDR is lengthy (approximately 58 pages in length) so I have not included it in this agenda packet. However, TAC members may review it in its entirety at this website:</p> <p style="text-align: center;"><a href="http://www.waterboards.ca.gov/centralcoast/board_decisions/tentative_orders/index.shtml">http://www.waterboards.ca.gov/centralcoast/board_decisions/tentative_orders/index.shtml</a></p> <p>I have reviewed the complete Draft WDR and believe that it addressed the majority of the concerns expressed to the DDW in our previous comment letter on the Draft Title 22 Engineering Report. However, I have included some comments and requests for items to be included in the terms and conditions of the WDR, as described in the attached proposed comment letter to the RWQCB.</p> <p>At today's meeting the TAC may offer further comments, and propose additions, to the attached letter.</p>	
<b>ATTACHMENTS:</b>	<ol style="list-style-type: none"> <li>1. RWQCB letter regarding issuance of permit for Pure Water Monterey Project</li> <li>2. Proposed comment letter to be sent to the RWQCB</li> </ol>
<b>RECOMMENDED ACTION:</b>	Approve sending the attached comment letter, either as-is or with revisions

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**Central Coast Regional Water Quality Control Board**

December 15, 2016

Dear Interested Parties:

**Sent Via Electronic Mail or U.S. Mail**

**HEARING NOTICE AND AVAILABILITY OF DRAFT WASTE DISCHARGE REQUIREMENTS, PURE WATER MONTEREY GROUNDWATER REPLENISHMENT PROJECT - ORDER NO. R3-2017-0003; COMMENTS REQUESTED BY JANUARY 20, 2017**

This letter notifies interested parties of draft waste discharge requirements and a draft monitoring and reporting program for discharges of highly treated recycled water to the Seaside Basin aquifer. The tentative order and monitoring program are available at the following web address:

[http://www.waterboards.ca.gov/centralcoast/board\\_decisions/tentative\\_orders/index.shtml](http://www.waterboards.ca.gov/centralcoast/board_decisions/tentative_orders/index.shtml)

The intent of the order is to protect water quality and enhance the Seaside Basin aquifer's beneficial uses, especially drinking water.

Comments on the proposed order must be submitted in writing to the letterhead address or to [centralcoast@waterboards.ca.gov](mailto:centralcoast@waterboards.ca.gov) no later than **5 p.m. on January 20, 2017**. The Central Coast Water Board will not accept late comments or other written submissions on the proposed order unless the Central Coast Water Board chair rules that exclusion would create a severe hardship and that the late submission will not prejudice any party or the Central Coast Water Board. Any person asking to submit late materials must explain why the materials were not submitted earlier. The Water Board chair will rule on any late submissions at or before the hearing. Late submissions that consist of evidence (as opposed to policy statements or comments) are generally prejudicial unless all designated parties and Central Coast Water Board staff have time to consider the evidence before the meeting. If Central Coast Water Board staff proposes substantive changes to the revised Order before the Central Coast Water Board meeting, parties and interested persons will have an opportunity to submit written comments on the proposed changes.

The Central Coast Water Board will hold a public hearing regarding this matter during its March 7-9, 2017 regularly scheduled public meeting in Watsonville. At the hearing, the Central Coast Water Board will hear testimony and consider adoption of **Order No. R3-2017-0003**. The Central Coast Water Board will issue an agenda notice at least 10 days before the hearing.

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DR. JEAN-PIERRE WOLFF, CHAIR | JOHN M. ROBERTSON, EXECUTIVE OFFICER

895 Aerovista Place, Suite 101, San Luis Obispo, CA 93401 | [www.waterboards.ca.gov/centralcoast](http://www.waterboards.ca.gov/centralcoast)



If you have any questions regarding the draft waste discharge requirements or draft monitoring and reporting requirements, or if you would like to receive a paper copy of the documents, please contact **Jon Rokke** at **805-549-3892** or by email at [Jon.rokke@waterboards.ca.gov](mailto:Jon.rokke@waterboards.ca.gov), or Chris Adair at (805) 549-3761 or by email at [Chris.Adair@waterboards.ca.gov](mailto:Chris.Adair@waterboards.ca.gov).

Sincerely,



Digitally signed by

Chris Adair

Date: 2016.12.15

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for  
John M. Robertson  
Executive Officer

ECM # 805968

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Development\Transmittal letter 12-2-16.docx

**Seaside Basin Watermaster  
P.O. Box 51502  
Pacific Grove, CA 93950  
(831) 641-0113**

January 12, 2017

Central Coast Regional Water Quality Control Board  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401

**Subject:** Hearing Notice on Draft Waste Discharge Requirements Pure Water Monterey Groundwater Replenishment Project - Order No. R3-2017-0003

Dear Sirs:

The Seaside Basin Watermaster (Watermaster) is the Court-appointed manager of the adjudicated Seaside Groundwater Basin, into which the proposed Project will inject advance treated wastewater for groundwater replenishment.

The Watermaster is the Court-appointed body responsible for ensuring that the Basin is managed in accordance with the requirements set forth in the Seaside Basin Adjudication Order (Superior Court of the State of California in and for the County of Monterey, Case No. M66343). Therefore, it would be both appropriate and important that the Watermaster be informed directly (i.e. by both emails to its Technical Program Manager, and by direct U.S. Postal Service mailings to its administrative office) of the types of reports that the WDR requires be submitted periodically to various State agencies. Prompt and timely receipt of these reports is necessary to keep the Watermaster informed on issues affecting Basin management, water quality, public health issues, and other matters related to the Project.

The Watermaster has reviewed the Draft Waste Discharge Requirements you have prepared for this Project has the following comments and requests:

**Comments:**

1. In Section V of the Findings, paragraph number 30 states that the storage capacity of the “subbasin” is estimated to be 1,000,000 acre-feet. Our consultants have estimated that the storage capacity of the adjudicated Seaside Basin is approximately 52,000 acre-feet. The storage volume stated in the WDR appears to be significantly overstated.
2. In Section V of the Findings, paragraph number 31 states that the Seaside Groundwater Basin Salt and Nutrient Management Plan was submitted to the RWQCB by the Monterey Peninsula Water Management District in 2014, but has still not been adopted by the RWQCB. Please explain what is preventing adoption of that Plan and what additional information or steps will be needed in order for it to be adopted.
3. Many of the Water Quality Goals listed in Table 1 (page 8) of the WDR are missing from the list of constituents in the Recycled Water Reinjection Discharge Limits in Table 4 (page 15) of the WDR. All of the goals should be included in that table, or required elsewhere in the WDR.

**Requests:**

1. That the WDR include language stating that all of the reports required under the Monitoring and Reporting Program (in Section I thereof) also be sent to the Watermaster at the same time they are sent to the RWQCB. Sending them directly to the Watermaster, rather than relying on other blanket forms of notification, will ensure that important information contained in those reports is not missed or delayed in receipt, so that the Watermaster can take response actions, if appropriate.
2. That a description of the monitoring program protocols required under Section II.3 of the Monitoring and Reporting Program also be sent to the Watermaster, for our use in preparing various reports and in compiling other information for our Annual Report to the Court.

Thank you for your consideration of our comments and requests. If you have any questions regarding them, please contact our Technical Program Manager, Mr. Robert Jaques, at (831) 375-0517 or by his email at [boj83@comcast.net](mailto:boj83@comcast.net).

Sincerely,

Robert S. Jaques  
Technical Program Manager

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	2.D
<b>AGENDA TITLE:</b>	Sustainable Groundwater Management Act (SGMA) Update
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

**At the State level:**

DWR has recently provided information on these topics:

Submitting Alternatives in Lieu of Groundwater Sustainability Plans. SGMA and the Emergency GSP regulations provide the methods and criteria for local agencies to submit alternatives in lieu of a groundwater sustainability plan. An Alternative is required to be submitted to DWR for review no later than January 1, 2017.

Groundwater Sustainability Agency (GSA) Formation. DWR's GSA Interactive Map has been updated with the 2016 Bulletin 118 Groundwater Basin Boundary Modifications. A new map layer shows the areas that have been either added to, or removed from, a basin which may affect a local agency's posted GSA notice. All new GSA formation notices must submit maps using the 2016 basin boundaries.

Nothing new from DWR impacts the Watermaster, other than the scheduling of an online workshop for adjudicated basins for DWR staff to provide information and respond to questions about SGMA compliance actions for those basins. I will participate in the workshop, which will be held on January 24 from 1 to 5 p.m.

**At the Monterey County level:**

Meetings of Monterey County's Collaborative Work Group and Stakeholders continue to be held. At meetings on December 13, 2016, the Monterey County Board of Supervisors and the Salinas City Council voted to approve the Salinas Valley GSA Joint Powers Authority (JPA) Agreement. The JPA will be the governing body for the GSA that the County is working to develop for the Salinas Valley Basin.

In late December the Board of Supervisors approving filing a Notification with DWR to become the GSA for the same area that MCWD had filed its Notification earlier in the year (see paragraph below). DWR and those two entities will likely begin discussions on how to resolve the issue of overlapping notifications.

At its December 5, 2016 meeting agenda the Watermaster Board discussed the topic of Marina Coast Water District's (MCWD's) Notification to the Department of Water Resources (DWR) to become a Groundwater Sustainability Agency (GSA). The Board directed staff to submit a letter describing the Watermaster's concerns with MCWD becoming a GSA, and a copy of that letter is attached.

<b>ATTACHMENTS:</b>	Letter sent by Watermaster to DWR regarding MCWD GSA Notification
<b>RECOMMENDED ACTION:</b>	None required – information only

**SEASIDE GROUNDWATER BASIN WATERMASTER  
PO BOX 51502, PACIFIC GROVE, CA 93950  
(831) 641-0113**

December 20, 2016

*Via Electronic Mail and U.S. Mail*

Mark Nordberg, GSA Project Manager  
Sustainable Groundwater Management Program  
California Department of Water Resources  
901 P Street, Room 213-B  
P.O. Box 942836  
Sacramento, CA 94236

**Re: Marina Coast Water District (MCWD) Notification to the Department of Water Resources (DWR) to become a Groundwater Sustainability Agency (GSA) under the Sustainable Groundwater Management Act (SGMA)**

Dear Mr. Nordberg:

This letter serves to document the concerns of the Seaside Groundwater Basin Watermaster (Watermaster) regarding MCWD becoming the GSA for the Monterey sub-basin of the Salinas Valley Groundwater Basin. The Seaside Groundwater Basin is one of the Adjudicated Basins listed in the SGMA, and the Watermaster manages the adjudicated Seaside Basin. Areas adjacent to the Seaside Basin are not adjudicated and require formation of a GSA under SGMA. Extractions by producers immediately adjacent to the Basin's eastern boundary have been identified by Watermaster as contributing to declining water levels in the eastern portion of the Seaside Basin. For this reason, and for other issues of concern that may arise along the Seaside Basin's boundaries over time, the Watermaster has a keen interest in the formation of adjacent GSAs.

The MCWD as a GSA intends to include in its jurisdiction portions of the Monterey sub-basin that fall outside of its District boundaries. The Watermaster is aware that MCWD is currently under contract with the Fort Ord Reuse Authority to service areas beyond its district boundaries, however once that contract expires, and if MCWD is allowed to establish a GSA over lands not in its service area, consumers in the those outlying areas would be effectively "annexed" into the MCWD without benefit of due processes such as Local Agency Formation Commission, Sphere of Influence, CEQA, and EIR. Furthermore, as fees are not allowed to be collected from consumers outside of a district's service area, MCWD would be unable to charge for the cost to maintain an effective GSA.

The Watermaster requests that DWR consider that the developing multi-local-agency, collaborative Salinas Valley Basin Joint Powers Authority may be better suited jurisdictionally as GSA for the Monterey sub-basin.

If you would like to discuss this matter further, please do not hesitate to contact the Seaside Groundwater Basin Watermaster at the above address.

Regards,



Ralph Rubio  
Chairman, Seaside Groundwater Basin Watermaster

cc: Seaside Groundwater Basin Watermaster Board of Directors  
Monterey County Board of Supervisors

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	2.E
<b>AGENDA TITLE:</b>	Progress Update on Salinas River Groundwater Basin Investigation Model TAC
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<p>The Salinas River Groundwater Basin Investigation Model TAC held its most recent meeting on December 13, 2016. Attached are notes from that meeting.</p>	
<b>ATTACHMENTS:</b>	Notes from the December 13, 2016 Salinas Model TAC meeting
<b>RECOMMENDED ACTION:</b>	None required – information only

Salinas River Groundwater Basin Investigation Model Development  
Technical Advisory Committee  
December 13, 2016  
Meeting Notes

Outreach Activities

Outreach efforts that occurred over the summer/fall period included multiple public meetings and small group meetings with growers and agricultural experts. The meetings were fairly well attended. Much helpful data was received. Many individuals expressed concern about maintaining confidentiality of data and/or the possibility that providing data could be detrimental for them at some future time. Some also indicated that the effort to compile data was too time-consuming. As the model updates continue, outreach to the public will be ongoing.

Salinas Valley Hydrogeologic Framework (SVHFM)

The study area for the SVHFM includes active and inactive cells, both onshore and offshore. Cells are 600 ft (XY), with 84,000 active cells onshore and 11,000 active cells offshore. Hydrostratigraphic data was assigned to the centroid of each cell. There are four components to the SVHFM: extent, layering, texture, and faults. Numerous data sources were used, including: cross sections, surfaces from existing models, geologic maps in combination with DEM, and selected well logs.

The 3D lithologic model includes seven categories of textural distributions, and can be “cut” midway through each hydrostratigraphic unit in order to allow mapping of the textures as a percentage coarse material.

Work will continue on: the volumetric model of hydrostratigraphic unit layers; offshore unit layering; ties with adjacent models (Seaside, Pajaro); review of climate drivers and influence on widespread aquitards.

With regard to the approach for dealing with the Seaside Basin, the Seaside area will be included in SVIHM but that there will not be any reporting out of results for that area. There is an inherent difference in the models just in the number of geologic layers in each model.

Salinas Valley Watershed Model (SVWM)

Segments of the SVWM have been updated and the boundary refined to better match drainage areas. A comparison of model test results with local station records is ongoing, and matches thus far are fairly good. Model calibration is ongoing. At all locations, the simulations are still being refined but presently there is a tendency to underestimate peak flows and overestimate low flows, or to not quite capture the correct duration of low flows.

Salinas Valley Integrated Hydrologic Model (SVIHM)

The SVIHM is running but there are no results yet, although much has been completed. A new demand component for agricultural irrigation salinity demands is being added following discussion during outreach efforts which indicated that this is important.

There are four general groups of agricultural land use:

- (1) rotational crops/land use changing every 30-90 days (e.g. spring mix, carrots, onions);
  - (2) annual/seasonal crops and land use (e.g. pasture, strawberries, artichokes, cane berries);
  - (3) multi-year crops and land use (e.g. vineyards, nurseries, deciduous fruits and nuts, golf courses);
- and,
- (4) “permanent” native or urban crops and land use (e.g. quarries, riparian areas, woodlands, dunes).

The Farm Process will capture CSIP supply and demand. There are three sources of supply: CSIP wells, SRDF diversions, and SVRP recycled water.

Observations of streamflow, pumpage, and seawater intrusion will be used for calibration. There is still a great deal of missing data for wells. A scheme has been developed for standardizing the assumptions used to fill in data gaps; this can be refined as necessary.

Pumpage data has been compiled for M&I Wells (MNW2) since 1994. Data prior to 1994 is an issue and will be estimated from census data (this work is ongoing).

Observations of groundwater head and head differences are in progress.

A calibrated model is expected in January with a baseline and buildout model construction/analysis in April 2017. In the interim, model analysis and integration of a reservoir operations module will take place.

#### Next Meeting

The next meeting of the TAC is scheduled for Tuesday, February 14, 2017.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE  
\* \* \* AGENDA TRANSMITTAL FORM \* \* \***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	2.F
<b>AGENDA TITLE:</b>	Amendment No. 1 to RFS No. 2017-01 to Martin Feeney
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

**SUMMARY:**

Due to the high level of concern expressed by TAC and Board members regarding the comments in the 2016 Seawater Intrusion Analysis Report (SIAR) regarding the Sentinel and Ord Terrace Well July 2016 sampling results, an immediate order to our consultants was issued to resample these wells and to report on the findings at the soonest possible date.

In order to bring into play all of the Watermaster's experts on this topic, the contract (RFS) with Mr. Feeney needs to be amended to include providing on-call consulting services. This will enable Mr. Feeney to provide input on, review documents associated with, and participate in discussions of this matter.

<b>ATTACHMENTS:</b>	Amendment No. 1 to RFS No. 2017-01 to Martin Feeney
<b>RECOMMENDED ACTION:</b>	Approve Amendment No. 1 to RFS No. 2017-01 to Martin Feeney

SEASIDE BASIN WATERMASTER  
REQUEST FOR SERVICE

**DATE:** December 26, 2016                      **RFS NO.** 2017-01 Amendment No. 1  
(To be filled in by WATERMASTER)

**TO:** Martin Feeney                              **FROM:** Robert Jaques  
Martin Blair Feeney                      WATERMASTER  
PROFESSIONAL

**Services Needed and Purpose:** Consultation and other hydrogeologic services. See Amended Scope of Work in Attachment 1.

**Completion Date:** All work of this RFS as amended shall be completed not later than December 31, 2017.

**Method of Compensation:** Time and Materials (As defined in Section V of Agreement.)

**Total Price:** The revised Total Price for RFS No. 2017-01, as authorized by this Amendment No. 1 thereto, is \$30,085.56.

**Total Price** may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

**Requested by:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
WATERMASTER Technical Program Manager

**Agreed to by:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
PROFESSIONAL

## **ATTACHMENT 1**

The original Scope of Work of RFS No. 2017-01 was to collect water quality samples, perform laboratory analyses of these samples, and to perform induction logging of certain of the WATERMASTER'S Sentinel Wells.

Subsequent to the issuance of RFS No. 2017-01 the WATERMASTER determined that it would also like the PROFESSIONAL to provide general hydrogeologic consulting services to the WATERMASTER on a variety of topics on an ongoing and as-requested basis. These may include, but not be limited to, interpretation of water level and water quality data, and seawater intrusion analysis issues.

Providing these services will likely involve attending certain of WATERMASTER's Technical Advisory Committee (TAC) and /or Board meetings, most of which will be attended telephonically.

An allowance for 20 hours of consulting services at \$195/hour, plus \$500 for related other direct costs (such as travel costs), for a total of \$4,400 to provide these services is hereby added to the authorized cost of RFS No. 2017-01. The original cost authorized by RFS No. 2017-01 was \$25,685.56, so the revised cost authorized by this Amendment No. 1 is \$30,085.56.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE  
\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	3
<b>AGENDA TITLE:</b>	Results from Resampling Verification of Wells
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

**SUMMARY:**

Due to the high level of concern expressed by TAC and Board members regarding the comments in the 2016 Seawater Intrusion Analysis Report (SIAR) regarding the Sentinel and Ord Terrace Well July 2016 sampling results, an immediate order to our consultants was issued to resample these wells and to report on the findings at the soonest possible date.

In order to bring into play all of the Watermaster's experts on this topic, the contract (RFS) with Mr. Feeney is being amended (under Agenda item 2.F of today's meeting) to include providing on-call consulting services, and funds for the existing contract with Todd Groundwater to also provide on-call consulting services were added to the 2017 Watermaster Monitoring and Management Plan Operations Budget. Thus, Mr. Feeney and Mr. Yates (of Todd Groundwater) will be participating in the discussion of this item at today's TAC meeting.

In order to provide the TAC with as much expert opinion and information as possible at today's meeting, I had Mr. Feeney and Mr. Yates review the 2016 SIAR and various documents and data pertaining to this topic, and had them participate with HydroMetrics and myself in a conference call held on January 4, 2017 to discuss all of the issues pertaining to this topic. The attached Technical Memorandum from Georgina King of HydroMetrics reflects the discussions and input from that call.

The Technical Memorandum concluded that water quality is fluctuating in several of these wells, and recommends several actions that should be taken to try to determine what is causing these fluctuations. However, it does not conclude that seawater intrusion has been detected.

<b>ATTACHMENTS:</b>	<ol style="list-style-type: none"> <li>1. Photos of Sentinel Well sampling</li> <li>2. Technical Memorandum from HydroMetrics</li> </ol>
<b>RECOMMENDED ACTION:</b>	<ol style="list-style-type: none"> <li>1. Approve the Technical Memorandum as-is, or request revisions to it</li> <li>2. Approve implementing the actions listed in the Recommendations section of the Technical Memorandum</li> </ol>

**Views of the Water Quality Sample Collection Device.**

A vacuum is created inside the device with a vacuum pump before it is lowered into the well. The sample is drawn into the device by the vacuum when the hole being pointed to by the operator is remotely opened by the operator.



Views of the Device Being Lowered into the Well.



**Views of the Water Quality Sample Being Put into Laboratory Bottle for Analysis.**

The sample is placed into an ice chest immediately after it is collected in the bottle, and transported to the laboratory later the same day it is collected. Mr. Feeney also made field conductivity measurements on the samples as they were collected, for comparison with the laboratory-reported conductivity values.



## TECHNICAL MEMORANDUM

To: Bob Jaques, Seaside Watermaster Program Manager  
From: Georgina King and Derrik Williams  
Date: January 5, 2017  
Subject: Seaside Groundwater Basin Analysis of Wells Sampled in December 2016

---

### 1. BACKGROUND

The 2016 Seawater Intrusion Analysis Report (SIAR) reported on groundwater samples obtained during July 2016 that contained several anomalous chloride concentrations and other anion and cations concentrations. These anomalous results triggered resampling of those wells with the anomalies. The wells with the increased chlorides were:

- Sentinel Well #2 (SBWM-2) at the 1,470 ft depth,
- Sentinel Well #4 (SBWM-4) at the 900 ft depth, and
- Ord Terrace Shallow well.

The Technical Advisory Committee (TAC) approved the SIAR recommendation to resample those wells as soon as possible to verify the water quality. The Ord Terrace Shallow well was resampled on December 5, 2016 by Monterey Peninsula Water Management District; and the sentinel wells were resampled by Martin Feeney on December 14, 2016.

The December samples effectively replace the samples that were scheduled to be collected in January 2017. Samples were analyzed by Monterey Bay Analytical Services (MBAS), which is the laboratory that has historically analyzed the Seaside Basin groundwater samples. Duplicate samples of the sentinel wells were sent to the Monterey County laboratory for general minerals analysis. Samples were not collected for Sentinel Well 3 (SBWM-3) which is only sampled in July of each year. No duplicate samples for the Ord Terrace Shallow well were analyzed.

## 2. LABORATORY RESULTS

Table 1 summarizes the results obtained from both MBAS and Monterey County laboratories. The analyses in the following section of this memorandum use the MBAS results to maintain consistency with previous years' reports.

With one exception, the results from duplicate samples analyzed by Monterey County were close to those results from MBAS; and there were no results that would indicate MBAS laboratory error. Some differences in the cations and anions are to be expected, but overall the results were similar. The exception is the SBWM-1 (1,390 ft) duplicate sample from the Monterey County laboratory which has higher chloride, sodium, specific conductance than the MBAS sample. The concentrations of these constituents collected at the well's 1,140 foot depth did not have as great a difference.

*Table 1: Summary of Laboratory Results*

Well	Constituent	MBAS Result	Result Monterey County	Units
SBWM 1 at 1,140 ft	Calcium	12	9.1	mg/L
	Chloride	74	72	mg/L
	Fluoride	0.2	-	mg/L
	Hardness (as CaCO3)	34	-	mg/L
	Bicarbonate (as HCO3-)	89	-	mg/L
	Potassium	3.3	2.5	mg/L
	Langlier Index, 60°C	0.56	-	
	Magnesium	1.0	0.3	mg/L
	Manganese, Total	21	-	µg/L
	Sodium	73	80	mg/L
	Nitrate as NO3	ND	ND	mg/L
	pH (Laboratory)	8.5	7.9	pH (H)
	Specific Conductance (E.C)	457	443	µmhos/cm
	Total Diss. Solids	254	-	mg/L
	Sulfate	22	25	mg/L
	QC Anion-Cation Balance	-1	-	%
	QC Ratio TDS/SEC	0.56	-	
	o-Phosphate-P, Dissolved	ND	-	mg/L
	Langlier Index, 15°C	-0.04	-	
	Alkalinity, Total (as CaCO3)	73	75	mg/L
	Iron	1359	-	µg/L
	Nitrite as NO2-N	0.1	-	mg/L

Well	Constituent	MBAS Result	Result Monterey County	Units
	QC Anion Sum x 100	88%	-	%
	QC Cation Sum x 100	86%	-	%
	Hydroxide	ND	-	mg/L
	Carbonate as CaCO <sub>3</sub>	ND	-	mg/L
	Bromide	0.2	-	mg/L
	Barium, Total	26	-	µg/L
	Iron, Dissolved	ND	-	µg/L
	Manganese, Dissolved	ND	-	µg/L
	Boron	0.09	-	mg/L
	Iodide	PENDING	-	µg/L

ND = Not Detected

Well	Constituent	MBAS Result	Result Monterey County	Units
SBWM 1 at 1,390 ft	Calcium	29	27	mg/L
	Chloride	152	201	mg/L
	Fluoride	0.2	-	mg/L
	Hardness (as CaCO3)	81	-	mg/L
	Bicarbonate (as HCO3-)	83	-	mg/L
	Potassium	5.3	4.2	mg/L
	Langlier Index, 60°C	0.97	-	
	Magnesium	2.0	0.3	mg/L
	Manganese, Total	58		µg/L
	Sodium	109	149	mg/L
	Nitrate as NO3	ND	ND	mg/L
	pH (Laboratory)	8.6	7.6	pH (H)
	Specific Conductance (E.C)	706	889	µmhos/cm
	Total Diss. Solids	383	-	mg/L
	Sulfate	29	35	mg/L
	QC Anion-Cation Balance	2	-	%
	QC Ratio TDS/SEC	0.54	-	
	o-Phosphate-P, Dissolved	ND	-	mg/L
	Langlier Index, 15°C	0.38	-	
	Alkalinity, Total (as CaCO3)	68	74	mg/L
	Iron	6400	-	µg/L
	Nitrite as NO2-N	ND	-	mg/L
	QC Anion Sum x 100	89%	-	%
	QC Cation Sum x 100	92%	-	%
	Hydroxide	ND	-	mg/L
	Carbonate as CaCO3	ND	-	mg/L
	Bromide	0.4	-	mg/L
	Barium, Total	72	-	µg/L
	Iron, Dissolved	40	-	µg/L
	Manganese, Dissolved	ND	-	µg/L
	Boron	0.09	-	mg/L
	Iodide	PENDING	-	µg/L

ND = Not Detected

Well	Constituent	MBAS Result	Result Monterey County	Units
SBWM 2 at 1,000 ft	Calcium	16	14	mg/L
	Chloride	67	66	mg/L
	Fluoride	0.2	-	mg/L
	Hardness (as CaCO3)	48	-	mg/L
	Bicarbonate (as HCO3-)	99	-	mg/L
	Potassium	3.3	2.8	mg/L
	Langlier Index, 60°C	0.64	-	
	Magnesium	2.0	0.7	mg/L
	Manganese, Total	36	-	µg/L
	Sodium	61	69	mg/L
	Nitrate as NO3	ND	ND	mg/L
	pH (Laboratory)	8.4	8.2	pH (H)
	Specific Conductance (E.C)	432	417	µmhos/cm
	Total Diss. Solids	234	-	mg/L
	Sulfate	17	19	mg/L
	QC Anion-Cation Balance	-2	-2	%
	QC Ratio TDS/SEC	0.54	-	
	o-Phosphate-P, Dissolved	ND	-	mg/L
	Langlier Index, 15°C	0.04	-	
	Alkalinity, Total (as CaCO3)	81	86	mg/L
	Iron	6585	-	µg/L
	Nitrite as NO2-N	0.2	-	mg/L
	QC Anion Sum x 100	89%	-	%
	QC Cation Sum x 100	86%	-	%
	Hydroxide	ND	-	mg/L
	Carbonate as CaCO3	ND	-	mg/L
	Bromide	0.2	-	mg/L
	Barium, Total	40	-	µg/L
	Iron, Dissolved	34	-	µg/L
	Manganese, Dissolved	ND	-	µg/L
	Boron	0.08	-	mg/L

ND = Not Detected

Well	Constituent	MBAS Result	Result Monterey County	Units
SBWM 2 at 1,470 ft	Calcium	18	18	mg/L
	Chloride	66	65	mg/L
	Fluoride	0.2	-	mg/L
	Hardness (as CaCO3)	53	-	mg/L
	Bicarbonate (as HCO3-)	100	-	mg/L
	Potassium	3.4	3.0	mg/L
	Langlier Index, 60°C	0.69	-	
	Magnesium	2.0	1.0	mg/L
	Manganese, Total	47	-	µg/L
	Sodium	60	69	mg/L
	Nitrate as NO3	ND	ND	mg/L
	pH (Laboratory)	8.4	7.9	pH (H)
	Specific Conductance (E.C)	431	419	µmhos/cm
	Total Diss. Solids	234	-	mg/L
	Sulfate	18	18	mg/L
	QC Anion-Cation Balance	-2	1	%
	QC Ratio TDS/SEC	0.54	-	
	o-Phosphate-P, Dissolved	ND	-	mg/L
	Langlier Index, 15°C	0.10	-	
	Alkalinity, Total (as CaCO3)	82	89	mg/L
	Iron	5448	-	µg/L
	Nitrite as NO2-N	0.2	-	mg/L
	QC Anion Sum x 100	90%	-	%
	QC Cation Sum x 100	87%	-	%
	Hydroxide	ND	-	mg/L
	Carbonate as CaCO3	ND	-	mg/L
	Bromide	0.2	-	mg/L
	Barium, Total	50	-	µg/L
	Iron, Dissolved	77	-	µg/L
	Manganese, Dissolved	ND	-	µg/L
	Boron	0.08	-	mg/L
	Iodide	PENDING	-	µg/L

ND = Not Detected

Well	Constituent	MBAS Result	Result Monterey County	Units
SBWM 4 at 715 ft	Calcium	78	69	mg/L
	Chloride	139	135	mg/L
	Fluoride	0.2	-	mg/L
	Hardness (as CaCO3)	232	-	mg/L
	Bicarbonate (as HCO3-)	224	-	mg/L
	Potassium	8.5	7.5	mg/L
	Langlier Index, 60°C	0.62	-	
	Magnesium	9.0	9.4	mg/L
	Manganese, Total	133	-	µg/L
	Sodium	91	103	mg/L
	Nitrate as NO3	ND	ND	mg/L
	pH (Laboratory)	7.4	7.5	pH (H)
	Specific Conductance (E.C)	866	866	µmhos/cm
	Total Diss. Solids	503	-	mg/L
	Sulfate	37	36	mg/L
	QC Anion-Cation Balance	3	2	%
	QC Ratio TDS/SEC	0.58	-	
	o-Phosphate-P, Dissolved	ND	-	mg/L
	Langlier Index, 15°C	0.02	-	
	Alkalinity, Total (as CaCO3)	184	195	mg/L
	Iron	12,985	-	µg/L
	Nitrite as NO2-N	0.2	-	mg/L
	QC Anion Sum x 100	97%	-	%
	QC Cation Sum x 100	102%	-	%
	Hydroxide	ND	-	mg/L
	Carbonate as CaCO3	ND	-	mg/L
	Bromide	0.4	-	mg/L
	Barium, Total	133	-	µg/L
	Iron, Dissolved	29	-	µg/L
	Manganese, Dissolved	27	-	µg/L
	Boron	0.10	-	mg/L
	Iodide	PENDING	-	µg/L

ND = Not Detected

Well	Constituent	MBAS Result	Result Monterey County	Units
SBWM 4 at 900 ft	Calcium	86	83	mg/L
	Chloride	274	259	mg/L
	Fluoride	0.2	-	mg/L
	Hardness (as CaCO3)	297	-	mg/L
	Bicarbonate (as HCO3-)	340	-	mg/L
	Potassium	8.6	8.1	mg/L
	Langlier Index, 60°C	0.79	-	
	Magnesium	20	18	mg/L
	Manganese, Total	140	-	µg/L
	Sodium	172	189	mg/L
	Nitrate as NO3	ND	ND	mg/L
	pH (Laboratory)	7.4	7.6	pH (H)
	Specific Conductance (E.C)	1,427	1,430	µmhos/cm
	Total Diss. Solids	806	-	mg/L
	Sulfate	40	50	mg/L
	QC Anion-Cation Balance	-2	0	%
	QC Ratio TDS/SEC	0.56	-	
	o-Phosphate-P, Dissolved	ND	-	mg/L
	Langlier Index, 15°C	0.20	-	
	Alkalinity, Total (as CaCO3)	279	284	mg/L
	Iron	4215	-	µg/L
	Nitrite as NO2-N	0.2	-	mg/L
	QC Anion Sum x 100	99%	-	%
	QC Cation Sum x 100	96%	-	%
	Hydroxide	ND	-	mg/L
	Carbonate as CaCO3	ND	-	mg/L
	Bromide	0.8	-	mg/L
	Barium, Total	347	-	µg/L
	Iron, Dissolved	37	-	µg/L
	Manganese, Dissolved	72	-	µg/L
	Boron	0.31	-	mg/L
	Iodide	PENDING	-	µg/L

ND = Not Detected

Well	Constituent	MBAS Result	Units
Ord Terrace Shallow	Calcium	64	mg/L
	Chloride	114	mg/L
	Fluoride	0.2	mg/L
	Hardness (as CaCO3)	217	mg/L
	Bicarbonate (as HCO3-)	249	mg/L
	Potassium	3.7	mg/L
	Langlier Index, 60°C	--	
	Magnesium	14	mg/L
	Manganese, Total	87	µg/L
	Sodium	66	mg/L
	Nitrate as NO3	6	mg/L
	pH (Laboratory)	7.6	pH (H)
	Specific Conductance (E.C)	868	µmhos/cm
	Total Diss. Solids	506	mg/L
	Sulfate	43	mg/L
	QC Anion-Cation Balance	-6	%
	QC Ratio TDS/SEC	0.58	
	o-Phosphate-P, Dissolved	ND	mg/L
	Langlier Index, 15°C	--	
	Alkalinity, Total (as CaCO3)	204	mg/L
	Iron	106	µg/L
	Nitrite as NO2-N	0.2	mg/L
	QC Anion Sum x 100	95%	%
	QC Cation Sum x 100	84%	%
	Hydroxide	--	mg/L
	Carbonate as CaCO3	ND	mg/L
	Bromide	0.3	mg/L
	Barium, Total	51	µg/L
	Iron, Dissolved	ND	µg/L
	Manganese, Dissolved	ND	µg/L
	Boron	0.07	mg/L
	Iodide	PENDING	µg/L

### 3. WATER QUALITY ANALYSIS

The analyses used to examine the water quality data collected in December 2016 are the same as those used in the SIAR: chloride concentrations over time, sodium/chloride ratios, and piper and stiff diagrams.

Groundwater quality results for the following wells were within the range of normal historical values, and are therefore not discussed further in this memorandum:

- Well SBWM-1 (1,140 ft),
- Well SBWM-2 (1,000 ft), and
- Well SBWM-4 (715 ft).

The analysis in this memorandum focuses on those wells with observed anomalies in either the July 2016 or December 2016 samples:

- Well SBWM-1 (1,390 ft),
- Well SBWM-2 (1,470 ft),
- Well SBWM-4 (900 ft), and
- Ord Terrace Shallow.

### 3.1. Chloride Concentrations and Sodium/Chloride Ratios

Figures 1 through 4 update the chloride concentration and sodium/chloride ratio charts from the 2016 SIAR with the December 2016 sample results, and include chloride trend lines. In summary, the charts show:

- Well SBWM-1 (1,390 ft) has had a 85 mg/L chloride increase since July 2016 and its overall chloride concentrations are increasing. The increasing chloride trend observed in this well is more pronounced because of seasonal fluctuations where the winter concentrations tend to be higher than summer concentrations (grey trend line). There is a slight, but inconsequential, increasing trend if the high winter concentrations are excluded ( $> 70$  mg/L, black trend line);
- Well SBWM-2 (1,470 ft) chloride concentrations declined in December to less than 70 mg/L, back to within the range of historical concentrations. The overall chloride trend is virtually flat if the July 2016 sample is excluded;
- Well SBWM-4 (900 ft) chloride concentrations are slightly less than in July 2016 but still higher than historical values. The overall chloride trend at this depth in the well is increasing over the period of record and increasing at a higher rate since January 2012; and
- Ord Terrace Shallow well chloride concentrations have declined to 114 mg/L, which is within the range of historical concentrations. There is a very slight increasing chloride trend over the period of record.

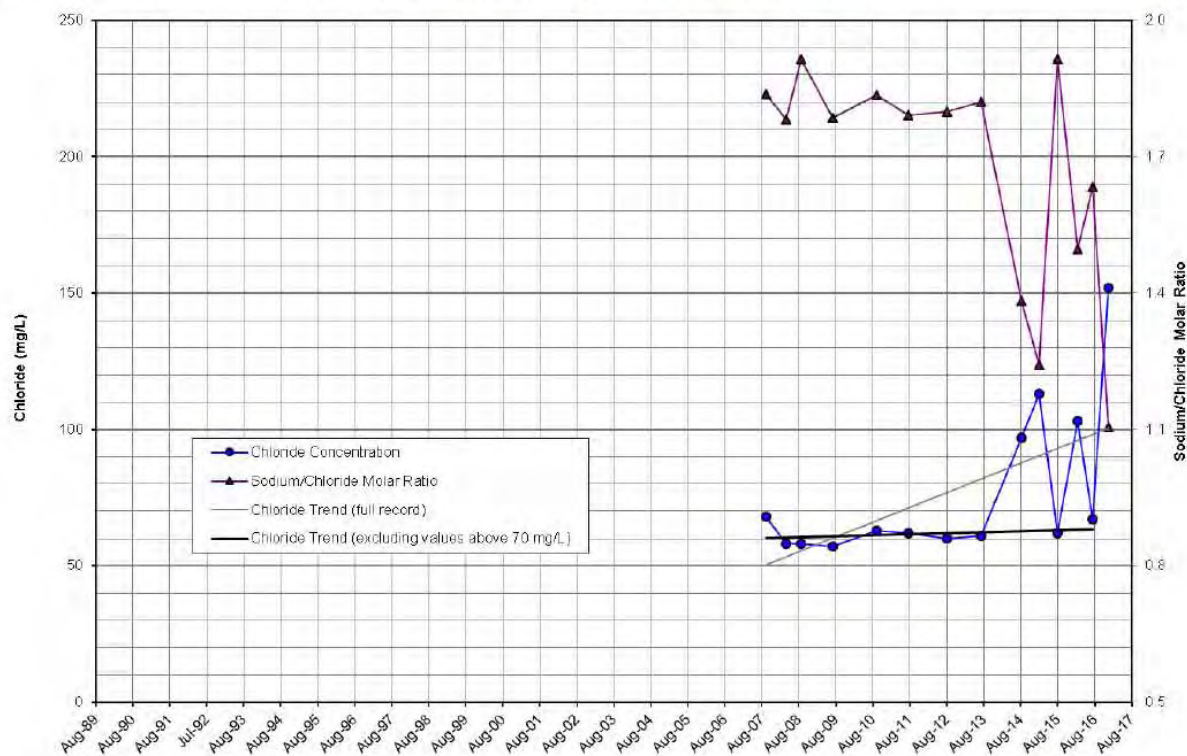


Figure 1: SBWM-1 (1,390 ft) Chloride Concentrations and Sodium/Chloride Ratios

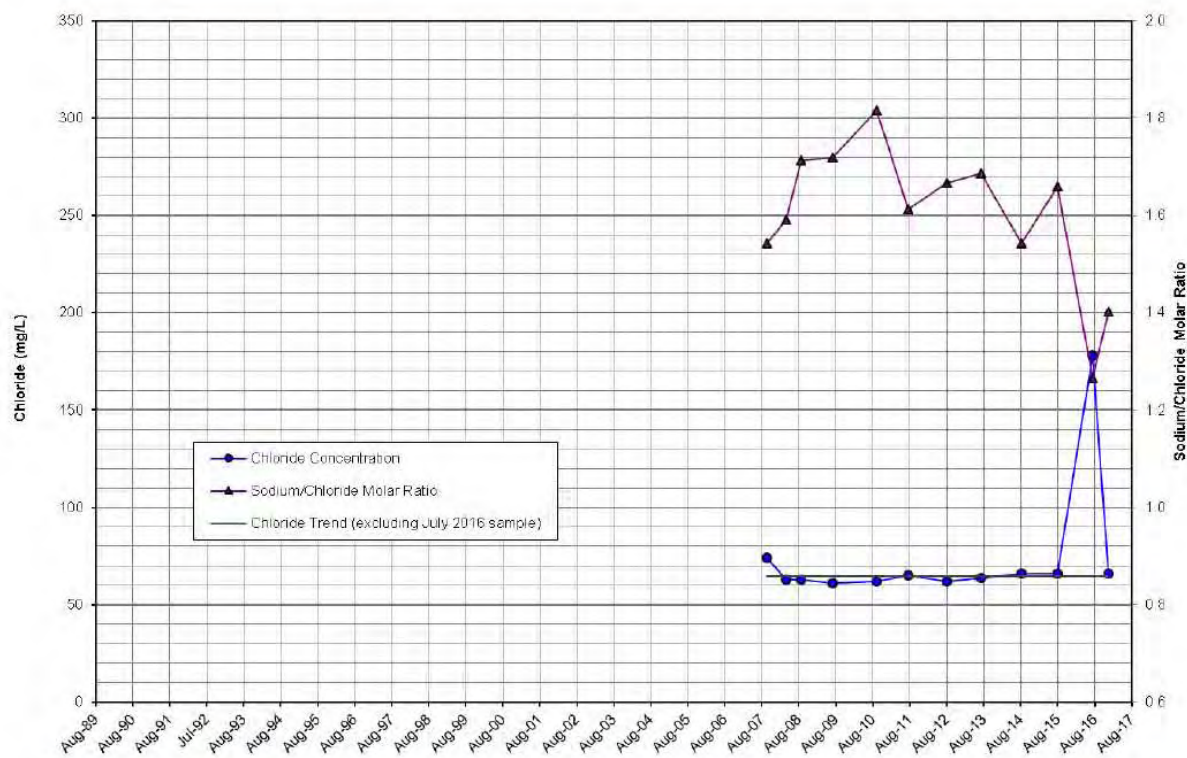


Figure 2: SBWM-2 (1,470 ft) Chloride Concentrations and Sodium/Chloride Ratios

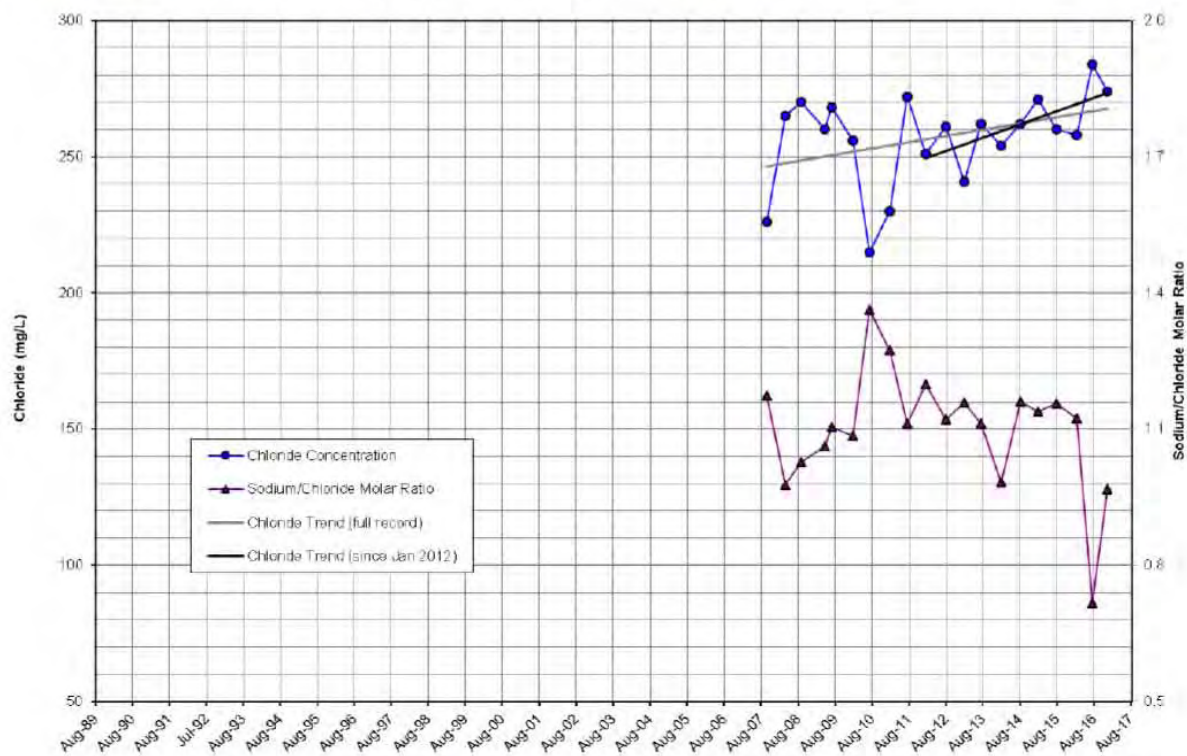


Figure 3: SBWM-4 (900 ft) Chloride Concentrations and Sodium/Chloride Ratios

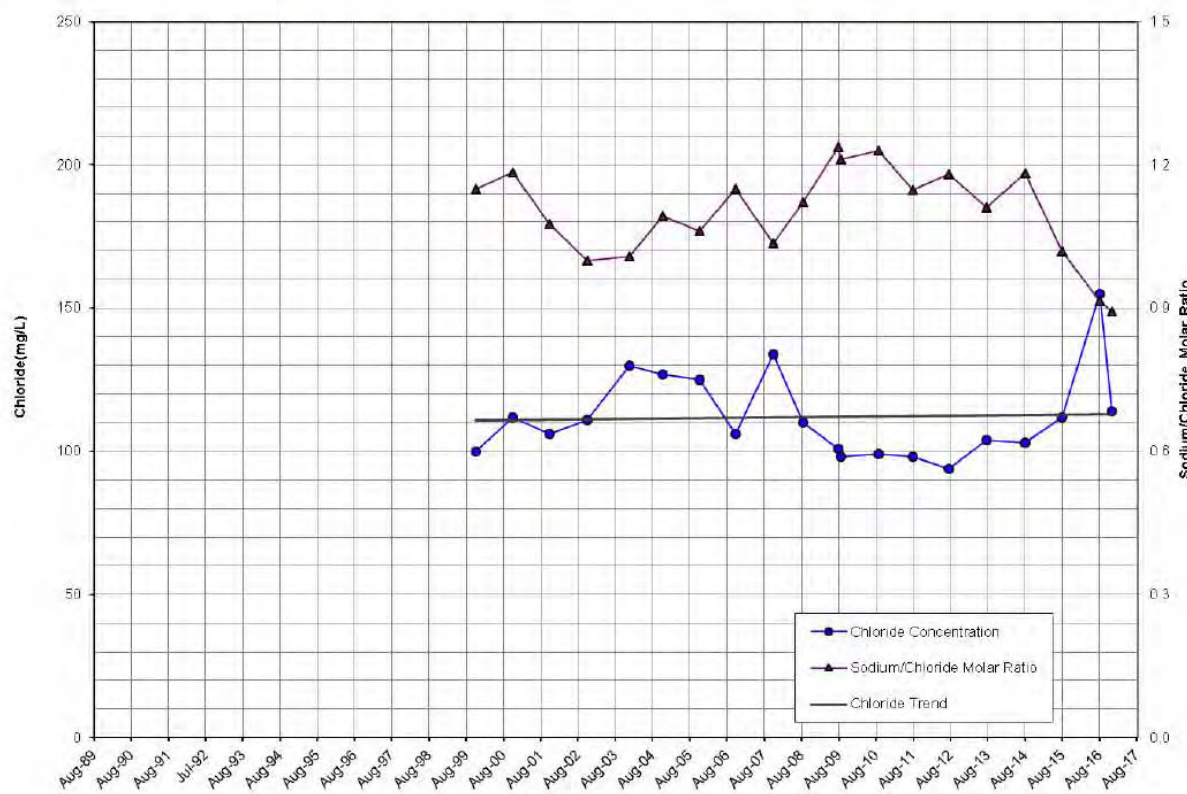


Figure 4: Ord Terrace Shallow Chloride Concentrations and Sodium/Chloride Ratios

### 3.2. Piper and Stiff Diagrams

Piper diagrams for the four wells with anomalous data are shown on Figures 5 through 8. In summary the Piper diagrams show:

- Well SBWM-1 (1,390 ft)'s sample for December 2016, shown with the green triangle, plots between seawater and its historical cluster of data points.
- Well SBWM-2 (1,470 ft)'s sample for December 2016, shown with the green triangle, plots within its historical cluster of data points. This is in contrast with the July 2016 sample, shown with the open circle, which plots between seawater and the historical cluster of data points.
- Well SBWM-4 (900 ft)'s sample for December 2016, shown with the green star, plots within its historical cluster of data points. This is in contrast with the July 2016 sample, shown with the star, which plots between seawater and the historical cluster of data points.
- Ord Terrace Shallow well's sample for December 2016, shown with the green triangle, plots within its historical cluster of data points.

Stiff diagrams for these four wells are shown on Figures 9 and 10. Stiff diagrams for 2015 and 2016 are included to provide context, and show change over a two year period. All of the well's stiff diagrams for the December 2016 sample, except well SBWM-1 (1,390 ft)'s, are similar to historical diagrams before July 2016. Sentinel well SBWM-1 (1,390 ft)'s stiff diagram has a slightly different shape from previous years, but the shapes over time for this well have varied. The stiff diagrams that are included in the SIAR to demonstrate what a seawater intruded sample might look like are reproduced on Figure 11. Comparing the stiff diagrams on Figure 9 and Figure 10 with Figure 11 reveals that none of the December sample's stiff diagrams are clearly indicative of seawater intrusion.

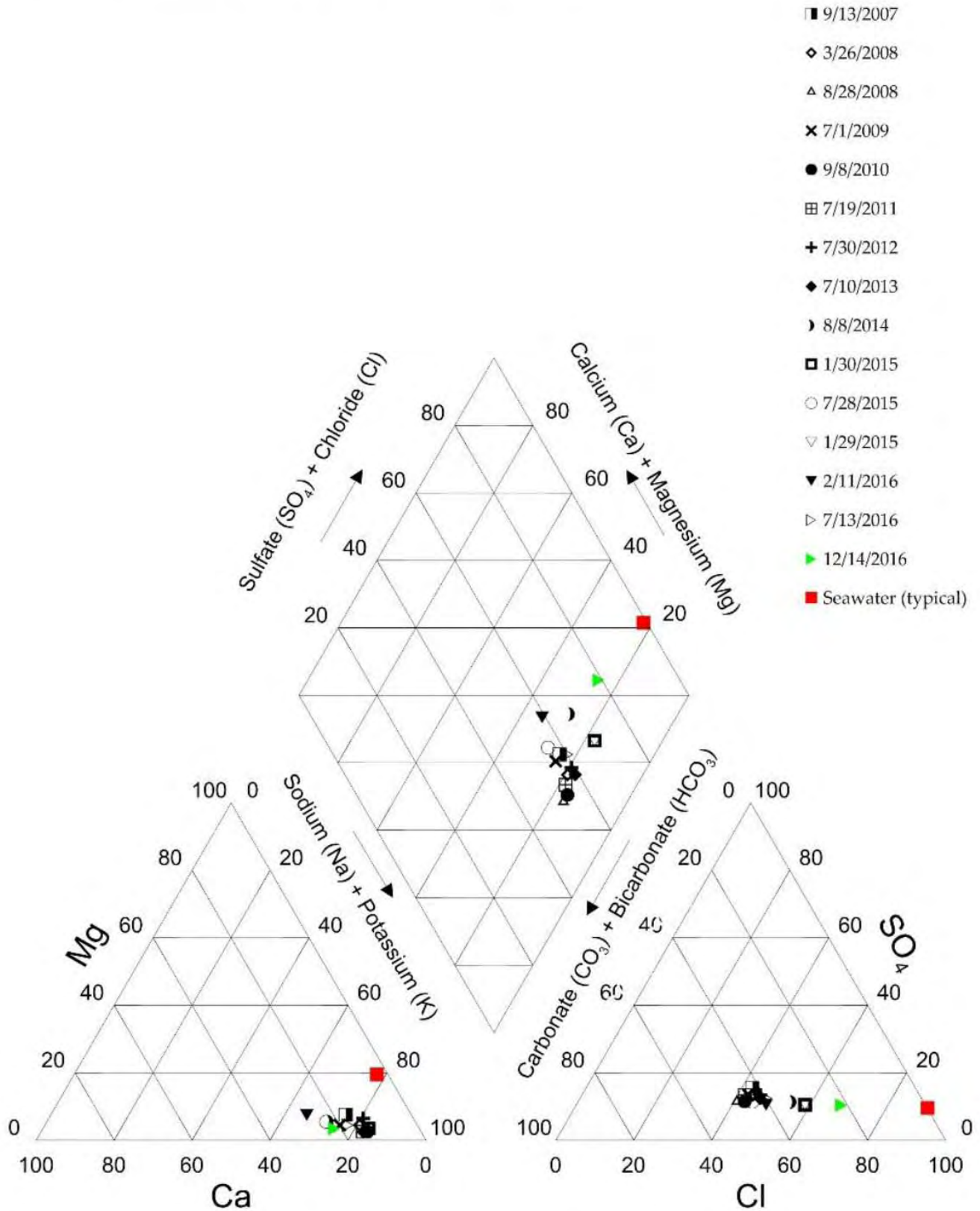
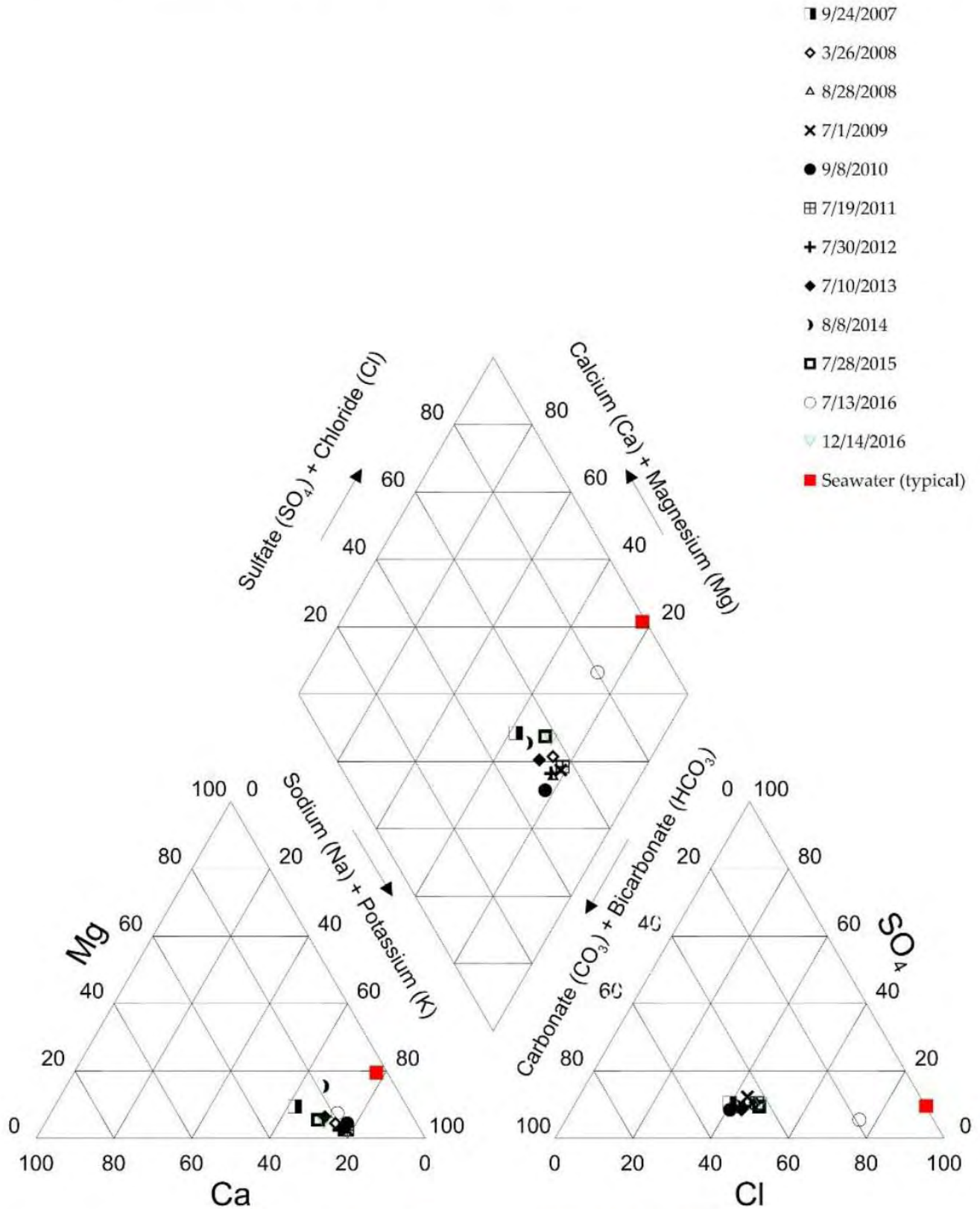


Figure 5: Piper Diagram for SBWM-1 (1,390 ft)



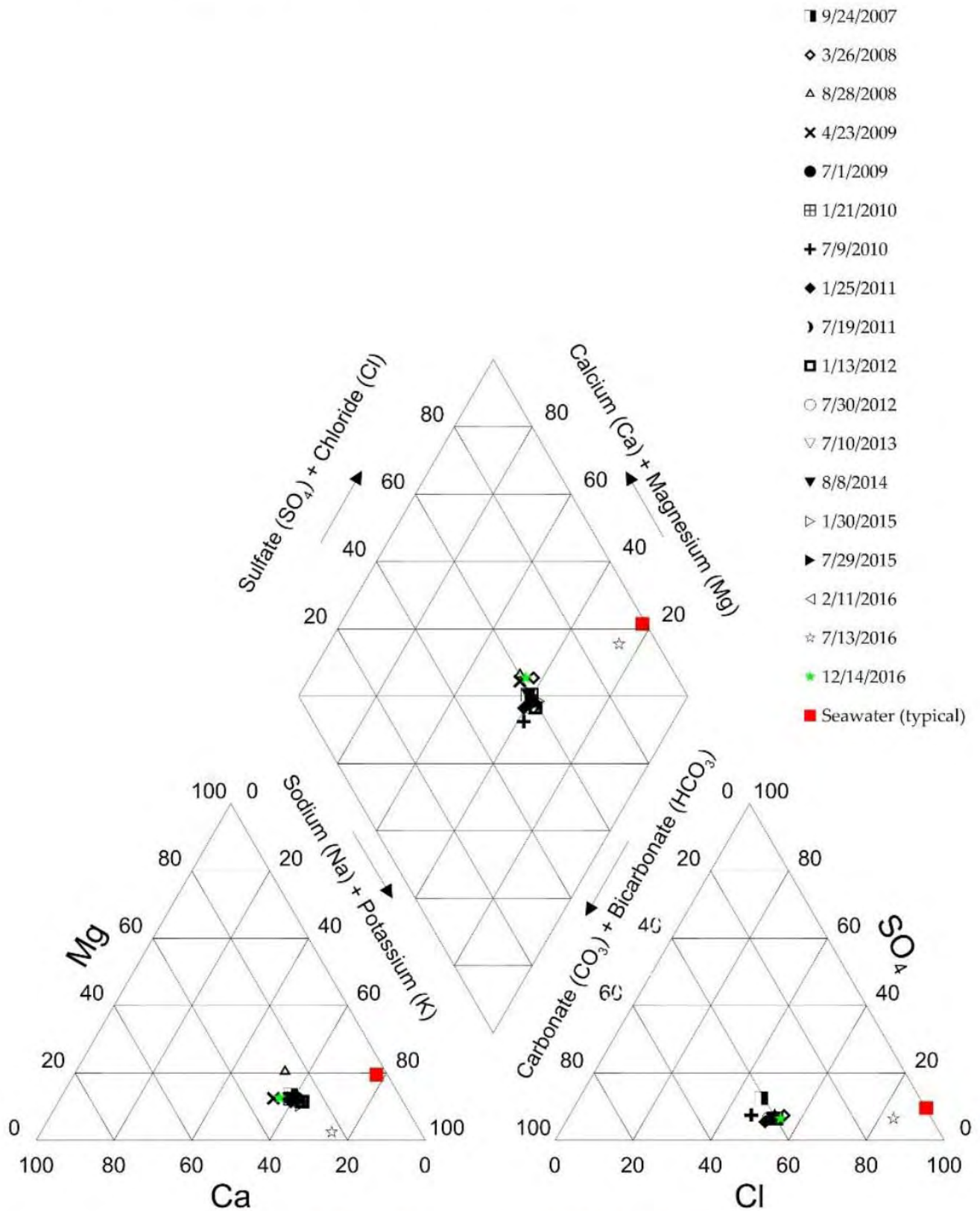


Figure 7: Piper Diagram for SBWM-4 (900 ft)

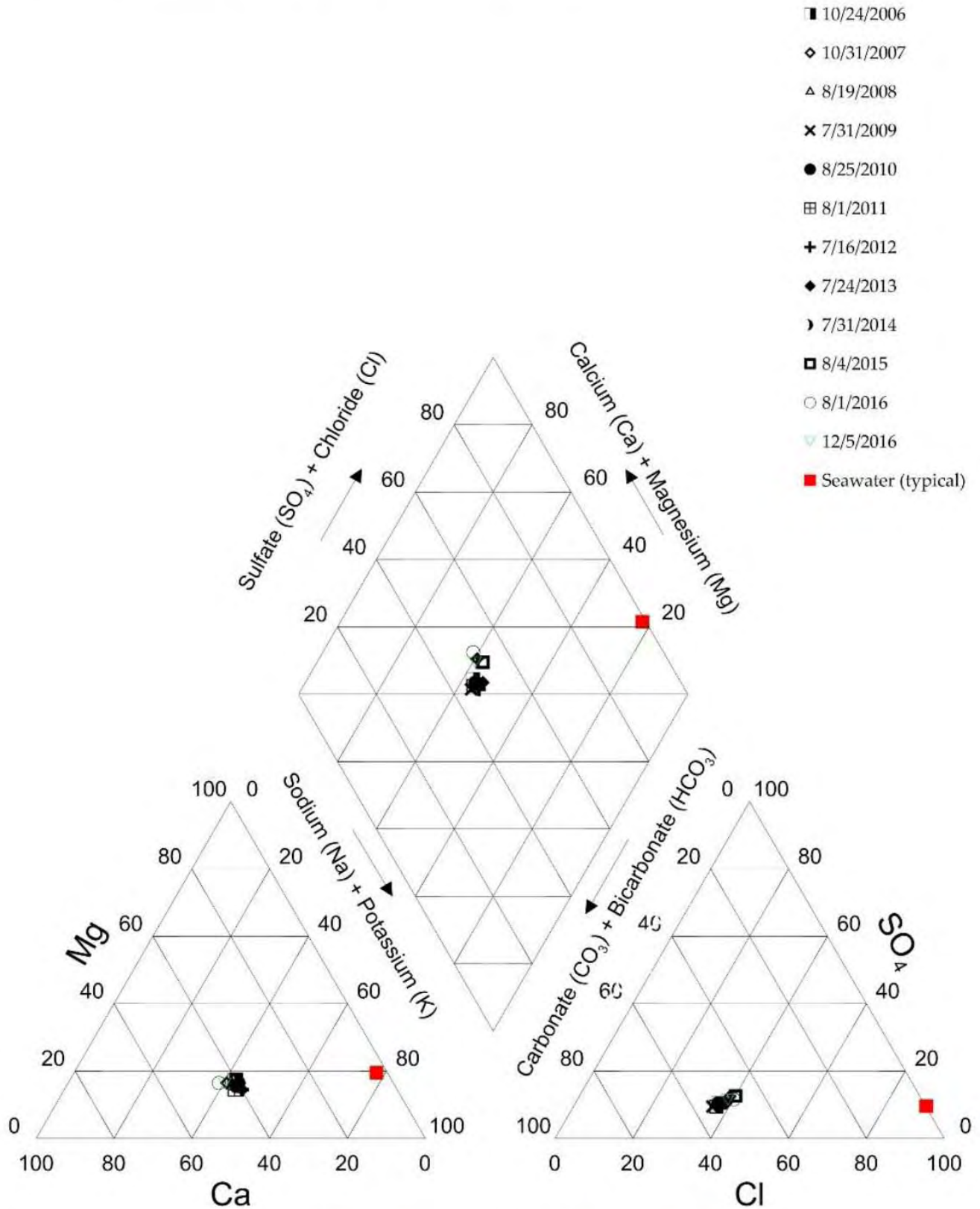


Figure 8: Piper Diagram for Ord Terrace Shallow

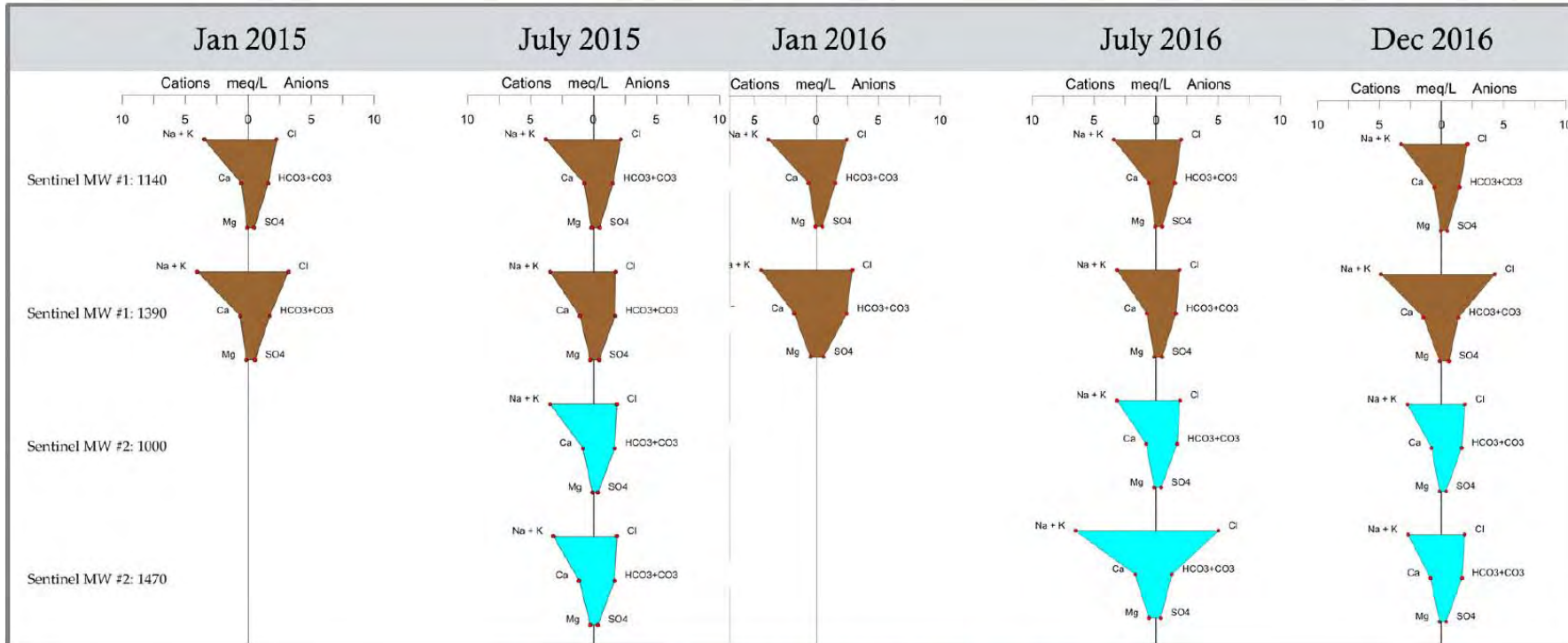


Figure 9: Stiff Diagram for SBWM-1 and SBWM-2

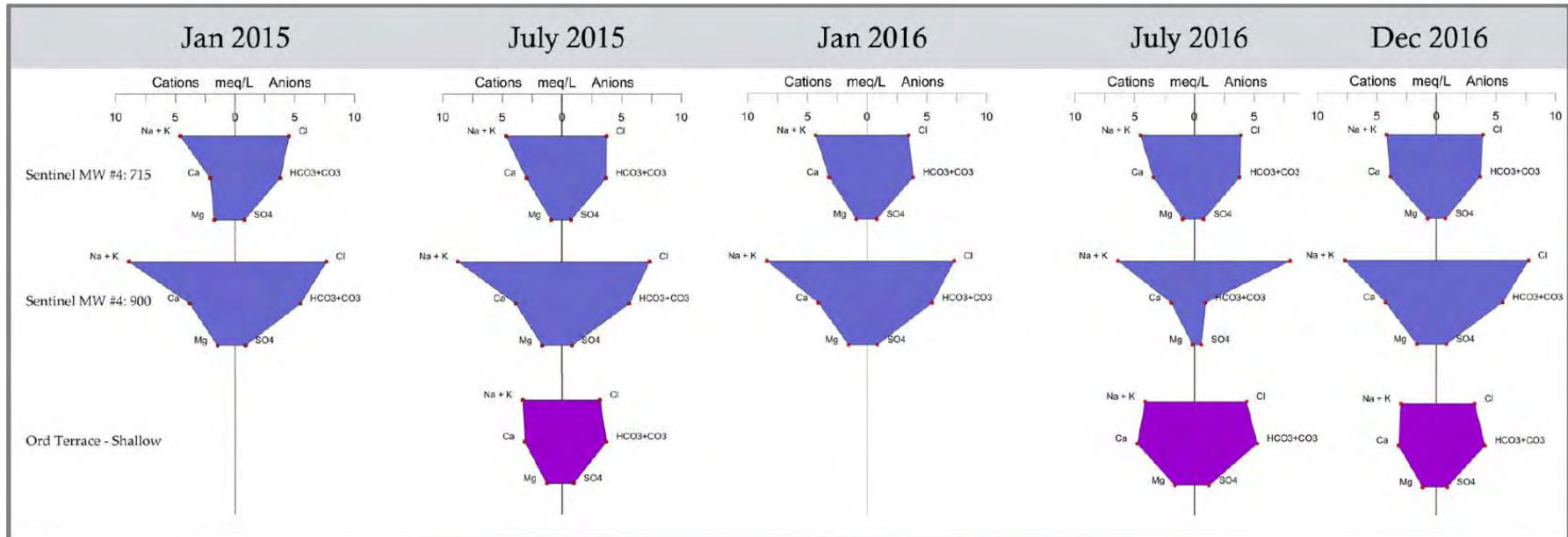


Figure 10: Stiff Diagram for SBWM-4 and Ord Terrace Shallow

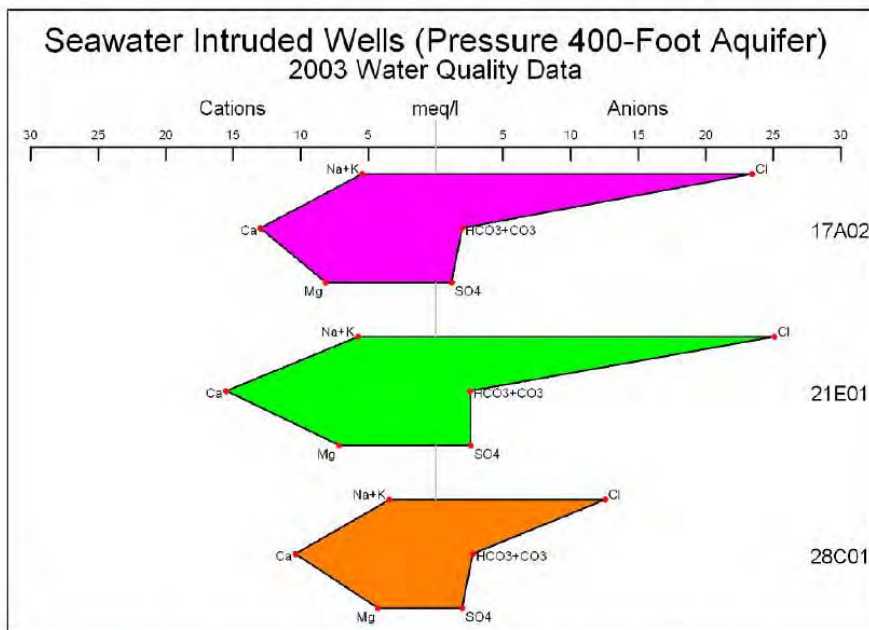


Figure 11: Stiff Diagrams from Salinas Valley Wells with Seawater Intrusion  
 (Source: MWCRA)

#### 4. DISCUSSION OF RESULTS

##### 4.1. Well SBWM-1 (1,390 ft)

Based on the piper diagram (Figure 6), and shape of the stiff diagram (Figure 9), the increased chloride concentration in the December 2016 sample is not definitively indicative of seawater intrusion. This well has experienced fluctuating chloride concentrations since 2014 (Figure 1) with higher chloride concentrations being observed in winter and lower concentrations in summer. Prior to 2014, its chloride concentrations were fairly stable. It is possible the observed chloride fluctuations are related to incipient saline intrusion that is being controlled by seasonal groundwater fluctuations. However, the definitive trend of increasing chloride needed to assert that seawater intrusion is occurring is not yet apparent.

##### 4.2. Well SBWM-2 (1,470 ft)

In the December 2016 sample, the chloride concentration in SBWM-2 (1,470 ft) returned to within the range of historical concentrations of less than 70 mg/L, following a reading of over 150 mg/L in the July 2016 sample. The piper (Figure 6) and stiff diagrams (Figure 9) both indicate that the anions and cations from the December 2016 sample returned to within their pre-July 2016 range. The high chlorides and anomalous anion

cation ratios observed in the July, 2016 sample may have been due to seasonal fluctuations, similar to what is observed in SBWM-1; or may have been the result of sampling/laboratory error. Continued monitoring of this well will determine sampling/whether seasonal fluctuations are responsible for the elevated chloride concentration observed in July 2016.

#### 4.3. Well SBWM-4 (900 ft)

The 274 mg/L chloride concentration in SBWM-4 (900 ft) from December 2016 is above historical concentrations prior to July 2016 concentrations, but slightly lower than the July 2016 concentration of 284 mg/L (Figure 3). The piper (Figure 7) and stiff (Figure 10) diagrams for this well show that the anions and cations have returned to within the range of to pre-July 2016 conditions. The anomalous anion cation distribution observed in the July 2016 sample may have been due to seasonal fluctuations, similar to what is observed in well SBWM-1; or may have been the result of sampling/laboratory error. This well has the highest chloride elevations of all the coastal monitoring wells and appears to have an increasing chloride trend (Figure 3).

#### 4.4. Ord Terrace Shallow Well

The chloride concentration measured in the Ord Terrace Shallow well in December, 2016, returned to within its historical range of concentrations of less than 120 mg/L. In the 2016 SIAR, this well was ruled out as being potentially impacted by seawater because of its inland location, and because its piper and stiff diagrams did not indicate a seawater source of its anions and cations. The piper and stiff diagrams on Figure 7 and Figure 10, respectively, support this observation.

#### 4.5. Trends and Fluctuations

The Seaside Basin Watermaster Seawater Intrusion Response Plan (SIRP) (HydroMetrics WRI, 2009) points out that:

*Unusually high or steadily increasing chloride concentrations are one of the most commonly used indicators of seawater intrusion. At low chloride concentrations, trends are often as important as absolute concentrations because of natural variations in groundwater chemistry. While chloride concentrations are strongly indicative of seawater intrusion, it often takes time for the increasing chloride trend to be recognizable due to the long-term and relatively slow increase in chlorides during seawater intrusion.*

Most of the coastal wells have low chloride concentrations and trends are difficult to identify at those low concentrations because the trends can be masked by natural

variations in groundwater quality. However, we are starting to see an increasing trend in the well with the highest coastal chloride concentrations: SBWM-4. This well must be closely monitored in the future.

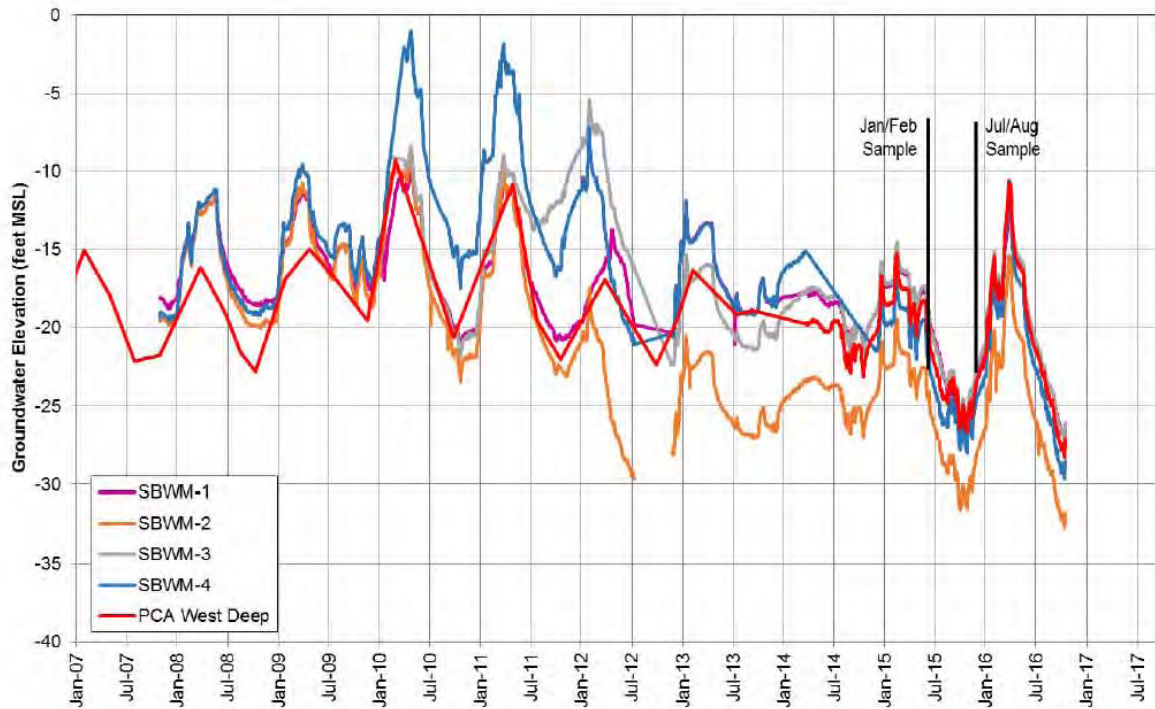
The chloride fluctuations observed more recently in well SBWM-1 (1,390 ft) appear to be seasonal, with samples collected in winter having higher concentrations than samples collected in summer. An increasing chloride trend may underlie the seasonal fluctuations as evidenced by the slight increasing chloride trend even when the seasonal high concentrations are excluded from the trend line (Figure 1). If water quality is changing in response to seasonal groundwater elevation fluctuations, larger groundwater quality impacts may be seen in future winter/spring months as groundwater levels continue to decline in the basin.

The seasonal chloride concentrations may be tied to seasonal groundwater elevation fluctuations. This relationship between chloride concentrations and groundwater elevations, however, likely results from a complex interplay of hydrogeologic structure and stratigraphy, pumping location, and seawater interface location.

The types of analyses for the annual SIAR and this memorandum do not definitively identify the source of the increased salinity. Mechanisms other than seawater intrusion have been found to be responsible for increased salinity along the California coast. These include:

- Declining groundwater levels causing compaction of clays which releases saline pore water, and
- Declining groundwater levels causing upwelling of saline connate water from the underlying Monterey Formation sediments which are known to cause increased salinity, e.g., groundwater in the Laguna Seca subarea is more saline than the rest of the Seaside Basin due to the underlying Monterey Formation.

To classify the source of increased salinity correctly, these alternative mechanisms should be examined. Regardless of the source, the Judge's Decision regarding material injury refers to "*physical impacts to the Seaside Basin or any particular Producer(s), including but not limited to: seawater intrusion, land subsidence, excessive pump lifts, and water quality degradation*". The two above bulleted mechanisms, although not seawater intrusion, would constitute degradation of water quality.



*Figure 12: Hydrograph for Sentinel Wells and Monitoring Well PCA West Deep*

If the seasonal fluctuations in chloride concentrations are tied to seasonal groundwater elevations, then groundwater samples should be taken at the times of highest and lowest groundwater elevations. Continuous logger groundwater level data plotted on a hydrograph (Figure 12), show that the lowest annual groundwater elevations generally occur at the beginning of October, and the highest annual groundwater elevations generally occur at the end of March. Sampling groundwater quality at the times of highest and lowest groundwater elevations will help establish if there is a definitive correlation between groundwater elevation and chloride concentration.

For groundwater quality samples to be more representative of extreme conditions in the basin, we recommend that samples in the future be collected in the last week of September for the 4<sup>th</sup> quarter and in the first week of March for the 2<sup>nd</sup> quarter samples.

## 5. ELECTRIC INDUCTION LOGGING

Induction logging measures the fluid conductivity up to a distance of three feet within the formation adjacent to the well being logged. If over time, conductivity increases relative to a baseline value, it indicates increased salinity. A limitation of this method is that it does not provide concentrations of chloride or other ions that contribute to salinity. Therefore, the use of electric induction logs can only be used qualitatively.

Induction logs are run in the sentinel wells because they are deep wells screened at select depths. The induction logs provide qualitative salinity information throughout the entire well depth, including unscreened areas of the well. The groundwater grab samples taken within the screened intervals only provide groundwater quality at that particular screened depth.

Figure 13 through Figure 15 shows the initial induction logs for the entire length of wells SBWM-1, SBWM-2 and SBWM-4 when they were installed (blue), and for all induction logs run by Pacific Surveys since 2014. Welenco performed the logging between 2007 and 2013 but due to a different tool used by Pacific Survey, a new baseline was established in August 2014. To improve readability of the lower portion of the wells, Figure 16 and Figure 17 provide a zoomed in view with the logs overlain on one another.

The induction logs for well SBWM-1 shows there has been an increase in the shallow seawater intrusion zone above 450 feet depth since the well was constructed in 2007 (Figure 13). This intrusion was evident at the time SBWM-1 was constructed (HydroMetrics WRI, 2016). The deeper depths of well SBWM-1 show no clear evidence of increased salinity over time, although seasonal fluctuations are observed in the clays (zones with lower resistivity); summer conductivities (July 2015 and July 2016) plot close together and the conductivities in winter are more varied (Figure 16).

The induction logs for well SBWM-2 shows that there has been an increase in the shallow seawater intrusion zone above 300 feet depth since the well was constructed in 2007 (Figure 14). The logs show seasonal fluctuations in the clays (zones with lower resistivity), with similar conductivities in January 2015 and February 2016, and increased conductivities in summer (August 2014, July 2015 and July 2016) (Figure 16). At a depth of 1,470 feet within the screened sandy part of the aquifer (higher resistivity), the July 2016 conductivity is higher than all previous conductivities, except the initial log in 2007 (Figure 16). This might corroborate the higher chloride concentration observed in the July 2016 sample.

At the 900 foot depth in well SBWM-4, it is difficult to see changes in conductivity because most of the logs plot too close together (Figure 17). These similar conductivities indicate that there has been no major increase in salinity at this depth. The seasonal fluctuations observed in SBWM-1 and SBWM-2 are not obvious in this well.

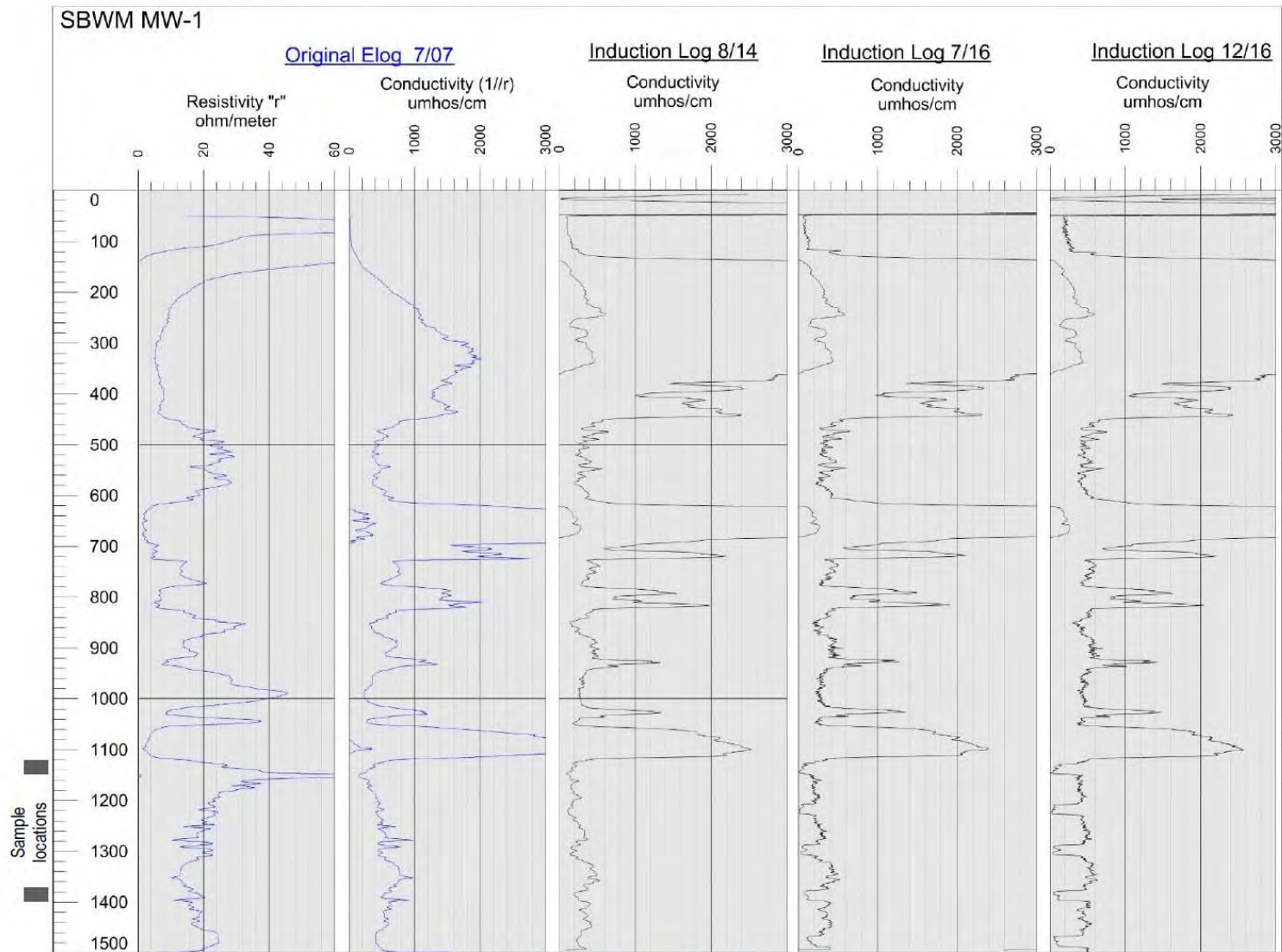


Figure 13: Sentinel Well 1 Induction Logs

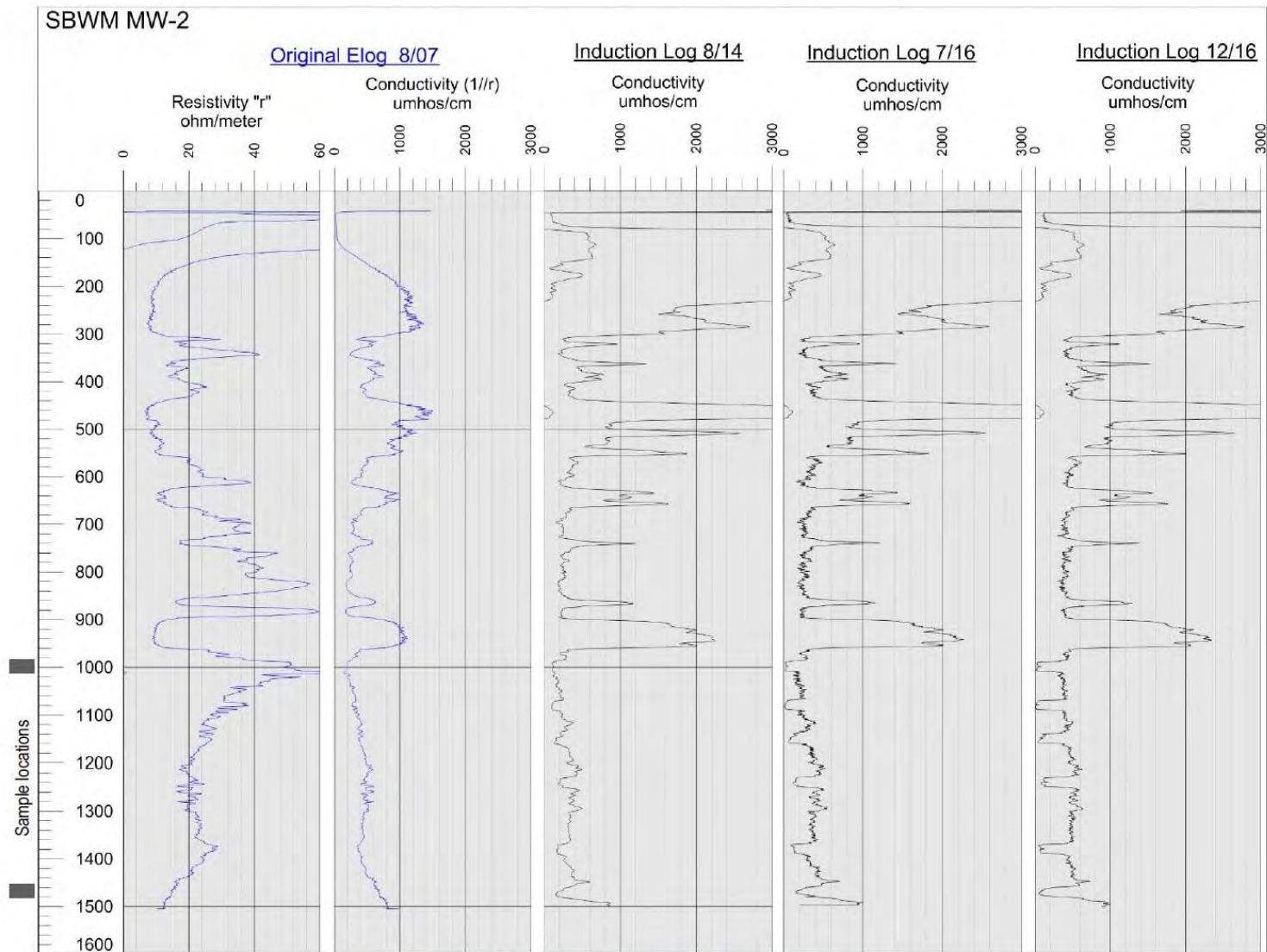


Figure 14: Sentinel Well 2 Induction Logs

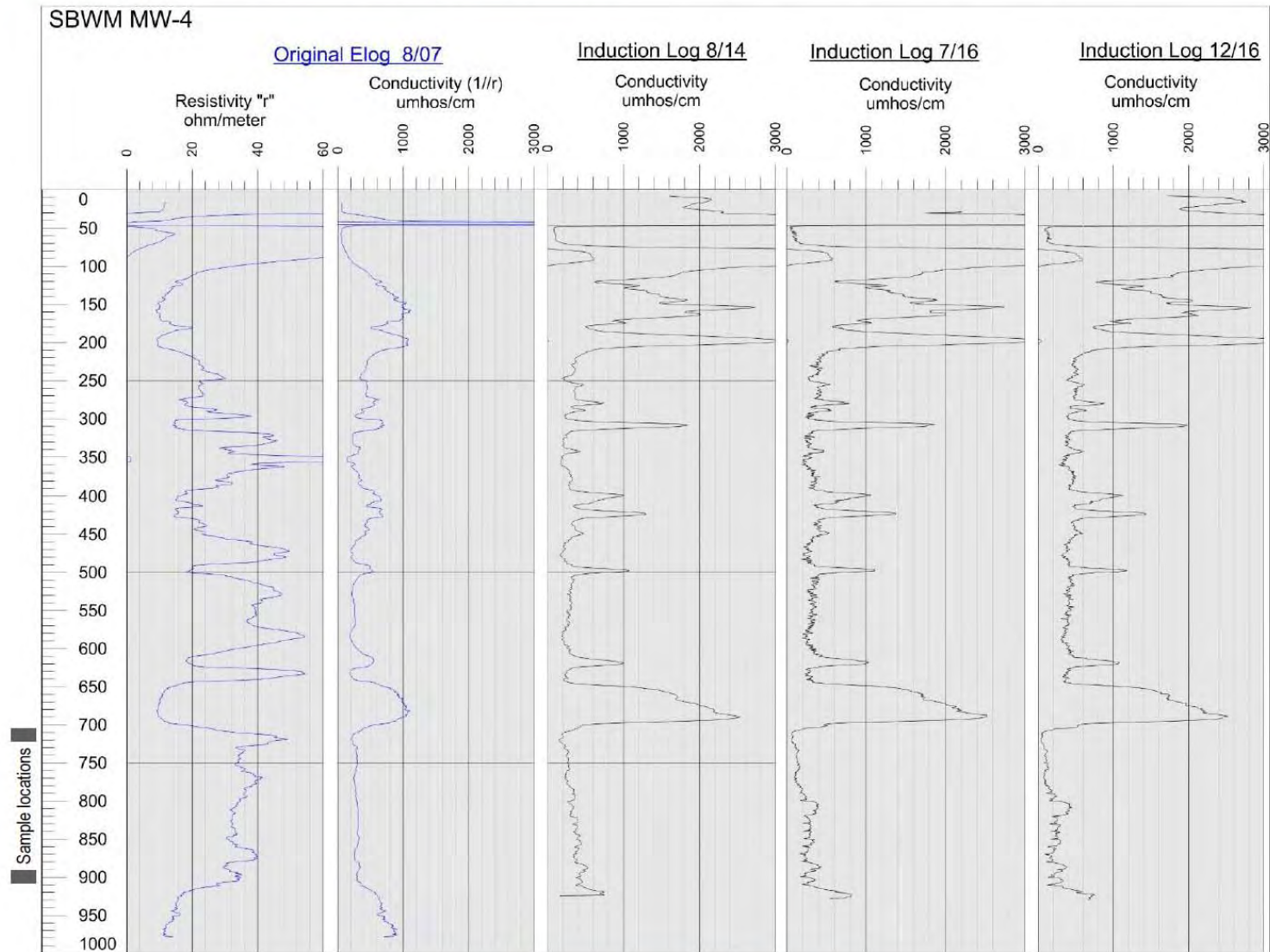


Figure 15: Sentinel Well 4 Induction Logs

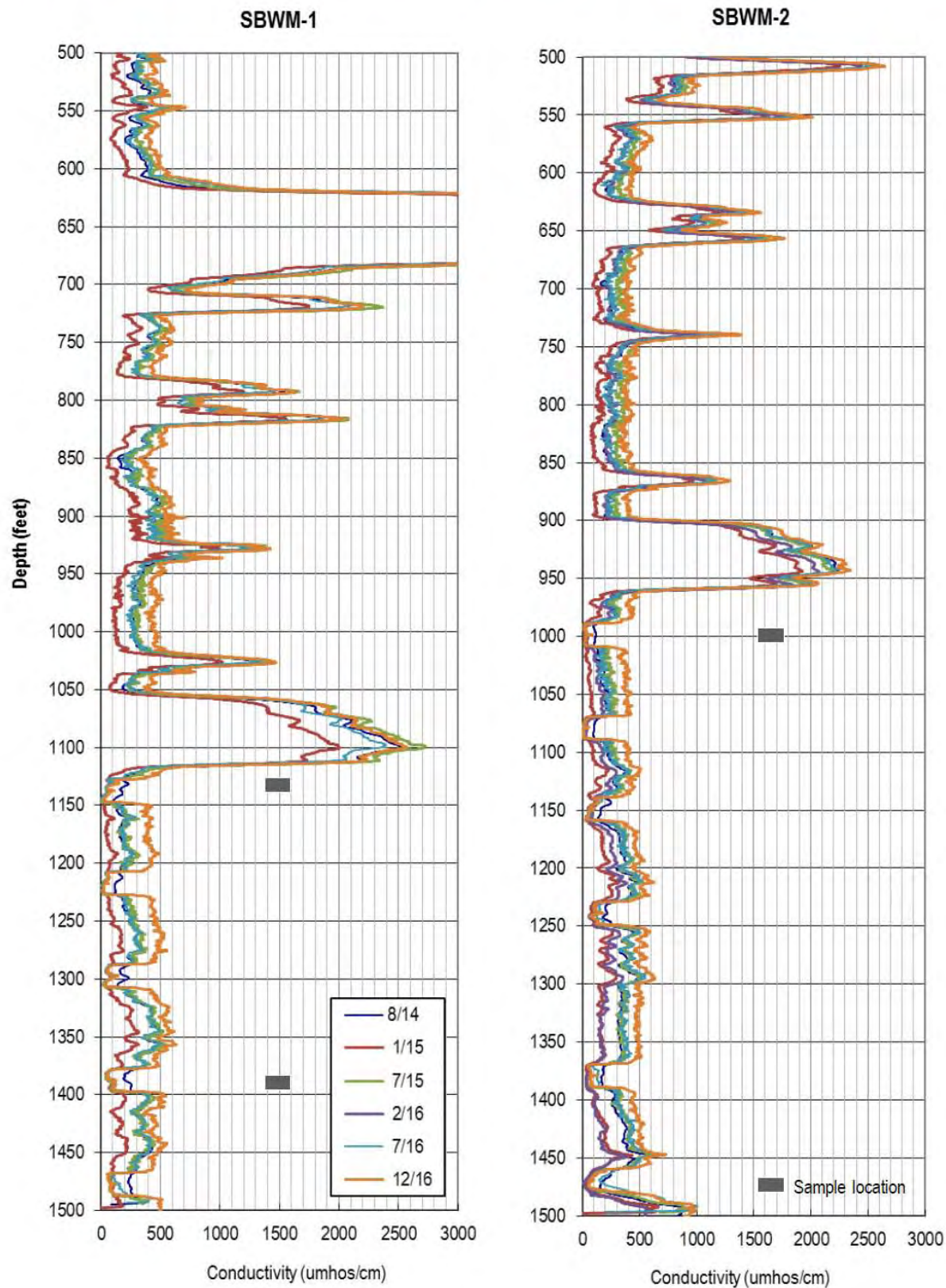
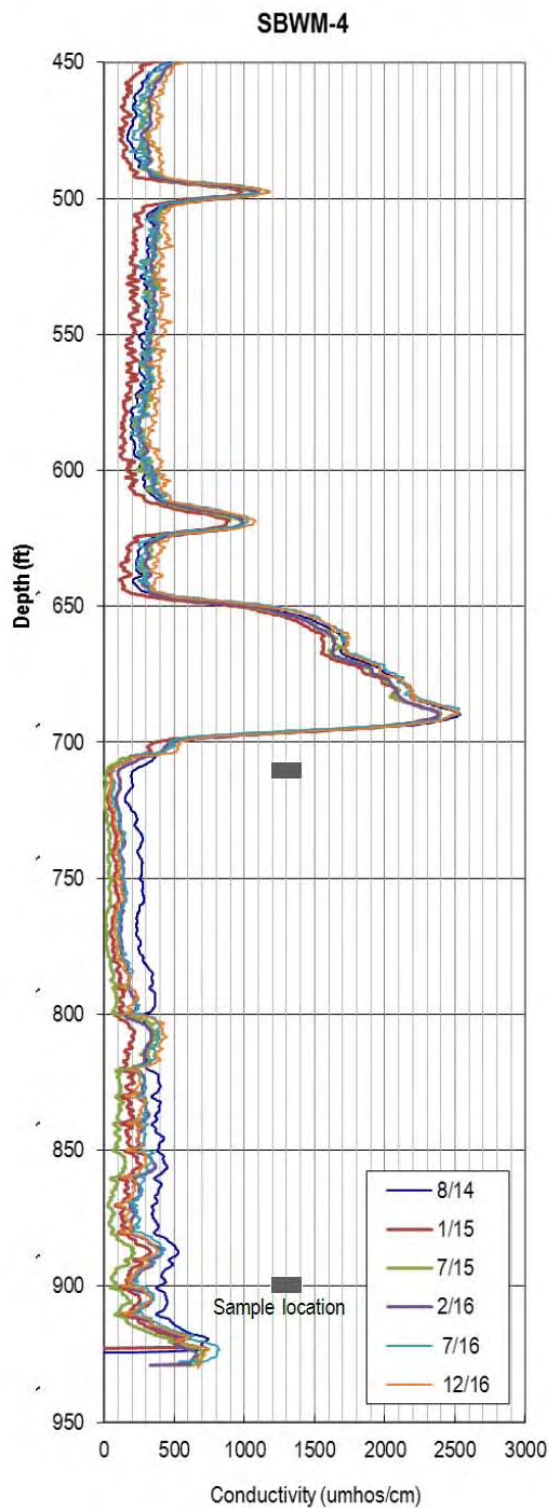


Figure 16: Induction Logs of Lowest 500 feet of Sentinel Wells 1 and 2



*Figure 17: Induction Logs of Lowest 500 feet of Sentinel Well 4*

## 6. CONCLUSIONS

1. Variances in groundwater quality from samples collected over the course of the last year from wells SBWM-1 and SBWM-4 necessitate increased vigilance and caution about potential changes to the Basin's groundwater quality, but do not indicate any immediate action take place.
2. Chloride concentrations at well SBWM-1 (1,390 ft) increased in the December 2016 re-sampling, but the stiff diagram does not indicate that the anions and cations are much different from previous years. There is a very slight increasing chloride trend in this well.
3. Water quality at both well SBWM-2 (1,470 ft) and well SBWM-4 (900 ft) returned to within the range of historical groundwater quality observed in previous years.
4. Sentinel well SBWM- 4 (900 ft) has the highest coastal chloride concentrations and does appear to show an increasing chloride trend of approximately 5 mg/L per year since 2012. This well needs to be closely monitored.
5. Monitoring well Ord Terrance Shallow chloride concentrations returned to the historic range. Its anions and cations both currently and historically do not indicate seawater chemistry.
6. There could possibly be some seasonal effects on water quality in the deepest portions of the aquifer. If this is true, we might start to see larger impacts in the fall when groundwater levels are at their lowest if groundwater levels continue to decline.
7. The sources of increasing and fluctuating salinities in wells SBWM-1 and SBWM-4 are unclear. Further investigation could suggest sources of salinity, although these investigations may be inconclusive. Regardless of the salinity source, the increasing and fluctuating salinities likely result from chronically low groundwater levels.
8. While there is no evidence that errors occurred in the July 2016 sampling event, errors in collection, labeling, handling, and/or laboratory analyses of water quality samples is always a possibility in complex sampling events such as these. Consequently, the possibly of such errors cannot be ruled out. Resampling as soon as possible when anomalous results are obtained will verify such concentrations.

## 7. RECOMMENDATIONS

1. Continue to sample SBWM-1 and SBWM-4 twice a year.
2. SBWM-2 should be resampled in July 2017 and based on those results a decision should be made as to whether it should be sampled twice a year.
3. For water quality samples to be more representative of extreme conditions in the basin, we recommend that samples in the future be collected in the last week of September for the 4<sup>th</sup> quarter and in the first week of March for the 2<sup>nd</sup> quarter samples.
4. Prepare a work plan that will direct an effort towards identifying the source of fluctuating chloride concentrations. The plan would outline the types of analyses and chemistry data that are required to more definitively identify the chloride source and mechanism. This plan could also incorporate geophysical data about salinity in the Seaside Basin that has been conducted by Stanford University.
5. Conduct a downhole conductivity profile within SBWM-1 during the next sampling event. This tool measures the conductivity within the well, as opposed to induction logging which measures conductivity within the adjacent sediments. This technique may help identify if upwelling is occurring. If results from SBWM-1 are useful, consider running profiles for the other sentinel wells and select monitoring wells.
6. A process has recently been implemented to review water quality results as soon as they are received. This will allow for action to take place immediately instead of at the end of the year when the data have historically been analyzed.

## 8. REFERENCES

HydroMetrics LLC, 2009. *Seawater intrusion response plan, Seaside basin, Monterey County, California*, prepared for the Seaside Groundwater Basin Watermaster, February 2009.

HydroMetrics Water Resources Inc., 2014. *Water year 2016 seawater intrusion analysis report*, prepared for the Seaside Groundwater Basin Watermaster, December 2016.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	4
<b>AGENDA TITLE:</b>	Schedule
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<p><b>SUMMARY:</b> As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Schedule of the activities being performed by the Watermaster, its consultants, and the public entity, MPWMD, which is performing certain portions of the work.</p> <p>Attached is the most recent update of the Work Schedule for FY 2017.</p>	
<b>ATTACHMENTS:</b>	Schedule of Work Activities for FY 2017
<b>RECOMMENDED ACTION:</b>	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedule

1

# Seaside Basin Watermaster Monitoring and Management Program 2017 Work Schedule

ID	Task Name	2017												2018								
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1	<b>CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK</b>																					
2	<b>2017 Administration, Operations and Replenishment Budgets</b>																					
3	Prepare M&MP Draft Budgets (Same as Task 19)																					
4	TAC Approves M&MP Budgets (Same as Task 20)																					
5	Board Approves M&MP Budgets (Same as Task 21)																					
6	<b>Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports</b>																					
7	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters (Same as Task 46)																					
8	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2016 (Same as Task 42)																					
9	<b>Replenishment Assessment Unit Costs for Water Year 2018</b>																					
10	B&F Committee Develops Replenishment Assessment Unit Cost for 2018 Water Year																					
11	If Requested, TAC Provides Assistance to B&F Committee in Development of 2018 Water Year Replenishment Assessment Unit Cost																					
12	Board Adopts and Declares 2018 Water Year Replenishment Assessment Unit Cost																					
13	<b>Replenishment Assessments for Water Year 2017</b>																					
14	Watermaster Prepares Replenishment Assessments for Water Year 2017																					
15	Watermaster Board Approves Replenishment Assessments for Water Year 2017 (At December Meeting)																					
16	Watermaster Levies Replenishment Assessment for 2017																					
17	<b>Monitoring &amp; Management Program (M&amp;MP) Budgets for 2018 and 2019</b>																					

# Seaside Basin Watermaster Monitoring and Management Program 2017 Work Schedule

ID	Task Name	2017												2018									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
18	Preliminary Discussion of Potential Scope of Work for 2018 M&MP												◆ 8/9										
19	Prepare Draft 2017 M&MP Work Plan and 2018 and 2019 O&M and Capital Budgets												■										
20	TAC approves Draft 2017 M&MP Work Plan and 2018 and 2019 O&M and Capital Budgets												◆ 9/13										
21	Board approves 2018 M&MP O&M and Capital Budgets												◆ 10/4										
22	<b>2017 Annual Report (Note: Schedule Reflects Court Approval of Later Submittal Date for Annual Report)</b>																						
23	Prepare Preliminary Draft 2017 Annual Report																						
24	TAC Provides Input on Preliminary Draft 2017 Annual Report																						
25	Prepare Draft 2017 Annual Report (Incorporating TAC Input)																						
26	Board Provides Input on Draft 2017 Annual Report (At December Board Meeting)																						
27	Prepare Final 2017 Annual Report (Incorporating Board Input)																						
28	Watermaster Submits Final 2017 Annual Report to Judge																						
29	<b>MANAGEMENT</b>																						
30	<b>M.1 PROGRAM ADMINISTRATION</b>																						
31	Prepare Initial Consultant Contracts for 2018																						
32	TAC Approval of Initial Consultant Contracts for 2018																						
33	Board Approval of Initial Consultant Contracts for 2018																						
34	<b>M.1.g – Sustainable Groundwater Management Act Reporting Requirements</b>																						
35	HydroMetrics Prepares Draft Groundwater Storage Analysis																						
36	TAC Reviews HydroMetrics Draft Storage Analysis																						

# Seaside Basin Watermaster Monitoring and Management Program 2017 Work Schedule

ID	Task Name	2017												2018								
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
37	HydroMetrics Revises Draft Storage Analysis if Necessary																					
38	Submit SGMA Documentation to DWR																					
39	<b>IMPLEMENTATION</b>																					
40	<b>I.2.a DATABASE MANAGEMENT</b>																					
41	I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance																					
42	<b>I.2.b DATA COLLECTION PROGRAM</b>																					
43	I.2.b.2 Collect Monthly Water Levels (MPWMD)																					
44	I.2.b.3 Collect Quarterly Water Quality Samples (MPWMD)																					
45	I.2.b.6 Reports (from MPWMD)																					
46	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters																					
47	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2016																					
48	<b>I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL</b>																					
49	Develop and Schedule Additional Tasks as Directed by Board																					
50	I.3.c Refine and/or Update the BMAP																					
51	<b>I.4.c Annual Seawater Intrusion Analysis Report (SIAR)</b>																					
52	HydroMetrics Provides Draft SIAR to Watermaster																					
53	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)																					
54	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)																					
55	<b>I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)</b>																					

## Seaside Basin Watermaster Monitoring and Management Program 2017 Work Schedule

ID	Task Name	2017												2018								
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
56	I.4.e Refine and/or Update the SIRP																					

ONLY IF FOUND TO BE NECESSARY

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	January 11, 2017
<b>AGENDA ITEM:</b>	5
<b>AGENDA TITLE:</b>	Other Business
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	<p>The "Other Business" agenda item is intended to provide an opportunity for TAC members or others present at the meeting to discuss items not on the agenda that may be of interest to the TAC.</p>
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	None required – information only