Report to the Court

January 21, 2009

The Seaside Basin Watermaster submits the following report in response to the Order of the Court dated December 12, 2008.

The Court's Order in part directs that the Watermaster provide written responses to four questions pertaining to the Watermaster's 2008 Annual Report. Each of the questions is shown in boldface ***italics***. The responses immediately follow each question.

Question 1: ***Page 6. Explain whether the Watermaster anticipates any material challenges in obtaining: (1) a "Use Agreement" with the U.S. Army in 2009 for conversion of one of the Army's existing wells in the area north of the Northern Coastal Subarea to a monitoring well for Watermaster's use; and (2) construction of a new monitoring well in 2009 in the inland area near the northern basin boundary. To the extent Watermaster identifies any material challenges in this respect, explain Watermaster's plans to overcome such challenges.***

Response: The Watermaster and its consultants have already initiated contacts with the parties that will have approval authority over both of these wells, and at this point has not identified any serious challenges to obtaining the Use Agreement with the U. S Army, or in finding an acceptable site for the new monitoring well.

With regard to converting the existing Army well, initial contacts with the Army indicated that the well has been abandoned, and that those representatives did not anticipate any significant difficulties in obtaining approval for the conversion.

With regard to the new monitoring well, a meeting with U.S. Army, Fort Ord Reuse Authority, Base Realignment and Closure Office, and Corps of Engineer representatives was held by Watermaster staff and its consultants on January 7, 2009. These are parties involved with the conversion of the former Fort Ord. The purpose of that meeting was to describe the objectives of the new monitoring well to these parties, and to solicit their advice and assistance in identifying the site(s) that will be the easiest to pursue as a well construction site from the standpoints of environmental approvals, permitting, and impacts on proposed future land uses. The information gained at this meeting indicates that the most promising sites are those that will be transferred to Monterey Peninsula College, to the U.S. Bureau of Land Management, and to the organization that is pursuing development of a Veterans Cemetery.

Of these three ultimate landowners, the most promising site appears to be on the land that will be transferred to Monterey Peninsula College. Contacts with representatives of that organization are currently being made to initiate the process of securing their consent to placing the monitoring well on their site. If this proves to be overly complicated or time consuming, either or both of the other organizations will be contacted.

In summary the Watermaster does not anticipate any material challenges to carrying out either of these actions.

Question 2: ***Page 8. Identify the specific technical, political, and socio-economic complexities that delayed the completion of the Seawater Intrusion Response Plan (SIRP), and the specific schedule that Watermaster anticipates to finalize and adopt the SIRP as soon as practically feasible.***

Response: From a technical perspective, initially considered were a set of actions that consisted of shutting down production wells within an increasing radius of any well where seawater intrusion was detected. In assessing and refining this approach the TAC realized that shutting down production wells would have a direct and immediate series of significant consequences.

The Watermaster's hydrogeologic consultants commented that while it is known that the Basin is down-gradient from the ocean, the exact pathway that sea water will enter into the aquifers is not known. Therefore, the length of time it will take for sea water intrusion to actually occur in the proximity of production or monitoring wells within the Basin is also not known. It was also recognized that the SIRP is a response plan, not a prevention plan for sea water intrusion, and that turning off wells throughout the Basin would not stop sea water intrusion, unless so-doing would raise the water levels up to the Protective Levels needed to prevent sea water intrusion. With these understandings the TAC recognized that the hydrogeologic solution to address sea water intrusion is to raise water levels within the Basin to protective levels, but that the solution also needs to be politically acceptable and viable in order for the solution to be implemented.

In order to develop an SIRP that properly addressed these issues and concerns, the TAC took longer than originally anticipated to process them to the point where they were ready for presentation to the Board. In an effort to accomplish this work in as rapid a manner as possible, the TAC scheduled a series of additional Special TAC Meetings that were held beginning in July, 2008 and continuing through November, 2008.

From a political perspective, it was realized that each of the Board members represents a different constituency. The issues of political importance to each constituency needed to be addressed in the proposed set of actions, so the SIRP would be acceptable, and therefore implementable, within each jurisdiction. There were also concerns that there might be legal constraints associated with implementing the SIRP, depending on exactly what actions were proposed for implementation in the event of seawater intrusion being detected. An example of one such potential issue was how a coastal producer's allocation would be handled in a case where the Watermaster asked for a cutback or curtailment of production in that area due to concerns about sea water intrusion.

From an economic perspective it was realized that shutting down production wells would result in reduced, or even curtailed, water supplies to customers served by those wells. This would have an economic impact on the specific businesses whose livelihood depended on having an adequate and reliable water supply. It would also have a general impact on the local economies of the affected jurisdictions.

From a social perspective there were concerns about such issues as environmental justice, and fairness in having the impacts of the proposed actions not be focused on one area more than another. It was also recognized that there could be California Environmental Quality Act (CEQA) issues associated with the SIRP, depending on what actions were included in it, and that the actions needed to be defined in a manner that would allow them to be in compliance with CEQA requirements in order for the SIRP to be adopted by the Board.

The Final Draft of the SIRP was distributed to the Board for their review in early December. A presentation to the Board on the SIRP is scheduled for the Board's January 21, 2009 meeting. If there are sufficient questions and/or requested changes to the Final Draft SIRP at that meeting,

the matter may be carried over to the Board's February 4, 2009 meeting. It was previously concluded that in order to ensure that adoption of the SIRP is done in compliance with California Environmental Quality Act (CEQA) requirements, an Initial Study should be performed on the document before it is formally adopted by the Board. Assuming that preparation of an Initial Study, presumably leading to a recommendation to adopt a Negative Declaration, can be performed within one month following the Board's consideration of the SIRP at its January 21 and (if necessary) its February 4 meetings, the Watermaster anticipates Board adoption of the SIRP at either the Board's March, or at the latest April, 2009 meeting.

In summary the development of the SIRP was a complex process from both a technical standpoint and even more so from the standpoints of the political, economic, and social consequences and impacts of adopting and enforcing the SIRP, in the event seawater intrusion was detected. The Final Draft SIRP has been thoughtfully prepared to address these issues in an acceptable manner. Delays in adoption associated with completing the CEQA process are not expected to occur.

Question 3: ***Page 9. Explain why the Watermaster believes that increased chloride levels detected in the deep Ord Terrace well and SBWM-4 well are not the result of seawater intrusion.***

Response: The Seawater Intrusion Analysis Report (SIAR) provides the following explanations for increased chloride concentrations in the deep Ord Terrace well and the deep zone of SBWM-4.

On page 34 of the SIRP, it is reported that the Deep Ord Terrace well is situated relatively inland, and is a relatively shallow well compared to other monitoring wells. Our hydrogeologic consultants have advised us that they would anticipate observing seawater intrusion in more coastward wells before observing it in the Ord Terrace wells. Since seawater intrusion was not detected in the more coastward wells, they are of the opinion that the increased chloride levels are due to a cause other than seawater intrusion. The complete explanation may be complicated to describe and may have to do with the residence time of groundwater in this area of the aquifer system, and the response time to changing local groundwater pumping conditions in the vicinity of the well.

Also on page 34 of the SIAR it is reported that the sodium/chloride molar ratios are not declining with increasing chloride concentrations, as would be expected with seawater intrusion. Thus, this "trigger" which is described in more detail in the SIAR has not been reached.

On page 34 of the SIAR it is reported that Sentinel well SBWM-4, which was sampled at 900 feet, also showed an increase in chloride levels. Well SBWM-4 intersected the Monterey Formation shale of marine origin at 913 ft below ground level. This formation is known to have higher salinity due to its depositional environment. Hence, our hydrogeologic consultants believe that the marine deposits in the Monterey Formation are the reason for the increased chloride levels in this well. As only three sampling events have taken place at this well, there is insufficient data to establish a definite trend. If sampling in future years continue to show increasing chloride concentrations, along with decreasing sodium/chloride molar ratios, the Watermaster will undertake further examinations to determine whether seawater intrusion is occurring at this well.

<u>Question 4:</u> Page 10. Explain whether subsidence is a likely result of the dewatering of the deep aquifer in the Coastal Sub-area.

<u>Response:</u> Due to the combination of: (1) the large depth to groundwater in the areas of the Basin most affected by water level declines (i.e., approximately 100 to over 300 ft.), (2) the lack of occurrence of significant expansive clay deposits, and (3) the likely level of past stressing of the aquifer skeletal matrix, it is unlikely that subsidence has been or will in the future be a major concern in the Seaside Basin.

However, given that groundwater levels have declined in some areas, our hydrogeologic consultants advise us that the Watermaster cannot rule out subsidence completely. Senate Bill No. 1938 (see excerpts in italics below) mentions subsidence monitoring as part of a groundwater management plan, and thus subsidence must be considered, even though there has not been a history of subsidence in the area.

> *Senate Bill No. 1938 (passed in Sep-2002)*
> *CHAPTER 603*
> *An act to amend Sections 10753.4 and 10795.4 of, to amend and renumber Sections 10753.7, 10753.8, and 10753.9 of, and to add Sections 10753.1 and 10753.7 to, the Water Code, relating to water.*
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> *SEC. 5. Section 10753.7 is added to the Water Code, to read:*
> *10753.7. (a) …….*
> *(1) Prepare and implement a groundwater management plan that includes basin management objectives for the groundwater basin that is subject to the plan. The plan shall include components relating to the monitoring and management of groundwater levels within the groundwater basin, groundwater quality degradation, inelastic land surface subsidence, and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater pumping in the basin.*
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> *(4) The local agency shall adopt monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem and flow and quality of surface water*
> *that directly affect groundwater levels or quality or are caused by groundwater pumping in the basin. The monitoring protocols shall be designed to generate information that promotes efficient and effective groundwater management.*

In 2008 the Watermaster performed a detailed wellhead elevation survey of all active Basin production and monitoring wells. The Watermaster plans to perform another survey of these same wellheads in 2011 (three years after the initial survey) to confirm the belief that subsidence is not an issue of concern in any area of the Basin.