

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF DECEMBER 4-5, 2008

ITEM NUMBER: 25

SUBJECT: Adoption of Waste Discharge Requirements (WDRs) Order No. R3-2008-0017, Continuation of Hearing from October 17, 2008 meeting, Sand City, Monterey County

KEY INFORMATION:

Plant Location: Sand City, Monterey County
Discharge Type: Desalination plant waste brine
Design Discharge Flowrate: 0.74 million gallons per day (mgd)
Treatment: Filtration
Disposal: Pipeline in beach sands
Reclamation: None
Existing Orders: None
This action: Adopt WDRs Order No. R3-2008-0017

SUMMARY

At its October 17, 2008, public meeting, the Central Coast Region Water Quality Control Board (Regional Board) continued the hearing of Waste Discharge Requirements (WDRs) Order No. R3-2008-0017 until this meeting. Staff added new information to the proposed Order's Finding No. 21, which describes conditions imposed on Sand City, the Discharger, by the California Coastal Commission's Coastal Development Permit. Staff recommends the Regional Board adopt the proposed Order and Monitoring and Reporting Program (Attachments 1 and 2, respectively), which would regulate the discharge of desalination plant waste brine to a perforated pipeline emplaced within beach sands seaward of Sand City. For information about the Discharger's desal plant operation and the waste brine's potential effects on groundwaters underlying the disposal site and nearshore ocean waters, please see the Staff Report for the October 17, 2008 public meeting (Attachment 3).

BACKGROUND

The proposed action before the Regional Board is to adopt waste discharge requirements that regulate the discharge of waste from the City of Sand City's desal plant to ensure protection of the water quality of groundwater and ocean water that could be adversely affected by the discharge. The desal plant is also subject to regulation by the California Coastal Commission. California American Water Company (CalAm), which will use some of the treated water from the desal plant to offset use of Carmel River water, uses water from the Carmel River and is subject to regulation and enforcement by the State Water Resources Control Board (State Water Board) Division of Water Rights. The waste discharge requirements regulating the desal plant do not and cannot regulate or enforce CalAm's appropriation of water.

California Coastal Commission. On February 27, 2008, the California Coastal Commission (Commission) amended Coastal Development Permit No. A-3-SNC-05-010. (Attachment 4 provides the proposed Permit Amendment, which the Commission adopted.) A new condition requires that all documentation between the Discharger, the Regional Board, and other similar agencies reflect the Carmel River and Seaside Basin Aquifer pumping reduction required by State Water Board

Order No. 95-10. In the near term, the desal plant's potable water production will allow CalAm to reduce pumping by 300 AFY because the Discharger will need no new water supplies. When the city is completely built (at full build-out), the Discharger will need 206 AFY, reducing pumping by 94 AFY.

DISCUSSION

State Water Resources Control Board Order No. 95-10. In a letter dated October 10, 2008 (Attachment 5), Mr. Shimek with Monterey Coastkeeper submitted comments, which he also stated orally to the Regional Board at the October 17, 2008 public meeting. In the letter, Mr. Shimek restated part of State Board Order No. 95-10, in which he underlined a section, as follows:

Cal-Am shall diligently implement one or more of the following actions to terminate its unlawful diversions from the Carmel River (1) obtain appropriative permits for water being unlawfully diverted from the Carmel River, (2) obtain water from other sources of supply and make one-for-one reduction of unlawful diversions from the Carmel River, provided that water pumped from the Seaside aquifer shall be governed by condition 4 of this Order not this condition, and/or (3) contract with another agency having appropriative rights to divert and use water from the Carmel River.

Please note that the paragraph above is Condition 2 of State Board Order No. 95-10, which regulates CalAm's water appropriation, not the Sand City desal plant's waste discharge.

In his letter and when speaking to the Regional Board, Mr. Shimek requested the Board adopt the following condition:

Discharger shall provide to the Board on an annual basis CalAm records showing that the first 94 AFY produced by the Sand City desal plant lead to a 1-to-1 reduction in ground water pumping by CalAm. Further, Sand City shall provide CalAm records showing that any water sold or transferred beyond the City Limits of Sand City shall also lead to a 1-for-1 reduction in groundwater pumping.

On October 24, 2008, the Discharger submitted a January 31, 2006 letter (Attachment 6) from the State Board's Division of Water Rights to CalAm and an October 27, 2008 letter (Attachment 7) wherein the Discharger responds to Mr. Shimek's comments. Attachment 6 restates condition 2 (as above), and provides condition 4, which states in part:

"Based on condition 2, diversions from the Seaside aquifer are not subject to the requirement that they be used to offset illegal diversions from the Carmel River by CalAm."

"Sand City's proposed project will not be counted toward offsetting illegal diversions because it only temporarily reduces Carmel River's diversions and is not a permanent solution."

Staff concludes that the Mr. Shimek's requests should not be granted. Mr. Shimek's request contradicts State Water Board Order No. 95-10. As explained in the State Water Board staff's January 31, 2006 letter, Order No. 95-10's conditions 2 and 4 do not require CalAm to use the potable water from Sand City's desal plant to make one-for-one reductions in diversions from the Carmel River.

It is not reasonable to require the Discharger to provide CalAm records to the Regional Board since they are not in its direct control. Furthermore, the matter of reducing water extraction from the Carmel River is a pending Division of Water Rights enforcement matter being heard by the State Board.

Coastal Development Permit. Staff modified the proposed Order's Finding No. 21 to reflect the conditions imposed on Sand City by the Commission's Coastal Development Permit.

BOARD MEMBERS QUESTIONS FROM PRIOR TO THE OCTOBER 17, 2008 MEETING

1. What are the contingency plans for system breakdown? I note that effluent monitoring includes flow and total dissolved solids, and does not include monitoring the salinity level of the waste brine or other potential contaminant constituents. Is there any possibility of a malfunction of the plant's intake filtration system, or problems associated with improper maintenance that could result in increased pathogen levels or other impacts including malfunctions in the system that result in exceeding the designed salinity level of 34,800 mg/L?

Staff Response

Pathogens. The brackish supply water, which the Discharger will pump from the shallow aquifer in the beach sands and provide to the desal plant, likely contains no pathogens because the sand formations through which the water flows effectively remove them. The brine discharge, which consists of the concentrated brackish supply water, will therefore likely contain no pathogens. Plant malfunctions would have no effect on pathogen concentrations in the discharge because the plant itself cannot contribute them to the discharge

Salinity. The desal plant will add brackish supply water to the waste brine to keep its concentration below 34,800 mg/L. The brackish supply water and the brine discharge salinities will not exceed approximately 25,000 mg/L, and approximately 40,000 mg/L, respectively. If the automatically controlled piping/pump system that provides the brackish water to the waste brine (to reduce its concentration to less than 34,800 mg/L) fails, the plant automatically shuts down, stopping all flows, including the discharge to the distribution pipelines in the beach sands.

2. I note in the staff report that, "from time to time, the Discharger will add small quantities of anti-scalant and/or anti-corrosion compounds to the flow through the desal plant." What are the constituents of these additives and are these present in the final effluent product? If so, is there any impact to the ambient environment in the discharge zone over time (cumulative effects)?

Staff response The Discharger diverts the desal plant discharge to the City's sewer system during maintenance events, such as when anti-scalant or anti-corrosion compounds are added. Therefore, they are not present in the wastewater discharge.

At this time, the Discharger has not responded to staff's request for specific information about the additives proposed for use at the Sand City desal plant.

However, if the discharge were diverted to disposal in the beach sands at all times, thereby discharging the additives to groundwaters, the effects on them and on ocean water quality would be slight, and the discharge would not impair the ocean's beneficial uses. Staff based this conclusion on experience with other desal plants, including those at the City of Santa Barbara, the Chevron Refinery at Gaviota in Santa Barbara County, and proposed for the Cambria Community Services District in San Luis Obispo County. In each case, the additives posed an insignificant threat to the ocean's beneficial uses because the dischargers added them in small amounts, and dilution in ambient waters and/or municipal wastewater reduced the pollutants to levels posing an insignificant threat to the ocean's beneficial uses. Staff determined that the waste brine from the Discharger's desal plant will be similarly added to in small amounts, and, if discharged to other than the sewer system, would be similarly diluted in slow-moving groundwaters and the turbulent surf zone at the beach/ocean interface.

CONCLUSION

The desal plant discharges waste brine at salt concentrations approximating seawater, which eliminates its adverse effects on the receiving waters.

RECOMMENDATION

Adopt WDRs Order No. R3-2008-0017, as proposed.

ATTACHMENTS

1. WDR Order No. R3-2008-0017
2. MRP No. R3-2008-0017
3. Staff Report for October 16-17 Board meeting.
4. January 25, 2008, California Coastal Commission Proposed Permit Amendment
5. October 10, 2008 Coastkeeper letter
6. January 31, 2006 State Water Board letter
7. October 27, 2008 Sand City response to Coastkeeper comments

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