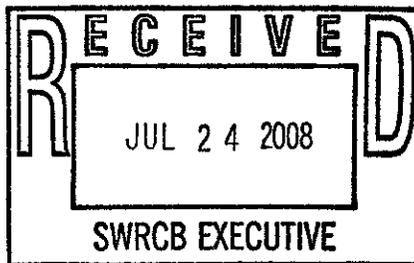


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24 July 2008

Jeanine Townsend  
Clerk to the Board  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100



**Subject:** COMMENT LETTER – 09/02/08 BOARD MEETING: CHINO BASIN  
WATERMASTER DECISION.

Comments on and Requests for Revision to DRAFT Decision Conditionally  
Approving Water Right Application 31369  
Chino Basin, San Bernardino County, California

Dear Ms. Townsend:

This letter presents comments on behalf of General Electric Company (GE) regarding the State Water Resources Control Board's (SWRCB) DRAFT Decision Conditionally Approving Water Right Application 31369 (the Draft Decision) by the Chino Basin Watermaster (CBWM).

GE is a diversified manufacturing company with operations located in the Chino Basin. Pursuant to Consent Orders with the California Department of Health Services (DHS) and the California Department of Toxic Substances Control (DTSC), GE is currently remediating a plume of contaminated groundwater that contains volatile organic compounds (VOCs) stemming from historical operations at GE's aircraft engine testing facility located at Ontario International Airport. The GE Test Cell plume extends near the Ely Basins, one of the recharge facilities included in the CBWM's Water Right Application that would receive diversion of additional storm water to enhance recharge. While GE supports ultimate approval of CBWM's application, GE has specific concerns regarding the terms of the approval because of the potential for changes in localized groundwater gradients that would accompany increased recharge at the Ely Basins to spread the GE Test Cell plume. Accordingly, GE requests revisions to the Draft Decision to correct technical inaccuracies regarding influence of recharge on hydraulic gradient and groundwater flow direction. In addition, to help prevent spreading of groundwater contamination due to increased recharge rates, GE requests that the SWRCB consider adding conditions to the final Decision specifying maximum recharge rates for recharge facilities with proximal plumes of contaminated groundwater, such as the Ely Basins and nearby GE Test Cell plume.

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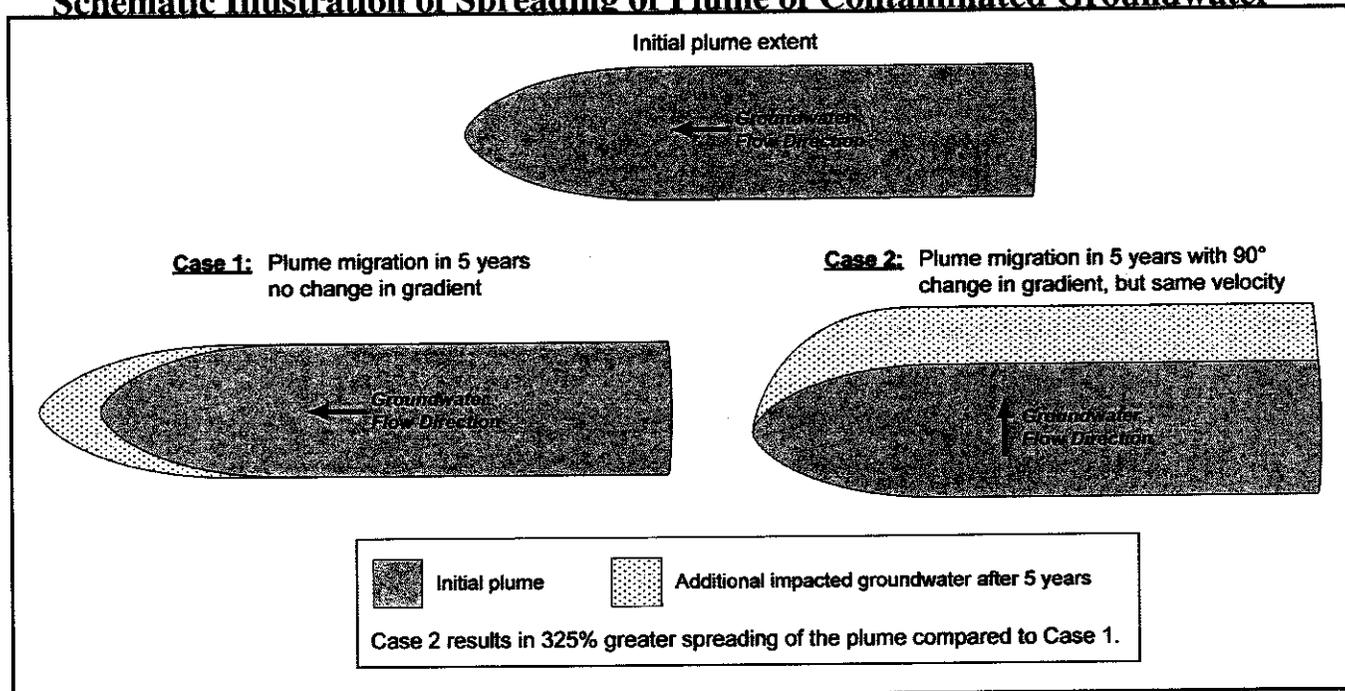
As recognized in the Draft Decision, the Environmental Impact Report (EIR) for the CBWM's Optimum Basin Management Program for the Chino Basin stipulates that mitigation measures are required to ensure that local plumes of contaminated groundwater are not significantly impacted by increased recharge rates (Tom Dodson & Associates, 2000). Stipulations in this EIR are appropriately included in the Draft Decision by the SWRCB for Water Right Application 31369. Condition 9 on page 22 of the Draft Decision specifically addresses the issue of potential for increased recharge to spread plumes of contaminated groundwater. Condition 9 is quoted below with requested revisions indicated in underlined boldface type:

*9. Permittee shall monitor all known contaminated groundwater plumes that may be affected by the diversion of water to recharge groundwater under this permit to determine whether the recharged water will ~~increase~~ **change** the local hydraulic gradient and cause more rapid spread of existing plumes. Permittee shall report annually the results of its monitoring to the Santa Ana Water Board and to the State Water Board. If existing domestic water production wells will be impacted by the plume a minimum of one year earlier than under pre-existing conditions, or if significant quantities of additional groundwater (more than 5,000 acre-feet) will become contaminated within a five-year period due to recharge pursuant to the permit, **additional recharge influencing plume migration shall be curtailed, and** Watermaster shall petition the State Water Board for an alternate location for recharge.*

This language change is requested because a change in flow direction can cause more rapid spread of plumes even if the gradient does not increase. Spreading of a plume of contaminated groundwater is influenced by the width of a plume perpendicular to groundwater flow direction as well as the magnitude of the gradient (velocity). For example, if the flow direction changes by 90 degrees, the volume of an aquifer impacted by spreading of a plume can increase significantly even though the gradient (velocity) remains the same as illustrated on the next page.

Increases in diversion of water to recharge facilities in the Chino Basin will increase groundwater mounding beneath each recharge facility. Although the general regional groundwater flow direction in the Chino Basin may remain essentially unchanged, as shown by regional-scale modeling conducted for the CBWM, the local enhancements in recharge will definitely cause localized changes in hydraulic gradient, which in turn will impact any plume of contaminated groundwater that is sufficiently close to a recharge facility. The statement in the CBWM closing brief submitted to the SWRCB that the "Watermaster presented uncontested and unequivocal evidence that its recharge of storm water under Application 31369 will not cause the plumes of contamination in the Chino Basin to move differently than they are already moving" is simply incorrect.

### Schematic Illustration of Spreading of Plume of Contaminated Groundwater



In the spring of 2005, a shift in groundwater levels and hydraulic gradient was identified north of the Ely Basins based on water levels recorded in a network of monitoring wells in the vicinity of the GE Test Cell plume (Geosyntec, 2005). This change in gradient was associated with increased mounding of groundwater beneath the Ely Basins due to increased recharge to the Ely Basins resulting from very heavy rainfall in 2004/2005. Groundwater modeling of localized impacts from increased recharge at the Ely Basins conducted by Geosyntec confirmed that higher recharge rates could result in changes to groundwater flow directions that would potentially spread the GE Test Cell plume to the north into uncontaminated portions of the aquifer. This was reported to the Santa Ana Regional Water Quality Control Board (SARWQCB) in the DRAFT Groundwater Remedial Action Plan (DRAFT RAP) for the GE Test Cell Plume (Geosyntec, 2006), and also reported to the CBWM at a meeting in their offices on 9 February 2006 and by subsequent email correspondence on 23 and 26 February 2006.

Specifically, while modeling based on the estimated 2004/2005 recharge rate of 2,171 acre-feet per year (AF/Y) showed minor impact on the position and extent of the plume, the results indicated that a recharge rate of approximately 3,000 to 4,000 AF/Y at the Ely Basins would spread the plume by a sufficient magnitude to violate the 5,000 acre-feet threshold for plume spreading in 5 years stipulated by the EIR and Draft Decision. Because approximations inherent

in the model make it difficult to give a precise estimate of what amount of increase in recharge rates would result in an exceedance of the 5,000 acre-feet threshold of damage to water resources in 5 years, a reasonable margin of safety applied to model-based estimates of maximum acceptable rate of enhanced recharge seems prudent for management of recharge at the Ely Basins.

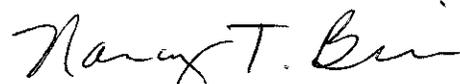
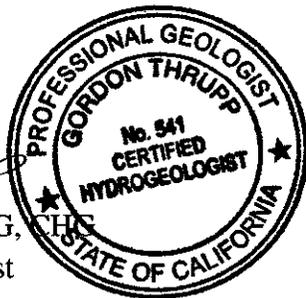
The Draft Decision specifies a maximum total recharge rate of 68,500 AF/Y, but does not specify maximum recharge rates at individual recharge facilities. Potential for damage to water resources caused by the spread of groundwater contamination due to enhanced recharge varies for each individual recharge facility that is near a plume of contaminated groundwater. Accordingly we request that the SWRCB consider adding a table to the Final Decision document for Water Rights Application 31369 specifying maximum recharge rates for recharge facilities with proximal plumes of contaminated groundwater, such as the Ely Basins, to help ensure that the Chino Basin enhanced recharge program does not damage water resources.

In conclusion, while GE supports approval of the CBWM's Water Right Application 31369 to facilitate enhancement of groundwater resources in the Chino Basin, GE respectfully requests the minor revisions to Condition 9 as indicated above, and also requests that the SWRCB consider additional conditions specifying maximum annual recharge rates where necessary to prevent further degradation of water resources.

Sincerely,



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