



# DOCKET

09-AFC-10

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March 16, 2010

Mr. John Kessler  
Siting Project Manager  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814

Subject: Rice Solar Energy Project (09-AFC-10)  
Response to CEC Staff Data Requests 130, 139-141, 143-144

Dear Mr. Kessler:

Attached please find one hardcopy and one CD of Rice Solar Energy, LLC's responses to California Energy Commission Staff Data Requests 130, 139-141, and 143-144 for the Application for Certification for the Rice Solar Energy Project (09-AFC-10).

If you have any questions about this matter, please contact me at (916) 286-0278 or Sarah Madams at (916) 286-0249.

Sincerely,

CH2M HILL

A handwritten signature in blue ink, appearing to read "Douglas M. Davy".

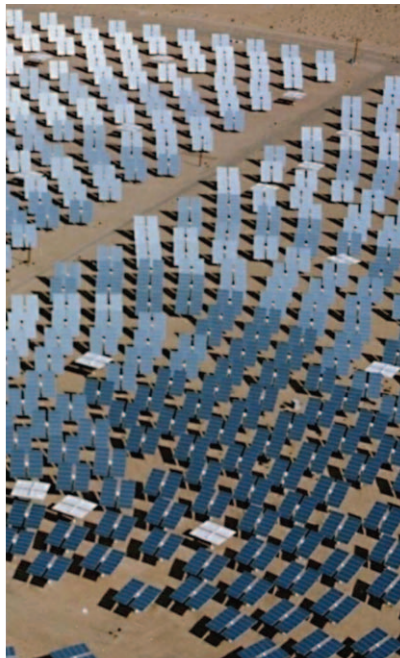
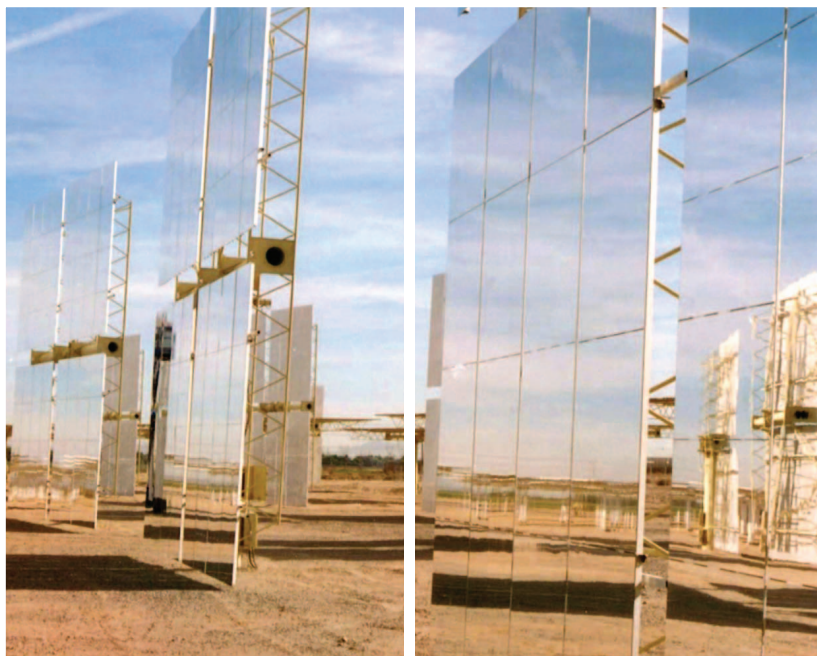
Douglas M. Davy, Ph.D.  
AFC Project Manager

Attachment

cc: POS List  
Project File

Application for Certification  
Response to CEC Staff Water Resources  
Data Requests 130, 139-141, 143-144

# Rice Solar Energy Project



Submitted by  
**SOLARRESERVE**

Submitted to  
**California Energy  
Commission**

With Technical Assistance by  
 **CH2MHILL**

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*Supplemental Filing*

**Response to CEC Staff  
Water Resources Data Requests 130, 139-141, 143-144**

In support of the  
**Application for Certification**  
for the  
**Rice Solar Energy Project**  
(09-AFC-10)

Submitted to the:  
**California Energy Commission**

Submitted by:  
**SOLARRESERVE**

With Technical Assistance by:



Sacramento, California

March 2010

# Contents

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| Section                        | Page |
|--------------------------------|------|
| Introduction.....              | 1    |
| Soil and Water Resources ..... | 3    |

## Table

|         |                                                                                             |
|---------|---------------------------------------------------------------------------------------------|
| DR143-1 | General Subsidence and Water Table Drop Values for Basins in the Southwestern United States |
|---------|---------------------------------------------------------------------------------------------|

## Figures

|         |                                                    |
|---------|----------------------------------------------------|
| DR130-1 | Well Locations                                     |
| DR130-2 | Well Construction Schematic                        |
| DR139-1 | Rice Valley Watershed Average Annual Precipitation |

## Attachment

|         |                                  |
|---------|----------------------------------|
| DR130-1 | Riverside County Ordinance 682.3 |
|---------|----------------------------------|

# Introduction

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Attached are Rice Solar Energy, LLC's (RSE's) responses to California Energy Commission (CEC) Staff data requests for the Rice Solar Energy Project (RSEP) (09-AFC-10). This document addresses the following data requests:

- 130 Well Drilling
- 139 Rice Valley Basin Recharge
- 140 Adjacent Groundwater Basins
- 141 Water Level Monitoring
- 143 Aquifer Characteristics
- 144 Basin Subsidence Monitoring

for the Rice Solar Energy Project (RSEP) (09-AFC-10). The CEC Staff served the data requests on February 16, 2010, as part of the discovery process for the RSEP. RSE filed most of the responses to the remainder of the data requests on March 9, 2009, and required additional time to prepare these responses.

Please note that the responses are presented in the same order as CEC Staff presented them and are keyed to the Data Request numbers. New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 15 would be numbered Table DR15-1. The first figure used in response to Data Request 28 would be Figure DR28-1, and so on.

Attachments submitted in support of a data request (supporting data, stand-alone documents such as plans) are found at the end of a discipline-specific section and are not sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

# Soil and Water Resources

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## Well Drilling

130. *Please provide detailed information on the proposed well drilling, reconstruction (if necessary), development, and abandonment activities to be undertaken for the wells associated with the Rice Solar Energy Project including the following:*

- a. Please be sure to include draft well completion diagrams as well as a site map showing existing and proposed well locations; and*

**Response:** Three wells currently exist on site, as presented in Table 1 and Figure 2 of the Rice Groundwater Resources Investigation Report (WorleyParsons, 2009; provided as AFC Appendix 5.15A and referred to herein as GRI Report). Rice #1 is completed in the upper alluvium and is not suitable as a source of water for the RSEP because of low yield and high total dissolved solids (TDS) in the groundwater. Rice #2 is completed in the lower alluvium and underlying Bouse Formation, and is currently unused. Rice #3 is noted by the U.S. Geological Survey (USGS) as being obstructed above the water surface.

The GRI report proposes that two wells, Rice #2 and a new well, RS-1, are required to meet construction water demand and to provide full redundancy of the operating water supply. Because Rice #2 is screened in the lower alluvium and underlying Bouse Formation, modifications to this well are necessary. Rice #2 will be filled with cement grout to the base of the lower alluvium at a depth of approximately 810 feet below ground surface (bgs). Additionally, one new well, RS-1, will be drilled early in the construction phase to supplement Rice #2. This well will be constructed between 8 and 16 inches in diameter and screened in the lower alluvium from approximately 635 to 805 feet bgs. The final screened interval will be determined based on the results of a pilot boring that will be drilled at the proposed well location. The location of the proposed well is shown in Figure DR130-1 and the anticipated well construction details are included on the well schematic in Figure DR130-2.

Regarding existing onsite wells Rice #1 and Rice #3, RSE proposes to use Rice #1 as a groundwater monitoring well during site operations, and to abandon (decommission) Rice #3. All well construction and abandonment operations at the site will be conducted in accordance with Riverside County Ordinance Number 682.3 (see Attachment DR130-1).

- b. Please provide documentation of consultation with Riverside County and describe how the wells will conform to County Ordinance No. 682 for the Construction, Reconstruction, Abandonment and Destruction of Wells.*

**Response:** Several telephone discussions have occurred between WorleyParsons personnel and County of Riverside Department of Environmental Health staff members Jackie Jones and Mark Abbott between July 2008 and November 2009 to discuss permit requirements, confirm fees, and address construction detail requirements. The most recent discussion occurred in November 2009 to discuss unknown geologic conditions and potential changes in the construction details due to the geologic conditions at the drill location(s). County of

Riverside staff confirmed that well construction details can be modified in the field at the time of construction due to these constraints; however, in accordance with Riverside County Ordinance Number 682.3, upon completion the well completion logs and final construction details and diagrams must be issued to the County for permit final release.

A licensed and registered well drilling subcontractor will be engaged to construct, abandon and modify the wells in compliance with all requirements of County of Riverside Ordinance Number 682.3. Well Completion Records (California Department of Water Resources (DWR) Form 188) and lithologic logs will be filed by the project's drilling subcontractor with the County and DWR in accordance with the project's subcontractor agreements.

As indicated previously, wells Rice #2, Rice #3, and RS-1 will be modified, constructed or abandoned in accordance with County of Riverside Ordinance Number 682.3, Section 10, DWR Bulletin NO 74-81 Chapter II Water Wells, and DWR Bulletin NO 74-90 (Supplement to DWR Bulletin 74-81).

### **Rice Valley Basin Recharge**

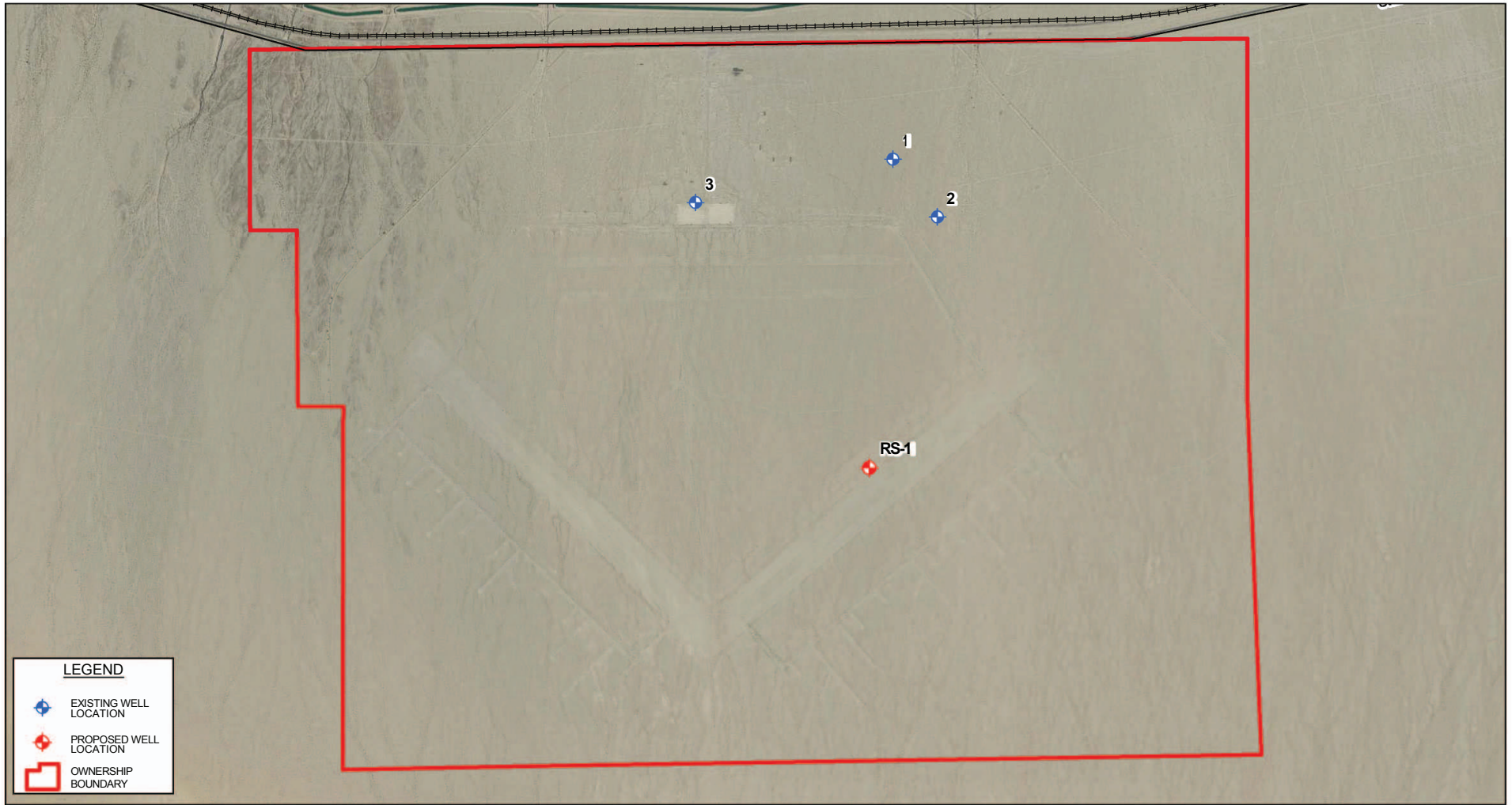
139. *Please provide more detailed or different analysis of Rice Valley basin recharge (or adjacent valleys if necessary) using methods such as Maxey-Eakin (1949) or modified methods such as Donovan and Katzer (2002).*

**Response:** In this part of California, almost all moisture from rain is lost through evaporation or evapotranspiration and runoff occurs principally during intense thunderstorms (RWQCB, 2006). Most recharge from precipitation occurs when runoff from the surrounding mountains exits bedrock canyons and flows across the coarse sediments deposited in the proximal portions of the alluvial fans that ring Rice Valley. To a lesser extent, recharge occurs from infrequent precipitation or runoff on the valley floor (DWR, 2004). The area of the Rice Valley watershed encompasses Rice Valley (161,960 acres) and the surrounding bedrock mountains (40,814 acres), for a total area of approximately 202,774 acres (Figure DR139-1).

Estimates of recharge are typically variable and dependant on the approach used and the extent and quality of available data. Recharge estimates from precipitation can be derived using approaches such as water balance calculation, groundwater water flow modeling, chloride mass balance calculation, isotope mixing cell flow models, empirical water balance methods (e.g., Maxey-Eakin), and methods based on, or adjusted using, site-specific measurements, such as infiltration studies.

For purposes of the RSEP GRI Report (AFC Appendix 5.15A), 500 acre-feet/year (AFY) was assumed to represent natural recharge in the Rice Valley Basin. This figure was proposed to represent mountain front recharge in the basin as it is the widely accepted value documented in a major study by the State of California Department of Water Resources, Bulletin No. 118 (DWR, 1975); however, the source of the estimate could not be independently verified during this study. Therefore, additional estimates are presented here for comparison and validation of the estimate used in the impact analysis presented in the GRI Report. The mountain front recharge estimate is assumed to be derived from all of the surrounding mountains, including those surrounding Big Wash. It is assumed that east of the interpreted





SOURCE:  
USGS, USDA NAIP 2009  
All Locations approximate



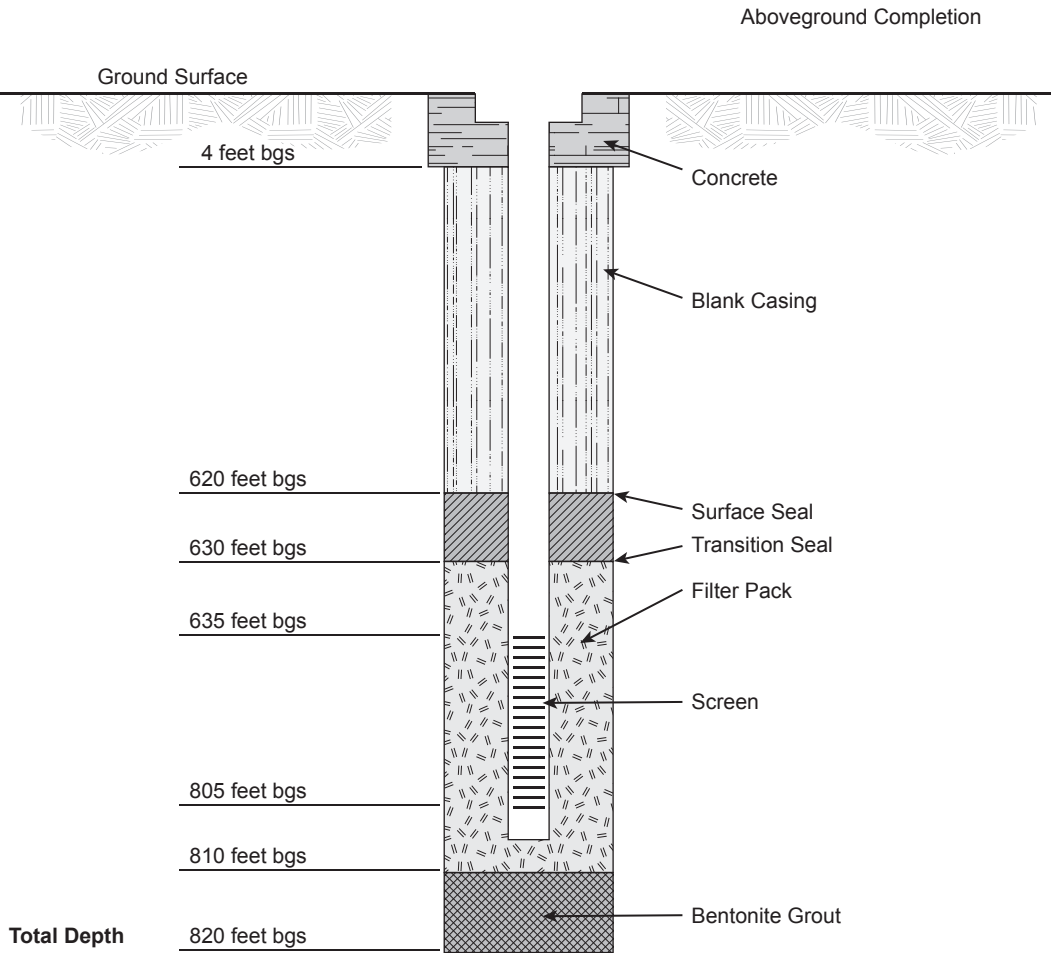
## FIGURE DR130-1 WELL LOCATIONS

Rice Solar Energy Project  
Riverside County, California

Source: WorleyParsons, LTD.

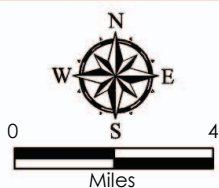
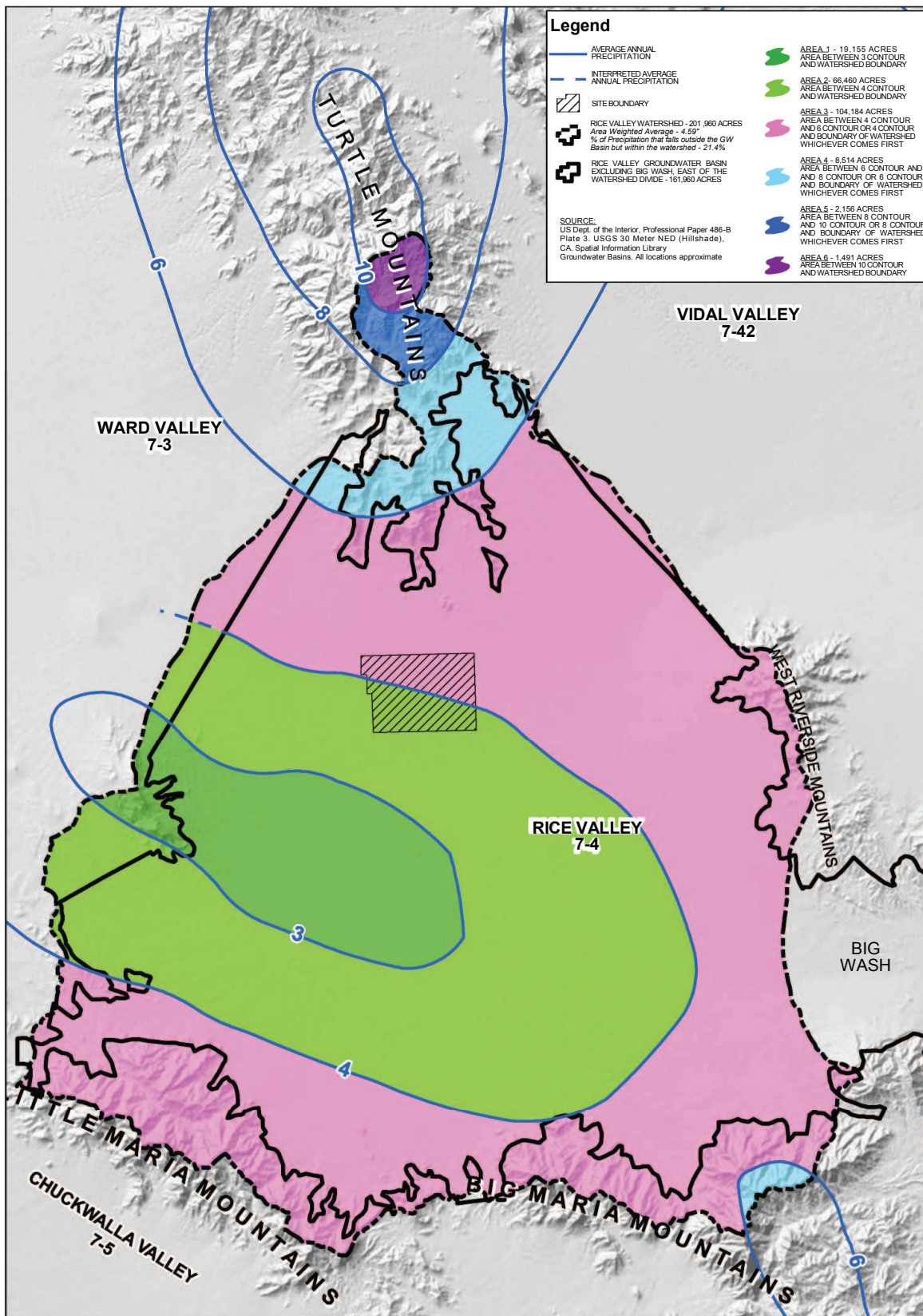


Well ID: RS-1



**FIGURE DR130-2**  
**WELL CONSTRUCTION SCHEMATIC**  
Rice Solar Energy Project  
Riverside County, California

Source: WorleyParsons, LTD.



**FIGURE DR139-1  
RICE VALLEY WATERSHED AVERAGE  
ANNUAL PRECIPITATION**

Rice Solar Energy Project  
Riverside County, California

Source: WorleyParsons, LTD.

groundwater flow divide within Big Wash, mountain front recharge and discharge to the Colorado River cancel one another. Assuming that recharge is apportioned equally among the mountain fronts that encircle Rice Valley, this was assumed to effectively decrease mountain front recharge to the remainder of the basin from 500 AFY to 394 AFY.

The Maxey-Eakin method and various derivations have been widely used for estimation of recharge in arid basins. This empirical method consists of the determination of precipitation zones considering orographic effects, and application of recharge rate coefficients to each zone based on empirical factors that may be regionally derived or adjusted to reflect local conditions. This method has been criticized as being unreliable because of the uncertainty in the derived recharge rate coefficients (Lerner, et al., 1990); however, a review of over 60 recharge estimates in Nevada by Avon and Durbin (1992) indicated the method compared favorably with independent recharge estimates derived using other methods. Specifically, they found the standard deviation Maxey-Eakin recharge from values derived using independent estimates was not more than 4,800 AFY, and the standard deviation from values derived using modeling studies was not more than 4,100 AFY. Maurer and Berger et al. (2006) observed that application of the Maxey-Eakin method involves many uncertainties and has limitations, principally because it does not consider the location and mechanism of recharge within a basin. Davisson and Rose (2000) indicated that Maxey-Eakin estimates should be calibrated using the correct regional climatic data and local topographic conditions. They noted that areas in the Mojave Desert west of 116 degrees longitude generally have significantly less precipitation at higher elevations than areas that are located further to the east (such as the proposed project site).

Donovan and Katzer (2000) developed a refined form of the Maxey-Eakin relation to estimate recharge volumes for the Las Vegas Valley using precipitation data from a localized network of high-elevation monitoring sites. To simulate this calculation, information is required about the saturated cross-sectional area. Limited well data exists to determine the depth to bedrock or information from historical reports to conclusively assess the recharge in Rice Valley using the Donovan and Katzer method.

Based on the above information, calibration and adaptation of the data are necessary and important to achieving a meaningful recharge estimate using the Maxey-Eakin method in a particular basin within California. Because the information to derive meaningful recharge estimates using this method is not readily available, considerable study would be required to use a water balance approach to estimate recharge from precipitation, and even when complete, significant uncertainty would remain given the current state of knowledge of the basin. We have therefore used an empirical approach to estimate recharge, as described further below.

For this study, recharge from precipitation was estimated by overlaying isohyetal maps prepared by Hely and Peck (1964) on the Rice Valley watershed boundaries and calculating the volume of average annual precipitation for each of six precipitation zones for the valley and bedrock portions of the watershed, as shown in Figure DR139-1. Recharge was then estimated as 2, 3, 5, and 10 percent of total incident precipitation and a reasonable lower bound recharge estimate was adopted. The area to the east of the interpreted groundwater flow divide within Big Wash was excluded from the calculation because this area drains to the Colorado River. The calculated average annual precipitation volume for the Rice Valley watershed is 77,250 acre feet based on an area-weighted average precipitation of 4.59 inches

and an area of 201,960 acres. For perspective, recharge for the Rice Valley Groundwater Basin estimated as a fraction of 2, 3, 5 and 10 percent of total incident precipitation (the approximate range of recent recharge estimates for other basins in the region) is calculated to be 1,545, 2,318, 3,862 and 7,725 AFY.

Based on the above analysis, approximately 21.4 percent of precipitation in the watershed falls on the bedrock areas that ring the watershed. This is significant because precipitation that falls on the valley floor is not expected to contribute consistently to recharge. Studies published by USGS report that approximately 7 to 8 percent of precipitation falling on bedrock mountains in other arid basins goes to mountain front recharge (Carling, 2007). This would amount to approximately 1.5 percent of the total precipitation that falls on the Rice Valley watershed. In the absence of more detailed study, it is assumed that 1.5 percent of total precipitation falling on the Rice Valley watershed (1,160 AFY) represents a reasonable estimate of recharge to the groundwater basin. This is almost three times more than the published recharge estimate used in the GRI Report for evaluation of potential impacts to groundwater resources. This sufficiently illustrates that the impact analysis presented in the AFC is conservative, and further evaluation is not warranted.

## Adjacent Groundwater Basins

140. *Please provide an analysis of impacts to the Rice Valley basin and users in adjacent groundwater basins based on any new estimates that may be developed from further analysis of basin recharge.*

**Response:** The direct potential effects of the RSEP on local water resources are those associated with using groundwater for construction (specifically for demands during site grading) and with the plant's operational process water demand. Potential impacts on groundwater resources during construction and operation include drawdown-related impacts, depletion of water resources, and water quality impacts. The assumed recharge estimate apportioned to the mountain front in analysis of these impacts in the GRI Report was 394 AFY; however, the evaluation presented in response to Data Request #139 illustrates this estimate may be overly conservative. Therefore, the impact analysis presented in the GRI Report and incorporated in the AFC does not require updating.

As discussed in the GRI Report, projected offsite drawdown at the end of project construction is estimated to range from approximately 2 to 3 feet near the site boundary, and to decrease to less than 1 foot at a distance of 1 to 3 miles from the site. Projected drawdown after 5 to 30 years of pumping is approximately the same, and is estimated to be approximately 1 foot near the site boundary and decreasing farther away from the site. The similarity of drawdown after 5 and 30 years indicates that drawdown will stabilize relatively quickly after pumping begins.

Pumping for the project is not expected to result in changes in recharge at the surrounding mountain fronts. Based on the recharge evaluation using the calculation method presented in the response to Data Request #139, and considering the impact analysis results from the pump testing and GRI Report as stated previously, the drawdown impacts do not increase by incorporating the 1,160 AFY groundwater basin recharge budget, but may decrease. Additionally, given that the basin has not been extensively developed and groundwater flow patterns are assumed to be in a long-term state, changes in underflow to adjacent

basins will remain the same. As such, the increased recharge calculation is not expected to result in significant changes to the assessment of impacts that was previously presented.

## Water Level Monitoring

141. *Please discuss whether the applicant proposes to implement a water level monitoring program during project development and operation given the challenges in estimating basin recharge and safe yield of the groundwater basin.*

**Response:** Because the expected pumping rates are not likely to result in significant impact to recharge and the groundwater basin, a water level monitoring program will not be implemented.

## Aquifer Characteristics

143. *Please provide further analysis of aquifer characteristics, basin storage, and drawdown impacts that could result in significant subsidence.*

**Response:** Subsidence refers to the sinking or settling of land to a lower level (elevation) in response to various natural and other factors. Subsidence is known to occur in desert basins of the southwestern United States primarily resulting from lowering of aquifer fluid pressure or lowering of groundwater level. The overdraft of an aquifer system that allows for the uncompressed and collapsible sediments to bear the confining pressure of the overlying sediments and thus increase the effective stress on the sediments can cause non-recoverable reduction in the pore volume of the compacted aquitards, and a reduction in the total storage capacity of the aquifer system (Galloway et al., 1999).

Almost all the subsiding areas in the southwestern United States, and even around the world, associated with lowering of the groundwater table are underlain by young (Quaternary) unconsolidated or semiconsolidated clastic sediments of high porosity laid down in alluvial, lacustrine, or shallow marine environments (Poland, 1984). Additionally, nearly all the areas susceptible to subsidence in the southwestern United States exhibit semiconfined or confined aquifers systems containing aquifers of sand and/or gravel of high permeability and low compressibility, interbedded with clayey aquitards of low vertical permeability and high compressibility under virgin stresses (Poland, 1984). Based on the existing geologic data from Rice Valley and comparison to other desert basins in the region exhibiting historical subsidence due to anthropogenic dewatering, it is likely that the Upper and Lower Alluvial aquifer systems would be susceptible to subsidence if the water table were to lower a considerable amount (i.e., on the order of tens of feet) (WorleyParsons, 2009).

A report prepared by DWR (2004) indicates that groundwater levels near the center of the Rice Valley basin have remained relatively stable between 1962 to 1983. Thus, there appears to be very little groundwater development or existing demand in Rice Valley (WorleyParsons, 2009; DWR, 1975). Groundwater recharge to the Rice Valley Groundwater Basin has been estimated to be approximately 500 AFY, of which 394 AFY occurs in the internally-drained portion of the basin where the site is located (DWR, 1975). Further evaluation presented in the response to Data Request #139 yielded a recharge estimate of 1,160 AFY. The recharge mechanism is assumed to be primarily associated with mountain front recharge (DWR, 1975). Because analysis of drawdown impacts performed for the



project were based on the lower recharge estimate, the drawdown estimates presented in the GRI Report are likely conservative.

Based on interpretation of boring logs at the RSEP site by WorleyParsons (2009), the sediments beneath the site consist of an upper unconfined aquifer within the Upper Alluvium to a depth of approximately 630 feet bgs, and a confined aquifer within Lower Alluvium between depths of 630 to 810 feet bgs. An approximately 30-foot-thick clay layer separates the Upper Alluvium unconfined aquifer and the Lower Alluvium confined aquifer. Pliocene-age Bouse Formation occurs below the base of the Lower Alluvium beneath a depth of approximately 810 bgs. The uppermost sedimentary member of the Bouse Formation consists of a 30-foot-thick clay layer. The strong TDS gradient between the upper and lower alluvial aquifers suggests that the lower confined aquifer is confined by a competent aquitard system, and that the two aquifers extend laterally a considerable distance across Rice Valley. Thus, the Lower Alluvial aquifer is confined between two clay layers that likely extend laterally across most of the Rice Valley at depth (WorleyParsons, 2009). Project pumping is proposed within the confined Lower Alluvial aquifer (WorleyParsons, 2009).

Based on the existing data, the potential for RSEP site subsidence associated with groundwater withdrawal is primarily a function of the drawdown of the water table during the development and lifetime of the project. WorleyParsons (2009) conducted a quantitative assessment of the anticipated drawdown during construction (first 27 months) and during 30 years of operational pumping. The analysis included conservative assumptions regarding basin recharge (394 AFY) and behavior of the Lower Alluvial aquifer based on site-specific aquifer parameters derived from pump testing and observed behavior of regional desert basins in the southwestern United States. The analytical drawdown model for groundwater withdrawal within the Lower Alluvial aquifer provided maximum drawdown values near the RSEP site of approximately 2 feet (30 years of operation, see AFC Appendix 5.15A, Figure 7), and 4 feet (during 27 months of construction, AFC Appendix 5.15A, Figure 5). Note that water for construction will be supplied by two wells, and effect or simulating drawdown resulting from pumping of a single well during the impact analysis presented in the GRI Report would be to over-predict the resulting drawdown.

Based on the existing data, some drawdown of the potentiometric surface within the Lower Alluvial confined aquifer is likely; however, for significant subsidence to occur, drawdown values would need to be an order of magnitude larger than what is anticipated. Table DR143-1 provides documented values of subsidence and its associated drop in the water table for similar desert basins in the southwestern United States. These values indicate that significant subsidence occurs when the water table lowers on the order of tens or hundreds of feet. The ratio of total subsidence related water table drop (S/WTD) normalized to a value of 1 provides a clear comparison value for the various other sites. For example, an S/WTD value of 1/100 indicates that for each 1 foot of vertical subsidence, the water table lowered by 100 feet. The average S/WTD for Table DR143-1 data equals 1/114. S/WTD values for the site using drawdown values of 2 and 4 feet and the average S/WTD of 114 from Table DR143-1 correlates to subsidence values of 0.2 and 0.4 inches associated with the project pumping. Predicted drawdown decreases rapidly away from the site, so significant drawdown is not anticipated in offsite areas, even if the actual S/WTD ratio were

higher. Based on this analysis and interpretation, the two proposed site wells will not result in significant subsidence.

**TABLE DR143-1**

General Subsidence and Water Table Drop Values for Basins in the Southwestern United States

| Location                                    | Subsidence (ft) | Water Table Drop (ft) | S/WTB | Reference                             |
|---------------------------------------------|-----------------|-----------------------|-------|---------------------------------------|
| South Central Arizona                       | 12.5            | 300                   | 1/24  | Carpenter, USGS-1999                  |
|                                             | 0.6             | 300                   | 1/500 |                                       |
|                                             | 5               | 200                   | 1/40  |                                       |
|                                             | 18              | 300                   | 1/17  |                                       |
| South Central Arizona-Tucson                | 0.36            | 18.8                  | 1/50  | Carruth, Pool and Anderson, USGS-2007 |
|                                             | 0.27            | 42.5                  | 1/160 |                                       |
|                                             | 0.2             | 41.6                  | 1/216 |                                       |
| Antelope Valley California – Central Mojave | 4               | 150                   | 1/38  | Sneed and Galloway, USGS-2000         |
| Coachella Valley California                 | 2.3             | 77                    | 1/33  | Sneed, Brandt et al, USGS-2007        |
| Las Vegas Nevada                            | 5               | 300                   | 1/60  | Pavelko, Wood and Laczniak, USGS-2003 |

Note: Ratio S/WTB represents Subsidence/Water Table Drop values. An S/WTB equal to 1/24 indicates that the land surface subsided vertically approximately 1 foot for a water table vertical drop of 24 feet.

## Basin Subsidence Monitoring

144. *Please discuss whether the applicant proposes to implement a monitoring program to evaluate whether project pumping is causing basin subsidence.*

**Response:** Based on the above discussion, monitoring for potential subsidence is unwarranted and a monitoring program is not proposed.

## References Cited

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- Sneed, M., and D. L. Galloway. 2000. Aquifer-system compaction and land subsidence: Measurements, analyses, and simulations-the Holly Site, Edwards Air Force Base, Antelope Valley, California, U.S. Geological Survey Water-Resources Investigations Report 00-4015, 65 p.
- Sneed, M., J. T. Brandt, C. L. Stamos, and K. R. McPherson. 2007. Water-Level and Land-Subsidence Studies in the Mojave River and Morongo Ground-Water Basins: U.S. Geological Survey Scientific Investigations Report 2007-5097.

WorleyParsons. 2009. Groundwater Resources Investigation, Rice Solar Energy Project, Riverside County, California, 171 pp. Included as Appendix 5.15A of the Application for Certification for the Rice Solar Energy Project. Submitted to the California Energy Commission by Rice Solar Energy, LLC.

**Attachment DR130-1**  
**Riverside County Ordinance 682.3**

---

WILLIAM C. KATZENSTEIN, COUNTY COUNSEL  
3535 TENTH STREET, SUITE 300  
RIVERSIDE, CA 92501-3674

**From:**  
David H.K. Huff  
Deputy County Counsel  
(909) 955-6300

5/25/99 3.12



1 TABLE OF CONTENTS

2 Section 1. PURPOSE, AUTHORITY AND IMPLEMENTATION

3 Section 2. DEFINITIONS

4 Section 3. PERMIT REQUIREMENTS

5 Regulated Activities  
6 Permit Fee  
7 Penalty for Failure to Obtain A Permit  
8 Permit Application and Plot Plan  
9 Permit Streamlining

10 Section 4. CONDITIONS OF APPROVAL

11 Compliance with Standards  
12 Completion Bonds  
13 Conditions for Approval

14 Section 5. CONDITIONS OF DENIAL

15 Expiration  
16 Failure to Meet Standards

17 Section 6. EXPIRATION OR EXTENSION OF PERMIT

18 Expiration  
19 Extension

20 Section 7. PERMIT REVOCATION OR SUSPENSION

21 Revocation or Suspension for Violations of this Ordinance  
22 Revocation or Suspension Under Exigent Circumstances

23 Section 8. HEARINGS

24 Pre-deprivation Hearing  
25 Post-deprivation hearing  
26 Hearing Procedure

27 Section 9. LICENSING AND REGISTRATION

28 Registration Requirements for Driller's  
Registration Suspension

29 Section 10. STANDARDS

30 Construction Reconstruction and Destruction  
31 Standards for all Wells in Accordance with  
32 DWR Standards  
33 Exemptions

1 Section 11. LATERAL (HORIZONTAL) WELL STANDARDS

2 Construction Guidelines and Requirements

3 Section 12. REQUIRED INSPECTION OF WELL SITE

4 Pre-Drilling Site Inspection for  
5 Community Water Supply Wells

6 Section 13. REQUIRED INSPECTION OF WELLS

7 Required Frequency of Departmental Inspections  
8 Additional Geophysical Testing

9 Section 14. DISCHARGE OF DRILLING FLUIDS

10 Discharge and Clean-up Requirements

11 Section 15. GENERAL LOCATION OF WATER WELLS

12 Required Setback Distances From Known Contamination or Other Potentially Hazardous  
13 Conditions

14 Section 16. WELL LOGS

15 Driller's Responsibility to Maintain and Submit Log  
16 Limited Public Access to Well Log Information

17 Section 17. WATER WELL SURFACE CONSTRUCTION FEATURES

18 Check Valve  
19 Sample Spigot  
20 Disinfection Pipe  
21 Water Well Master Meter  
22 Air-Relief Vent  
23 Backflow Prevention Assembly

24 Section 18. DISINFECTION OF WATER WELLS

25 Requirement and Procedure

26 Section 19. WATER QUALITY STANDARDS

27 Community Water Supply Wells  
28 Individual Domestic Wells

Section 20. Minimum Water Well Production

Testing Requirement  
Production Standards

Section 21. PRIVATE WELL EVALUATIONS

Required Evaluations

1 Section 22. WELL ABANDONMENT

2 Procedures

3 Section 23. PUBLIC NUISANCE ABATEMENT

4 Declaration of Public Nuisance  
5 County Abatement Powers

6 Section 24. DECLARATION OF PROPOSED REUSE

7 Written Declaration of Intent to Reuse  
8 Inactive Status  
9 Inactive Status Rescinded for Cause

10 Section 25. ADMINISTRATIVE VARIANCE

11 Section 26. VIOLATION AND PENALTIES

12 Section 27. SEVERABILITY

13 Section 28. CONFLICT WITH EXISTING LAWS

14 Section 29. REPEAL

15 Section 30. EFFECTIVE DATE

ORDINANCE 682.3  
AN ORDINANCE OF THE COUNTY OF RIVERSIDE REGULATING THE  
CONSTRUCTION RECONSTRUCTION, ABANDONMENT, AND  
DESTRUCTION OF WELLS

The Board of Supervisors of the County of Riverside, Ordains that Ordinance No. 682 is amended in its entirety to read as follows:

Section 1. PURPOSE, AUTHORITY AND IMPLEMENTATION. The purpose of this ordinance is to provide minimum standards for construction, reconstruction, abandonment, and destruction of all wells in order to: (a) protect underground water resources, and (b) provide safe water to persons within Riverside County. Pursuant to the authority cited in Chapter 13801(c) of the California Water Code, the Riverside County Department of Environmental Health shall enforce the provisions of this ordinance within its jurisdiction.

Section 2. DEFINITIONS. Whenever in this ordinance the following terms are used, they shall have the meanings respectively ascribed to them in this section:

- A. "Abandoned Wells" and "Abandonment", shall apply to a well whose original or functional purpose and use has been discontinued for a period of one (1) year and which has not been declared for reuse with the Department by the legal owner, or a well in such a state of disrepair that it cannot be functional for its original purpose or any other function regulated under this ordinance. Exploration holes shall be considered abandoned twenty-four (24) hours after construction and testing work has been completed.
- B. "Agriculture Well" shall mean any water well used to supply water for irrigation or other agricultural purposes, including so-called "Stock Wells".
- C. "Annular Seal" or "Sanitary Seal" shall mean the approved material placed in the space between the well casing and the wall of the drilled hole (the annular space).
- D. "Boring" shall mean a temporary hole for immediate exploration drilled or driven into the ground to determine underground conditions.
- E. "Cathodic Protection Well" shall mean any artificial excavation in excess of fifty (50') feet constructed by any method for the purpose of installing equipment or facilities

1 for the protection electrically of metallic equipment in contact with the ground,  
2 commonly referred to as cathodic protection.

3 F. "Community Water Supply Well" shall mean any well which provides water for  
4 public water supply systems.

5 G. "Contamination" shall mean an impairment of the quality of the waters of the  
6 state by waste to a degree which creates a hazard to the public health through poisoning  
7 or through the spread of disease.

8 H. "Cross-Connection" shall mean any unprotected connection between any part of a  
9 water system used or intended to supply water for domestic purposes and any source or  
10 system containing water or other substances that are not or cannot be approved as safe,  
11 pure, wholesome, and potable for human consumption.

12 I. "Department" shall mean the Riverside County Department of Environmental  
13 Health.

14 J. "Director" shall mean the Director of Environmental Health or his duly  
15 authorized representative.

16 K. "Distribution System" shall include the facilities, conduits, or any other means  
17 used for the delivery of water from the source facilities to the customer's system.

18 L. "Geothermal Heat Exchange Well" shall mean any uncased excavation by any  
19 method for the purpose of using the heat exchange capacity of the earth for heating and  
20 cooling and in which the ambient ground temperature is 86° Fahrenheit (30° Celsius) or  
21 less and which uses a closed loop fluid system to prevent the discharge or escape of its  
22 fluid into the surrounding aquifers or geologic formations. Geothermal Heat Exchange  
23 Wells are also known as ground source heat pump wells. (California Water Code § 13713).  
24 Such wells or boreholes are not intended to produce water or steam.

25 M. "Exploration Hole" shall mean an uncased excavation for the purpose of  
26 immediately determining the existing geological and/or hydrological conditions at the  
27 site either by direct observation or other means.

28 N. "Extraction Well" shall mean any well used to extract water for treatment,

dewatering or other processes but not to include domestic or agricultural uses.

O. "Individual Domestic Well" shall mean any well used to supply water for domestic needs other than a public water supply system.

P. "Industrial Well" shall mean any well used primarily to supply water for industrial processes and may supply water intentionally or incidentally for domestic purposes.

Q. "Injection or Recharge Well" shall mean any well used to inject water of approved quality into groundwater basins (Special approval required).

R. "Lateral (horizontal) Well" shall mean a well drilled or constructed horizontally or at an angle with the horizon as contrasted with the common vertical well and does not include horizontal drains or "wells" constructed to remove subsurface water from hillside, cuts, or fills.

S. "Monitoring Well" shall mean an artificial excavation by any method for the purpose of observing, monitoring, or supplying the conditions of a water bearing Aquifer, such as fluctuations in groundwater levels, quality of groundwaters, or the concentration of contaminants in underground waters.

T. "Person" shall mean any individual, firm, corporation, association, profit or non-profit organization, trust, partnership, special district, or governmental agency to the extent authorized by law.

U. "Pollution" shall mean an alteration of water by waste to a degree which unreasonably affects such water for beneficial uses, or facilities which serve such beneficial uses "Pollution" may include "contamination".

V. "Public Water System" shall mean:

1. A system, regardless of type of ownership, for the provision of piped water to the public for domestic use, if such system has at least five (5) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days of the year. A public water system includes:

a. Any collection, treatment, storage, and distribution facilities which

are used primarily in connection with such system and which are under control of the water supplier.

b. Any collection or pretreatment storage facilities which are used primarily in connection with such system but are not under control of the water supplier.

2. A Labor Camp as defined by the California Code of Regulations, Title 25, Housing.

W. "Reconstruction" means certain work done to an existing well in order to restore its production, replace defective casing, seal off certain strata or surface water, or similar work, not to include the cleaning out of sediments, surging, or maintenance to the pump or appurtenances where the integrity of the annular seal or water bearing strata are not violated.

X. "Source Facilities" shall include wells, stream, diversion works, infiltration galleries, springs, reservoirs tanks, and all other facilities used in the production, treatment, disinfection, storage, or delivery of water to the distribution system.

Y. "Vapor Extraction Well" shall be a hole drilled and cased to extract vapor from underground.

Z. "Water Well" shall mean any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into the ground. This definition shall not include:

1. Oil and gas wells, or geothermal wells constructed under the jurisdiction of the California State Department of Conservation, except those wells converted to use as water wells; or

2. Wells used for the purpose of:

a. Dewatering excavation during construction.

or

b. Stabilizing hillsides or earth embankments, unless located within 500 feet of a potential source of groundwater contamination.



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Property Owner's  
Signature \_\_\_\_\_ Date \_\_\_\_\_

C. Any person who shall commence any work for which a permit is required by this Department without having obtained a permit therefore, shall, if subsequently granted a permit, pay double the permit fee for such work; provided, however, that this provision shall not apply to emergency work when it shall be established in writing to the satisfaction of the Director that such work was urgently necessary and that it was not practical to obtain a permit before commencement of the work. In all cases in which emergency work is necessary, a permit shall be applied for within three (3) working days after commencement of the work. The applicant for a permit for any such emergency work shall, in any case, demonstrate that all work performed is in compliance with the technical standards of Section 10. of this ordinance.

1 D. An application for a permit to construct a water well, monitoring well, cathodic  
2 protection well, or geothermal heat exchange well shall be submitted to the Department on a  
3 form and in a manner prescribed by the Department, and shall include the following information:

4 1. A Plot Plan showing the proposed well location with respect to the  
5 following items within a radius of five hundred feet (500') from the well:

6 a. Property lines, including ownership.

7 b. Sewage or waste disposal systems (including reserved waste  
8 disposal expansion areas), or works for carrying or containing sewage or  
9 waste.

10 c. All intermittent or perennial, natural, or artificial bodies of water  
11 or watercourses.

12 d. The approximate drainage pattern of the property.

13 e. Other wells, including abandoned wells.

14 f. Access road(s) to the well site.

15 g. Structures.

16 2. Location of the property with a vicinity map including the legal  
17 description of the property (Assessor Parcel Map/Tract Map Number, Township, Range  
18 and Section).

19 3. The C-57 license number and signature of the person responsible for  
20 constructing the well.

21 4. For a monitoring well the name and telephone number of the consultant.

22 5. The proposed well depth, including casing size and zones of perforations  
23 and strata to be sealed off if such data can be reasonably projected.

24 6. The proposed use of the well.

25 7. Location of underground storage tank(s) within five hundred feet (500') of  
26 the proposed well.

27 8. Location and classification by visual inspection of any solid, liquid, or  
28 hazardous waste disposal sites to include municipal and individual package sewage

1 treatment plants within two thousand feet (2,000') of the proposed well.

2 9. Where proposed work is reconstruction or destruction of a water well,  
3 monitoring well, cathodic protection well or geothermal heat exchange well, provide the  
4 following information, if available:

- 5 a. Method of reconstruction or destruction of well.
- 6 b. Total depth.
- 7 c. Depth and type of casing used.
- 8 d. Depth of perforation.
- 9 e. Well log.
- 10 f. Any other pertinent information.

11 10. Other information as may be deemed necessary for the Department to  
12 determine if the underground waters will be adequately protected.

13 E. As a condition of a construction or reconstruction permit, any abandoned wells on  
14 the property shall be destroyed in accordance with standards provided in this ordinance.

15 F. All complete and accurate permit applications shall be approved or denied within  
16 six (6) working days after the date of filing of the application or shall be deemed approved. The  
17 term "working day" shall be defined to mean a day in which the County of Riverside is open to  
18 members of the public for the regular conduct of business. In the event that the application is  
19 denied, the applicant shall be informed of any deficiencies contained in the application at the  
20 time of being notified of such denial. The applicant, after initial denial, may resubmit a  
21 corrected application that addresses the deficiencies that were identified as part of the application  
22 denial. The applicant shall resubmit a corrected application within thirty (30) days after being  
23 notified of the application denial or thereafter a new permit application will need to be  
24 submitted.

25 Section 4. CONDITIONS OF APPROVALS. Permits shall be issued after  
26 compliance with the standards provided and incorporated by reference in this ordinance. Plans  
27 shall be submitted to the Department demonstrating compliance with such standards. Permits  
28 may include conditions and requirements found by the Department to be reasonably necessary

1 to accomplish the purpose of this ordinance. Completion bonds, contractor's bonds, cash  
2 deposits, or other adequate security may be required to insure that all projects are performed  
3 completely and properly to protect the public's health and safety and the integrity of underground  
4 water resources.

5 Section 5. CONDITIONS OF DENIAL. Where the Department determines that the  
6 standards of this ordinance have not been met, it shall deny the application.

7 Section 6. EXPIRATION OR EXTENSION OF PERMIT.

8 A. Each permit issued pursuant to this ordinance shall expire and become null and  
9 void if the work authorized thereby has not been completed within six (6) months  
10 following the issuance of the permit.

11 B. The permit fee shall be non-refundable.

12 C. Any permit issued pursuant to this ordinance may be extended at the option of  
13 the Department. Each individual extension granted by the Department shall be for not  
14 longer than one hundred twenty (120) days. In no event shall the Department grant an  
15 extension which would make the total term of the permit exceed one (1) year.

16 Application for extension shall be made on a form provided by the Department.

17 D. Upon expiration of any permit issued pursuant hereto, no further work may be  
18 done in connection with construction, repair, reconstruction, or abandonment of a well  
19 unless and until a new permit for such purpose is secured in accordance with the  
20 provisions of this ordinance. If, the permit has expired before the final inspection is  
21 conducted, the permittee must pay a renewal fee for the final inspection to take place.

22 Section 7. PERMIT REVOCATION OR SUSPENSION.

23 A. The Director may revoke or suspend a permit issued pursuant to this ordinance  
24 upon a finding that:

- 25 1. A determination of violation exists.
- 26 2. Said determination has been sent to the permittee by first class mail in the  
27 form of a written notice specifying the violation.
- 28 3. The permittee has failed or neglected to correct the violation within

twenty (20) days from the date the written notice is mailed.

B. A permit violation exists where any of the following conditions are present:

1. The permit was issued in error.
2. The permit was issued on the basis of incorrect information supplied by the permittee.
3. The permittee violated any of the provisions of this ordinance or the conditions and requirements attached to the permit.

C. A permit may be revoked or suspended by the Director as provided for herein after the permittee is afforded a pre-deprivation opportunity for a hearing pursuant to Section 8 of this ordinance. Notwithstanding the foregoing, a permit may be summarily revoked or suspended in the event that the Director determines that exigent circumstances exist which demonstrate an immediate threat to the public health or safety. Upon a determination that exigent circumstances exist, a permittee shall be sent a written notice of violation pursuant to Section 7.A.2. of this ordinance and alternatively afforded a post-deprivation opportunity for a hearing pursuant to Section 8 of this ordinance.

Section 8. HEARINGS.

A. Pre-deprivation Hearing. Any person whose application for a permit has been denied or whose permit faces revocation or suspension after having first been sent a written notice of violation pursuant to Section 7.A.2. of this ordinance shall be entitled to request a pre-deprivation hearing. The person shall file with the Department a written petition requesting the hearing and setting forth a brief statement of the grounds for the request within ten (10) days from the date the permit application was denied or from the date the written notice of violation was mailed pursuant to Section 7.A.2. of this ordinance. The failure to timely submit a written request for a hearing shall be deemed a waiver of the right to such hearing.

B. Post-Deprivation Hearing. Any person whose permit has been summarily revoked or suspended shall be entitled to request a post-deprivation hearing. The person shall file with the Department a written petition requesting the hearing and setting forth a brief statement of the grounds for the request within ten (10) days from the date the written notice of

1 violation was mailed pursuant to Section 7.A.2. of this ordinance. The failure to timely submit a  
2 written request shall be deemed a waiver of the right to such hearing.

3 C. Hearing Procedure. The Hearing Officer shall be the Director or the Director's  
4 designee. The hearing shall be set for a date within ten (10) days from the date the written  
5 request is received by the Department unless extended at the request of the petitioner. At the  
6 time and place set for the hearing, the Hearing Officer shall give the petitioner and other  
7 interested persons, adequate opportunity to present any facts pertinent to the matter at hand. The  
8 Hearing Officer may, when deemed necessary, continue any hearing by setting a new time and  
9 place and by giving notice to the petitioner of such action. At the close of the hearing, or within  
10 twenty (20) normal business days thereafter, the Hearing Officer shall order such disposition of  
11 the permit application or permit as determined to be proper, and shall, by postage prepaid,  
12 certified mail, notify the petitioner of the Hearing Officer's final determination.

13 Section 9. LICENSING AND REGISTRATION OF WATER WELL DRILLER'S  
14 AND CONTRACTORS. No persons shall engage in any activity listed in Section 3. of this  
15 ordinance unless he is in compliance with the Provisions herein and possesses a valid C-57  
16 license in accordance with the California Contractor's State License Law (Chapter 9. Division 3  
17 of the Business and Professions Code), or possesses a license appropriate to the activity to be  
18 engaged in. Such person shall register annually with the Department thereto prior to  
19 commencing any activity regulated by this ordinance. The Driller's Registration may be  
20 suspended if there are any Well Driller's Reports outstanding and due or for other just cause. All  
21 well drilling rigs are to be identified as specified in the Contractor's License Law Section 7029.5  
22 1990.

23 Section 10. STANDARDS. Standards for the construction, reconstruction,  
24 abandonment, or destruction of wells shall be the standards recommended in the Bulletins of the  
25 California Department of Water Resources as follows: Bulletin NO 74-81 Chapter II Water  
26 Wells, and Bulletin NO 74-90 (Supplement to Bulletin 74-81) and as these Bulletins may be  
27 amended by the State of California from time to time. The content of said Bulletins is hereby  
28 incorporated by reference with the following additions or modifications:

1           A.     Exploration holes used for determining immediate geological or hydrological  
2 information relating to onsite sewage disposal systems, liquefaction studies, or geotechnical  
3 investigations for construction purposes, such as foundation studies, are exempt from the  
4 monitoring well destruction standards of Part III Bulletin 74-90, provided that a zone of low  
5 permeability overlying sediments with water bearing capabilities has not been penetrated. For  
6 the above-listed cases, the excavation or boring shall be backfilled with native soils immediately  
7 after the investigatory work has been completed. Where a zone of low permeability has been  
8 penetrated, the hole shall be abandoned as specified in Bulletin 74-90, Part III. When the  
9 excavation is to be left open and unattended (such as at the end of a work shift), the person in  
10 charge of the construction shall take necessary precautions to insure that the excavation has not  
11 created a public health or safety hazard. All excavations under this section shall be properly  
12 destroyed with approved sealant material within 24 hours.

13           Section 11.    LATERAL (HORIZONTAL) WELL STANDARDS. The location and  
14 design of lateral wells shall be in accordance with the standards recommended in the State of  
15 California, Department of Health Services' Publication: Requirements for The Use of Lateral  
16 Wells in Domestic Water Systems as such publication may be amended by the State of  
17 California from time to time. The content of said publication is hereby incorporated herein by  
18 reference.

19           Section 12.    REQUIRED INSPECTION OF WELL SITES. A site inspection by the  
20 Department is required prior to issuance of a permit for a well that is to be part of a public water  
21 system or other wells that possess a high potential for contamination as determined by the  
22 Director. In the event that the well is to serve a system under the direct jurisdiction of the State  
23 Department of Health Services, then, that agency may perform the site inspection and notify the  
24 Department of Environmental Health of its approval or disapproval.

25           Section 13.    REQUIRED INSPECTIONS OF WELLS.

26           A.     A well inspection shall be requested of the Department at least two (2) working  
27 days in advance of the following activities:

- 28                 1.     For individual domestic wells, agricultural wells, cathodic protection

1 wells, extraction wells, injection wells, and monitoring wells:

2 a. The filling of the annular space or conductor casing.

3 b. Immediately after the installation of all surface equipment and (for  
4 individual domestic wells) after the well has been disinfected and purged.

5 2. For community wells:

6 a. All community water wells shall be inspected at the frequencies  
7 stated in subsection 1. of this section for individual domestic water wells. In  
8 addition, a site inspection prior to issuance of a permit is required in accordance  
9 with Section 12. of this ordinance.

10 3. For all wells:

11 a. Any other operation or condition for which a special inspection is  
12 stipulated on the well permit.

13 4. For well and boring destruction (~~all wells~~):

14 a. During the actual sealing of the well,

15 b. Immediately after all well destruction work has been  
16 completed.

17 B. Upon failure to notify the Department of the filling of the annular space, approved  
18 geophysical tests including Sonic Log and Gamma Ray Log shall be conducted at the owner's  
19 expense, to substantiate that an annular seal has been properly installed.

20 C. If the enforcement agency fails to appear at the well site within 30 minutes of the  
21 scheduled time designated for sealing, the well may be sealed without the presence of the  
22 enforcement agency. However, the driller shall seal the well in accordance with the standards of  
23 this ordinance and the permit.

24 Section 14. DISCHARGE OF DRILLING FLUIDS. Drilling fluids and other drilling  
25 materials used in connection with cathodic protection, monitoring, or water well construction  
26 shall not be allowed to discharge onto streets or into waterways, and shall not be allowed to  
27 discharge to the adjacent property unless a written agreement with the owner(s) of the adjacent  
28 property is obtained; provided, however, that such fluids and materials are discharged off- site



with permission and are removed within thirty (30) days after completion of the well drilling and there is no violation of waste discharge regulations. This section shall not operate to prohibit the surface discharge of contaminated groundwater provided such discharge is carried out in compliance with a lawful order of a regional water quality control board.

Section 15. GENERAL LOCATION OF WATER WELLS. It shall be unlawful for any person or entity to drill, dig, excavate, or bore any water well at any location where sources of pollution or contamination are known to exist, have existed, or otherwise substantial risk exists that water from that location may become contaminated or polluted even though the well may be properly constructed and maintained. Exceptions to the above include the following:

A. Extraction wells used for the purpose of extracting and treating water from a contaminated aquifer.

B. Wells from which water is to be treated to meet all State Department of Health standards and requirements.

C. Wells from which water will be blended with other water sources resulting in water that meets all State Department of Health standards and requirements.

Every well shall be located an adequate distance from all potential sources of contamination and pollution as follows:

|                                                                         |                  |
|-------------------------------------------------------------------------|------------------|
| Sewer                                                                   | 50-foot minimum  |
| Watertight septic tank                                                  | 100-foot minimum |
| Subsurface sewage leach line or leach field                             | 100-foot minimum |
| Cesspool or seepage pit                                                 | 150-foot minimum |
| Animal or fowl enclosures                                               | 100-foot minimum |
| Any surface sewage disposal system discharging<br>2,000 gal/day or more | 200-foot minimum |

Minimum distances from other sources of pollution or contamination shall be as

determined by the Department upon investigation and analysis of the probable risks involved.

Where particularly adverse or special hazards are involved as determined by the Department of Environmental Health, the foregoing distances may be increased or specially approved means of

1 protection, particularly in the construction of the well, may be required as determined by the  
2 Department.

3       Section 16. WELL LOGS. Any person who has drilled, dug, excavated, or bored a  
4 well subject to this ordinance shall within sixty (60) days after completion of the drilling,  
5 digging, excavation, or boring of such well, furnish the Department with a complete log of such  
6 well on a standard form provided by the State Department of Water Resources. This log shall  
7 include depths of formations, character, size distribution, i.e., clay, sand, gravel, rocks and  
8 boulders, and color for all lithological units penetrated, the type of casing, pump test results  
9 when applicable, and any other data required by the Department. The Department may require  
10 inspection of the well log during any phase of the well's construction and where necessary to  
11 achieve the purposes of this ordinance, may require modification of the work as originally  
12 planned.

13       Well logs furnished pursuant to this ordinance shall not be made available for inspection  
14 by the public, but shall be made available to governmental agencies for use in making studies;  
15 provided, that any report be made available to any person who obtains written authorization from  
16 the owner of the well.

17       Section 17. WATER WELL SURFACE CONSTRUCTION FEATURES.

18       A.     Check Valve. A check valve shall be provided on the pump discharge line  
19 adjacent to the pump for all water wells.

20       B.     Sample Spigot. An unthreaded sample spigot shall be provided on any community  
21 or individual domestic water well. The sample spigot is to be installed on the pump discharge  
22 line adjacent to the pump and on the distribution side of the check valve.

23       C.     Water Well Disinfection Pipe. All community water supply wells and individual  
24 domestic wells shall be provided with a pipe or other effective means through which chlorine or  
25 other approved disinfecting agents may be introduced directly into the well, The pipe shall be  
26 extended at least four inches (4") above the finished grade and shall have a threaded or  
27 equivalently secured cap on it.

28       D.     Water Well Flow Meter. A flow meter or other suitable measuring device shall be

located at each source facility and shall accurately register the quantity of water delivered to the distribution system from all community water supply wells serving a public water supply system.

E. Air-Relief Vent. An air-relief vent, when required, shall terminate downward, be screened, and otherwise be protected from the entrance of contaminants.

F. Backflow Prevention Assembly. Wells equipped with chemical feeder devices for fertilizers, pesticides or other nonpotable water treatment, including connections to reclaimed water systems, shall be furnished with an approved backflow prevention assembly or a sufficient air gap to insure that a cross-connection with the well does not exist.

Section 18. DISINFECTION OF WATER WELLS. Every new, repaired, or reconstructed community water supply well or individual domestic well, after completion of construction, repair or reconstruction, and before being placed in service, shall be thoroughly cleaned of all foreign substances. The well gravel used in packed wells, pipes, pump, pump column, and all well water contact equipment surfaces, shall be disinfected by a Department-approved method. The disinfectant shall remain in the well and upon all relevant surfaces for at least twenty-four (24) hours. Disinfection procedures shall be repeated until coliforms organisms are no longer present.

Section 19. WATER QUALITY STANDARDS.

A. Water from all new, repaired, and reconstructed community water supply wells, shall be tested for and meet the standards for constituents required in the California Code of Regulations, Title 22, *Domestic Water Quality and Monitoring*.

B. In addition to the microbiological standards required in Section 18. of this ordinance, all individual domestic water wells shall be tested for and meet the nitrate, fluoride, and total dissolved solids (or total filterable residue) standards in accordance with the California Code of Regulations, Title 22, *Domestic Water Quality and Monitoring*.

C. At the discretion of the Director, for the purpose of protecting the health and safety of the public, any new, repaired, or reconstructed individual domestic water well, or community well, shall be tested for and must meet, any or all additionally specified Water Quality Standards in accordance with the California Code of Regulations, Title 22, *Domestic*

1 *Water Quality and Monitoring.* Exceptions would be community well water to be either treated  
2 or blended with other water sources to meet State Department of Health Services standards and  
3 requirements. Said treatment or blending must be approved by the State Department of Health  
4 Services.

5       Section 20     MINIMUM WATER WELL PRODUCTION.

6       A.     All individual domestic water wells providing drinking water to a residence must  
7 be tested for the purpose of achieving a minimum level of water production capability.

8       B.     Water production testing shall be performed under the direct supervision of a  
9 California licensed C-57 well driller, C-61 pump contractor, D-21 pump contractor or a certified  
10 hydrogeologist. Said testing shall include the following requirements:

11           1.     Standing water level measurements in the individual domestic water well  
12 shall be made immediately prior to the start of pumping. The standing water level shall  
13 be measured to an accuracy of at least 0.1 foot.

14           2.     Timing of the test shall commence from the start of pumping or when an  
15 air lift is started. Pumping shall continue on an uninterrupted basis for a minimum two  
16 hour period until three or more wetted bore volumes of water have been discharged from  
17 the well. The term "wetted bore volume" shall be defined to mean the volume of the well  
18 hole below the standing water level measurement. In those cases that involve screened  
19 and filter packed wells, the volume of water contained in the filter pack shall also be  
20 included in the bore volume calculation.

21           3.     Water production shall be kept at a constant rate of no less than 1 gallon  
22 per minute per residence or unit. Higher production rates may be required based upon  
23 the proposed water usage and as determined by the Department. This level of production  
24 applies to new water wells used for domestic purposes and existing water sources on  
25 property being improved.

26           4.     Water discharged from the water well during the production test shall be  
27 restricted so that it does not re-enter the water well that is the subject of the test.

28           5.     The standing water level in the individual domestic water well shall be

remeasured immediately at the conclusion of pumping. The standing water level shall be measured to an accuracy of at least 0.1 foot. The well shall not pump dry during the test.

Section 21. PRIVATE WELL EVALUATIONS. A well evaluation is required for all individual domestic wells that have been in existence for more than one year and are to be utilized as a potable water supply for a proposed development or improvement of property. This evaluation is required when application is made to this Department for waste disposal. A well evaluation may be requested by the applicant or otherwise required by this Department. The Department shall perform a well-site inspection and conduct the water sampling portion of the evaluation. The well shall be sampled for total coliform, nitrate, fluoride, total filterable residue (or total dissolved solids) and any other constituent determined to be necessary for the Department to evaluate the basic water quality. The well water shall meet the Water Quality Standards in accordance with the California Code of Regulations, Title 22, Domestic Water Quality and Monitoring. A water source can not be approved by this Department if it does not meet the bacteriological standards. Failure to meet the fluoride or nitrate standard will require recordation of this fact on the grant deed of property. Any additional testing, including any pump test to determine the yield quantity of the well, shall be performed under the direct supervision of a California licensed C-57 well driller, C-61 pump contractor, D-21 pump contractor or a certified hydrogeologist at the expense of others.

Section 22. WELL ABANDONMENT. If after thirty (30) days of abandonment, the owner has not declared to the Department a proposed reuse of the well per Section 24 of this ordinance, and the well has been found by the Department to be a hazard, whereby its continued existence is likely to cause damage to ground water or a threat to public health and safety, the Department shall direct the owner to destroy the well, in accordance with Section 10. of this ordinance. Upon removal of the pump, the casing shall be provided with a threaded or equivalently secured watertight cap. The well shall be maintained so that it will not be a hazard to public health and safety until such time as it is properly destroyed.

Section 23. PUBLIC NUISANCE ABATEMENT. Where an abandoned well has been identified and the owner fails to comply with the Department's order to destroy the well,

1 such well may be declared a public nuisance pursuant to Government Code Section 50231, and  
2 thereafter abated pursuant to Title 5, Division 1, Article 9 of the California Government Code.  
3 Where abatement is undertaken at the expense of the County, such cost shall constitute a special  
4 assessment against the parcel and shall be added to the next regular tax bill as enumerated under  
5 Government Code Section 50244 et seq.

6 Section 24. DECLARATION OF PROPOSED REUSE. Where a well is unused or its  
7 disuse is anticipated, the owner may apply to the Department, in writing, stating an intention to  
8 use the well again for its original or other approved purpose, The Department shall review such a  
9 declaration and may grant an exemption from certain of the provisions of Section ~~24~~ 22 of this  
10 ordinance, provided no undue hazard to public health or safety is created by the continued  
11 existence of the well. Thereafter, an amended declaration shall be filed annually with the  
12 Department. The original or subsequent exemption may be terminated for cause by the  
13 Department at any time.

14 Section 25. ADMINISTRATIVE VARIANCE. Subject to approval by the State  
15 Department of Health Services, the Director may grant an administrative variance of the  
16 provisions of this ordinance where documentary evidence establishes that a modification of the  
17 standards as provided herein will not endanger the general public health and safety, and strict  
18 compliance would be unreasonable in view of all the circumstances.

19 Section 26. VIOLATIONS AND PENALTIES.

20 A. The Director, or his designee, may at any and all reasonable times enter any and  
21 all places, property, enclosures, and structures for the purpose of conducting examinations and  
22 investigations to determine whether all provisions of this ordinance are being complied with.

23 B. It shall be unlawful for any person, firm, corporation, or association of persons to  
24 violate any provision of this ordinance or to violate the provisions of any permit granted  
25 pursuant to this ordinance. Any person, firm, corporation, or association of persons violating  
26 any provision of this ordinance or the provisions of any permit granted pursuant to this  
27 ordinance, shall be deemed guilty of an infraction or misdemeanor as herein specified. Such  
28 person, firm, corporation, or association of persons shall be deemed guilty of a separate offense

1 for each and every day or portion thereof during which any violation of any of the provisions of  
2 this ordinance or the provisions of any permit granted pursuant to this ordinance is committed,  
3 continued, or permitted. Any person, firm, corporation, or association of persons so convicted  
4 shall be: (1) guilty of an infraction offense and punished by a fine not exceeding one hundred  
5 dollars (\$100.00) for a first violation, (2) guilty of an infraction offense and punished by a fine  
6 not exceeding two hundred dollars (\$200.00) for a second violation at the same site. The third  
7 and any additional violations on the same site shall constitute a misdemeanor offense and shall  
8 be punishable by a fine not exceeding one thousand dollars (\$1,000.00), or six (6) months in jail,  
9 or both. Notwithstanding the above, a first offense may be charged and prosecuted as a  
10 misdemeanor. Payment of any penalty herein shall not relieve a person, firm, corporation, or  
11 association of persons from the responsibility for correcting the violation.

12 C. Anything done, maintained, or suffered in violation of any of the provisions of  
13 this ordinance is a public nuisance dangerous to the health and safety of the public and may be  
14 enjoined or summarily abated in the manner provided by law. Every public officer or body  
15 lawfully empowered to do so shall abate the nuisance immediately.

16 Section 27. SEVERABILITY. If any provision, clause, sentence, or paragraph of this  
17 ordinance, or the application thereof, to any person, establishment, or circumstances shall be  
18 held invalid, such invalidity shall not affect the other provisions of this ordinance which can be  
19 given effect without the invalid provision or application, and to this end, the provisions of the  
20 ordinance are hereby declared to be severable.

21 Section 28. CONFLICT WITH EXISTING LAWS. The provisions of any existing  
22 ordinance or State or Federal law affording greater protection to the public health or safety shall  
23 prevail within this jurisdiction over the provisions of this ordinance and the standards adopted or  
24 incorporated by reference thereunder.

25 Section 29. REPEAL. Riverside County Ordinance No. 340, and all amendments  
26 thereto, shall be repealed and of no further force or effect upon the effective date of this  
27 ordinance.

28 ///

Section 30. EFFECTIVE DATE. This ordinance shall take effect sixty (60) days after its adoption.

BOARD OF SUPERVISORS OF THE COUNTY  
OF RIVERSIDE, STATE OF CALIFORNIA

B.   
Vice Chairman, Board of Supervisors

ATTESTED: 5/25/99

GERALD A. MALONEY  
Clerk of the Board

By: 11/16/00  
Deputy,



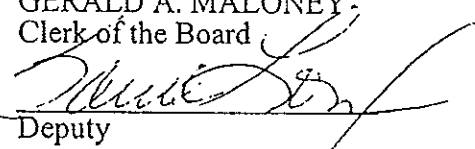
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STATE OF CALIFORNIA            )  
                                          )  
COUNTY OF RIVERSIDE        )       ss.

I HEREBY CERTIFY that at a regular meeting of the Board of Supervisors of said county held on May 25, 1999, the foregoing ordinance consisting of 30 sections was adopted by the following vote:

AYES:       Buster, Tavaglione, Venable and Mullen  
NOES:       None  
ABSENT:     Wilson

DATE:     May 25, 1999

GERALD A. MALONEY  
Clerk of the Board  
BY:   
Deputy

1 adds a new Section 20 relating to the testing of individual domestic water wells which provide water  
2 to a residence such that they achieve certain minimum water well production standards; amends  
3 Section 21 to allow for an individual domestic water well evaluation to be performed after a one-  
4 year period rather than the existing requirement of six months.

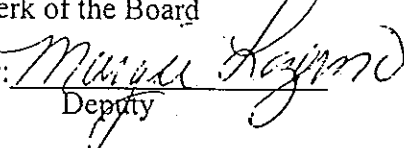
5 Ordinance No. 682.3 will take effect sixty days after its adoption.

6  
7 BOARD OF SUPERVISORS OF THE COUNTY  
8 OF RIVERSIDE, STATE OF CALIFORNIA

9 By:   
10 Vice Chairman TOM MULLEN

11 ATTEST: 5/25/99

12 GERALD A. MALONEY  
13 Clerk of the Board

14 By:   
15 Deputy  
16 (SEAL)

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5/25/99 312

MINUTES OF THE BOARD OF SUPERVISORS  
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA



3.12

On motion of Supervisor Tavaglione seconded by Supervisor Venable and duly carried, IT WAS ORDERED the reading being waived, that an ordinance bearing the following title, is adopted:

ORDINANCE 682.3  
AN ORDINANCE OF THE COUNTY OF RIVERSIDE  
AMENDING ORDINANCE NO. 682 REGULATING THE  
CONSTRUCTION, RECONSTRUCTION, ABANDONMENT, AND  
DESTRUCTION OF WELLS

Roll Call:

Ayes: Buster, Tavaglione, Venable and Mullen  
Noes: None  
Absent: Wilson

I hereby certify that the foregoing is a full, true and correct copy of an order made and entered on May 25, 1999 of Supervisors Minutes.

WITNESS my hand and the seal of the Board of Supervisors

Dated: May 25, 1999

Gerald A. Maloney, Clerk of the Board of Supervisors, in and for  
the County of Riverside, State of California.

(seal)

By: Margie K. [Signature], Deputy

AGENDA NO.  
3.12

XC: Co.Counsel, HSA, Env. Health, TLMA, Bldg & Safety, COB,  
District Attorney, Public Defender, Sheriff, Superior Court