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**SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF LOS ANGELES**

Coordination Proceeding
Special Title (Rule 1550(b))

Judicial Council Coordination
Proceeding No. 4408

ANTELOPE VALLEY GROUNDWATER CASES

Included actions:

**SUPPLEMENT TO EXPERT
WITNESS DECLARATIONS OF
DR. JUNE OBERDORFER AND
DR. JASON SUN**

Los Angeles County Waterworks District No. 40 v.
Diamond Farming Co., et al.

Los Angeles County Superior Court, Case No. BC 325
201

Los Angeles County Waterworks District No. 40 v.
Diamond Farming Co., et al.

Kern County Superior Court, Case No. S-1500-CV-
254-348

Wm. Bolthouse Farms, Inc. v. City of Lancaster

Diamond Farming Co. v. City of Lancaster

Diamond Farming Co. v. Palmdale Water District

Riverside County Superior Court, Consolidated Action,
Case nos. RIC 353 840, RIC 344 436, RIC 344 668

AND RELATED CROSS ACTIONS

The United States hereby supplements its Expert Witness Declarations of Dr. June
Oberdorfer and Dr. Jason Sun. Pursuant to California *Code of Civil Procedure* § 2034.260(c)(2),
the United States supplements its previously filed brief narrative statement of the general

1 substance of the testimony of Drs. Oberdorfer and Sun with the following.

2 The MODFLOW simulations described in the “Separation of Antelope Valley into Sub-
3 Basins for Groundwater Management” (Tejon Report) by Bookman-Edmonston/GEI for
4 TejonRanchcorp, dated June 25, 2008, have discrepancies with the results presented in the U.S.
5 Geological Survey (USGS) regional flow model (Leighton and Phillips, 2003). These
6 discrepancies introduce an uncertainty into Bookman-Edmonston’s results and conclusions.

7 The Tejon Report show inconsistencies between the heads simulated by Bookman-
8 Edmonston with corresponding heads in Leighton and Phillips (2003). The discrepancies
9 between the model outputs for Leighton and Phillips (2003) and Bookman-Edmonston raise
10 questions about the reliability of the Bookman-Edmonston results.

11 The USGS regional groundwater flow model (Leighton and Phillips, 2003) was based on
12 the Unix operating system. To run on a Windows operating system, we compiled the
13 MODFLOW source code from Leighton and Phillips (2003) with an Intel Fortran compiler to
14 generate the MODFLOW executable program for the model simulations. We ran the regional
15 groundwater model for verification. We compared the hydrographs reported in Leighton and
16 Phillips (2003) to the hydrographs from our simulations. Our simulated hydrographs match well
17 with the hydrographs in Leighton and Phillips (2003).

18 Bookman-Edmonston’s Scenario 3 purports to evaluate “the impact of pumping increase
19 in the Western Antelope Valley sub-basins” by simulating a pumping well located many miles
20 from their proposed sub-basin boundary with the adjacent Lancaster sub-unit. That simulation
21 indicated some pumping impacts southeast of the Neenach fault in the Lancaster sub-unit. If the
22 simulation had been carried out for a longer period of time, much greater effects would have
23 been observed in both the water level response and in the water budget. Bookman-Edmonston
24 failed to provide an appropriate water budget analysis of the effects of the pumping scenario.

25 Using the USGS regional flow model, Scenario 3 in the Tejon Report was duplicated and
26 extended in time. We used the stress/boundary conditions in 1995 for the stress/boundary
27 conditions from for the post-1995 simulation time. The extended simulation timeframe shows
28 predicted water level declines after 100 years and after 200 years. The model suggests water level

1 declines southeast of Neenach fault range from 1.0 ft to 10 ft after 100 years and range from 3.0
2 ft to 50 ft after 200 years, with lesser amounts of drawdown east of the bedrock ridge discussed
3 by the Tejon Report. The effects of the pumping well in the westernmost corner of the proposed
4 Western Antelope Valley “sub-basins” extend to the Lancaster sub-unit, resulting in significant
5 drawdown in the Lancaster sub-unit on the timeframe of 100 to 200 years.

6 The pumping and resulting water level decline affects the flow budget across the Neenach
7 fault and the bedrock ridge. We ran the USGS regional groundwater model (Leighton and
8 Phillips, 2003) to calculate the flow budget, specifically the underflow across the Neenach fault
9 line from the Western Antelope Valley sub-unit to the Lancaster sub-unit.

10 The loss of underflow from Western Antelope Valley sub-units to the Lancaster sub-unit
11 is 6% of the annual pumping rate (3,000 af/yr) after 81 years. The percentage increases to 9%
12 after 100 simulated years and continues to increase to 24% after 200 simulated years.

13 Pumping that occurs in the middle or eastern portion of the proposed West Antelope sub-
14 basin will have an even greater affect on water levels and on the water budget than the effects
15 observed in Bookman-Edmonston’s Scenario 3. The USGS model was used to examine the
16 effects of pumping closer to the proposed sub-basin boundary. The results show a high degree of
17 hydraulic connection across the proposed boundary and significant impacts to underflow and to
18 water levels.

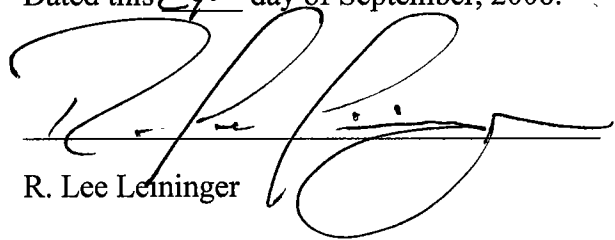
19 Simulations using the USGS regional groundwater flow model (Leighton and Phillips,
20 2003) indicates that there is good hydraulic connection between Tejon’s proposed Western
21 Antelope Valley sub-basins and the adjacent Lancaster sub-unit. Examining stresses on the basin
22 over a somewhat longer timeframe than that used by Bookman-Edmonston indicated much
23 greater water-level effects than Bookman-Edmonston reported. Bookman-Edmonston did not
24 report on the effects on underflow across the proposed sub-basin boundary. Those effects were
25 significant over the timeframe we simulated, particularly for pumping closer to the proposed sub-
26 basin boundary. The model results are consistent with the high degree of hydraulic connection
27 across the proposed sub-basin boundary.

28 The calculation of the travel time in the Tejon Report is not appropriate for analyzing the

1 effect of stresses on the groundwater basin. The appropriate approach is to evaluate the impacts
2 to the flow budget and the declines in water levels.

3
4 I declare under the penalty of perjury, the above statements are true and correct.

5
6 Dated this 29th day of September, 2008.

7
8 
9 R. Lee Leininger

PROOF OF SERVICE

I, Linda C. Shumard, declare:

I am a resident of the State of Colorado and over the age of 18 years, and not a party to the within action. My business address is U.S. Department of Justice, Environmental and Natural Resources Section, 1961 Stout Street, 8th Floor, Denver, Colorado 80294.

On September 29, 2008, I caused the foregoing documents described as; **SUPPLEMENT TO EXPERT WITNESS DECLARATIONS OF DR. JUNE OBERDORFER AND DR. JASON SUN**, to be served on the parties via the following service:

☒

BY ELECTRONIC SERVICE AS FOLLOWS by posting the documents(s) listed above to the Santa Clara website in regard to the Antelope Valley Groundwater matter.

☐

BY MAIL AS FOLLOWS (to parties so indicated on attached service list): By placing true copies thereof enclosed in sealed envelopes addressed as indicated on the attached service list.

☐

BY OVERNIGHT COURIER: I caused the above-referenced document(s) be delivered to FEDERAL EXPRESS for delivery to the above address(es).

Executed on September 29, 2008, at Denver, Colorado.

/s/Linda C. Shumard
Linda C. Shumard
Legal Support Assistant