

TESTIMONY OF MICHAEL SEBHAT

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3 I, Michael Sebhat, declare as follows:

4 1. I am a consultant with the United States Department of the Interior, Bureau of
5 Reclamation Mid-Pacific Region (USBR). My primary responsibility is to manage the USBR
6 Mid-Pacific Region Geographic Information Systems (GIS) Service Center. I have worked as a
7 GIS professional for the federal government for more than 16 years. A true and correct copy of
8 my statement of qualifications is submitted contemporaneously herewith as **Exhibit DOI-3a** and
9 incorporated herein by reference.

10 2. I have over 16 years of experience with GIS technology. The USBR instituted GIS
11 technology in 1984 to provide for resource management using geographic databases. A GIS is a
12 system of computers, people, and databases capable of assembling, storing, manipulating, and
13 displaying geographically referenced information. The GIS Service Center at USBR has been
14 involved with many local and state agencies in the past and currently is a cooperating partner
15 with many agencies on a variety of projects. The GIS Service Center uses the Environmental
16 Systems Research Institute (ESRI) software suite to perform all GIS projects. ARC/INFO is the
17 primary GIS software package developed and used by the ESRI. I have extensive experience
18 with the installation, customization, operation and maintenance of the entire suite of ARC/INFO
19 software modules on a variety of platforms. The modules within ARC/INFO are extended
20 products that perform more complex tasks such as raster modeling or 3-D modeling. I have
21 extensive experience with data conversion, programming, database design and management, and
22 environmental model integration. I also have experience with other ESRI software components,
23 namely ArcView, ArcSDE, and the Internet Map Server.

24 3. I provide expert GIS analysis and systems management to the USBR Mid-Pacific
25 Region's GIS Service Center. I develop work plans and supervise staff persons in all aspects of
26 ARC/INFO and GIS analysis. I oversee analysis and production efforts of all projects in the
27 Service Center. Provides system and network administration of all GIS hardware and software.

28 4. My duties include integration of GIS with environmental models such as the
USGS/MODFLOW finite difference model, the NWS DAMBRK model, and other hydrologic

1 transport models. I am also responsible for implementing web-based GIS at the USBR using
2 ArcView and MapObjects Internet Map Server technology.

3 5. From September 1981 to May 1982, I was enrolled in graduate studies in Control
4 Systems at Oregon State University, Corvallis, Oregon. In May 1981, I received a Bachelor of
5 Science degree in Electrical Engineering from Gonzaga University in Spokane, Washington.

6 6. The statements made in this declaration are based upon information or facts of which I
7 have personal knowledge, or are based upon information presented to me in the course of my
8 employment. If called as a witness, I could and would testify competently to the statements
9 contained in this declaration.

10 7. The purpose of my testimony below is to describe the development and creation of
11 three maps depicting the Cachuma Project, Map Nos. 368-208-899, 368-208-900 and 368-208-
12 901, **Exhibits DOI-3b, DOI-3c and DOI-3d**, respectively, and a map depicting the location of
13 the Dos Pueblos Golf Links Project Site in the Goleta Water District, **Exhibit DOI-3e. Exhibits**
14 **DOI-3b, DOI-3c, DOI-3d, and DOI-3e** are incorporated herein by reference.

15 8. My staff used ARC/INFO GIS software to create the maps represented in **Exhibits**
16 **DOI-3b, DOI-3c, DOI-3d, and DOI-3e**. All data is in ARC/INFO format. The maps vary in
17 extent and scale.

18 19 **I. GIS MAP SOURCE DESCRIPTIONS FOR CACHUMA PROJECT**

20 9. The following information and data were used to create the three maps of the
21 Cachuma Project, Maps No. 368-208-899, No. 368-208-900 and No. 368-208-901, **Exhibits**
22 **DOI-3b, DOI-3c and DOI-3d**, respectively. The information and data described below in the
23 creation of **Exhibits DOI-3b, DOI-3c and DOI-3d** are of the type of information and data upon
24 which experts in my field of expertise may reasonably rely in the creation of maps.

25 10. **Goleta Water District, Carpinteria Water District, Santa Ynez River Water**
26 **Conservation District, Montecito Water District.** These districts were originally digitized in
27 1986 from USBR mylar maps showing district boundaries at 1:24000 scale. The inclusion of the
28 Santa Ynez River Water Conservation District Improvement District #1 was made using a

1 contour map that USBR received on August 29, 1995. The inclusion was the area around the
2 Water Treatment Plant near the Bradbury Dam Office.

3 11. **City of Santa Barbara.** The service area boundaries for the City of Santa Barbara
4 were created by one of its consultants. The boundary information was received as ARC/INFO
5 export file in April 1995. USBR staff in the Fresno field office stated that the consultant's
6 service area boundaries were incorrect. My staff received instructions from the USBR Water
7 Rights section to edit the boundaries, deleting the portion in the ocean and the east side around
8 the airport, which the Water Rights section stated is serviced by Goleta Water District and not
9 the City of Santa Barbara.

10 12. The water district boundaries have been verified by the districts themselves. Our
11 general procedure is to digitize the district boundary from a given source and then send the
12 districts a map at a 1:24,000 scale. We request that they make changes, if necessary, by denoting
13 areas to be added in green and those to be deleted, in red. Verification dates are: Goleta Water
14 District, February 1994; Montecito Water District, March 1998; Carpinteria Water District, June
15 1995; Santa Ynez River Water Conservation District, June 1995; and City of Santa Barbara,
16 April 1995.

17 13. **Existing Place-of-Use Boundary.** The Existing Place-of-Use Boundary was
18 digitized from USBR Drawing No. B-1P-21, dated March 1947, revised on August 26, 1948 and
19 on May 4, 1949 (Map Nos. 368-203-218 and 368-203-219), as on file with the State Water
20 Resources Control Board under USBR Applications 11331 and 11332.

21 14. **Proposed Place-of-Use Boundary.** The Proposed Place-of-Use Boundary was
22 created by using the Existing Place-of-Use and including all outer boundaries of the water
23 districts as they existed at that time the maps were created.

24 15. **Tunnels.** The Tunnels, as depicted, were digitized from 1:24,000 7.5-minute U.S.
25 Geological Survey (USGS) quad maps.

26 16. **South Coast Conduit.** The South Coast Conduit, as depicted, was digitized from
27 1:24,000 7.5-minute quad maps, except the portion east of Montecito Water District, which was
28 not on the quad. This part of the Conduit was digitized from Drawing No. 368-203-394.

1 17. **Spanish Land Grant Boundaries.** The Spanish Land Grant Boundaries were
2 digitized from 1:24,000 7.5-minute USGS quad maps.

3 18. **Public Land Survey System.** The Public Land Survey System, as depicted, was
4 digitized from 1:24000 7.5-minute USGS quad maps.

5 19. **Federal Installation at Lake Cachuma.** The Federal Installation at Lake Cachuma
6 (Bradbury Dam Office), as depicted, was digitized from a 1:24,000 7.5 minute USGS quad map
7 on which the boundary was delineated.

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9 **II. GIS MAP SOURCE DESCRIPTIONS FOR DOS PUEBLOS GOLF LINKS PROJECT**
10 **LOCATION MAP (FIGURE 1)**

11 20. **Dos Pueblos Golf Links Project.** The Dos Pueblos Golf Links Project, as depicted
12 in Exhibit DOI-3e, was digitized from a map enclosed in the "Addendum to the Final
13 Environmental Impact Report for the DPGL, dated July 1998, at 1:24,000 scale.

14 21. **Goleta Water District.** Goleta Water District, as depicted, was originally digitized
15 in 1986 from USBR mylar maps showing district boundaries at 1:24000 scale. The water district
16 boundary has been verified by the district in 2/94. Our general procedure is to digitize the
17 district boundary from a given source and sending the districts a map at a 1:24,000 scale. We
18 request they make changes, if necessary, by denoting areas to be added in green and those to be
19 deleted, in red.

20 22. **Public Land Survey System.** The Public Land Survey System, as depicted, was
21 digitized from 1:24,000 7.5 minute USGS quad maps.

22 23. **Spanish Land Grant Boundaries.** The Spanish Land Grant Boundaries were
23 digitized from 1:24,000 7.5 minute USGS quad maps.

24 24. **Existing Place-of-Use Boundary.** The Existing Place-of-Use Boundary was
25 digitized from USBR Drawing No. B-1P-21, dated March 1947, revised on August 26,1948 and
26 on May 4, 1949 (Maps. No. 368-203-218 and 368-203-219), as on file with the State Water
27 Resources Control Board under USBR Applications 11331 and 11332.

28 25. **Proposed Place-of-Use Boundary for Pending Change Petition.** The Proposed

1 Place-of-Use Boundary for Pending Change Petition is consistent with Map No. 368-208-899. It
2 was created by using the Existing POU and including all outer boundaries of the water districts
3 as the existed at that time.

4 26. **Proposed Place-of-Use Boundary for Dos Pueblos Golf Links Project.** The
5 Proposed Place-of-Use Boundary for Dos Pueblos Golf Links Project was digitized from a map
6 enclosed in the Addendum to the Final Environmental Impact Report for the DPGL, dated July
7 1998, at 1:24,000 scale.

8 27. **Tunnels.** The Tunnels, as depicted, were digitized from 1:24,000 7.5 minute USGS
9 quad maps.

10 28. **South Coast Conduit.** The South Coast Conduit, as depicted, was digitized from
11 1:24000 7.5 minute quad maps, except the portion east of Montecito Water District, which was
12 not on the quad. This part of the conduit was digitized from Map No. 368-203-394.

13 29. **Roads.** The Roads were converted from 1:100,000 scaled USGS Digital Line Graph
14 to ARC/INFO coverages.

15 30. Within a GIS, topological relationships are maintained, allowing for such tasks as
16 calculating polygon areas, measuring distance, calculating volume, height and so on. A typical
17 calculation of an acreage involves building a query within the GIS database and having areas
18 automatically summed up by selected categories. In a GIS units are stored in either meters or
19 feet, and thus an acreage calculation will involve converting the areas reported into acres. The
20 precision of such calculations is dependent on the quality of the source maps used to create the
21 GIS database as well as good ground control.

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1 31. To the best of my knowledge and the information provided to me, Exhibits DOI-
2 3b, DOI-3c, DOI-3d, and DOI-3e are accurate depictions of the Cachuma Project and the
3 location of the Dos Pueblos Golf Links Project Site in the Goleta Water District.

4 32. I declare under penalty of perjury that the foregoing is true and correct to the best of
5 my knowledge. Executed at Sacramento, California on this 19th day of October 2000.

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Michael Sebhat

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