

1 ROCKARD J. DELGADILLO, Los Angeles City Attorney  
2 RICHARD M. BROWN, General Counsel  
3 Water and Power

4 **JULIE C. RILEY (SBN 197407)**

5 **Deputy City Attorney**

6 111 North Hope Street, Suite 340

7 P. O. Box 51111

8 Los Angeles, California 90051-0100

9 Telephone: (213) 367-4500

10 Facsimile: (213) 367-4588

11 Attorneys for Defendant,  
12 CITY OF LOS ANGELES, ACTING BY AND  
13 THROUGH THE LOS ANGELES DEPARTMENT  
14 OF WATER AND POWER (DWP)

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

12 **ANTELOPE VALLEY**  
13 **GROUNDWATER CASES**

14 Los Angeles County Waterworks District  
15 No. 40 v. Diamond Farming Co.

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

18 Diamond Farming Co. v. City of Lancaster

19 Diamond Farming Co. v. Palmdale Water  
20 District

Case No. 1-05-CV049053

Judicial Council Coordination Proceeding  
No. 4408

**DEFENDANT CITY OF LOS ANGELES'**  
**DESIGNATION OF EXPERT WITNESS**

Riverside County Superior Court  
Lead Case No. RIC 344436  
Case No. RIC 344668  
Case No. 353840

Los Angeles Superior Court  
Case No. BC 325201

Kern County Superior Court  
Case No. S-1500-CV-254348

23 **COMES NOW** Defendant CITY OF LOS ANGELES ("Defendant" herein), by and  
24 through its attorney of record, Julie C. Riley, Deputy City Attorney, Office of the  
25 Los Angeles City Attorney, who declares under penalty of perjury that the following  
26 individual may be called to testify at the time of trial as an expert witness.

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DOCKETED

1 Timothy J. Durbin, West Yost Associates, Consulting Engineers, 2020 Research  
2 Park Drive, Suite 200, Davis, California 95618. Mr. Durbin will testify concerning the  
3 Antelope Valley groundwater basin and its natural water recharge. Mr. Durbin's report  
4 containing his opinion on this subject is contained within the Public Water Suppliers'  
5 Expert Report for Phase III Trial, filed by Los Angeles County Waterworks District 40, and  
6 his resume is attached herewith. Counsel is informed and believes that Mr. Durbin will be  
7 sufficiently familiar with the pending action to submit meaningful oral deposition testimony  
8 and has agreed to testify at trial. Counsel is informed and believes that Mr. Durbin  
9 charges \$216 per hour for any deposition or trial testimony, plus travel time and expenses.

10 Defendant hereby designates as its own expert witness to any and all experts  
11 designated by other parties hereto and reserves the right to claim such experts as its own  
12 and call them as its own witnesses at trial if desired.

13 Defendant reserves the rights expressly set forth in California Code of Civil  
14 Procedure section 2034.210, et seq. concerning the retention, designation and use of  
15 expert witnesses.

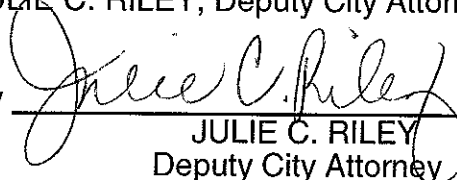
16 Defendant reserves all rights to subsequently name expert witnesses as provided  
17 by California Code of Civil Procedure section 2034, et seq.

18 I declare under the penalty of perjury that the foregoing is true and correct and that  
19 this Declaration was executed on July 15, 2010, at Los Angeles, California.

20  
21 Dated: July 15, 2010

ROCKARD J. DELGADILLO, City Attorney  
RICHARD M. BROWN, General Counsel  
JULIE C. RILEY, Deputy City Attorney

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24 By

  
JULIE C. RILEY  
Deputy City Attorney

25  
26 Attorneys for Plaintiff CITY OF LOS ANGELES,  
27 acting by and through the LOS ANGELES  
28 DEPARTMENT OF WATER AND POWER

**RESUME OF TIMOTHY J. DURBIN, P.E.  
IN SUPPORT OF DEFENDANT  
CITY OF LOS ANGELES'  
DESIGNATION OF EXPERT WITNESS**

DOCKETED

## Timothy J. Durbin, P.E.

### Professional Registration

Professional Civil Engineer, 1972  
California No. 20651

Professional Civil Engineer, 1989  
Oregon No. 16497PE

Professional Engineer, 2009, Utah  
No. 7534697-2202

Professional Civil Engineer, 2009,  
Nevada No. 5015

### Education

M.S., Civil Engineering, 1971  
Stanford University, California

B.S., Civil Engineering, 1967  
Stanford University, California

### Professional Affiliations

American Society of Civil Engineers

American Geophysical Union

International Association of  
Hydrogeologist

National Groundwater Association

### Publications

Durbin, T.J., 1974, *Digital simulation of the effects of urbanization on runoff in the upper Santa Ana Valley, California: U.S. Geological Survey Water-Resources Investigations 41-73*, 44 p.

Durbin, T.J., and Hardt, W.F., 1974, *Hydrologic analysis of the Mojave River, California, using a mathematical model: U.S. Geological Survey Water-Resources Investigation 17-74*, 50 p.

Durbin, T.J., 1975, *Selected effects of suburban development on runoff in south-coastal California: in Proceedings of Second National Symposium on Urban Hydrology and Sediment Control, Lexington, Kentucky*, p. 209-217.

Durbin, T.J., 1975, *Ground-water hydrology of Garner Valley, San Jacinto Mountains, California - a mathematical analysis of recharge*

Tim Durbin has over 40 years of engineering experience and directs projects relating to groundwater and surface-water hydrology. Areas of expertise include design of multidisciplinary investigations, design of large-scale programs for the collection and interpretation of hydrologic data, and application of mathematical modeling to the analysis of problems in groundwater and surface-water hydrology.

### Project Experience

**Antelope Valley Groundwater Basin, California.** The Antelope Valley groundwater basin is being adjudicated to address the overdraft within the basin. Developed criteria for defining the geographic extent of the groundwater. Developed estimate of natural recharge within adjudicated area. Work was done in support of litigation related to the adjudication. *City of Los Angeles, California.*

**Seaside Groundwater Basin, California.** The Seaside groundwater basin was adjudicated to balance the threat of seawater intrusion against the need for groundwater production to supply water to communities overlying the basin and within the Monterey Peninsula area. Developed a groundwater model to assess the relation between groundwater production and seawater intrusion. Work was done in support of litigation related to the adjudication. *California American Water, Monterey, California.*

**Carbonate Aquifer System, Eastern Nevada.** Analyzed the water-related impacts of groundwater development within the regional Carbonate Aquifer System that underlies central and eastern Nevada. The Southern Nevada Water Authority, which delivers water to Las Vegas and neighboring communities, is considering a project to import of groundwater from the Carbonate Aquifer. The analysis is focused on the possible impacts of the project on springs and phreatophytes. The work includes developing a groundwater model of the Carbonate Aquifer System. The model extends over an area covering 20,000 square miles. The work was done in support of hearings before the Nevada State Engineer on water-right applications by the Authority. The work was done also in support of the environmental compliance for the project. *Southern Nevada Water Authority, Las Vegas, Nevada.*

**North Platte River, Wyoming and Nebraska.** Analyzed the impacts of water-resource development and reservoir operations on water supply, streamflows, regional economics, and wildlife resources within the North Platte River Basin, Nebraska and Wyoming. Designed and directed a multi-disciplinary investigation involving agricultural engineers, groundwater hydrologists, surface-water hydrologists, agricultural economists, and environmental scientists in six different consulting firms. Work was done in support of litigation before the U.S. Supreme Court between the states of Nebraska and Wyoming. *Attorney General, Lincoln, Nebraska.*

**Santa Monica Groundwater Basin, California.** Analyzed the occurrence of MTBE in the Santa Monica groundwater basin, California. MTBE contamination from multiple sites has resulted in abandonment of public-supply wells. An analysis of the sources and fate of MTBE within the Santa Monica groundwater basin is being conducted. Work was

done within the context of State and Federal regulatory proceedings and litigation. *ConocoPhillips, Houston, Texas.*

and discharge: U.S. Geological Survey Open-File Report 75-305, 40 p.

Durbin, T.J., 1978a, *Application of Gauss algorithm and Monte Carlo simulation to the identification of aquifer parameters: in Proceedings of 26th Annual American Society of Civil Engineers Hydraulic Division Specialty Conference, College Park, Maryland, p. 101-111.*

Durbin, T.J., 1978b, *Calibration of a mathematical model of the Antelope Valley ground-water basin, California: U.S. Geological Survey Water-Supply Paper 2046, 51 p.*

Durbin, T.J., and Morgan, C.O., 1978, *Well-response model of the confined area, Bunker Hill ground-water basin, San Bernardino County, California: U.S. Geological Survey Water-Resources Investigation 77-129, 39 p.*

Arteaga, F.E., and Durbin, T.J., 1978, *Development of a relation for steady-state pumping rate from Eagle Valley ground-water basin, Nevada: U.S. Geological Survey Open-File Report 79-261, 44 p.*

Durbin, T.J., Kapple, G.W., and Freckleton, J.R., 1978, *Two-dimensional and three-dimensional digital flow models of the Salinas Valley ground-water basin, California: U.S. Geological Survey Water-Resources Investigation 78-113, 134 p.*

Van Denburgh, A.S., Seitz, H.R., Durbin, T.J., and Harrell, J.R., 1982, *Proposed monitoring network for ground-water quality, Las Vegas Valley, Nevada: U.S. Geological Survey Open-File Report 80-1286, 25 p.*

Durbin, T.J., 1983, *Application of Gauss algorithm and Monte Carlo simulation to the identification of aquifer parameters: U.S. Geological Survey Open-File Report 81-688, 26 p.*

Katzer, T., Durbin, T.J., and Maurer, D.K., 1984, *Water-resources appraisal of the Galena Creek basin, Washoe County, Nevada: U.S.*

Special Master, California. Assigned as Special Master in a technical dispute between City of San Bernardino, California and the Regional Water Quality Control Board. The issue is the cause of a wastewater discharge to the Santa Ana River. The work was being done within the context of a State regulatory proceeding. *Regional Water Quality Control Board, Santa Ana, California.*

**Bookman-Edmonston Engineering, Inc., Sacramento, California. Vice President (May 1998 – January 1999)**

Directed projects related to groundwater and surface-water hydrology. Directed a staff of about 30 engineers, hydrologists, biologists, and geologists. Examples of such projects include:

**Flooding, Arizona.** Analyzed the causes of flooding near Phoenix, Arizona. Residential and commercial areas were flooded during a summer storm. The analysis involved assessing the effect of irrigation ditches and other facilities on the depth of flooding. The work was done in support of litigation.

**Pipeline Break, California.** Analyzed the impact of floodflows on the failure of a stream pipeline crossing within Thousand Oaks, California. A large sewer line failed owing to channel erosion during an extreme flood event. The recurrence interval of the erosion event was analyzed. The work was done within the context of a State regulatory proceeding.

**Hydrologic Consultants, Inc., Sacramento, California. President (March 1989 – May 1998)**

Directed projects related to groundwater and surface-water hydrology. Directed a staff of about 10 hydrologists, geologists, and engineers. Examples of such projects include:

**Lake Tahoe, California and Nevada.** Analyzed the impacts of urban development on the water quality of Lake Tahoe, California. Work involved the analysis of sediment and nutrient transport in streams tributary to the lake and nutrient cycling within the lake. Work was done for litigation.

**Streamflow Temperature, California.** Analyzed streamflow temperature within the Owens River, Owens Valley, California. Work was done to evaluate the hydrologic feasibility of reestablishing a fishery within the Owens River.

**Groundwater Salinity, California.** Analyzed the source and management of surface-water and groundwater salinity within the Lompoc groundwater basin. Work involved developing groundwater and surface-water models of the Santa Ynez River basin, including salinity models. Work was done in support of litigation.

**Agricultural Drainage, California.** Analyzed the causes and management of drainage water discharges from the Firebaugh and Central California Water District to natural watercourses and the San Joaquin River. Work was done in support of litigation.

**FERC Re-licensing, California.** Developed a model for the optimal use of ground water and surface water within the Turlock and Modesto Irrigation Districts for the benefit of water supply and environmental resources. Work was done in support of the FERC re-licensing of New Don Pedro Reservoir.

**Seawater Intrusion, California.** Analyzed seawater intrusion in the Salinas Valley. Analyzed the impacts of groundwater pumping on seawater intrusion. Analyzed the impacts of reservoir operations on streamflow recharge and seawater intrusion. Work was done in support of litigation.

**Petroleum Contamination, California.** Analyzed the source of soil and groundwater contamination by petroleum hydrocarbons at Santa Barbara, California. Work was done in support of litigation. Analyzed the source of soil and groundwater contamination by petroleum hydrocarbons at Oxnard,

*Geological Survey Open-File Report 84-433, 59 p.*

*Kappler, G.W., Mitten, H.T., Durbin, T.J., and Johnson, M.J., 1984, Analysis of Carmel Valley alluvial ground-water basin, California, using digital flow model techniques: U.S. Geological Survey Water-Resources Investigation 83-4280, 45 p.*

*Hromadka, T.V., and Durbin, T.J., 1984, Adjusting the nodal point distribution in domain ground-water flow numerical models: in Proceedings of Fifth International Conference on Finite Elements in Water Resources, p. 265-284.*

*Durbin, T.J., and Berenbrock, C., 1985, Three-dimensional simulation of free-surface aquifers by the finite-element method: U.S. Geological Survey Water-Supply Paper 2270, p. 51-67.*

*Mitten, H.T., Lines, G.C., Berenbrock, C., and Durbin, T.J., 1988, Water resources of Borrego Valley and vicinity, San Diego County, California: Phase 2, Development of ground-water flow model: Water Resources Investigations 87-4199.*

*Martin, P., and Durbin, T.J., 1990, Identification of net-flux rates for ground-water models: U.S. Geological Survey Water-Supply Paper, 2340, pp. 119-130.*

*Hromadka, T.V., and Durbin, T.J., 1986, Two-dimensional dam-break analysis for Orange County Reservoir: Water Resources Bulletin, v. 22, n. 2, p. 249-256.*

*Hromadka, T.V., and Durbin, T.J., 1986, Modeling steady-state advective transport by the CVBEM: Engineering Analysis, v. 3, n. 1, p. 9-15.*

*Durbin, T.J., 1988, Two-dimensional simulation of ground-water flow by finite-element method: Microsoftware for Engineers, v. 2, n. 1, p. 40-48.*

*Azrag, E.A., Durbin, T.J., and Nour El-Din, N.N., 1986, Two-dimensional simulation of solute transport by*

California. Work was done in support of litigation.

San Bernardino Groundwater Basin, California. Analyzed the occurrence of high groundwater levels in the San Bernardino Valley, California using surface-water and groundwater models. High groundwater levels resulted from excess artificial recharge and other factors. Work was done in support of litigation.

Arkansas River, Colorado and Kansas. Analyzed the effects of groundwater pumping and other factors in the depletion of streamflow in the Arkansas River at the Colorado-Kansas state line using surface-water, groundwater, and institutional models. Work was done in support of litigation in the U.S. Supreme Court between the states of Kansas and Colorado.

Geothermal Development, California. Analyzed the effects of geothermal development on thermal-spring discharges in the Mammoth Lakes area, California using groundwater and heat-transport models. Work was done in support of litigation.

**S.S. Papadopoulos & Associates, Inc., Davis, California. Vice President and Manager of Davis office (October 1985 – March 1989)**

Directed and conducted investigations of numerous aspects of groundwater hydrology. Examples of such projects include:

Love Canal, New York. Analyzed the migration of groundwater contaminants at the Love Canal hazardous waste site in Niagara Falls, New York using a groundwater model. The Love Canal site is a Superfund Site. Work was done in support of litigation.

Groundwater Contamination, New Jersey. Analyzed the migration of groundwater contaminants at the Lone Pine landfill near Freehold, New Jersey. The Lone Pine landfill is a Superfund site. Work was done as part of a remedial investigation.

Modeling Code. Developed a computer program for the simulation of soil-water movement within and near a land-disposal facility. Work was done for the U.S. Environmental Protection Agency in support of the preparation regulations relating to the design of cover, liner, and leak-detection systems for land-disposal facilities.

Sediment Transport, California. Analyzed the impacts of urban development on flooding and sediment transport for streams in Orange County, California. Work supported the permitting of a large residential and commercial development project.

**Williamson and Schmid, Hydrotec Division, Davis, California. Manager of Davis office (July 1984 – October 1985)**

Directed and conducted investigations for evaluation of groundwater resources, management of regional groundwater systems, and evaluation of hazardous waste sites. Studies involved identification of essential hydrologic issues, collection of

hydrologic data, and application of quantitative methods to evaluate alternatives and to select an optimal solution. Examples of such projects include:

Groundwater Contamination, California. Developed a three-dimensional groundwater model of a physical barrier at a hazardous waste landfill in order to evaluate performance of the existing barrier and proposed modifications. Work was done for regulatory compliance.

Isotope Geochemistry, California. Analyzed a hazardous waste site using isotope geochemistry and groundwater models as investigative tools. Work was

*finite-element method:*

*Microsoftware for Engineers, v. 2, n. 3, p. 171-180.*

*Atkinson, L.C., Durbin, T.J., and Azrag, E.A., 1992, Estimating the effects of non-Darcian flow on inflow to a pit and slope stability: Society for Mining, Metallurgy, and Exploration 1992 Annual Meeting, Paper 92-156, 4 p.*

*Durbin, T.J., and Atkinson, L.C., 1993, Optimizing the design of mine dewatering systems: Society for Mining, Metallurgy, and Exploration 1993 Annual Meeting, Paper 93-103, 5 p.*

*Avon, L., and Durbin, T.J., 1994, Evaluation of the Maxey-Eakin method for estimating recharge to ground-water basins in Nevada: Water Resources Bulletin, v. 30, n. 1, pp. 99-112.*

*Durbin, T.J., Bond, L.D., 1997, FEMFLOW3D: A finite-element program for the simulation of three-dimensional aquifers, Version 1.0: U.S. Geological Survey Open-File Report 97-810, 338 p.*

*Hromadka, T. V., Durbin, T.J., 2000, Estimating changes in sediment transport trends due to catchment changes: in Proceedings of Floodplain Management Association Conference on Non-Structural Solutions to Floodplain Management, San Diego, Calif.*

*Rajagopal-Durbin, A., and Durbin, T. J., 2008, Wells are not always water follies: Sustainable groundwater policies for the American West: Water Policy, v. 10, n. 2, p. 145-164.*

*Durbin, T. J., and Delemos, D. W., 2007, Adaptive under relaxation of Picard iterations in ground-water models: Ground Water, v. 45, n. 5, p. 648-651.*

*Durbin, T. J., Delemos, D. W., and Rajagopal-Durbin, A., 2008, Application of superposition to non-linear ground-water models: Ground Water, v. 46, n. 2, p. 251-258.*

*Bredehoeft, J., and Durbin, T., 2009 Groundwater development – the*

*done for regulatory compliance.*

Groundwater Salinity, Nevada. Analyzed the utilization of fresh water body overlying saline water using surface geophysical techniques and a density-dependent groundwater flow model.

**U.S. Geological Survey, Water Resources Division, California District. District Chief (GS-15) (August 1982 – July 1984)**

Managed California District (350 persons in 14 offices) with annual budget of \$25 million (in 1995 dollars) for hydrologic investigations. Responsible for developing plans for hydrologic investigations and ensuring plans were implemented. Provided organizational and technical input to development of large scale, multi-agency investigations. Examples of such projects include:

Agricultural Drainage, California. Investigation of water quality related to agricultural drainage from the west side of San Joaquin Valley, California.

San Francisco Bay, California. Investigation of hydrodynamics of San Francisco Bay and Sacramento-San Joaquin, California Delta hydrologic systems.

Groundwater Exports, California. Investigation of the effects of exporting water from Owens Valley groundwater basin, California, including both hydrologic and biological impacts.

Central Valley Groundwater, California. Assessment of the groundwater resources of the Central Valley, California. Work was part of the Central Valley Regional Aquifer System Analysis (RASA).

Modeling Code. Development of numerical finite element codes (now used within the U.S. Geological Survey) for simulation of two- and three-dimensional groundwater flow and solute transport.

**U.S. Geological Survey, Water Resources Division, Nevada District. District Chief (GS-14) (January 1980 – August 1982) and Assistant District Chief (GS-13) (July 1977 – August 1982)**

Managed Nevada District (80 persons in three offices) with annual budget of \$10 million (in 1995 dollars) for hydrologic investigations. Projects included:

Truckee River, Nevada. Design and organization of Truckee-Carson River Quality Assessment and Great Basin Regional Aquifer System Analysis (RASA).

Groundwater Management, Nevada. Development of groundwater and solute transport models for Washoe Valley, Galena Creek, Eagle Valley, and Carson Valley groundwater basins in Nevada.

Geothermal Development, Nevada. Design and organization of regional geothermal investigations of areas throughout Nevada including Dixie Valley, Ruby Valley, Black Rock Desert, and Carson Desert.

**U.S. Geological Survey, Water Resources Division, California District. Hydrologist (GS-13) (December 1975 – July 1977), Hydrologist (GS-12) (October 1974 – December 1975), Hydrologist (GS-11) (September 1973 – October 1974), and Hydrologist (GS-9) (July 1972 – July 1977)**

Served as Project Chief for numerous groundwater projects involving hydrogeologic and geophysical investigations and groundwater modeling. Conducted research in development of finite-element models for simulation of groundwater flow and mass transport. Applied results of research to solution of management problems and provided assistance to hydrologists within USGS and other public agencies in use of these models.

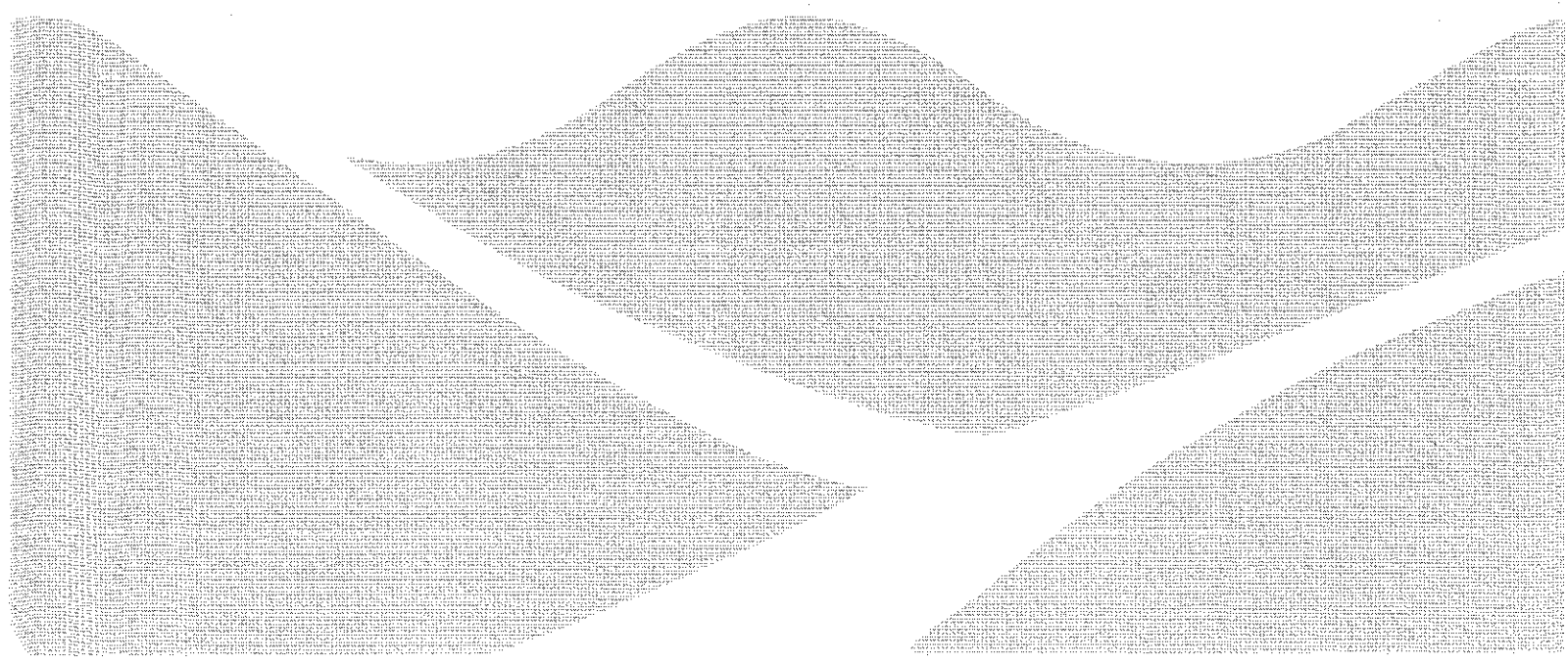


*time to full capture problem:*  
*Groundwater, v. 47, n. 1, pp. 2-9.*

### **Books**

*Hromadka, T.V., Durbin, T.J., and  
DeVries, J.J., 1984, Computer  
methods in water resources:  
Lighthouse Publications, Mission  
Viejo (California), 344 p.*

*Hromadka, T.V., McCuen, R.H.,  
Devries, J.J., and Durbin, T.J., 1993,  
Computer methods in  
environmental and water resources  
engineering: Lighthouse  
Publications, Mission Viejo  
(California), 590 p.*





1 **PROOF OF SERVICE**

2 I am employed in the County of Los Angeles; I am over the age of eighteen  
3 years and am not a party to the within entitled action; my business address is 111 North  
4 Hope Street, Suite 340, Los Angeles, California 90012-2694. On July 15, 2010, I served  
the within document:

5 **DEFENDANT CITY OF LOS ANGELES' DESIGNATION OF EXPERT WITNESS**

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7 ☐

(By FACSIMILE TRANSMISSION) I am readily familiar with the firm's  
practice of facsimile transmission of documents. It is transmitted to the  
recipient on the same day in the ordinary course of business.

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(BY U.S. MAIL) by placing the document(s) listed above in a sealed  
envelope with postage thereon fully prepaid, in the United States mail at  
Los Angeles, California addressed as set forth below.

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11 ☒

(BY ELECTRONIC SERVICE) by posting the document(s) listed above  
to the Santa Clara County Superior Court website: [www.scefiling.org](http://www.scefiling.org)  
regarding the Antelope Valley Groundwater matter.

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13  
14 I am readily familiar with the firm's practice of collection and  
15 processing correspondence for mailing. Under that practice it would be deposited  
16 with the U.S. Postal Service on that same day with postage thereon fully prepaid in  
the ordinary course of business.

17 I declare under penalty of perjury under the laws of the State of  
California that the above is true and correct.

18 Executed on July 15, 2010, at Los Angeles, California.

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21 LILLIAN CATENA