JANET K. GOLDSMITH, State Bar No. 065959
ERIC N. ROBINSON, State Bar No. 191781
KRONICK, MOSKOVITZ, TIEDEMANN & GIRARD
A Professional Corporation
400 Capitol Mall, 27th Floor
Sacramento, CA 95814-4416
Telephone: (916) 321-4500
Facsimile: (916) 321-4555

ROCKARD J. DELGADILLO, City Attorney
RICHARD M. BROWN, Senior Assistant
City Attorney for Water and Power
S. DAVID HOTCHKISS (Bar No. 076821)
Assistant City Attorney
JULIE A. CONBOY (Bar No. 197407)
Deputy City Attorney
111 North Hope Street, Suite 340
P. O. Box 51111
Los Angeles, California 90051-0100
Telephone: (213)367-4500

Attorneys for Defendant CITY OF LOS ANGELES

Exempt from Filing Fee Pursuant to Government Code Section 6103

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

Coordination Proceeding

ANTELOPE VALLEY GROUNDWATER CASES

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

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

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

Diamond Farming Co. v. City of Lancaster

Diamond Farming Co. v. Palmdale Water District

Case No. 105 CV 049053

Judicial Council Coordination Proceeding No. 4408

Hon. Jack Komar

EVIDENCE TIMOTHY J. DURBIN'S EXHIBITS 1-10, PHASE 1 TRIAL

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

Los Angeles Superior Court
Case No. BC 325201

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

TIMOTHY J. DURBIN, INC.
CONSULTING HYDROLOGISTS

5330 Primrose Drive, Suite 228
Fair Oaks, CA 95628
(916) 536-2314

Timothy J. Durbin

Principal Groundwater and Surface-Water Hydrologist

Education	Master of Science in Civil Engineering, 1971 Stanford University, Stanford, California
	Bachelor of Science in Civil Engineering, 1967 Stanford University, Stanford, California
Licenses	Civil Engineer, California Civil Engineer, Oregon Civil Engineer, Texas
Professional Societies	American Society of Civil Engineers American Geophysical Union International Association of Hydrogeologist National Ground Water Association

Professional Experience

February 1999 to Present

Timothy J. Durbin, Inc., Fair Oaks, California, Principal. 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. Examples of such projects include:

- 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.

Exh. 1

- 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.

- 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.

- 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.

- 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.

May 1998 to January 1999

Bookman-Edmonston Engineering, Inc., Sacramento, California. Vice President. 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.

March 1989 to May 1998

Hydrologic Consultants, Inc., Sacramento, California. President. 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, 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.

October 1985 to March 1989

S.S. Papadopulos & Associates, Inc., Davis, California. Vice President, and Manager of Davis office. 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 was done to support the permitting of a large residential and commercial development project.

July 1984 to October 1985

Williamson and Schmid, Hydrotec Division, Davis, California. Manager of Davis office. 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 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.

August 1982 to July 1984

U.S. Geological Survey, Water Resources Division, California District. District Chief (GS-15). 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.

July 1977 to August 1982

U.S. Geological Survey, Water Resources Division, Nevada District. District Chief (GS-14) from 1/80 to 8/82 and Assistant District Chief (GS-13) from 7/77 to 1/80. 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.

July 1972 to July 1977

U.S. Geological Survey, Water Resources Division, California District. Hydrologist (GS-13; 12/75 to 7/77), Hydrologist (GS-12; 10/74 to 12/75), Hydrologist (GS-11; 9/73 to 10/74), and Hydrologist (GS-9; 7/72 to 9/73). 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.

EXHIBIT B

TIMOTHY J. DURBIN, INC.
CONSULTING HYDROLOGISTS

5330 Primrose Drive, Suite 228
Fair Oaks, CA 95628
(916) 536-2314

Timothy J. Durbin

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 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.

Exh. 2

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

Kapple, 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 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.

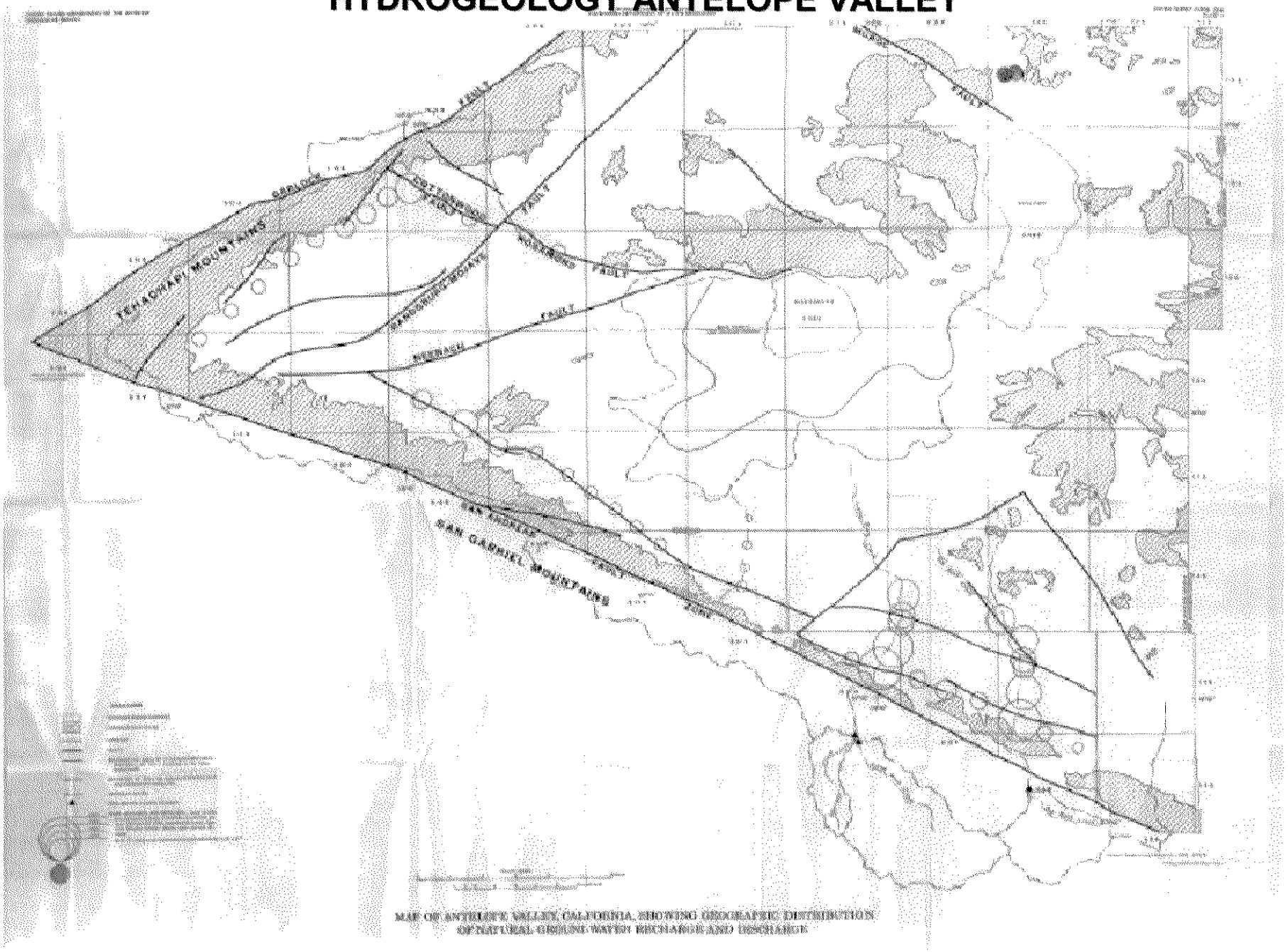
Hromadka, T. V., *Durbin, T.J.*, 2000, Estimating changes in sediment transport trends due to catchment changes: in Proceedings of Floodplain Management Association Conference on Non-Structural Solutions to Floodplain Management, San Diego, Calif.

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.

HYDROGEOLOGY ANTELOPE VALLEY

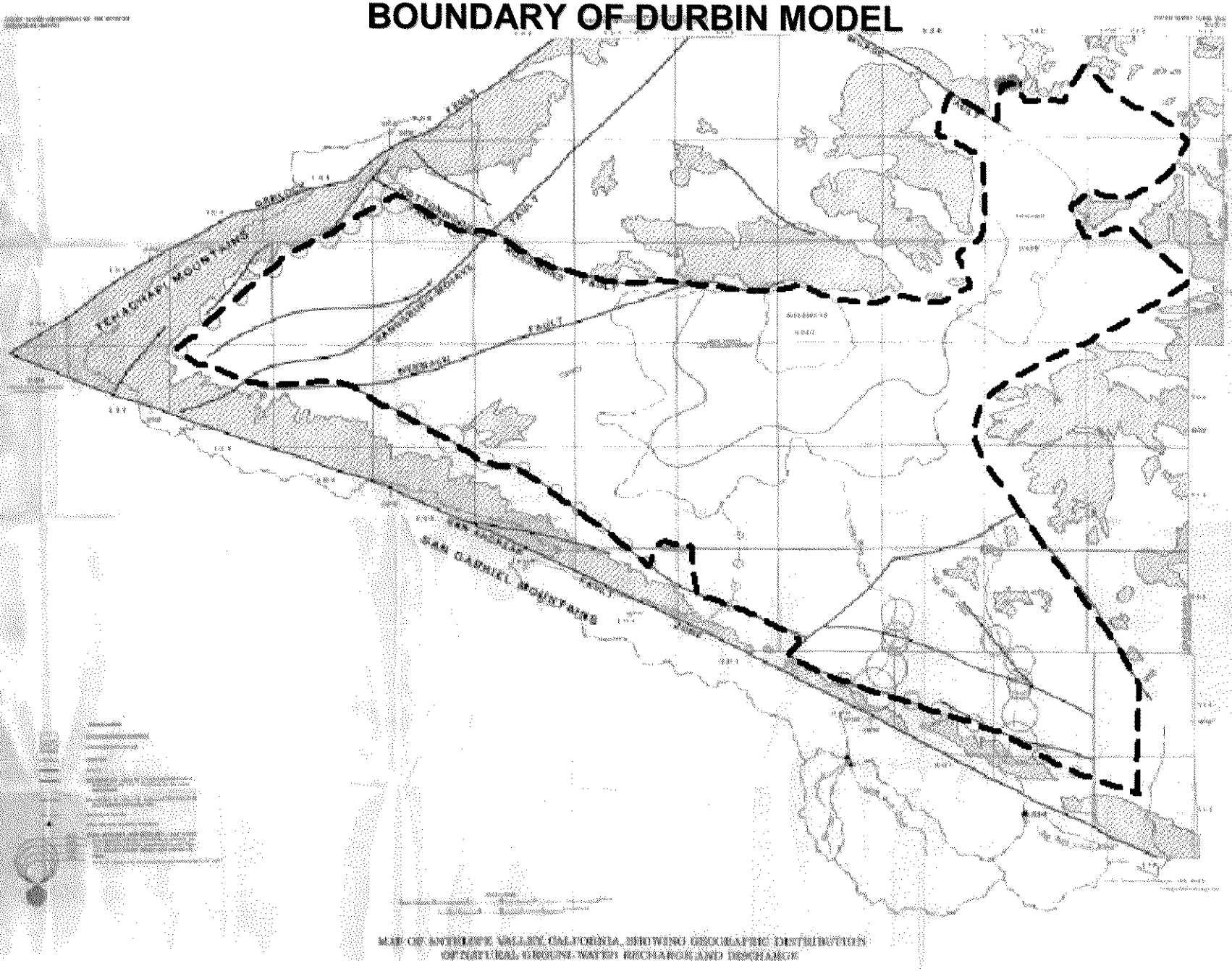


MAP OF ANTELOPE VALLEY, CALIFORNIA, SHOWING GEOGRAPHIC DISTRIBUTION OF NATURAL GROUND WATER RECHARGE AND DISCHARGE

DURBIN FIGURE A

Ex. 3

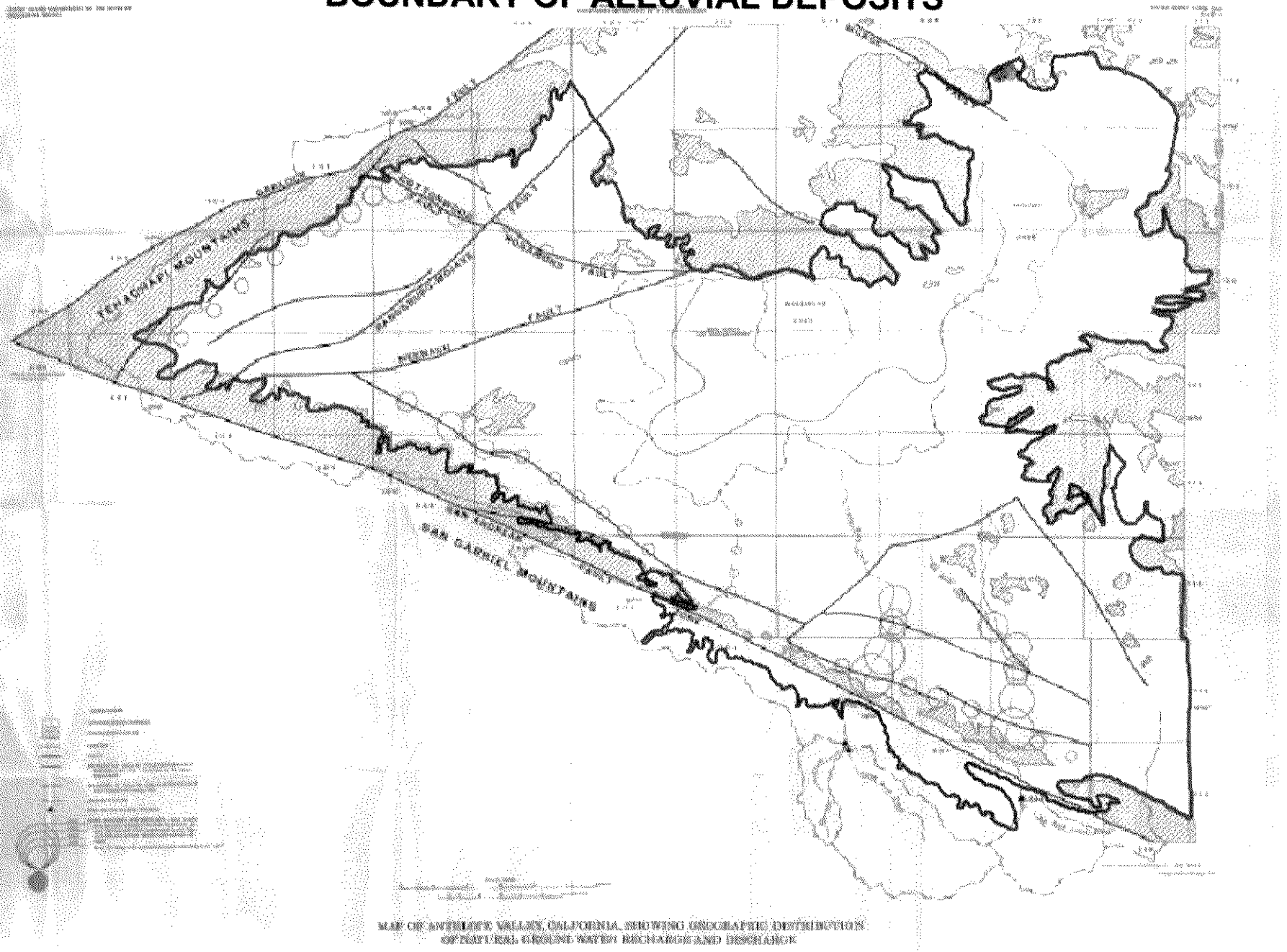
BOUNDARY OF DURBIN MODEL



MAP OF ANTELOPE VALLEY, CALIFORNIA, SHOWING GEOGRAPHIC DISTRIBUTION OF NATURAL GROUND WATER RECHARGE AND DISCHARGE

DURBIN FIGURE E

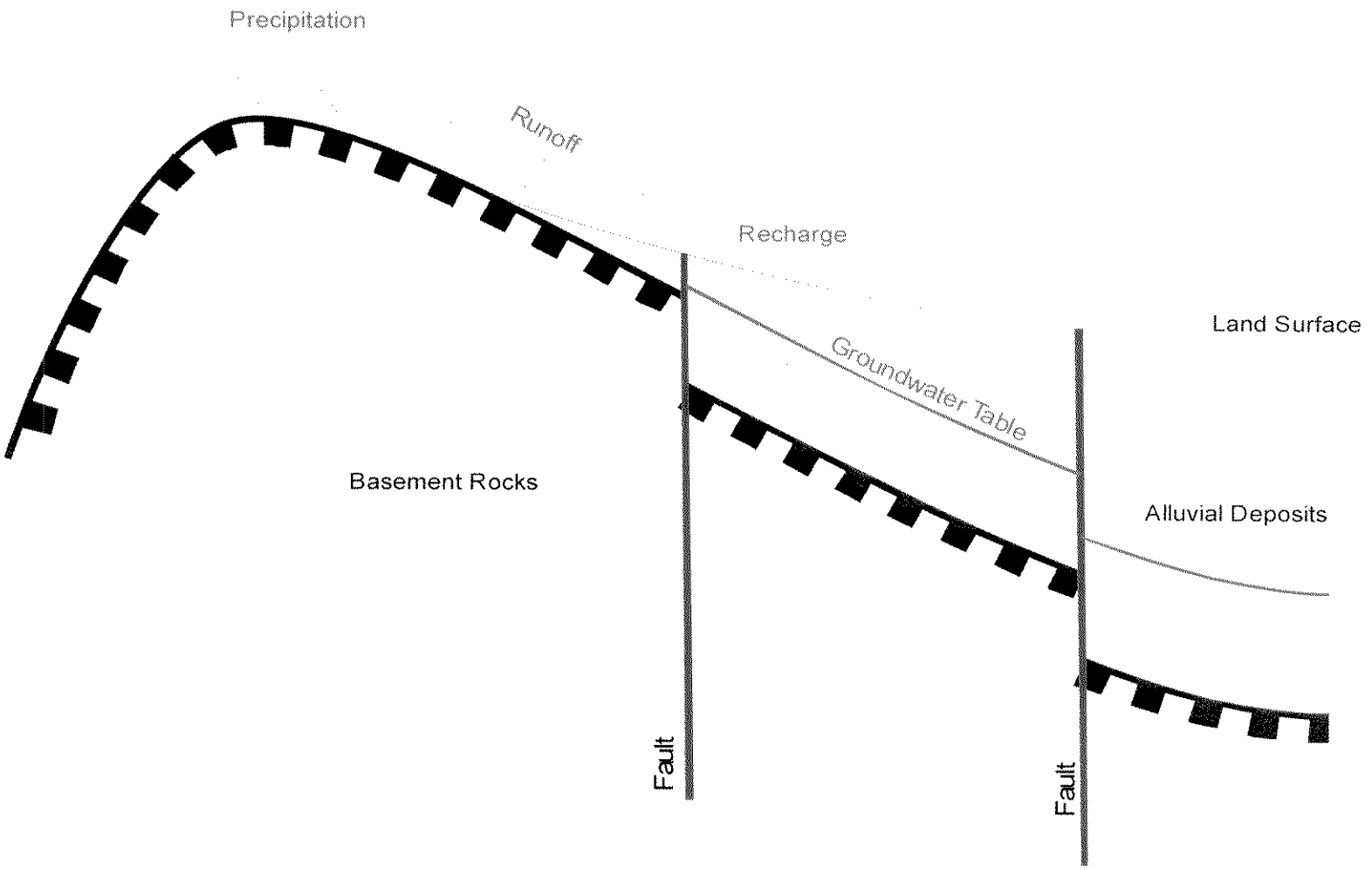
BOUNDARY OF ALLUVIAL DEPOSITS



MAP OF ANTELOPE VALLEY, CALIFORNIA, SHOWING GEOGRAPHIC DISTRIBUTION OF NATURAL GROUND WATER RECHARGE AND DISCHARGE

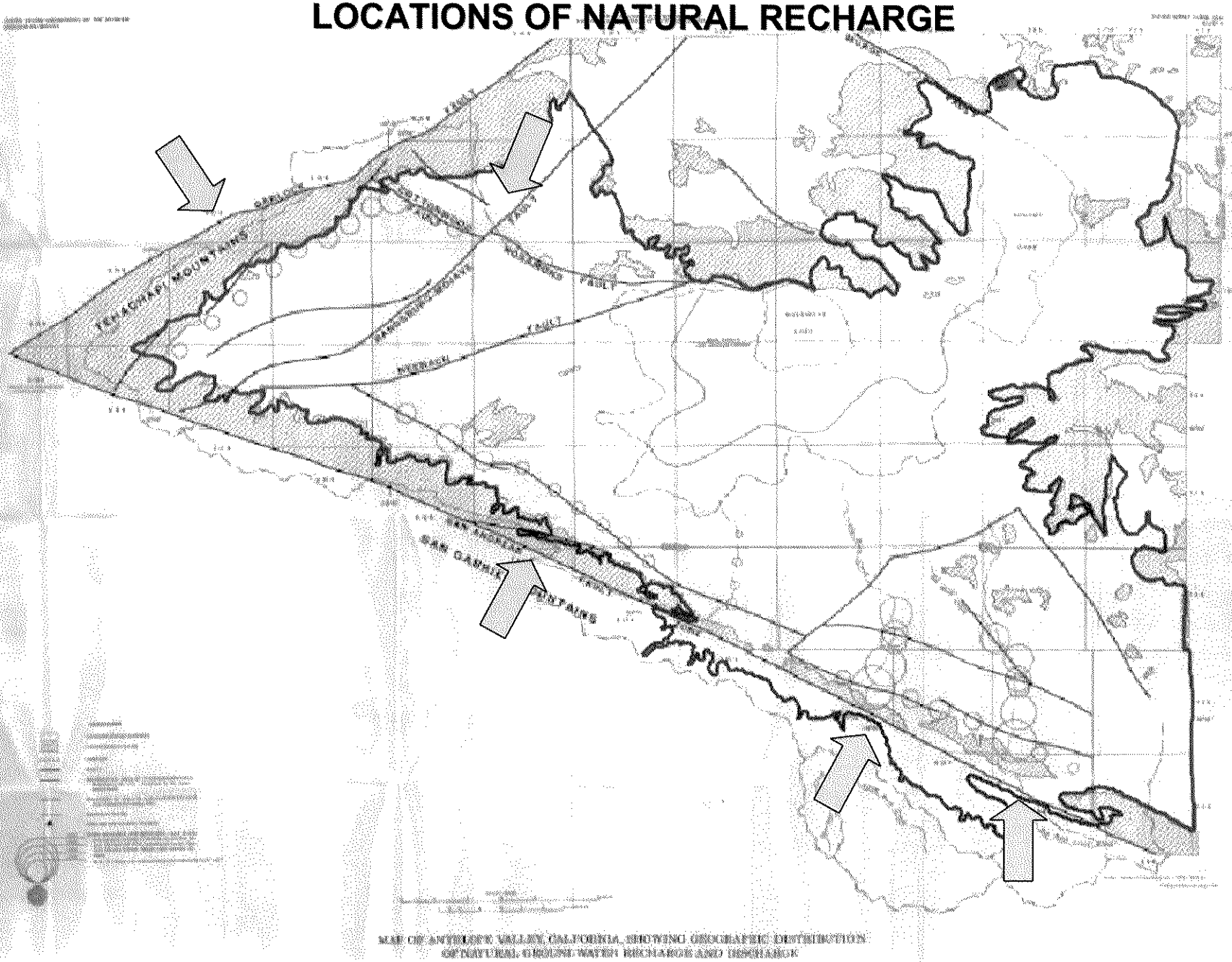
DURBIN FIGURE B

RECHARGE AND GROUNDWATER FLOW



DURBIN FIGURE C

LOCATIONS OF NATURAL RECHARGE



MAP OF ANTELOPE VALLEY, CALIFORNIA, SHOWING GEOGRAPHIC DISTRIBUTION OF NATURAL GROUND WATER RECHARGE AND DISCHARGE

DURBIN FIGURE D

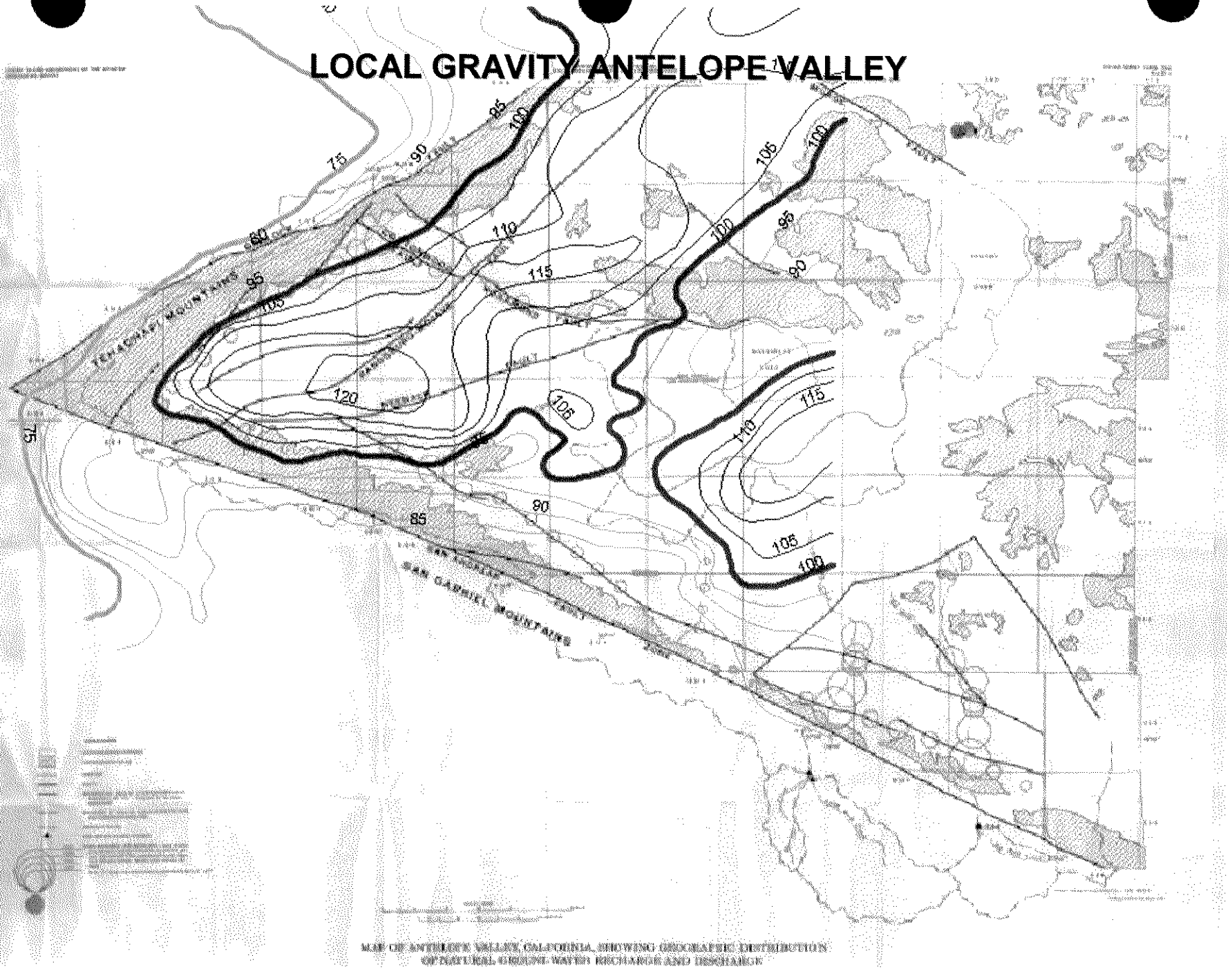
GRAVITY MAP LOS ANGELES SHEET

DURBIN FIGURE F

GRAVITY MAP BAKERSFIELD SHEET

DURBIN FIGURE G

LOCAL GRAVITY ANTELOPE VALLEY



MAP OF ANTELOPE VALLEY, CALIFORNIA, SHOWING GEOGRAPHIC DISTRIBUTION OF NATURAL GROUND-WATER RECHARGE AND DISCHARGE

DURBIN FIGURE H