Kurt A. Stiefler SBN 103249
2130 Cedarhurst Drive
Los Angeles CA 90027
(323) 664-8292

Attorney for Little Baldy Water Company

SUPERIOR COURT OF CALIFORNIA

COUNTY OF LOS ANGELES

ANTELOPE VALLEY GROUNDWATER CASES INCLUDED ACTIONS: LOS ANGELES COUNTY WATERWORKS DISTRICT No. 40 v. DIAMOND FARMING COMPANY, et al. LASC Case No. BC325201; LOS ANGELES COUNTY WATERWORKS DISTRICT No. 40 v. DIAMOND FARMING COMPANY, et al. Kern County Superior Court Case No. S-1500-CV-254-348; DIAMOND FARMING COMPANY et. al. v. CITY OF LANCASTER et al., Riverside County Superior Court Case No. RIC 344436 (c/w RIC 344668 355840)	Judicial Council Coordination No. 4408 Case No: 1-05-CV-049053 Assigned to Honorable Jack Komar LITTLE BALDY WATER COMPANY'S EXPERT WITNESS DESIGNATION TRIAL DATE: FEB. 11, 2013 TIME: 9:00 a.m.

Little Baldy Water Company, pursuant to the Phase Four Order concerning the designation of expert witnesses submits the following expert witness designation:

1. Jordan Kear, Kear Groundwater, PO Box 2601, Santa Barbara CA 93120

Dated: January 4, 2013

Kurt A. Stiefler, counsel for Little Baldy Water Company

Law Office of Kurt A. Stiefler
2130 Cedarhurst Drive
Los Angeles CA 90027

DECLARATION OF KURT STIEFLER

I, Kurt Stiefler, declare:

I have personal knowledge of the facts set forth in this expert witness declaration and I could and would competently testify thereto in court under oath if called upon to do so.

1. Jordan Kear has been retained to serve as an expert on behalf of Little Baldy Water Company and has agreed to testify on behalf of Little Baldy Water Company. A copy of his CV setting forth his background and qualifications is attached hereto. Mr. Kear's 2013 Rate sheet is also attached hereto.

2. Mr. Kear is expected to testify that the wells of the Little Baldy Water Company are outside of the Adjudicated area established by the Court in its Phase One order. Mr. Kear is further expected to testify that Little Baldy Water Company is drawing surface water from its wells, and not groundwater from the aquifer at issue.

3. Mr. Kear will be prepared to submit to expert deposition within the time frame established by Court order. He has no conflicts within those dates.

4. Copies of Mr. Kear's file materials, relied on in generating his opinions, are attached hereto.

I declare the foregoing to be true and correct under penalty of perjury under the laws of the State of California. This declaration was executed on January 4, 2013 in Los Angeles, CA.

Dated: January 4, 2013

Kurt A. Stiefler

Law Office of Kurt A. Stiefler
2130 Cedarhurst Drive
Los Angeles CA 90027

KEAR GROUNDWATER
RATES FOR PROFESSIONAL SERVICES
2013

Principal Hydrogeologist..... $180.00/hour
Field Hydrogeologist..... $140.00/hour
Field Technician..... $100.00/hour
Assistant/Professional/Clerical..... $80.00/hour

Expenses

Travel Airfare, car rental, cab, bus, parking ..... Actual cost
Lodging, meals..... Actual cost or negotiated per diem rates
Mileage..... $0.65/mile
Subcontractors/temporary service personnel ..... Actual cost plus 10%
Computer, copies, fax ..... No charge
Miscellaneous office expenses (e.g., express mail, shipping, external copy service, etc.) .....Actual cost

Equipment

Water Level Sounder $20/day
Automated Level Logger.....$40/day, $120/week, $350/month
Flow probe.....$30/day, $100/week, $300/month
Misc. field equipment and supplies..... Actual cost plus 10%
Fabrication in our shop..... Labor plus materials

TERMS

Payment terms for professional services and expenses are net 30 days.
Unpaid balance will be assessed a service fee of 1.5% per month.

NOTES

1. All fees are subject to local/state sales tax, as applicable.
2. Delivery of depositions will be billed at 1.5 times Fee Schedule rates.
3. Delivery of courtroom expert testimony will be billed at 2.0 times Fee Schedule rates

Jordan L.N. Kear, P.G., C.H.G.

Professional Registration

Professional Geologist, California, No. 6960

Certified Hydrogeologist, California, No. 749

Specialization

Groundwater resources geology; water supply well locating, design, construction, testing and evaluation; groundwater supply studies; groundwater basin assessments, aquifer storage and recovery, aquifer recharge, conceptual and analytical modeling; environmental and water resource litigation support.

Academic Degrees

M.S., Geological Sciences, California State University, Northridge, 2005

B.S., Geological Sciences, University of California, Santa Barbara, 1994

Representative Professional Assignments

- ***Groundwater/Surface Water Interaction Study, Meiners Oaks Water District, Ventura County, California:*** Kear Groundwater conducted a detailed testing and analysis of acute surface and groundwater interaction between the MOWD wells and the Ventura River. Mapping and measuring surface flows, evaluating groundwater conditions, and correlating precipitation events and surface flows with groundwater fluctuations were key to the study. Detailed aquifer testing and monitoring of surface water depths and the acute influences of typical well pumping on flowing river rates and stage provided new insight into the hydrologic system. In addition to providing aquifer parameters, the study allowed demonstration of influence of well pumping on river stage of inches, as opposed to feet as commonly believed. Ambient monitoring also led to correlations between water levels and: aquifer morphology, temperature, and evapotranspiration in the headwaters and groundwater basin area.
- ***Water Well Location, Design, and Construction Management, Z & R Water Company, Santa Barbara California:*** To demonstrate a proof of concept and provide a sustainable water supply, Mr. Kear located, designed, and managed the construction of a new well in a recently-identified groundwater basin. Recently completed, the well is producing at a rate of 300 gpm artesian flow and can be pumped at higher rates. Project has involved detailed geologic mapping, spring and creek flow monitoring, planning and strategy consultations, aquifer testing and water quality analysis. Mr. Kear assessed and identified the groundwater basin and conducted extensive modeling to determine storage capacity, recharge, and yield.
- ***Water supply well location study, Central Basin, Suburban Water Systems, Los Angeles County, California:*** Recent data suggested that portions of the Central Basin at the water company's access points may have water of sufficient quality and quantity to warrant exploration and groundwater development. Kear Groundwater evaluated several possible locations in the target areas, and selected several locations for additional investigation. Preliminary designs of new wells at five specific properties were prepared, with well construction recently completed to 1,500 feet at a location in La Mirada and to commence at a second in Whittier in 2012.

Representative Professional Assignments Continued

- ***Municipal Supply Well Locating, Design, and Construction Supervision, City of Glendora, California:*** Several replacement wells are planned for the water division to continue to provide high quality groundwater to its residents. Mr. Kear provided a feasibility study to rank and determine optimum locations for new water supply wells and provide preliminary designs for each. Specifications, construction management, and permitting support efforts were provided by Mr. Kear.
- ***Municipal Supply Well Locating, Design, and Construction Supervision, City of Signal Hill, California:*** To provide the city with a groundwater source within city limits and south of bridges separating other water sources, Mr. Kear conducted feasibility studies, preliminary and final designs and specifications, and permit applications for a new water supply well for the city. Specific challenges for the project include oil well proximity, aquifer material facies changes near the elevated Signal Hill, faulting in the project vicinity, and colored groundwater. Under Mr. Kear's direction, the well was constructed and developed in early 2008, and test pumped at 1,800 gallons per minute. Both the quality of water produced and the rate of production favorably exceeded the city's expectations.
- ***Landscape irrigation well site selection, design, construction supervision, and testing, Stone Canyon Residence, Los Angeles, California:*** Using detailed geologic mapping and evaluation, Mr. Kear selected a new exploratory well site in bedrock formation. Nearby evidence suggested that poor quality water in low quantities were to be expected, but a fault that is known to be a barrier to groundwater flow separated the project site from the known data points. Drilling, geophysical data, and cuttings evaluation indicated that successful development of the groundwater supply was feasible. The well was completed, developed, and tested to produce water of excellent quality at a rate that exceeded expectations by three-fold.
- ***Instream Flow Study, Hydrogeologic Tasks, Santa Maria River, California State Coastal Conservancy:*** Three main hydrogeologic subtasks were undertaken by Kear Groundwater in the effort aimed to determine flow characteristics in the Santa Maria River. Initial tasks involved general basin research to determine characteristics and status of adjudication with respect to surface water and groundwater in the basin. Subsequent tasks involved the review and evaluation of groundwater models and previous studies specifically as they related to the relationship between surface and groundwater interaction. The ultimate subtask resulted in the creation of detailed 1-D and 2-D models to demonstrate the infiltration of river water to groundwater as the river traverses the groundwater basin and the interaction of the two in select areas. In association with teaming partners, this project also involved extensive river monitoring, surveying, and flow estimation during various stages of flow in the winter 2010-2011.
- ***Landscape irrigation well site selection, design, and construction supervision, Trentwood Canyon Homeowners Association, Lake Sherwood, Thousand Oaks, California:*** To reduce dependence on imported water, and its associated costs, the TCHOA evaluated the utility of new well construction for landscape irrigation in their 22-acre area which contains over three dozen high-end residences. Mr. Kear ranked five client-preferred locations for new well construction based on the local hydrogeology, provided preliminary designs for each, generated a set of specifications for well construction, solicited and evaluated bids from several contractors, and assisted the HOA in the management of the well construction project. Ultimately, only one well was constructed - at the highest priority location selected by Mr. Kear - which provides adequate production (over 200 gpm) to meet peak irrigation demand.
- ***Vineyard Irrigation Supply Well Rehabilitation and New Well Locating, Design, Malibu Rocky Oaks Vineyard, Malibu, California:*** Award-winning winegrapes were irrigated with a combination of municipal supply water and limited contributions from a poorly-producing, but relatively young, water well. Mr. Kear evaluated the existing well and selected a location for a new water supply well. After soliciting bids on behalf of the client from several drilling contractors, Mr. Kear managed the

Representative Professional Assignments Continued

rehabilitation of the older well, increasing its production from less than 5 gpm to over 60 gpm. On the same mobilization, the contractor drilled a new well, also indicated to produce over 60 gpm. This groundwater development program replaced the need for irrigating with municipal supplies on the 40-acre property. Based on his evaluation of the geology and geochemistry, Mr. Kear provided a well monitoring and maintenance program plan to help ensure viability of the wells for years to come.

- ***Recharge Basin Feasibility Study, United Water Conservation District (UWCD), Ventura County, California:*** Three gravel pits dating to the 1950s were excavated to depths below the local water table. As part of the Freeman Expansion Project, UWCD is considering acquiring and using these deep basins to add as much as 650 acre-feet of water to the district's spreading capacity. Conducted literature review, regulatory review, hydrogeologic review, analytical modeling, and reporting to determine the feasibility of using these basins to spread Santa Clara River water. Key recommendations included a detailed monitoring plan, preliminary basin modification design, and regulatory approaches for successful project implementation.
- ***Quantification of Nitrogen Removal, Eastern Municipal Water District (EMWD), Riverside County, California:*** DBS&A has provided hydrogeologic service to EMWD in this project to quantify the removal of nitrogen beneath recycled water ponds in San Jacinto and Moreno Valley. These ponds recharge the local groundwater basins with recycled water upon which stringent nitrogen loading controls are placed. As project manager, Mr. Kear has been involved with all phase of the efforts, consisting of conceptual modeling, generation of a sampling and analysis plan, drilling and lysimeter installation along the bottoms of the ponds while dry, weekly sampling of the lysimeters, design and construction of deep monitoring wells, and data management and interpretation. Preliminary results indicate that the nitrogen removal from beneath the ponds is on the order of 70 to 85 percent in the upper 30 feet.
- ***Well Evaluation and Rehabilitation, Gonzales Blending Station, City of Oxnard, California:*** Several wells at this facility were idle for a number of years and required evaluation and rehabilitation if they were to be used for municipal, industrial, agricultural, and water treatment applications. Mr. Kear collected and reviewed available data, directed video surveys if the wells, analyzed hydrogeologic data from the pumping of these wells, and generated a report documenting the efforts and outlining well rehabilitation guidelines. Subsequent phases of work involved the preparation of technical specifications for redevelopment and testing, field supervision of rehabilitation efforts, and conducting a hydrogeologic feasibility for well replacement at both onsite and off-site locations.
- ***Well No. 9 Rehabilitation, City of Santa Paula, California:*** Mr. Kear conducted field monitoring of rehabilitation of the city well during all phases of the effort. Key facets included pump removal and inspection, video surveying, swabbing and brushing of well, Sonar-jetting of casing, ion and bacteriological-specific sampling and analysis of scale from casing, Aqua-Freed® (liquid carbon dioxide injection) process implementation, air lifting, test pumping, and permanent pump installation and testing. All efforts were documented in a summary of operations report prepared by Mr. Kear.
- ***Well No. 11 Rehabilitation, City of Alhambra, California:*** Mr. Kear collected and evaluated a wealth of data on the city's well, including old logs and construction records, production and water level data, water quality information, and pump replacement records to evaluate the reasons for diminished capacity of the well. Initial and tentative operations were recommended, and specifications for well rehabilitation were generated for competitive bidding processes.
- ***Water System Evaluation, United States Navy, Santa Cruz Island, California:*** A 50-year-old water system on Santa Cruz Island, California, required inspection by qualified personnel to determine optimized

Representative Professional Assignments Continued

courses of action to maximize production of high quality water. Inspected and tested the well, pumps, tanks, and several miles of pipeline and provided reporting and recommendations regarding well rehabilitation/ replacement and system upgrades.

- ***Water Well Construction Inspection and Design, Desert Willows Golf Course, Palm Springs, California:*** A new golf course development required construction of a new water supply well for irrigation and domestic uses. By hydrogeologic logging of the pilot borehole, review of the geophysical logs, and review of drilling data, provided the final well design to allow for long-term use of the well. Performed aquifer testing using a test pump in the new well to obtain key hydrogeologic information to design a permanent pump and optimize course design based on water availability.
- ***Water Well Evaluation, New Well Design, and Specifications, Senior Canyon Water Company, Ventura County, California:*** A mutual water company with several water supply wells serving domestic and agricultural service connections required a detailed summary of existing and potential groundwater sources. Evaluated wells, provided estimated of life expectancy, options for well modifications, maintenance and rehabilitation, as well as preliminary recommendations for future water supply wells. Follow-up work has included selecting new well locations, generating well construction guidelines for new well construction, and assisting SCMWC with contract negotiation and management.
- ***Hydrogeologic Investigation, Vintners' Grove, Sonoma County, California:*** To comply with the Sonoma County Permit and Resource Management Division requirements, conducted a thorough hydrogeologic evaluation to determine feasibility of developing groundwater resources to support proposed operations at this proposed winery, vineyard and tasting room.
- ***Irrigation Supply Well Monitoring and Evaluation, Los Angeles Country Club, Los Angeles, California:*** Several water wells were constructed to extract groundwater of questionable quality from older alluvial strata near Quaternary faults and oil fields. In addition to requiring treatment prior to irrigation use, water quality issues such as corrosivity, hydrogen sulfide content, and bacterial presence necessitated detailed well monitoring to closely observe well performance over time. Performed aquifer testing, groundwater sampling and specialized analyses as part of a long-term monitoring program that allowed for key managerial decisions regarding well rehabilitation and replacement.
- ***Ojai Basin Aquifer Testing, Ojai Basin Groundwater Management Agency, Ventura County, California:*** Designed, conducted, and analyzed data from six aquifer tests between November 2003 and May 2004 using municipal and agricultural water supply wells to determine aquifer characteristics in Ojai Valley. Also analyzed data from two previous pumping tests (1961 and 1996) to add to data sets. Objective of study was to provide local groundwater management agency with information regarding presence of multiple confined and unconfined aquifers in basin and provide direction for further research.
- ***Water Well Evaluation and Destruction Project, La Habra Heights County Water District, California:*** Researched, specified, and provided field support of three-well-destruction project for the district. Collected and properly analyzed 90-year-old data and provided key interface with regulators and contractors, affording the district the opportunity to destroy wells with a variance from regulatory agency, resulting in a significant cost and field-time savings to the district.
- ***Hydrogeologic Investigation, Public Works Department, City of La Verne, California:*** Conducted detailed hydrogeologic study of groundwater basins available to City and managed test drilling project in which aquifers containing low nitrate groundwater—a problem in all older City wells—were discovered. Project culminated with design, construction and testing of new high-capacity (600 gallons per minute) water-supply well that delivered water with low nitrate concentrations.

Representative Professional Assignments Continued

- ***Water Well Feasibility Study, Private Residential Development, Whatcom County, Washington:*** A parcel had a problem with naturally occurring high concentrations of barium in groundwater wells. The project involved reviewing local geology, well records, and water quality data, using Geographic Information System (GIS) technology, and then providing the landowner with a prime location and preliminary design of a water-supply well that maximized the volume of high-quality groundwater and allowed for further residential development.
- ***Hydrogeologic Study, City of Arcadia, California:*** Seven City-selected locations for potential new water wells were included in a comprehensive hydrogeologic study/modeling of capture zones for each of the proposed wells and highlighted sites of environmental concern within those zones. Prepared technical specifications for construction of City's St. Joseph Well No. 2, one of the City's best producers of high-quality groundwater.
- ***Water Well Feasibility Study, Garey Vineyards, Santa Barbara County, California:*** Project involved using data from nearby oil exploration wells, water wells, and local geology to select location for new well to support vineyard irrigation at 1,600 gallons per minute. Scope included preparing detailed well construction guidelines, construction monitoring, and a summary report of construction operations.
- ***Contaminant Source Investigation and Water Well Assessment, Central Basin Municipality, California:*** In this currently-confidential study, conducted a review of available data on hydrogeology, well construction, water production and water quality, in addition to nearby environmental sites of concern, to determine potential sources of contaminants. Following initial research, designed and implemented down-well testing to determine points of contaminant entry, concentrations, and production from individual zones. Information was vital to establishing responsible parties, as well as well maintenance and production issues.
- ***Conceptual and Analytical Modeling, City of Beverly Hills, California:*** After years of environmental investigation in shallow aquifers, project involved preparing detailed model of potential plume migration to vicinity of deep, newly constructed City water-supply wells. Work included correlating water-well geophysical logs, shallow and deep aquifer testing, analytical modeling for travel time of MTBE in groundwater, and graphical preparation. Project culminated with regulatory closure of leaking underground storage tank cases.
- ***Assessment of Perchlorate Issues, Upper Santa Clarita Valley Water Committee, California:*** Provided consulting services after perchlorate was discovered in water supply wells in Santa Clarita Valley. Project included researching origins of contaminant and working extensively with California Department of Toxic Substances Control to generate sampling and analysis guidelines. Provided oversight during assessment of contaminant pathways between originating facility and water supply wells.
- ***Assessment of High Groundwater Problem, City of Pomona, California:*** Years of above-average rainfall in the late 1990s caused water to flow from buried and abandoned—but not properly destroyed—century-old agricultural water-supply wells near a 1930s-era tract of homes. Project involved assessing problem and its origins, finding locations of buried wells and pipelines that conveyed water from wells to irrigation points, and designing and constructing diversion pipelines to transmit water to City sewer system.

Litigation Support Projects

- ***Bliszcz V. Goldberg, et al.:*** Provided declaration, deposition, and courtroom testimony in the case involving viability of an older water source and feasibility of new water well construction. The dispute

Representative Professional Assignments Continued

was between buyer and seller of a 40-acre parcel with a residence and producing citrus grove, open space and other features in the vicinity of Fillmore, California.

- ***Douglas V. Franz:*** Retained as expert hydrogeologist by plaintiff counsel, provided evaluation of shallow and deep groundwater conditions and surface hydrology as related to a construction defect case. Provided declaration and testimony at deposition shortly prior to favorable case settlement on behalf of client plaintiff. (2006, retained by Ed Quigley, Cox Castle Nicholson, Los Angeles, California.)
- ***Perea V. Rancho Santa Fe Community Services District, et al.:*** Mr. Kear managed this project on behalf of the defense-designated expert witness. Key tasks included specialized data collection, research, and modeling in this matter involving a sewer pipe constructed several years ago across an easement in the vicinity of San Elijo Lagoon in San Diego County, California. At issue was water at ground surface on the plaintiffs' property, which he attributed to the presence of the sewer pipe. DBS&A's research supported the opinion that natural conditions, coupled with excess irrigation by the plaintiff and other issues, was a significant contribution to the high water problem. (2005-2006, retained by Michael Martin, Grimm, Vranjes, McCormick & Graham LLP, San Diego, California.)
- ***Oliver V. Snows Quarry, et al.:*** Retained as expert hydrogeologist by attorneys representing defense. By conducting specialized data collection, research, and modeling, Mr. Kear was able to provide a declaration that refuted the plaintiff's claim that blasting operations at the quarry were related to reduced groundwater production from one of the plaintiff's wells. The plaintiff dismissed the case without receiving a financial settlement. (2004, retained by Kent Seitzinger, Law Offices of Kent Seitzinger, Roseville, California.)
- ***Beck V. Mission Geoscience:*** Provided forensic investigation of soil contamination and evaluated previous attempts by defense to remediate gasoline compound contamination by large-diameter-drilling excavation and off site disposal. (2001, retained by William Beck, Johnson and Beck, LLP, Los Angeles, California.)
- ***Kram V. Wierda et al.*:** Retained by attorneys for the defense regarding case where property owner alleged that past uses of property rendered dwelling unit uninhabitable. Although a portion of the property was used as a repair shop between 1923 and 1966, limited concentrations of analytes detected in soil were attributable to fill material dating back to the 1800s. Four defendants regained title to the property as part of the settlement, and the property has been remediated by excavation and off site disposal. (2001-2004, retained by Lawrence T. Sorensen, Mullen and Henzell, LLP, Santa Barbara, California.)

Professional Affiliations

American Water Works Association (AWWA)

AWWA Groundwater Committee

American Association of Petroleum Geologists (AAPG)

AAPG Division of Environmental Geosciences

Pacific Section AAPG

Coast Geological Society (CGS), Secretary 2002-2003, Vice President 2003-2004

Southern California Water Utilities Association

Association of Water Agencies, Ventura County (AWAVC)

Jordan L.N. Kear, P.G., C.H.G.

Representative Professional Assignments Continued

Professional Experience

Kear Groundwater, Santa Barbara, California, 2010 to present
Principal Hydrogeologist

Daniel B. Stephens & Associates, Goleta. California, 2005 to 2010
Senior Hydrogeologist

Lindmark Engineering, Long Beach, California
Senior Hydrogeologist, 2001-2005

Richard C. Slade and Associates, North Hollywood, California, 1997-2000
Groundwater Geologist

Lindmark Engineering, San Fernando, California
Staff Geologist, 1994-1997

Chevron USA, Inc., El Segundo Refinery, El Segundo, California, 1990
Draftsman

Publications

Kear, J., Rapp, B., and Hollenbrands, M., 2013. Groundwater/Surface Water Interaction: Measure, Model, Mitigate? The Ventura River Example. California-Nevada Section, American Water Works Association, Sustainability in a time of change, Spring Conference March 25-28, 2013. Las Vegas, Nevada

Kear, J. 2011. Abandoned Water Wells: Assets or Liabilities? Tri-State Seminar On-The-River, California Water Environment Association, Arizona Water, Nevada Water Environment Association. September 27-29, 2011. Primm, Nevada.

McGlothlin, R.M., and Kear, J., 2011. Got Water? Prove It! American Planners' Association; California Conference. September 11-15, 2011, Santa Barbara, California.

Kear, J. 2010. Roles of Aquifer Hydraulics in Aquifer Storage and Recovery. Pacific Section of American Association of Petroleum Geologists/Geological Society of America Joint Annual Meeting, May 26-31, 2010. Anaheim, California.

Kear, J., 2010. Groundwater Quality in the Ventura River Watershed. University of California Cooperative Extension, Ventura River "Watershed U." April-May, 2010, Ventura, California.

Kear, J., Manghi, F., Cullen S., and Kaiser, P. 2009. Quantification of nitrogen removal beneath recycled water recharge ponds. WateReuse Association, March 31-April 2, 2009. San Francisco, California.

Kear, J. 2007. Like Oil and Water: Proximity Issues of Supply Wells. California-Nevada Section, American Water Works Association, Bringing Water to the Desert, Spring Conference April 17-20, 2007. Las Vegas, Nevada

Kear, J., 2007. Energy savings effects of artificial recharge and increased storage in groundwater basins. First Western Forum on Energy and Water Sustainability, March 22-23, 2007, Bren School of Environmental Science & Management, University of California, Santa Barbara.

Jordan L.N. Kear, P.G., C.H.G.

Representative Professional Assignments Continued

Kear, J.L.N. and Benumof, B.T., 2005. Hydrogeologic and legal feasibility of remote extraction from a groundwater basin. Pacific Section American Association of Petroleum Geologists/Geological Society of America Joint Annual Meeting. San Jose, California.

Kear, J.L.N., Blanford, T.N., and McGlothlin, R.M., 2005. Modern challenges to spreading ground rehabilitation. Groundwater Resources Association of California, Basin Yield and Overdraft Symposium, Long Beach, California.

Kear, J. L., 2005. Hydrogeology of the Ojai Groundwater Basin: storativity and confinement, Ventura County, California. Master of Science Thesis, California State University Northridge: 196 p.

Kear, J.L.N. and Lindmark, U.M., 2004. Birth of a detached MTBE plume: Groundwater modeling anchored in groundwater monitoring. National Ground Water Association.

Kear, J.L.N. 2003. Receptor-specific endpoints to contaminant pathways. American Water Resources Association. Annual Meeting, San Diego, California.

Kear, J.L.N. 2003. Assessing MTBE contamination in an ephemerally saturated aquifer. Geological Society of America. Seattle, Washington.

SUPPLEMENTAL MEMORANDUM No. 1

TO: Mr. Kurt Stiefler
Attorney at Law
2130 Cedarhurst Drive
Los Angeles, California 90027

FROM: Jordan Kear, P.G., C.Hg. KG12-0100
Kear Groundwater
PO Box 2601
Santa Barbara, CA 93120.

DATE: January 3, 2013

SUBJECT: Reconnaissance Level Hydrogeologic Evaluation,
Little Baldy Water Company
Llano, Los Angeles County, California

This memorandum is intended to supplement our preliminary findings, conclusions, and recommendations following our reconnaissance-level evaluation of the nature and disposition of water sources of Little Baldy Water Company (LBWC) in Los Angeles County, California.

At your direction, and those of LBWC, Kear Groundwater's (KG) efforts for this project have involved data collection and review; field visits to the LBWC area, reconnaissance of the spring and wells and areas of geologic outcrops, and preparation of KG's July 20, 2012 memorandum. The primary goal of this evaluation is to help define and understand the nature and disposition of the source waters to LBWC wells and spring, and the fate of that water both when and when not intercepted by the LBWC system. Using this information, preliminary locations and design discussions for replacement or augmentation wells were provided as well.

To address the nature of LBWC water resources, we briefly discussed the primary system components, geology and hydrology of the LBWC area and the larger regional hydrology. This supplemental memorandum includes review of the "Revised Order After Hearing On Jurisdictional Boundaries " (Phase One Order), provided to KG in December 2012.

Based on our review of the Phase One Order, and the findings of our efforts summarized in our July 20, 2012 memorandum, KG's opinion is that:

1) Little Baldy Water Company wells are outside the Antelope Groundwater Basin as delineated in the State of California Department of Water Resources Bulletin 118-2003 and concluded by the court to be the basic jurisdictional boundary for purposes of the litigation area (Figure 1).

2) Little Baldy Water Company Wells are not extracting percolating groundwater of the Antelope Groundwater Basin. The wells clearly extract water flowing in the alluvium of Grandview Canyon, also known as Deadman Canyon, equal in all respects to “subterranean streams flowing through known and definite channels” as defined in section 1200 of the California Water

Code. As such, the State Water Resources Control Board (SWRCB) has issued permits and licenses to LBWC for the extraction of the water resource.

3) Little Baldy Water Company should not be enjoined in the litigation since their water source is outside of the jurisdictional boundary as defined in the Phase One Order.

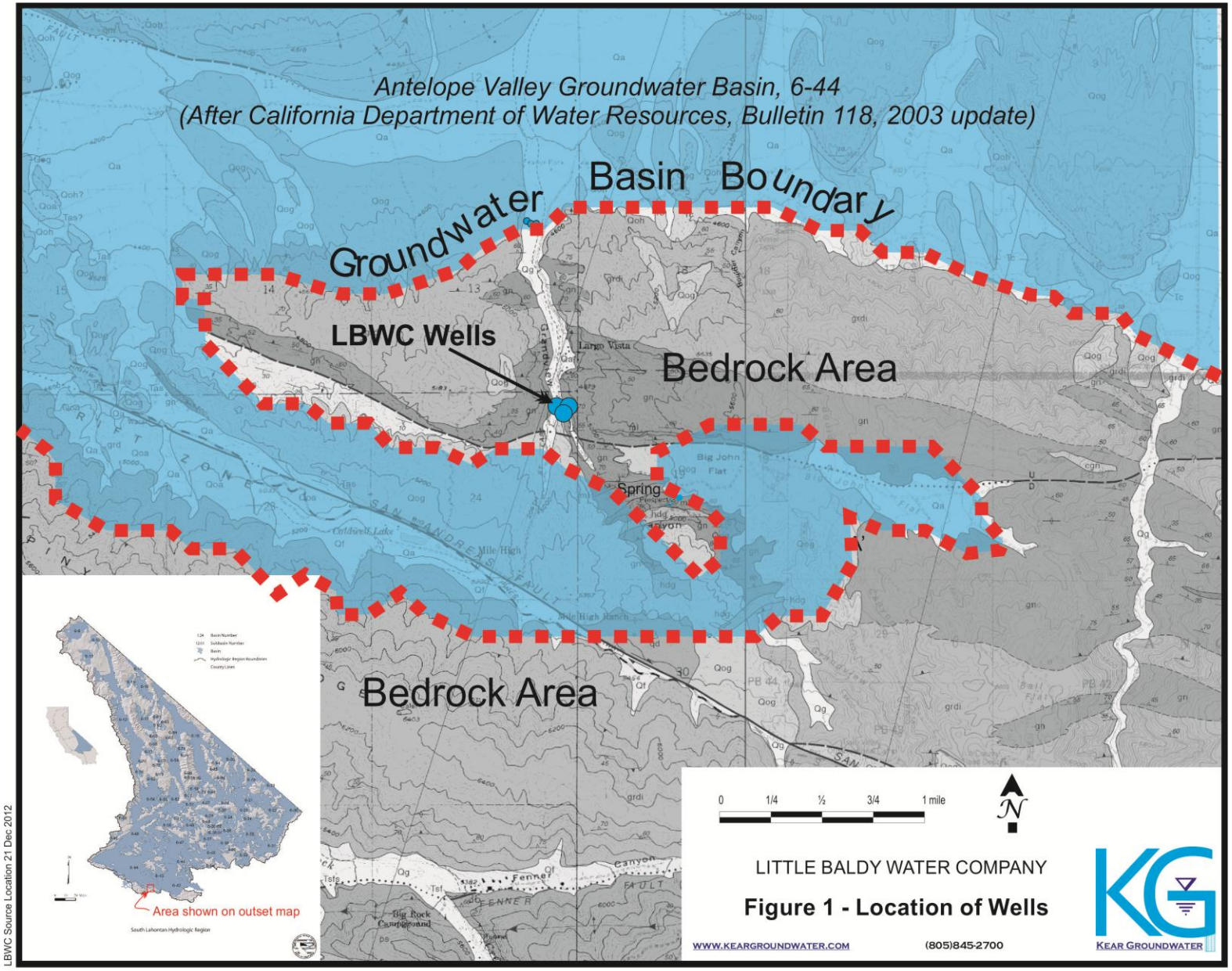
Statement of Limitations

The services described in this report were performed in a manner consistent with our agreement with the client and in accordance with generally accepted professional consulting principles and practices. Opinions and recommendations contained in this report apply to conditions existing at certain locations when services were performed and are intended only for the specific purposes, locations, time frames, and project parameters indicated. We cannot be responsible for the impact of any changes in standards, practices, or regulations after performance of services. Discussions of faults in this reporting relate only to their hydrogeologic characteristics and are not intended to speak to their potential activity, earthquake potential, geotechnical hazards, etc., or lack thereof.

Hydrogeologic analyses for this report relied solely on available background data obtained from the client, Los Angeles County, the State of California, and published geologic reports. No independent subsurface exploration, laboratory testing, geophysical surveying or well testing was conducted by our firm for this study. No guarantee of water quantity or quality from an attempted well can be offered. Because the efforts to implement recommendations contained herein rely on the skill of outside contractors, our liability is limited to the dollar value of our professional efforts.

Discussions of water rights are presented herein only for general purposes. The client is encouraged to contact a qualified attorney to better review legal issues and obtain a legal opinion.

Any use of this report by a third party is expressly prohibited without a written, specific authorization from the client. Such authorization will require a signed waiver and release agreement.



KEAR GROUNDWATER

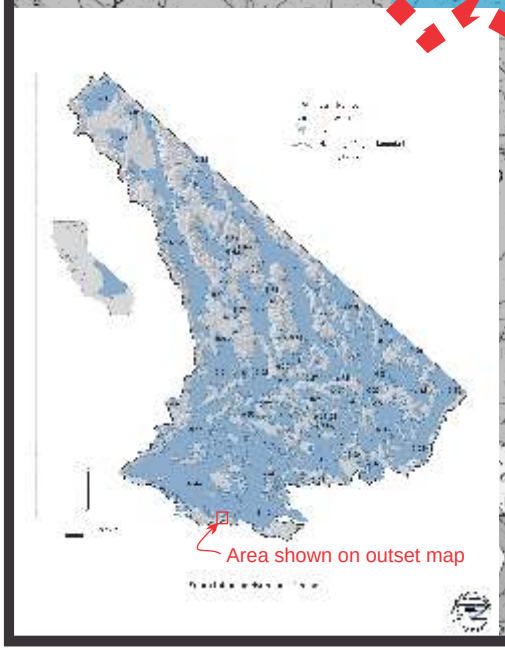
Antelope Valley Groundwater Basin, 6-44
(After California Department of Water Resources, Bulletin 118, 2003 update)

Groundwater Basin Boundary

LBWC Wells

Bedrock Area

Bedrock Area



0 1/4 ½ 3/4 1 mile

N

LITTLE BALDY WATER COMPANY

Location of Wells

www.keargroundwater.com (805)845-2700 Kear Groundwater

LBWC Source Location 21 Dec 2012

MEMORANDUM

TO: Mr. Robert Elliott
Little Baldy Water Company
PO Box 313
Llano, California 93544

FROM: Jordan Kear, P.G., C.Hg. KG12-0100

DATE: July 20, 2012

SUBJECT: Reconnaissance Level Hydrogeologic Evaluation,
Little Baldy Water Company
Llano, Los Angeles County, California

This memorandum is intended to transmit our preliminary findings, conclusions, and recommendations following our reconnaissance-level evaluation of the nature and disposition of water sources of Little Baldy Water Company (LBWC) in Los Angeles County, California.

At your direction, Kear Groundwater's (KG) efforts for this project have involved data collection and review; field visits to the LBWC area, reconnaissance of the spring and wells and areas of geologic outcrops, and preparation of this memorandum. The primary goal of this evaluation is to help define and understand the nature and disposition of the source waters to LBWC wells and spring, and the fate of that water both when and when not intercepted by the LBWC system. Using this information, preliminary locations and design discussions for replacement or augmentation wells are provided as well.

To address the nature of LBWC water resources, we briefly discuss herein the primary system components, geology and hydrology of the LBWC area and the larger regional hydrology.

LBWC System Sources

LBWC currently obtains its water via two active wells, and has historically obtained water from a spring, stored water via two dams, and has a third well which is not actively used. Each of these components are within the catchment of Grandview Canyon, south of the LBWC Service area and at higher elevation such that the system is fed via gravity.

Source	Year Developed	Depth	Production Capacity (gpm)	Status
Well No. 1	1937	60	90	Active
Well No. 2	1967	67	90	Active
Well No. 3	Circa 1998	300	5	Standby
Spring 19L1	Circa 1910	--	10	Flowing

All LBWC water sources appear to be primarily recharged by precipitation originating as rain or

snow within the Grandview Canyon catchment area, shown at various scales on Figures 1 through 4. Further discussion of the hydrology and geology of the Grandview Canyon catchment is described below.

KG understands that the relatively simple LBWC system operates as a flow-through system, wherein water is pumped into the transmission system at the source wells area and flows in approximately 8 miles of piping from which a portion of water is used but unused water is allowed to flow out at ground surface near the end(s) of the pipeline(s) where it percolates into the subsurface and effectively returns to the Pearland Subbasin, a sub-unit of the Antelope Groundwater Basin, currently the subject of adjudication. KG further understands that little irrigation is conducted in the LBWC service area and that most, if not all, service connections reach, after use, individual septic systems, resulting in a significant return flow back to the Antelope Groundwater Basin.

Well Nos. 1 and 2 appear to be relatively shallow, extracting groundwater from the shallow alluvial channel in Grandview Canyon. This area has consistently been excluded from the Antelope Groundwater Basin as defined by others (although included within the contributory area to the basin) and appears to be consistent with water flowing in a known and defined channel, bounded by relatively impermeable bedrock. As such, it is our understanding that the wells have been permitted and are operated as "surface water diversions."

Water quality from the wells appears to be consistent with this interpretation, as the character is of calcium-bicarbonate and total dissolved solids (TDS) concentration is in the 400 to 500 mg/l range, similar to the surface water in the creek flowing in Grandview Canyon and as would be expected in the area of marble-rich bedrock provenance.

The LBWC Spring, noted in the table above as 19L1 owing to the section and subsection in which the spring is present, flows up to a reported 10 gpm and yields a much fresher water quality with a TDS concentration of 200 mg/l as measured in the field with KG instrumentation. Although not currently directly connected to the LBWC system, the spring flow emerges from its source and enters the creek in Grandview Canyon where the flow is intercepted by the Well Nos. 1 and 2. Spring 19L1 appears to drain a section of perched older alluvial gravels (Qog on Figure 4) known as Big John Flat. The alluvial sediments of Big John Flat have consistently been mapped within the Antelope Groundwater Basin and therefore Spring 19L1 would have been a discharge point for percolating groundwater. The Antelope Groundwater Basin is currently the subject of adjudication and the Big John Flat area is included therein.

New Well Postulation

KG understands that the existing LBWC Well No. 3 produces limited quantities of groundwater and should be replaced. Should a new well be drilled, KG recommends targeting the central portion of the known and defined channel, maximizing the alluvial thickness and distance from relatively impermeable bedrock of the canyon walls. Depending on property availability, a new LBWC Well could be drilled at any available parcel where setbacks from septic systems and other regulations are met. KG anticipates that the alluvium thickens and widens to the north

within the Grandview Canyon channel. New wells should target the alluvium, and be adequately deep to capture fractured and/or weathered bedrock and be countersunk into the underlying lower permeability material. Well depths on the order of 100 feet appear to be typical. Should another existing well become available for inclusion into the LBWC system, it should be properly evaluated and tested as part of an escrow process.

Grandview Canyon Catchment

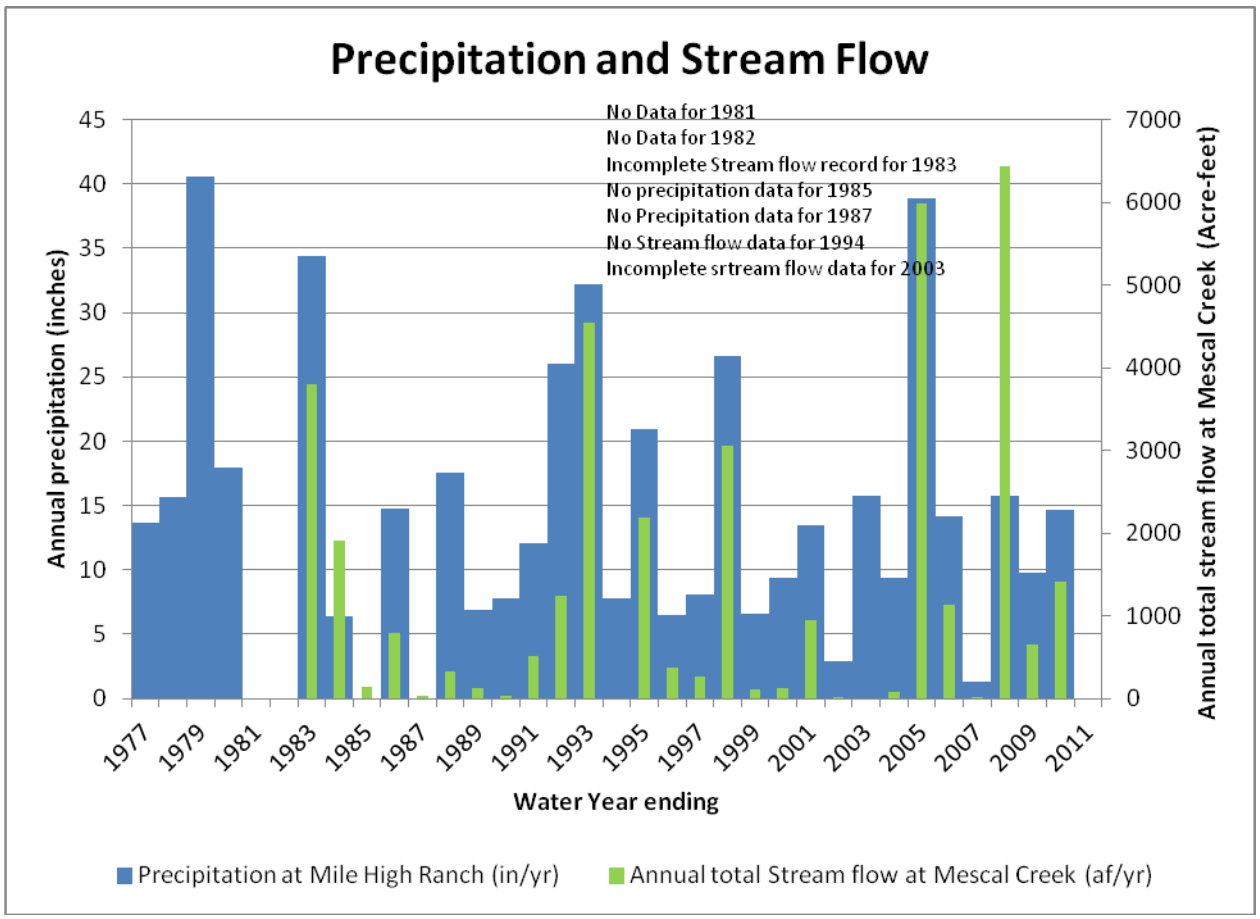
The area tributary to the LBWC system is referred to herein as Grandview Canyon Catchment (GCC), a sub-watershed of approximately 4.65 square miles along the northern front of the San Gabriel Mountains. The GCC ranges in elevation from about 4,500 feet above mean sea level at its northern mouth where it meets the Alluvium of the Antelope Valley to over 7,500 feet above sea level at the southern headwaters along Blue Ridge. Nearly 2 square miles of the GCC is south-southwest of the San Andreas Fault. Further bisection of the GCC includes the presence of alluvial strata of Big John Flat and also in the Mile High area, occupying about 1 square mile of the GCC area. The remainder of the sub-watershed is exposed bedrock and soils thereon and the alluvium in the canyon bottoms.

Precipitation and runoff

Precipitation in the GCC is variable, typically greater in the southern, upper elevations of the catchment and drier in the northern portions. Records from a rain gauge at Mile High Ranch (MHR), nearly midway in elevation and latitude within the GCC, as available from the County of Los Angeles for most years from 1977 to 2010, indicate a range of precipitation from 1.29 inches (2007) to 40.55 inches (1979). Arithmetic mean of the available data set is 15.6 inches annually, with a median value of 13.9 inches. Given the midland location of the MHR gauge, the data point is likely a fair representation of the average precipitation within the GCC as a whole. Hence, over the 4.65 square miles (2976 acres) of the GCC, a 14-inch-per year average precipitation would yield 3,472 acre feet to the catchment. Of this, as is typical in arid environments, over 50 percent, or 1,736 acre feet, is likely lost to evapotranspiration. Fifteen percent may infiltrate to groundwater within the GCC, or 521 acre feet annually, and 35 percent, or 1,215 acre feet, may flow as surface water as an annual average.

A similar catchment, Mescal Creek (just to the east of Grandview Canyon), has had a stream gauge in operation nearly continuously since 1983. This 5.41-square mile drainage appears to be a good proxy for Grandview Canyon, and although the data indicate some anomalies there appears to be a generally good correlation between precipitation measured at Mile High Ranch and runoff from Mescal Creek. Measured runoff has ranged from zero to upwards of 6,000 acre feet in wet years, with a mean value of 1,340 acre feet. This mean runoff value is very similar to the simple estimate presented above for GCC.

The following chart presents a comparison of precipitation at MHR and runoff at Mescal Creek:



Conceptual fate of GCC water

Precipitation that reached the GCC would primarily either evaporate, be transpired by flora, infiltrate into the soil and groundwater, or flow as streams. A portion of the infiltrated water southwest of the San Andreas Fault would likely be impounded on the southwest side of the fault and either emerge as spring flow along the fault or flow in the subsurface toward the west and into the alluvium of the Antelope Groundwater Basin. A portion of the precipitation which would infiltrate alluvium in the Big John Flat or Mile High Ranch areas would either return to the GCC as spring flow (like Spring 19L1) or flow to the east or west directly into other portions of the Antelope Groundwater Basin. Most of the remainder of surface and/or groundwater flow would coalesce in the shallow alluvial channel in Grandview Canyon.

If not extracted by LBWC Wells or other wells in the area, this Grandview Canyon flow would exit the catchment area and likely recharge the Pearland Subbasin of the Antelope Groundwater Basin. As shown on Figure 3, following a 1915 groundwater flow path from that point, the water would flow from the Pearland Subbasin to the Buttes Subbasin to the Lancaster Subbasin, and in the vicinity of Rogers Lake flow to the North Muroc Subbasin. The quantity of the recharge to the Antelope Basin from the GCC is likely on the order of 1,200 acre feet per year, either flowing directly out of the mouth of Grandview Canyon to the north or via the alluvial pathways

higher in the catchment.

Extraction and return of LBWC water
We understand that the LBWC pumps its wells via timers between 6 and 24 hours per day depending on system demands. This typically results in 30,000 to 70,000 gallons per day being pumped, which would equate to a range of 0.1 to 0.2 acre-feet per day being pumped. Annually, this would equate to 36 to 72 acre feet per year being extracted via the wells, but as described above a significant portion of this water returns to the Antelope Groundwater Basin in the vicinity of the properties of overlying landowners whose parcels are served by Little Baldy Water Company.

General Preliminary Conclusions

Based on our reconnaissance-level, preliminary review of available data, it appears that Little Baldy Water Company has been historically producing water either directly or indirectly from percolating groundwater of the Antelope Groundwater Basin and surface waters tributary to the nearly geographically-equal Rogers Lake Basin.

LBWC extraction appears to be on the order of 36 to 72 acre feet per year from a portion of the tributary area which is estimated to contribute about 1,000 acre feet per year of recharge to the Antelope Groundwater Basin. Much of the extracted groundwater/diverted surface water conceptually returns to the Antelope Groundwater Basin elsewhere in the system.

Owing to these factors, the water resources of the Little Baldy Water Company should be quantified and recorded with the State Water Resources Control Board and included in the ongoing Antelope Groundwater Basin adjudication.

Recommendations for further determination

To further substantiate the preliminary conclusions presented herein, KG recommends general approaches inclusive of the following:

Detailed Mapping: Detailed geologic mapping of the alluvial/bedrock contacts, wells, faults, recharge areas, and infrastructure (both abandoned and active) would help to better understand the nature of the hydrology of the LBWC area.

Detailed inflow monitoring: quantification of water discharged via the spring and pumped via wells, would help to substantiate and quantify the water produced by the LBWC.

Detailed outflow monitoring: quantification of the return flow to the Antelope Groundwater Basin via the "end of pipe" discharges and via septic systems. If needed, reporting of quantities of this discharge should be reported to either the State Regional Water Quality Control Board or

State Water Resources Control Board to establish this contribution quantity to recharge to the Antelope Groundwater Basin. Return flow should be quantified as a contribution to recharge in the adjudication.

Detailed water quality sampling and analysis: spring water should be analyzed for general mineral/general physical properties, such that the character of the water and key constituents can be evaluated. Both filtered and unfiltered samples can be analyzed, with the proper sampling procedures for various analytes employed. General mineral, bacteriological, isotopic, and biological constituents can be added to the water quality database for further understanding.

Recordation of Spring and Well use: KG recommends that LBWC record spring and well use with the State Water Resources Control Board. Water quality and reporting of water use should also be recorded with the CDPH.

Statement of Limitations

The services described in this report were performed in a manner consistent with our agreement with the client and in accordance with generally accepted professional consulting principles and practices. Opinions and recommendations contained in this report apply to conditions existing at certain locations when services were performed and are intended only for the specific purposes, locations, time frames, and project parameters indicated. We cannot be responsible for the impact of any changes in standards, practices, or regulations after performance of services. Discussions of faults in this reporting relate only to their hydrogeologic characteristics and are not intended to speak to their potential activity, earthquake potential, geotechnical hazards, etc., or lack thereof.

Hydrogeologic analyses for this report relied solely on available background data obtained from the client, Los Angeles County, the State of California, and published geologic reports. No independent subsurface exploration, laboratory testing, geophysical surveying or well testing was conducted by our firm for this study. No guarantee of water quantity or quality from an attempted well can be offered. Because the efforts to implement recommendations contained herein rely on the skill of outside contractors, our liability is limited to the dollar value of our professional efforts.

Discussions of water rights are presented herein only for general purposes. The client is encouraged to contact a qualified attorney to better review legal issues and obtain a legal opinion.

Any use of this report by a third party is expressly prohibited without a written, specific authorization from the client. Such authorization will require a signed waiver and release agreement.