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7 **Attorneys for Cross-defendants,**
8 LITTLE ROCK SAND AND GRAVEL, INC.,
9 a California Corporation;
10 THE GEORGE AND CHARLENE LANE FAMILY TRUST;
11 THE FRANK AND YVONNE LANE 1993 FAMILY
12 TRUST, DATED MARCH 5, 1993, AS RESTATED
13 JULY 20, 2000; MONTE VISTA BUILDING SITES, INC.,
14 a California Corporation; A.V. MATERIALS, INC.,
15 a California Corporation; A.C. WARNACK,
16 as Trustee of the A.C. WARNACK TRUST;
17 HOLLIDAY ROCK CO., INC.,
18 successor in interest to
19 LITTLEROCK AGGREGATE CO., INC. dba
20 ANTELOPE VALLEY AGGREGATE, INC.;
21 LITTLEROCK AGGREGATE CO., INC. dba
22 ANTELOPE VALLEY AGGREGATE, INC.

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25 **SUPERIOR COURT OF THE STATE OF CALIFORNIA**

26 **FOR THE COUNTY OF LOS ANGELES**

27 ANTELOPE VALLEY GROUNDWATER CASES)	Judicial Council Coordination No.
28 Included Actions:)	4408
29 Los Angeles County Waterworks)	For filing purposes only:
30 District No. 40 v. Diamond)	Santa Clara County Case No.
31 Farming Co. Superior Court of)	1-05-CV-049053
32 California County of Los Angeles,)	[Assigned to the Honorable Jack
33 Case No. BC 325 201)	Komar]
34 Los Angeles County Waterworks 2)	DECLARATION OF BLAKE MCCULLOUGH-
35 District No. 40 v. Diamong)	SANDEN RE PHASE 4 TRIAL
36 Farming Co. Superior court of)	
37 Califronia, County of Kern, Case)	
38 No. S-1500-CV-254-348)	
39 _____)	

1 Wm. Bolthouse Farms, Inc. V. City)
of Lancaster Diamong Farming Co.)
2 V. City of Lancaster Diamond)
Farming Co. V. Palmdale Water)
3 Dist. Superior Court of)
California, County of Riverside,)
4 consolidated actions, Case No.)
RIC 353 840, RIC 344 436, RIC 344)
5 668)

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8 **DECLARATION**

9 I, BLAKE SANDEN, declare:

10 1. I am currently employed by the University of California Cooperative Extension, in
11 Bakersfield, California. I have been retained by The George and Charlene Lane Family Trust,
12 and The Frank And Yvonne Lane 1993 Family Trust, Dated March 5, 1993, as Restated
13 July 20, 2000. I have been an Irrigation and Agronomy Farm Advisor for the University of
14 California Cooperative Extension, Kern County, since 1992. In that role I have been involved in
15 education and research programs relating to soil/salinity/irrigation management for all crops in
16 Kern County, and agronomic production practice for alfalfa, dry beans and oil crops. I
17 previously served as an irrigation technical advisor to a large farming company for the
18 management of irrigation on 26,000 acres of pistachios, almonds, olives, pomegranates and
19 cotton. I also have prior experience in vegetable production and irrigation management
20 development in Africa and Central Asia. I have also been the manager of a 40 acre high school
21 farm. I hold a B.S. degree in International Agricultural Development/Agronomy and an M.S.
22 degree in Water Science/Irrigation and Drainage from the University of California at Davis. A
23 true and correct copy of my curriculum vitae is attached as Exhibit 1 to this Declaration. I have
24 personal knowledge of each fact herein and would testify competently thereto under oath.

2. The George and Charlene Lane Family Trust and The Frank And Yvonne Lane 1993
Family Trust, Dated March 5, 1993, as Restated July 20, 2000, have identified property that they

1 own that overlies the Antelope Valley Area of Adjudication as decided by this Court. The land is
2 in both Los Angeles and Kern County and is identified by the following APN/APNs: See the
3 Declaration of George M. Lane in Lieu of Deposition Testimony and the discovery responses of
4 The George and Charlene Lane Family Trust and The Frank and Yvonne Lane 1993 Family
5 Trust, Dated March 5, 1993. The properties that I have analyzed are commonly referred to by
6 Mr. Lane in his declaration and in his discovery responses by the "Ranch Property", the
7 "Fairmont Property" and the "Godde Pass Property" or "Godde Hill Property."

8 **Crop Water Duties and Irrigated Acres**

9 3. I have performed calculations relating to water use on the properties referenced herein
10 using the amount of acres receiving irrigation on the properties and the crop water duties
11 identified in the Summary Expert Report, Appendix D-3: Table 4, a true and correct copy of
12 which is attached to this declaration as Exhibit 2.

13 4. I have personally visited the "Fairmont Property," the "Ranch Property," and the "Godde
14 Hill" Property. The Fairmont Property is approximately 320 acres and is located at
15 approximately 170th Street West and Avenue A. The Ranch Property is approximately 60 acres
16 and is located at L and 60th Street West. The Godde Hill Property is over 1,000 acres and is
17 located in the hills above the Aqueduct near 70th Street West and Avenue N.

18 5. Attached hereto as Exhibit 3 is a true and correct copy of my calculations relating to crop
19 water usage for the years 2000-2004 and 2008-2012 on the Fairmont Property using the
20 Summary Expert Report referenced in paragraph 3. Additionally, Exhibit 3 contains my
21 calculations relating to water usage on the Fairmont Property for those same years using pump
22 tests and Southern California Edison Electrical Records. The last column on the chart shows the
23 Grimmway Enterprises, Inc. flow meter readings for the years 2008 to 2012.


24 6. Attached hereto as Exhibit 4 is a true and correct copy of my calculations relating to
crop/item acreage/number multiplied by the expected water duty for the Ranch Property located
at 60th Street West and Avenue L using the Summary Expert Report referenced in paragraph 3.
Based upon my information and knowledge, the crop water duties would be approximately the

1 same for each of the years 2000-2004 and 2011-2012 as set forth in Exhibit 4. Based upon my
2 information and knowledge, Exhibit 4 also includes the quantities of water that the Antelope
3 Valley East Kern Water Agency supplied to the property for the years 2000 to 2012.

4 7. Exhibit 5 is a true and correct copy of my calculations relating to the Godde Hill Property
5 water use calculated by crop/item acreage/number multiplied by the expected crop water duty
6 (using the Summary Expert Report), estimated water consumption by livestock and evaporation
7 from stockwater pans/troughs (sources for these calculations annotated in exhibit). Based upon
8 my information and knowledge, the crop water duties would be approximately the same for each
9 of the years 2000-2004 and 2011-2012, as set forth in Exhibit 5. Based upon my information
10 and knowledge, Exhibit 5 also shows the quantities of water that the Antelope Valley East Kern
11 Water Agency supplied to the property for the years 2000 to 2012.

12 8. Exhibit 6 is a summary of the quantities of Antelope Valley East Kern Water Agency
13 water that were delivered to the Ranch Property and the Godde Hills Property for the years 2000
14 to 2012.

15 I declare under penalty of perjury under the laws of the State of California that the
16 foregoing is true and correct. Executed this 31st day of January 2013, at Bakersfield, California.

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18 BLAKE McCULLOUGH-SANDEN
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EXHIBIT 1

Blake McCullough-Sanden

University of California Cooperative Extension
1031 S. Mt. Vernon Ave.
Bakersfield, CA 93307

Business: (661) 868-6218
Fax: (661) 868-6208
E-mail: blsanden@ucdavis.edu

Education:

University of California, Davis. M.S. Water Science/Irrigation and Drainage, 1987.
University of California, Davis. B.S. International Agricultural Development/Agronomy, 1978.

Experience:

- 7/92-present: University of California Cooperative Extension, Kern County
Irrigation & Agronomy Farm Advisor
Education and research programs relating to soil/salinity/irrigation management for all crops in Kern County. Agronomic production practice for alfalfa, dry beans and oil crops.
- 2/88-7/92: Paramount Farming Co.-Westside Ranch; Lost Hills, CA
Irrigation Technical Advisor
Management of irrigation on 26,000 acres of pistachios, almonds, olives, grain, and cotton.
- 1/85-2/88: Dept. of Land, Air, & Water Resources; University of California, Davis
Graduate Research Assistant/Teaching Assistant
Developed original research to monitor seepage of ponded drainwater in five agricultural drainwater evaporation ponds in the San Joaquin Valley.
- 6/83-1/85: Woodlake Union High School; Woodlake, CA
Farm Manager
Plan and carry out operations for maintenance/production on 44 acre high school farm.
- 7/78-5/83: United Presbyterian Church, USA; Zambia, Africa & U.S.
Fraternal Worker/Missionary
Developed strategies and programs stressing self-reliance for increasing agricultural production in a rural area of Zambia, Africa through demonstration plots of local field and vegetable crops, design and construction of hand-powered processors for some crops, village extension/education.

Professional Activities:

As the Irrigation and Agronomy Farm Advisor with the University of California Cooperative Extension, stationed in Kern County at the southern end of the San Joaquin Valley, I conduct applied research and extension programs focusing on three areas: 1) **irrigation management** -- scheduling/crop water use, optimal system design and maintenance, 2) **salinity/fertility management** -- reclaiming/improving soil structure and nutrient availability, and 3) **agronomy** -- traditional commodity responsibilities for dry beans, sugar beets, safflower, alfalfa and other forage.

Field trials and seminars focus on **resource management issues** such as crop water demand (ET) in permanent and annual crops, water supply, greenwaste compost, application of biosolids to farm land, salinity management, wells and pumps, drip irrigation, irrigation system uniformity and irrigation scheduling. The results of this work are disseminated via local, statewide and national publications and meetings.

Consulting: Los Angeles County Sanitation District, Frusesa Spain and US AID funded projects in West Bank (Jericho), Uganda, Ethiopia and Central Asia.

Societies: American Society of Agronomy/Soil Science, American Society of Agricultural and Biological Engineers, California Association of Farm Advisors and Specialists, California Irrigation Institute (President 2008-2009), Irrigation Association

Selected Publications:

- McCullough-Sanden, B.L.,** Grismer, M.E. 1988. Field analysis of seepage from drainwater evaporation ponds. Transactions of the American Society of Agricultural Engineers. Soil and Water Div. 31(6):1710-14
- Grismer, M.E., **McCullough-Sanden, B.L.** 1989. Correlation of laboratory analyses of soil properties and infiltrometer seepage from drainwater evaporation ponds. Transactions of the American Society of Agricultural Engineers. Soil and Water Div. ASAE 32(1):173-176
- McCullough-Sanden, B.L.,** H. McCutchin, R. Bailey, T. Logan, and B. Harrison. 1995. N-Viro soil as a gypsum replacement in cotton production on a sodic saline/alkali soil. Proceedings "Effects of Land Application of Biosolids in Arid and Semi-arid Environments." US EPA Conference. Colorado State University, May 16-19. 15pp.
- Sanden, B.,** W.R. DeTar, A.E. Hall, S. Temple. 1996. Irrigation-scheduling and water quality in blackeyes. Proceedings of the International Evapotranspiration and Irrigation Scheduling Conference. Amer. Soc. of Ag. Eng. Saint Joseph, MI. pp.749-755
- DeTar, W.R., G.T. Browne, C.J. Phene, **B.L. Sanden.** 1996. Real-time irrigation scheduling of potatoes with sprinklers and subsurface drip systems. Proceedings of the International Evapotranspiration and Irrigation Scheduling Conference. Amer. Soc. of Ag. Eng. Saint Joseph, MI. pp.812-824.
- Sanden, B.,** J. Mitchell, L. Wu. 1997, 1998, 1999. Effects of irrigation nonuniformity on nitrogen and water use efficiencies in shallow-rooted vegetable cropping systems (second year progress report). Proc. of the Fifth Annual Fertilizer Research and Education Program Conference, CA Dept. of Food and Ag., Sacramento, CA. p.39-43. Also presented as poster at 1997 Soc. of Hort. Sci. Annual meeting.
- Sanden, B.L.,** L. Wu, J.P. Mitchell, S.E. Allaire-Leung. 2000. Sprinkler lateral spacing impacts on field distribution uniformity of precipitation and carrot yield. Proceedings of the 4th Decennial National Irrigation Symposium. Amer. Soc. of Ag. Eng. Saint Joseph, MI. pp.136-143.
- McCullough-Sanden, B.L.,** A.C. Chang, D.K. Crohn, T.K. Hartz. 2002. Effective mineralization of sewage sludge for field crops. Proceedings for International Workshop on Monitoring and Modeling Non-point Source Pollution of Agricultural Lands, Nanjing, China Jul 7-11. p. 25-32.
- Sanden, B.,** B. Hockett, R. Enzweiler. 2003. Soil Moisture Sensors and Grower "Sense" Abilities: 3 Years of Irrigation Scheduling Demonstrations in Kern County. Paper IA03-0498, Electronic Proceedings of the 24th Annual International Irrigation Show, Irrigation Association, 6540 Arlington Boulevard, Falls Church, VA 22042-6638, Telephone: 703-536-7080, www.irrigation.com, pp. 242-250
- Sanden, B.L.,** L. Ferguson, H.C. Reyes, S.C. Grattan. 2004. Effect of salinity on evapotranspiration and yield of San Joaquin Valley pistachios. Proceedings of the IVth International Symposium on Irrigation of Horticultural Crops, Acta Horticulturae 664:583-589.
- Sanden, B.L.,** L. Ferguson, C. Kallsen, D. Corwin. 2007. Large-Scale Utilization of Saline Groundwater for Development and Irrigation of Pistachios (*P. integerrima*) Interplanted with Cotton (*G. barbadense*) Proceedings of the Vth International Symposium on Irrigation of Horticultural Crops, Eds: I. Goodwin and M.G. O'Connell, Acta Horticulturae, ISHS 792:551-558.
- Hanson, B., S. Orloff, **B. Sanden.** 2007. *Monitoring Soil Moisture for Irrigation Water Management.* Univ. California, Davis, Dept. Land, Air and Water Resources, UC ANR Publication 21635, 48 pp.
- Kallsen, C.E., **B. Sanden,** M.L. Arpaia. 2011. Early Navel Orange Fruit Yield, Quality, and Maturity in Response to Late-season Water Stress. Horticultural Science 46(8):1-7. 2011. Co
- Sanden, B.L.** A.E. Fulton, D.S. Munk, S. Ewert, C. Little, F. Anderson, J.H. Connell, M.D. Rivera, M. Orang and R.L. Snyder. 2012. California's Effort to Improve Almond Orchard Crop Coefficients. European Geosciences Union General Assembly 2012, Vienna, Austria, 22-27 April, 2012, Session SSS11.3: Soil and irrigation sustainability practices. Abstract EGU2012-7043 and presentation.

In addition are extension research project summaries to commodity workgroups and grant agencies, regular publications of the Kern Soil & Water and Kern Crop newsletters and on-going contributions to popular press outlets such as Western Farm Press, Ag Alert, and Ag Consultant magazines.

EXHIBIT "2"

**Appendix D-3: Table 4
Applied Crop Water Duties and Irrigation Efficiency Values
(DU = 80%)
Antelope Valley Area of Adjudication**

Crop	ET _c ¹ (in)	P _e ² (in)	ET _{AW} ³ (in)	DU ⁴ (%)	AW _c ⁵ (in)	AW _{er} ⁶ (in)	AW _{pr} ⁷ (in)	AW _T ⁸ (in)	AW _T ⁸ (ft)	E _{ir} ⁹ (%)
Alfalfa	62.10	1.77	60.33	80	76.42	0	2.0	77.42	6.5	81
Carrots	27.47	0.00	27.47	80	34.33	6	6.5	46.83	3.9	85
Grain	22.84	1.42	21.52	80	26.90	0	4.0	30.90	2.6	83
Melons/Squash	23.91	0.00	23.91	80	29.88	0	4.0	33.88	2.8	82
Onions	37.57	0.00	37.57	80	46.96	3	4.0	53.96	4.5	83
Orchard (Deciduous)	47.38	0.00	47.38	80	59.22	0	0.0	59.22	4.9	80
Pasture	66.19	1.77	64.42	80	80.53	0	0.0	80.53	6.7	80
Potatoes	24.02	0.00	24.02	80	30.03	0	4.0	34.03	2.8	82
Silage	27.31	0.00	27.31	80	34.14	0	4.0	38.14	3.2	82
Sugar Beets	40.55	0.00	40.55	80	50.68	0	4.0	54.68	4.6	81
Vineyard (Grapes)	35.33	0.00	35.33	80	44.16	0	0.0	44.16	3.7	80

¹ ET_c = K_c * ET_e, where ET_e = average ET_e for specified periods, based on data from Victorville CIMIS Station, 1994-2003; K_c values from Univ. California Cooperative Extension
² P_e = effective precipitation offsetting ET_c, up to 1/2 of the average precipitation, in Dec. - Feb., inclusive.
³ ET_{AW} = evapotranspiration of applied water = ET_c - P_e
⁴ DU = Irrigation distribution uniformity
⁵ AW_c = applied water for crop requirement = ET_{AW} / DU
⁶ AW_{er} = applied water for erosion control
⁷ AW_{pr} = applied water for field preparation and pre-irrigation
⁸ AW_T = applied crop water duty = AW_c + AW_{er} + AW_{pr}
⁹ E_{ir} = overall irrigation efficiency for beneficial uses = (ET_{AW} + AW_{er} + AW_{pr}) / AW_T

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EXHIBIT 3

Lane Ranch (Fairmont Property) – 175th Street West and Avenue A

¹ Year	² Crop	Acres	³ Applied Crop Water Duties (Appendix D-3: Table 4)					Year Total @ 80% Irrig Effic (ac-ft)	⁴ Calculated Total from KWH (ac-ft)	⁵ Grimway Flowmeter Totals (ac-ft)
			^{3a} ET _{AW} (inch)	^{3b} AW _C (inch)	^{3c} AW _T (inch)	Irrigation Demand @ 80% Irrig Effic (ac-ft)				
2000	barley	22.8	21.5	26.9	30.9	58.7	1213.1	371.9	No record	
	carrots	296	27.5	34.4	46.8	1154.4				
2001	onions	140	37.6	47.0	54.0	630.0	630.0	722.3	No record	
2002	carrots	160	27.5	34.4	46.8	624.0	624.0	597.3	No record	
2003	carrots	159	27.5	34.4	46.8	620.1	620.1	775.5	No record	
2004	carrots	160	27.5	34.4	46.8	624.0	624.0	711.5	No record	
2008	barley	159.3	21.5	26.9	30.9	410.2	992.9	715.4	720.1	
	carrots	149.4	27.5	34.4	46.8	582.7				
2009	carrots	159.3	27.5	34.4	46.8	621.3	1006.0	685.5	513.5	
	wheat	149.4	21.5	26.9	30.9	384.7				
2010	carrots	161.6	27.5	34.4	46.8	630.2	835.2	906.7	886.4	
	wheat	79.6	21.5	26.9	30.9	205.0				
2011	carrots	157.6	27.5	34.4	46.8	614.6	1030.8	688.4	794.8	
	oats	161.6	21.5	26.9	30.9	416.1				
2012	oats	157.6	21.5	26.9	30.9	405.8	821.9	164.3 (Power to Aug)	315.4 Mtr total "0" after June	
	safflower	161.6	21.5	26.9	30.9	416.1				

¹Farm Services Agency records used for crops and acreage 2000-2007. Crop maps provided by Grimway Enterprises used for 2007-2012. Crop year generally for 11/1 to 10/31.

²No planting dates provided. Winter grain crops and safflower are assumed to be brought to maturity. Water consumption will be less if these are terminated earlier. Spring planted carrots are common in the Antelope Valley. Water use calculated for an April 3 planting date.

³From: Beeby, R., T. Durbin, W. LEEVER, P. LEFFLER, J.C. SCALMANINI and M. WILDERMUTH. 2010. Summary Expert Report Phase3 -- Basin Yield and Overdraft, Antelope Valley Area of Adjudication Report prepared for a consortium of Antelope Valley water agencies. (Appendix D-3: Table 4: Applied Crop Water Duties, Irrigation Efficiencies and Agricultural Return Flows). Accepted crop water use numbers for the Antelope Valley, supplied by Jim Lewis 1/11/13.

^{3a}Evapotranspiration of applied water = ET_c - Effective precipitation (calculated at 0.5* rainfall, which is only applicable to winter crops)

^{3b}Applied water for crop requirement = ET_{AW} / DU where DU is the field distribution uniformity @ 80%

^{3c}Applied water total = APPLIED CROP WATER DUTY = ET_{AW} + water required for field prep, pre-irrigation and erosion control. For carrots this equals 12.5 inches.

⁴A total of 6 well pump tests were conducted from 1993 to 2011 on the Lane Ranch well to determine pumping efficiency. As part of this test the power demand in kilowatt-hours/acre-foot of water pumped is calculated. This calculation can be used to estimate the volume of water pumped over time if the groundwater level does not change much and the irrigation system (such as sprinklers) is maintained at a similar pressure as tested. For this property, an additional booster motor after the well is used to supply the pressure needed by the sprinklers. Four tests were conducted on this motor from 1998 to 2011; showing an average power requirement of 250 kwh/ac-ft. An average 495 kwh/ac-ft demand (for tests from 1993 to 2008) was used for the well for the above years of 2000-2010. Thus: Monthly ac-ft = Monthly So. Cal Edison KWH / (250+495)

The well motor was changed from a 150 HP to 200 HP sometime between 2010 and 2011 seasons and retested 9/13/11 @ 622 kwh/ac-ft. This number plus the 250 kwh/ac-ft average for the booster was used to calculate pumped ac-ft for 2011 and 2012. Thus: Ac-ft = KWH / (250+622).

EXHIBIT 4

Lane Home Ranch – 60th Street West and Avenue L

(Water use calculated by crop/item acreage/number multiplied by expected water duty)

		² Applied Crop Water Duties (Appendix D-3: Table 4)			
¹ Crop	^{1a} Acres	^{2a} ET _{AW} (inch)	^{2b} AW _C (inch)	^{2c} AW _T (inch)	Total Water Demand @ 80% Irrig Effic (ac-ft)
Alfalfa	1.67	60.3	75.4	77.4	10.77
North Pasture	8.43	64.4	80.5	80.5	56.57
South Pasture	13.64	64.4	80.5	80.5	91.51
³ Corrals/dust control	21.09	32.2	40.3	40.3	70.77
⁴ Cow-Calf Water	40 pair	15.0 gal/day/pair		160 days	0.29
⁴ Horses	40 head	10.0 gal/day/head		365 days	0.20
⁵ Mixed landscape, paths & trees	1.79	35.5	44.4	44.4	6.63
ANNUAL RANCH TOTAL					236.74

¹Pasture and corral acreage are basically permanent. Alfalfa planted most years.

^{1a}Acreage calculated using 2012 Google Map Satellite Image.

²From: Applied Crop Water Duties, Irrigation Efficiencies and Agricultural Return Flows (Appendix D-3: Table 4) (DU = 80%) Antelope Valley Area of Adjudication. Accepted crop water use numbers for the Antelope Valley, supplied by Jim Lewis 1/11/13.

^{2a}Evapotranspiration of applied water = ET_c - Effective precipitation (calculated at 0.5* rainfall, which is only applicable to winter crops)

^{2b}Applied water for crop requirement = ET_{AW} / DU where DU is the field distribution uniformity @ 80%

^{2c}Applied water total = APPLIED CROP WATER DUTY = ET_{AW} + water required for field prep, pre-irrigation and erosion control.

³Assumes water applied for dust control every other day at a rate equal to pasture water use.

EXHIBIT 5

Godde Hill Water Use

(Water use calculated by crop/item acreage/number multiplied by expected water duty)

¹ Crop / Item	^{1a} Acres	² Applied Crop Water Duties (Appendix D-3: Table 4)				Year	AVEC Deliveries (ac-ft)
		^{2a} ET _{AW} (inch)	^{2b} AW _C (inch)	^{2c} AW _T (Inch)	Total Water Demand (ac-ft)		
Deciduous & Conifer Trees	1.32	47.4	59.2	59.2	6.51	2000	15.65
³ Stock Water Troughs	0.0062	62.7	62.65	121.1	0.06	2001	14.82
⁴ Cow-Calf Water	40 pair	15.0	gal/day/pair	205 days	0.38	2002	17.51
ANNUAL RANCH TOTAL					6.95	2003	17.98
						2004	31.77
						2005	16.02
						2006	16.64
						2007	14.68
						2008	9.33
						2009	12.75
						2010	14.61
						2011	12.50
						2012	13.16

¹Trees and stockwater pans are permanent.

^{1a}Acreage calculated using 2012 Google Map Satellite Image.

²From: Applied Crop Water Duties, Irrigation Efficiencies and Agricultural Return Flows (Appendix D-3: Table 4) (DU = 80%) Antelope Valley Area of Adjudication. Accepted crop water use numbers for the Antelope Valley, supplied by Jim Lewis 1/11/13.

^{2a}Evapotranspiration of applied water = ET_c - Effective precipitation (calculated at 0.5* rainfall, which is only applicable to winter crops. For stockwater troughs considered 100% effective.)

^{2b}Applied water for crop requirement = ET_{AW} / DU where DU is the field distribution uniformity @ 80%. Stockwater troughs considered 100% uniform -- no inefficiency losses.

^{2c}Applied water total = APPLIED CROP WATER DUTY = ET_{AW} + water required for field prep, pre-irrigation and erosion control. Metal Stockwater Trough (Dryland Pan Evaporation) = Pasture AWC / 0.67 * 0.772 (Source: Personal communication from unpublished comparison of dryland pan evaporation and pasture pan evaporation in the San Joaquin Valley, Dave Scruggs. 2001. DWR.)

³Seven galvanized circular stockwater troughs 7 feet diameter.

⁴Applied Estimated stock water requirement for cow-calf pairs for beef and stock horses. Porath, M., A. Ruddell and T. Bedell. 2010. Use of water and other tools for improved grazing management. Cow-Calf Management Guide, Cattle Producers Library, Univ of Idaho Exten. p. 535-2.

Year
2000

EXHIBIT 6

AVEX Customer Water Use Report - 1976 thru 2009

Water Deliveries (Acre-Feet) - Location of AVEX Tensiostats

LANE, FRANK

LOCATION	Est					
	2012	2011	2010	2009	2008	2007
GODDE HILL RD So. OF AQ	13.16	12.5	14.61	12.75	9.33	14
60th W & L-11	6	6	5.5	6	6	
TOTAL:	19.16	18.5	20.11	18.75	15.33	28
TOTALS: 2011-2012:		37.66				

Year	60th St.	Godde Hill
2000	44.93	15.65
2001	16.95	14.82
2002	25.65	17.51
2003	30.38	17.98
2004	47.63	31.77
2005	41.59	16.02
2006	6	16.64
2007	6	14.68
2008	6	9.33
2009	6	12.75
2010	5.5	14.61
2011	6	12.50
2012	6	13.16

	2006	2005	2004	2003	2002	2001	2000
.68	16.64	16.82	31.77	17.98	17.51	14.82	15.65
6	6	41.59	47.63	31.38	25.65	16.95	44.93
.68	22.64	57.61	79.4	48.36	43.16	31.77	60.53
			2000-2004	263.77			

PROOF OF SERVICE
(C.C.P. 1013A, 2015.5)

STATE OF CALIFORNIA

I am employed in the County of Los Angeles, State of California. I am over the age of eighteen years and not a party to the within action; my business address is 10900 Wilshire Boulevard, Suite 920, Los Angeles, California 90024.

On January 31, 2013, I served the foregoing document, described as:

DECLARATION OF BLAKE MCCULLOUGH-SANDEN RE PHASE 4 TRIAL

on the interested parties in this action in the following manner:

 X **BY ELECTRONIC SERVICE AS FOLLOWS** by posting the document(s) listed above to the Santa Clara website in the action of the *Antelope Valley Groundwater Litigation*, Judicial Council Coordination Proceeding No. 4408, Santa Clara Case No. 1-05-CV-049053.

Executed on January 31, 2013 at Los Angeles, California.

 XX **(State)** I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

James W. Lewis

