| Exhibit No. | Description | Dr. Douglas R. Littlefield's Notations (From PWS-43A) | Groundwater (G), Subsidence (S), or Both (B) | Court's Webpage Link |
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| PWS - 43B | Harry R. Johnson, "Water Resources of the Antelope Valley, California," USGS WSP 278 (1911) | See discussion beginning on p. 36 ("Underground Water"), and particularly beginning on p. 61 ("Inexhaustibility of Artesian Supply"): "The acceptance of this theory [that artesian wells currently flow or used to flow with abundance] has resulted in most of the injurious practices with reference to artesian water in the valley, and too much emphasis can not be given to the statement that the artesian supply is not inexhaustible, and that if the riotous waste of water is continued during future settlement of the valley, wells now flowing will have to be pumped, and the water level in many of the present pumping wells may be expected to fall below the limit of profitable lift." | G | http://www.scefiling.org/filingdocs/214/89227/220062e_PWSx043Bxx1911x00x00xxUSGSxWSPx278xxWaterxResourcesxofxAntelopexValley.pdf |
| PWS - 44 | David G. Thompson, "The Mohave Desert Region, California: A Geographic, Geologic, and Hydrologic Reconnaissance," USGS WSP 578 (1929) | Only a relatively small part of this report (which is over 750 pages long) deals with the Antelope Valley. The Antelope Valley section begins on p. 289. On p. 315 in a discussion of groundwater in the AV, the report states: "A great volume of water is stored in the alluvial deposits that underlie the valley, but if enough water were pumped to irrigate 275,000 acres [the area the report estimates where groundwater is less than 150 feet deep] the water level would soon be lower so far that pumping for irrigation would be unprofitable. In the long run pumping must not exceed intake." | G | http://www.scefiling.org/filingdocs/214/89230/220064e_pPWSx044xx1929x01x01xxUSGSxWSPx578xxMohavexDesertxxAVxportionxofxreportx.pdf |
| 6-40-09 | Los Angeles County Ordinance No. 4457 (2/20/1945) | | | http://www.scefiling.org/filingdocs/214/89549/pws/6-D40-09.pdf |
| PWS - 45 | Letter from V.D. Fairchild, President of the Antelope Valley Soil Conservation District to the California Water Resources Board (11/14/45) | This letter is from the microfilmed records of the California Department of Water Resources. The first sentence of the letter states: "This is to request assistance from the Water Resources Board [of the State of California] I helping to arrive at a solution to the diminishing water supply in the | G | http://www.scefiling.org/filingdocs/214/89231/220066e_PWSx045xx1945x11x |

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| | | underground basin of the Antelope Valley. The Antelope Valley Soil Conservation District [whose president authored this letter] was formed in June, 1944, and has as its objective the solution of the above-mentioned problem." The letter then lists the steps the organization has taken to slow deal with diminishing groundwater. One of those steps, according to the letter, was to petition the LA County Board of Supervisors to pass an ordinance to "help retard the drilling of new wells for the irrigation of new land. This request was complied with by the passage of Ordnance No. 4457, a copy of which is attached." (No copy of the ordnance was attached to this copy of the letter.) | | 14xxAVxSoilxCons.xBoardxletterxtoxCAxWRCB.pdf |
| PWS - 46 | "Antelope Valley Proposal Tabled," Los Angeles Times (2/20/1946) | State investigation of Antelope Valley's water needs postponed -- opposition was from Inyo Co., which feared more Owens Valley water would go to Antelope Valley | G | http://www.scefiling.org/filingdocs/214/89231/220067e_PWSx046xx1946x02x20xAntelopexValleyxwaterxstudyxtabled.pdf |
| PWS - 47 | Frank Rutledge, "Water in Antelope Valley," Los Angeles Times (7/22/1946) | (Letter to the editor). LA Board of Supervisors proposes making new wells in AV illegal due to declining groundwater. Proposed law would say groundwater is declining rapidly. | G | http://www.scefiling.org/filingdocs/214/89231/220068e_PWSx047xx1946x07x22xLAxOrdinancexstopsxnewxAntelopexValleyxwells.pdf |
| PWS - 48 | "Report of the State Soil Conservation Commission for the Years 1944 to 1946," California Soil Conservation Commission (Nov. 1946) | The section of this report that discusses the Antelope Valley states (p. 38): "Definite advancement has been made by the district toward the alleviation of the depleted underground water supply." Report adds that water-spreading activities | G | http://www.scefiling.org/filingdocs/214/89231/220069e_PWSx048xx1946x11x |

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| | (Certified) | are taking place to recharge groundwater. | | 00xxCAxSoilxCons.xServicexreportxxpartx.pdf |
| PWS - 49 | State of California, State Water Resources Board, "Report on Application for Assistance, Antelope Valley Water Supply" (1947) | Note: This is the first of two reports in this pdf file. This first report is undated, but based on content, it was created sometime after 1946. The report is also unpaginated. The report states in the first sentence of the first page: "The request for assistance to prevent further ground water lower in the Antelope Valley was made by the Antelope Valley Soil Conservation District." The second page of the report, under the heading "Water Conservation," states: "Attempts are being made by the Antelope Valley Soil Conservation District to finds means of preventing further lowering of the ground water." | G | http://www.scefiling.org/filingdocs/214/89231/220070e_PWSx049xx1947x00x00xxRptxonxApplxforxAssistance.pdf |
| PWS - 50 | "The Antelope Valley Soil Conservation Programs," Calif. Dept. of Water Resources Report (5/1/1947) | NOTE: This is the second report in this pdf file, and although it is undated, a hand-written notation on the first page carries the date "1946," so this report probably was created in 1946 or shortly thereafter. The report discusses the work of the Soil Conservation Program, and on page 3, it states that in the course of the program, "The District has raised some $15,000 to expand this work, which it is felt should have a beneficial effect on the water table which is becoming lower each year. . . . The District is attempting to work out some practical means of preventing a further lowering of the ground water and at the same time make the most effective use of available water supplies. . . . No practical solution to the problem of how to prevent a further lowering of the water table has yet been developed." | G | http://www.scefiling.org/filingdocs/214/89231/220071e_PWSx050xx1947x05x01xxAVxSoilxConservationxProgram.pdf |
| PWS - 51 | "Report to the Assembly of the State Legislature on Water Supply of Antelope Valley in Los Angeles and Kern Counties Pursuant to House Resolution | The "Introduction" to this report states on p. 1: "A progressive decline in ground water levels, now averaging three feet per year over the portion of Antelope Valley from which extractions are heavy, has prompted a request that the State of California initiate an investigation of the situation." | G | http://www.scefiling.org/filingdocs/214/89232/220073e_PWSx051xx1947x05x |

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| | Number 101 of February 16, 1946," California Dept. of Water Resources, (May 1947) | This report is the result of that request. Entire report discusses this topic. | | 00xxReportxtoxCAxLegislaturexxAntelopexValleyxgroundwater.pdf |
| PWS - 52 | Letter from the California State Engineer to Julian Beck, a member of the California State Assembly, California Dept of Water Resources (6/4/1947) | This is a letter from the California State Engineer to the California Legislature responding to the Legislature's request for information on the water supply of the Antelope Valley. The letter describes the Antelope Valley and the then-existing water sources there, and then states with regard to groundwater: "The only way to eliminate the overdraft in the foreseeable future is to drastically reduce the amount of water consumed. This can be accomplished (1) by substituting a type of culture which consumes less water and (2) by reducing the area of land using water." | G | http://www.scefiling.org/filingdocs/214/89233/220075e_PWSx052xx1947x06x04xxStatexEngineerxletterxtoxAssemblymanxBeck.pdf |
| PWS - 53 | "Antelope Valley Asks New Crop Research Branch," Los Angeles Times (7/15/1947) | AV Agricultural and Conservation Committee seeks less water-consuming crops due to declining groundwater, which is declining quicker than recharge. Cites report CA DWR report showing declining AV groundwater levels. | G | http://www.scefiling.org/filingdocs/214/89233/220076e_PWSx053xx1947x07x15xAntelopexValleyxasksxforxnewxcropsxtoxsavexwater.pdf |
| PWS - 54 | "Water Supply Protection Held No. 1 Problem," Los Angeles Times (10/14/1947) | Testimony before CA legislature. CA DWR engineer says AV groundwater declining. He cites critical water situation in AV. | G | http://www.scefiling.org/filingdocs/214/89233/220077e_PWSx054xx1947x10x14xDiminishingxgroundwaterxcriticalxinxAntelopex |

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| | | | | Valley.pdf |
| PWS - 55 | "Antelope Valley Water Saving Project Backed," Los Angeles Times (3/29/1949) | Conservation of run-off and flood waters needed to help with AV supplies due to limited groundwater. AV soil conservation leaders endorse plan. | G | http://www.scefiling.org/filingdocs/214/89233/220078e_PWSx055xx1949x03x29xCatchingxfloodwaterxtoxsupplementxgroundwaterxadvocated.pdf |
| PWS - 56 | "Antelope Valley Opens Demonstration Farm," Los Angeles Times (4/2/1949) | UC Davis opens crop demonstration farm in AV to find new crops for AV; "Antelope Valley agricultural production is said to be restricted by only the limited water supply." | G | http://www.scefiling.org/filingdocs/214/89233/220079e_PWSx056xx1949x04x02xUCDxopensxdemoxfarmxinxAntelopexValleyxrexcropsxandxsavingxwater.pdf |
| PWS - 57 | Tom Cameron, "Southland Still Has Room for Both Homes and Farms," Los Angeles Times (6/3/1949) | Lack of adequate water has hampered development in AV, but crops that use less water have helped. | G | http://www.scefiling.org/filingdocs/214/89233/220080e_PWSx057xx1949x06x03xNewxcropsxforxAntelopexValleyxtoxsavexwater.pdf |
| PWS - 58 | "Desert Empire Ranch Rises in Antelope Valley," Los Angeles | Dream to expand AV settlement linked to water; new | G | http://www.scefiling.org/filingd |

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| | Times (8/13/1950) | Mitchell Ranch possible by piping in water from mountains. | | ocs/214/89233/220081e_PWSx058xx1950x08x13xMitchellxRanchxpipesxinxwater.pdf |
| PWS - 59 | Robert Harris, "City's Foresight Pays Off in Water and Power," Los Angeles Times (11/15/1950) | "Present critically water-shy regions of Southern California are the city of Santa Barbara, Antelope Valley and the Ventura-Oxnard areas." | G | http://www.scefiling.org/filingdocs/214/89233/220082e_PWSx059xx1950x11x15xLosxAngelesxsxwaterxplanningxxxandxAntelopexValleyxshortagesx.pdf |
| PWS - 60 | "Rain-Increasing Effort Assured in Antelope Valley," Los Angeles Times (11/22/1950) | Cloud seeding tried to offset inadequate water supplies and drought in AV. | G | http://www.scefiling.org/filingdocs/214/89233/220083e_PWSx060xx1950x11x22xAntelopexValleyxtoxtryxcloudxseeding.pdf |
| PWS - 61 | "Farmers' Corporation Tests 'Cloud Seeding'," Los Angeles Times (1/2/1951) | Cloud seeding tried to offset inadequate water supplies in AV. | G | http://www.scefiling.org/filingdocs/214/89233/220085e_PWSx061xx1951x01x02xAntelopexValleyxfarmersxtryxcloudxseeding.pdf |

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| PWS - 62 | "Castor Bean Crop Tested on Antelope Valley Land," Los Angeles Times (7/29/1951) | Castor beans tested as low water crop to save water in AV. | G | http://www.scefiling.org/filingdocs/214/89233/220086e_PWSx062xx1951x07x29xCastorxbeanxcropxtriedxtoxsavexwater.pdf |
| PWS - 63 | "Engineer Tells Feather River Project Value," Los Angeles Times (12/13/1952) | Feather River Project, now a part of the State Water Project, will benefit areas needing water, including AV. | G | http://www.scefiling.org/filingdocs/214/89233/220087e_PWSx063xx1952x12x13xStatexWaterxPlanxmayxbenefitxAntelopexValley.pdf |
| PWS - 64 | Del Schrader, "Antelope Valley Blooms with Various Projects," Los Angeles Times (12/14/1952) | Large growth in AV has been brought about by tapping underground water supplies. Article mostly cites rapid growth of area; little information on water. | G | http://www.scefiling.org/filingdocs/214/89233/220088e_PWSx064xx1952x12x14xAntelopexValleyxBlooms.pdf |
| PWS - 65 | "Antelope Valley Growth of 10,000 Anticipated," Los Angeles Times (9/7/1953) | Anticipated future AV growth dependent in part on State Water Project to bring water from Feather River Dam to meet future needs. | G | http://www.scefiling.org/filingdocs/214/89233/220089e_PWSx065xx1953x09x07xAntelopexValleyxanticipatedxgrowthxandx |

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| | | | | waterxneeds.pdf |
| PWS - 66 | "Antelope Valley Hope for MWD Water Dashed," Los Angeles Times (11/26/1953) | LA's MWD says it cant provide water to AV -- too costly and too difficult to deliver to AV. | G | http://www.scefiling.org/filingdocs/214/89233/220090e_PWSx066xx1953x11x26xMWDxwillxnotxprovidexwaterxtoxAntelopexValley.pdf |
| PWS - 67 | Ed Ainsworth, "Feather River Top Plan for Water," Los Angeles Times (6/6/1954) | State Water Project supplies will be costly for LA area, even without providing lift capacity to deliver water to high elevation areas like AV. | G | http://www.scefiling.org/filingdocs/214/89233/220092e_PWSx067xx1954x06x06xFeatherxRiverxplanxforxwater.pdf |
| PWS - 68 | "Water District Plans Pushed in Desert Area," Los Angeles Times (7/4/1954) | Palmdale and Littlerock (southern AV area) take steps to organize water districts because current water systems are inadequate to meet demands. | G | http://www.scefiling.org/filingdocs/214/89233/220093e_PWSx068xx1954x07x04xWaterxdistrictsxplannedxforxdesertxarea.pdf |
| PWS - 69 | J. Herbert Snyder, "Ground Water in California: The Experience of the Antelope Valley," (Jan. 1955) | This report is by J. Herbert Snyder, a professor in the College of Agriculture at UC Berkeley, is about 200 pages long and details all aspects of groundwater in the AV. Beginning on p. 86, there is a detailed discussion of overdraft in the valley, together with tables and charts setting forth the declines in groundwater over a 20+ year | G | http://www.scefiling.org/filingdocs/214/89235/220095e_PWS69a.pdf |

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| | | period. There are many examples of statements supporting the conclusion that groundwater is declining in the AV, such as the statement on p. 150: "Long-run overdraft, continuing at an increasing rate, is the ever-present problem of the Antelope Valley." The report concludes on p. 156: "Barring imported water, long-run overdraft in Antelope Valley and similarly characterized areas will continue until economic forces bring a balance between recharge and draft." | | http://www.scefiling.org/filingdocs/214/89236/220097e_PWS69OK.pdf |
| PWS - 70 | "Memorandum Report on Water Conditions in Antelope Valley in Kern, Los Angeles and San Bernardino Counties," California Dept. of Public Works, (Feb. 1955) | This report states on pages 8-9: "Ground water levels have steadily declined in Antelope Valley for the past quarter century, indicating that net use of ground water has continuously exceeded replenishment of the ground water supply." Other parts of this report detail drops in groundwater levels in relation to specific wells or areas. The conclusions to the report (beginning on page 26) reiterate the findings that groundwater levels are falling. | G | http://www.scefiling.org/filingdocs/214/89237/220099e_PWSx070xx1955x02x01xxCAxDWRxxWaterxConditionsxinxAntelopexValley.pdf |
| PWS - 71 | Frederick Hehr, "Water for Fighting Fire," Los Angeles Times (9/12/1955) | Areas like AV don't utilize all underground water resources (apparently a letter to the editor). | G | http://www.scefiling.org/filingdocs/214/89237/220100e_PWSx071xx1955x09x12xDesertxareasxsourcesxofxwater.pdf |
| PWS - 72 | Ed Ainsworth, "Water Plan Gives Cause for Concern," Los Angeles Times (1/11/1956) | Southern California must commit to taking certain amounts of State Water Plan supplies in 1976. State Engineer estimates cost for irrigation water in AV will be much higher than farmers can afford. | G | http://www.scefiling.org/filingdocs/214/89237/220101e_PWSx072xx1956x01x11xStatexwaterxplanxandxfuturexcommitment |

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| PWS - 73 | Ed Ainsworth, "Monumental Water Plan Reviewed by State Board," Los Angeles Times (5/4/1956) | State Water Plan details by officials; plan is huge and includes service to Antelope Valley. | G | http://www.scefiling.org/filingdocs/214/89237/220102e_PWSx073xx1956x05x04xStatexwaterxplan.pdf |
| PWS - 74 | "Full Use of All Available Water in 15 Years Seen," Los Angeles Times (9/14/1956) | LA will be using all available water supplies from Colorado River, Owens Valley, and local supplies within 15 years. | G | http://www.scefiling.org/filingdocs/214/89237/220103e_PWSx074xx1956x09x15xLAxtoxbexusingxallxwaterxwithinx15xyears.pdf |
| PWS - 75 | "Antelope-East Kern Water District Studied as Step to Meet Shortage," Los Angeles Times (11/23/1958) | Water district proposed to meet water shortages; Antelope Valley-East Kern Water Assoc. President Virgil Davis says: "We know the water tables are dropping, in some places worse than others." | G | http://www.scefiling.org/filingdocs/214/89237/220104e_PWSx075xx1958x11x23xAVEKxformationxdiscussedxrexdroppingxgroundwater.pdf |
| PWS - 76 | L.C. Dutcher, "Ground-Water Inventory for 1958, Edwards Air Force Base, California," U.S. Dept. of the Interior, USGS OFR 60-40 (1959) | See p. 7 (section 4), where dropping water levels in various areas around Edwards Air Force Base are noted in different wells. See p. 7 (section 5), which discusses estimated depletion of ground-water. On p. 17, OFR 60-40 states: "Snyder (1955) estimated that through 1951 the cumulative overdraft (amount that discharge has exceeded runoff) of | G | http://www.scefiling.org/filingdocs/214/89238/PWS-076.pdf |

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| | | ground water in Antelope Valley, mainly in Lancaster basin, was about 1,800,000 acre-feet. Thus, the gradually diminishing supply of ground water in storage in Lancaster basin is critical to the Air Force. . . ." Beginning on p. 35 is a discussion of the impact of declining groundwater levels on future supplies for EAFB and the "longevity of the Air Force supply." The report also notes that in several regions around the Base, groundwaters had declined over several previous years. The report states on p. 44: "In general, as in the Main Base and Rosamond Lake areas, the graphs [of groundwater in the Lancaster farmed areas] indicate very large seasonal fluctuations of water levels and an overall decline for the period 1951-1958." | | |
| PWS - 77 | Charles Cohen, "Great Valley Has Progress Habit," Los Angeles Times (3/22/1959) | Lots of detail about rapid growth of AV. | G | http://www.scefiling.org/filingdocs/214/89238/220107e_PWSx077xx1959x03x22xAntelopexValleyxgrowthxpredicted.pdf |
| PWS - 78 | "Brown Restates Water Aim in Lancaster Talk," Los Angeles Times (6/7/1959) | Governor Brown discusses importance of State Water Project to AV: "The governor told his audience that Antelope Valley's underground water basin, now being depleted, will be supplemented by Feather River water by 1971. . . ." | G | http://www.scefiling.org/filingdocs/214/89238/220108e_PWSx078xx1959x06x07xGovxBrownxcitesxdecliningxAntelopexValleyxgroundwaterxlevels.pdf |
| PWS - 79 | Fred Beck, "California City Report," Los Angeles Times | Promo piece for California City in AV; "and with The Greater Antelope Valley destined for immense industrial expansion -- California City will emerge as a major | G | http://www.scefiling.org/filingdocs/214/89238/ |

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| | (9/27/1959) | residential community." | | 220109e_PWSx079xx1959x09x27xCaliforniaxCityxreportxcitesxgrowth.pdf |
| PWS - 80 | "U.S. Removes Million Acres from Farming," Los Angeles Times (10/3/1959) | BLM reclassified lands from agricultural to non-agricultural. According to the BLM, "50,000 acres of private land in Antelope Valley are being irrigated, with the result that demand exceeds supply and the water table is falling." | G | http://www.scefiling.org/filingdocs/214/89238/220110e_PWSx080xx1959x10x03xUSxremovesxmillionxacresxfromxfarmingxxdecliningxgroundwaterx.pdf |
| PWS - 81 | W.R. Moyle, Jr, "Ground-Water Inventory for 1960, Edwards Air Force Base, California," USGS OFR 61-0108 (1961) (Certified) | Summary and Conclusions (p. 5), section 2 (Water-level fluctuations), notes that groundwater in most parts of the base has been declining for several years, and starting in 1959, the rate of decline has increased. Section 3 (Ground water in storage) on p. 6 states: "The total depletion of ground water in storage during 1952-61 has been estimated to be about 84,600 acre-feet (table 5)." | G | http://www.scefiling.org/filingdocs/214/89238/PWS-081.pdf |
| PWS - 82 | Ray Zeman, "Next Big Boom in North L.A. County," Los Angeles Times (1/17/1961) | "Aircraft plants today, completion of a freeway to the Antelope valley by the mid-1960s and delivery of Feather River water by 1975" will lead to boom in AV area. | G | http://www.scefiling.org/filingdocs/214/89238/220112e_PWSx082xx1961x01x17xnorthxLAxCountyxboomxpredicted.pdf |
| PWS - 83 | "Rangeland Dying, Orchards Hit by Southland Dry Spell," Los | Drought is causing problems; rainfall needed to replenish underground water supplies. | G | http://www.scefiling.org/filingdocs/214/89238/ |

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| | Angeles Times (1/18/1961) | | | 220113e_PWSx083xx1961x01x18xAntelopexValleyxdroughtxcausesxmorexgroundwaterxdeclines.pdf |
| PWS - 84 | Ray Herbert, "Master Plan for North County Set," Los Angeles Times (3/30/1961) | Huge growth for AV predicted by 1980; partly predicated on availability of imported water from State Water Project by 1971. | G | http://www.scefiling.org/filingdocs/214/89238/220114e_PWSx084xx1961x03x30xNorthxLAxCountyxplannedxgrowth.pdf |
| PWS - 85 | Ray Herbert, "2-Year Schedule Step-up in Feather River Project Seen," Los Angeles Times (6/5/1961) | Timetable for State Water Plan construction discussed; canal construction in AV planned to begin in 1965. | G | http://www.scefiling.org/filingdocs/214/89238/220115e_PWSx085xx1961x06x05xStatexWaterxPlanxbenefitsxdiscussed.pdf |
| PWS - 86 | Howard Gingold, "Desert Promoters' Claims Produce Varied Reactions," Los Angeles Times (6/9/1961) | Claims of developers discussed in relation to adequate water supplies for proposed projects; state water officials say available water in AV dependent on runoff from surrounding hills and thus is dependent on local rainfall. | G | http://www.scefiling.org/filingdocs/214/89238/220116e_PWSx086xx1961x06x09xDesertxlandxpromotionsxandxwater.pdf |
| PWS - 87 | Charles Hillinger, "North County Envisioned as 'Connecticut of | Northern LA County predicted to be suburb of LA like | G | http://www.scefiling.org/filingd |

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| | Southland'," Los Angeles Times (11/20/1961) | Connecticut is suburb of NYC. | | ocs/214/89238/220117e_PWSx087xx1961x11x20xAntelopexValleyxpredictedxtoxbecomexsuburbia.pdf |
| PWS - 88 | J.E. Weir, Jr., "Ground-Water Inventory for 1961, Edwards Air Force Base, California," USGS OFR 62-0152 (1962) (Certified) | Summary and Conclusions, section 3 (Ground water in storage) on p. 6 states: "Depletion of ground water in storage [beneath and adjacent to the Base] during the period from March 1961 to March 1962 was about 8,500 acre-feet. The total depletion of ground water in storage during 1952-62 has been estimated to be about 93,100 acre-feet." Under the heading "Water-level Fluctuations" (on p. 15) the report states: "In general, each succeeding year, for the period of record, the highest annual water level [in wells] has been lower than the high for the previous year. Similarly, the lowest annual water level also has been lower each succeeding year." Under the heading "Ground Water in Storage, 1961 and 1962" (on p. 19) the report states: "The total depletion [in groundwater storage] for 1952-62, as shown by table 4, is about 93,100 acre feet. Depletion in all storage units except North Muroc for the same period was 84,100 acre-feet (fig. 5) and is reflected by an average water-level decline of about 24 feet for the 10-year period." | G | http://www.scefiling.org/filingdocs/214/89239/PWS-088.pdf |
| PWS - 89 | "Report on Feasibility of Serving the Antelope Valley-East Kern Water Agency From The State Water Facilities," Carley V. Porter Papers, California State Archives (Jan. 1962). (Certified) | This is a report from the California Department of Water Resources on the feasibility of serving AVEK from State Water Project supplies. The report states at p. 2 that AVEK was formed specifically to contract with the State of California for State Water Project supplies. Under the heading "Restrictions on Future Development," (p. 8), the report states: "It appears that without supplemental water supplies, the future development of the area will be severely hampered, as existing local water supplies are presently being substantially overdrawn." Under the heading (p. 18) | G | http://www.scefiling.org/filingdocs/214/89239/PWS-089.pdf |

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| | | "Projections of Irrigated Agricultural Acreage," the report states: "As long as overdrafting of the ground water basins persists and ground water levels continue to decline, irrigated acreage will be forced out of production as pumping depths exceed economic limits." Under the heading "Irrigated Agriculture" (p. 16), the report states: "In general, it appears that the expansion of population and urbanization and the continued lowering of ground water tables have begun to affect irrigated agricultural production." Under "Conclusions" (p. 70), the report states: "The ground water basins within the area encompassed by the boundaries of the Antelope Valley-East Kern Water Agency appear to have been subjected to a substantial amount of overdrafting for a considerable number of years, and are currently being overdrawn at the rate of 94,000 acre-feet per year." | | |
| PWS - 90 | Ray Herbert, "Inland Empire Boosters Assail Growth Forecast," Los Angeles Times (2/18/1962) | AV Progressive Assn. disagrees with study that says North County potential not as good as others say; proponents of AV claim State Water Project and Antelope Valley Freeway will make growth boom. | G | http://www.scefiling.org/filingdocs/214/89239/220121e_PWSx090xx1962x02x18xAntelopexValleyxpredictedxgrowth.pdf |
| PWS - 91 | Fred Beck, "Antelope Valley -- Magic Land at L.A. Back Door," Los Angeles Times (3/11/1962) | AV virtues extolled; future growth predicted. | G | http://www.scefiling.org/filingdocs/214/89239/220122e_PWSx091xx1962x03x11xAntelopexValleyxvirtuesxlisted.pdf |
| PWS - 92 | "Attention Now on North Edwards as Hub of 'Upper | Virtues of northern part of AV extolled; ample groundwater | G | http://www.scefiling.org/filingd |

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| | Valley' Growth," Los Angeles Times (3/11/1962) | supplies predicted based on test wells. | | ocs/214/89239/220123e_PWSx092xx1962x03x11xNorthxEdwardsxforcastedxgrowthxincludesxplentyxofxwater.pdf |
| PWS - 93 | "Central Water Agency Plan Wins Support," Los Angeles Times (3/12/1962) | Kern water agency officials approve participating with nearby areas to form AVEK to contract for State Water Project water supplies. | G | http://www.scefiling.org/filingdocs/214/89239/220124e_PWSx093xx1962x03x12xWaterxagencyxproposedxforxMojavexandxEastxKernxarea.pdf |
| PWS - 94 | Ray Herbert, "Antelope Valley Boom Predicted at Meeting," Los Angeles Times (4/5/1962) | Businessmen predict AV growth; deny lack of adequate water: "'Forget that ballyhoo about our lack of water,' said R.B. McNutt, president of the Antelope Valley Progress Assn. 'It just isn't so.'" Also, state official says AV "has the potential for population and economic growth if it receives supplemental supplies of water." | G | http://www.scefiling.org/filingdocs/214/89239/220125e_PWSx094xx1962x04x05xAntelopexValleyxboomxpredictedxifxenoughxwaterxfound.pdf |
| PWS - 95 | "Antelope Valley Sets Water Problem Votes," Los Angeles Times (4/22/1962) | One purpose of forthcoming election is to "determine annexation of the Acton area to the Antelope Valley-East Kern Water Agency, an agency established to contract for supplemental water rom the Feather River Aqueduct." | G | http://www.scefiling.org/filingdocs/214/89239/220126e_PWSx095xx1962x04x22xAntelopexV |

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| | | | | alleyxsetsxwaterxproblemxvotes.pdf |
| PWS - 96 | Jack Johnson, "Water Threat Minimized," Los Angeles Times (5/6/1962) | Water delivery to AV from State Water Project might be delayed until 1980 or later, depending on construction planning for parts of overall project. | G | http://www.scefiling.org/filingdocs/214/89239/220127e_PWSx096xx1962x05x06xStatexwaterxtoxAntelopexValleyxmayxbexdelayed.pdf |
| PWS - 97 | "Resolution No. 62-56, A Resolution Authorizing the Filing of a Request Designating the Chief Engineer & General Manager to Act on Behalf of the Antelope Valley-East Kern Water Agency as the Applicant for a Request for Preliminary Determination of Eligibility for Financial Assistance under the Davis-Grunsky Act," CA Dept of Water Resources papers, CA State Archives, 7/30/1962. (Certified) | This document is from the papers of the California Department of Water Resources at the California State Archives. It is a request for financial aid for AVEK. Part of the introductory matter to the resolution states: "WHEREAS, it is urgent that this water [supplies lost to evaporation and waste water that could be stored] be conserved because of a large over-draft of the ground-water basin...." | G | http://www.scefiling.org/filingdocs/214/89239/220128e_PWSx097xx1962x07x30xxAVEKxResolutionx62x56.pdf |
| PWS - 98 | "Southland: Antelope Valley to Mark Signing of Water Pact," Los Angeles Times (9/20/1962) | Ceremony scheduled for AVEK signing of contract to obtain State Water Project water supplies. AVEK requested 120,000 AF, but this amount will not be delivered until 1990; initial deliveries to be 20,000 AF in 1972. | G | http://www.scefiling.org/filingdocs/214/89239/220129e_PWSx098xx1962x09x20xAntelopexValleyxEastxKernxtoxcontractxf |

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| PWS - 99 | "Report on Assembly Bill 776 (1961 General Session)," Carley V. Porter Papers, CA State Archives, 11/14/1962 | This is a report on a California Assembly bill regarding a modification of the geographic boundaries of AVEK and the possible exclusion of two areas from AVEK. The report includes testimony from Randle Lunt, General Manager and Chief Engineer of AVEK, stating (p. 2) that one of the purposes of AVEK was the "prevention of destruction of the local ground water basin which currently is being overdrafted...." There was debate on the rate that groundwater was dropping in different parts of the AV area. A formal statement by Lunt was included beginning on p. 14. Part of that statement said one of the reasons for the formation of AVEK in 1959 was: "To take steps which would prevent the destruction of the local [ground] water basin which is be depleted by removing more water from the basin than is replenished by rainfall and surface flow." | G | http://www.scefiling.org/filingdocs/214/89239/PWS-099.pdf |
| PWS - 100 | J.E. Weir, Jr., "Ground-Water Inventory for 1962, Edwards Air Force Base, California," USGS OFR 63-0136 (1963) (Certified) | Under the heading "Summary and Conclusions," in the section entitled "Ground water in storage" (p. 6), the report states: "Depletion of ground water in storage during the period March 1962 to March 1963 was about 15,200 acre-feet. The total depletion of ground water in storage during the period 1952-63 is estimated to be about 108,300 acre-feet." Under the heading "Water-Level Fluctuations" on p. 16, the report states: "In general, each succeeding year, for the period of record, the highest annual water level has been lower than the high for the previous year. Similarly, the lowest annual water level also has been lower each succeeding year." | G | http://www.scefiling.org/filingdocs/214/89239/PWS-100.pdf |
| PWS - 101 | "Peace Seen Near in Water Dispute," Los Angeles Times (1/10/1963) | South Antelope Valley Water Basin Association officials meet with AVEK officials to resolve dispute over AVEK annexation of areas. | G | http://www.scefiling.org/filingdocs/214/89240/220133e_PWSx101xx1963x01x |

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| PWS - 102 | "Antelope Valley Sees Water Dispute Peace," Los Angeles Times (2/4/1963) | Palmdale Irrigation District signs agreement with AVEK to end dispute. Palmdale will end suit to nullify legislative act that formed AVEK. | G | http://www.scefiling.org/filingdocs/214/89240/220134e_PWSx102xx1963x02x04xWaterxgroupsxseekxcompromisexwithxAVEK.pdf |
| PWS - 103 | Ray Herbert, "Southland in New Fight over Route for Water," Los Angeles Times (2/10/1963) | Dispute over route to deliver State Water Project water between central LA County communities and those communities that are on the edges of the county. | G | http://www.scefiling.org/filingdocs/214/89240/220135e_PWSx103xx1963x02x10xStatexWaterxPlanxroutexdebated.pdf |
| PWS - 104 | Ray Herbert, "Feather River Battle Rages Outside of L.A.," Los Angeles Times (2/11/1963) | Dispute over route of delivery of State Water Project supplies pits those who back AV route against others in central LA County. | G | http://www.scefiling.org/filingdocs/214/89240/220136e_PWSx104xx1963x02x11xStatexWaterxPlanxroutexdebatedxPt.xII.pdf |
| PWS - 105 | Randle Lunt, "Water is Mined Like Gold, and It's Just as Precious," Los Angeles Times | Article by Randle Lunt, Chief Engineer for AVEK. Lunt says water used to flow freely from artesian wells; now this no longer happens due to groundwater depletion. He says: | G | http://www.scefiling.org/filingdocs/214/89240/ |

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| | (3/29/1963) | "More water is annually pumped from the basin than is replaced by rainfall to support the population and agriculture." He adds: water table is going down about 5 feet per year. State Water Project water will offset declining groundwater. | | 220137e_PWSx105xx1963x03x29xAntelopexValleyxgrowsxbutxwaterxdeclinesxpredicted.pdf |
| PWS - 106 | "Antelope Could Repeat the Saga of San Fernando Valley Growth," Los Angeles Times (3/29/1963) | Water to be bought from State Water Project will help AV grow. | G | http://www.scefiling.org/filingdocs/214/89240/220138e_PWSx106xx1963x03x29xAntelopexValleyxgrowthxpredicted.pdf |
| PWS - 107 | Doug Mauldin, "Area Facing Threat of Water Shortage," Los Angeles Times (7/28/1963) | LA County Supervisor Burton Chace says groundwater levels in LA County basins to be lower this fall, including AV. | G | http://www.scefiling.org/filingdocs/214/89240/220139e_PWSx107xx1963x07x28xLAxareasxfacingxdecliningxwellxlevels.pdf |
| PWS - 108 | L.C. Dutcher and G.F. Worts, Jr., "Geology, Hydrology, and Water Supply of Edwards Air Force Base, Kern County, California," USGS OFR 63-0146, (8/25/1963) (Certified) | The "Abstract" at the front of the report (p. 1) states: "Edwards Air Force Base occupies the northern part of Antelope Valley, California. As a result of large-scale and increasing agricultural pumping in the valley, the net draft has exceeded the perennial supply since about 1930 and was about 170,000 acre-feet in 1951 -- at least three times the estimated yield. As a result, there has been a continuing depletion of ground water stored in all the unconsolidated deposits, including the principal aquifers contained in the younger and older alluvium." The abstract then offers specific examples and then continues: "The prolonged | G | http://www.scefiling.org/filingdocs/214/89240/PWS-108.pdf |

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| | | overdraft in Antelope Valley has resulted in cessation of flowing wells, which in 1911 could be obtained in an area of about 240 square miles south of the Air Force Base. Approximately 70 percent of the total depletion in storage beneath the southern part of the Base is attributed to drainage of ground water toward this pumping depression." | | |
| PWS - 109 | "State Aid Sought to Reclaim Waste Water," Los Angeles Times (10/20/1963) | LA County officials seek money to build waste water facility to offset declining groundwater in AV area. LA County Supervisor Warren Dorn says the treatment plant would "establish a new water source in an area where the water table is diminishing constantly. . . ." | G | http://www.scefiling.org/filingdocs/214/89240/220141e_PWSx109xx1963x10x20xWastexwaterxplansxtoxoffsetxdecliningxwellxlevels.pdf |
| PWS - 110 | "Dorn Sees Bright Future: 'Long-Range Plans in Effect to Assure Orderly Growth'," Los Angeles Times (4/10/1964) | LA County Supervisor Warren Dorn says master planning will accommodate AV growth. This master planning includes State Water Project water supplies. | G | http://www.scefiling.org/filingdocs/214/89240/220142e_PWSx110xx1964x04x10xAntelopexValleyxgrowthxpredicted.pdf |
| PWS - 111 | Randle Lunt, "Water, Land for a Million People," Los Angeles Times (4/10/1964) | Article is by Randle Lunt, Chief Engineer for AVEK. "At this point there is no disagreement on the need for imported water. . . . In nearly all other areas [in AVEK but not in the extreme northerly end of AVEK] the need for receiving water from the agency [AVEK] by 1972 is now apparent." | G | http://www.scefiling.org/filingdocs/214/89240/220143e_PWSx111xx1964x04x10xNeedxtoximportxwaterxtoxAntelopexValleyxseen.pdf |

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| PWS - 112 | "Water is the Key to Future Development," Los Angeles Times (4/10/1964) | "The economic development of the Antelope Valley is directly dependent upon the availability of adequate supplies of good, pure, potable water." The Palmdale Irrigation District "overlies a groundwater basin which "is being depleted by heavy pumping in many portions of the Antelope Valley." | G | http://www.scefiling.org/filingdocs/214/89240/220144e_PWSx112xx1964x04x10xWaterxkeyxtoxfuturexAntelopexValleyxgrowth.pdf |
| PWS - 113 | Ray Herbert, "State Races Calendar to Bring Water to Southland," Los Angeles Times (6/28/1964) | State Water Project rushing to completion on time. Water to be delivered to AV and other places in southern California. | G | http://www.scefiling.org/filingdocs/214/89240/220145e_PWSx113xx1964x06x28xStatexeffortsxtoxbringxwaterxtoxLA.pdf |
| PWS - 114 | "Antelope Valley-East Kern Water Agency, Advisory Committee *ad hoc*, Syllabus and Supplement, Carley V. Porter Papers, California State Archives, rev. 7/27/1964. (Certified) | This is a report in the Carley V. Porter papers (Porter was a member of the California State Legislature and headed the committee on water) detailing materials reviewed the the AVEK Advisory Committee. The Committee was charged with assessing how to finance a conveyance system for water from the State Water Project as well as other administrative and financial issues. The Committee presented its findings in the form of a resolution detailing information from witnesses, documents reviewed, etc. The materials bound in the report with the resolution included many documents and testimonies, including testimony from Lee C. Dutcher, who told the Committee (p. 19): "Out preliminary appraisal of ground-water recharge to the area [AV], and the estimate by others, including the Department of Water Resources and studies at Edwards Air Force Base, indicate that the ground-water overdraft has been severe for many years." | G | http://www.scefiling.org/filingdocs/214/89241/PWS-114.pdf |

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| PWS - 115 | J.E. Weir, Jr., "Ground-Water Inventory for 1963, Edwards Air Force Base, California," USGS OFR 65-0173, (3/1/1965) (Certified) | Summary and Conclusion section beginning on p. 6 states (at p. 7 in relation to "Ground water in storage"): "Ground water in storage beneath and adjacent to the Base in 1952 was estimated by Dutcher (1958, p. 40) to be 1,500,000 acre-feet. Depletion of ground water in storage during the period March 1963 to March 1964 was about 11,200 acre-feet. Depletion during the period 1952-64 is about 119,500 acre-feet, an average of about 9,960 acre-feet per year." | G | http://www.scefiling.org/filingdocs/214/89241/PWS-115.pdf |
| PWS - 116 | "Agenda Item 10c, Staff Reports & Recommendations" [agenda for Water Committee meeting of the California Legislature], Carley V. Porter Papers, California State Archives, 7/13/1965. (Certified) | This document is from the Carley V. Porter Papers at the California State Archives. Porter was a California legislator and the head of the California Legislature's water committee (assembly). The document is a copy of an agenda for a meeting of the Water Committee of the California State Legislature on July 13, 1965. The agenda item deals with "Policy and Objectives of the Antelope Valley-East kern Water Agency." The agenda item sets forth the history of AVEK, noting: "Beginning in 1952, committees of businessmen and women worked diligently to bring about a consciousness of the serious water condition which was developing because of the rapid rate of decline of the ground water levels [in the Antelope Valley]." The agenda also quotes verbatim a 1959 letter asking the legislature to form AVEK, one purpose of which was to recharge the groundwater levels in the AV. The agenda item also contains a statement by AVEK's Chief Engineer and General Manager Randle B. Lunt: "Comparison of the latest groundwater elevations made available by the USGS with the groundwater elevations shown on a map published in 1962, show that vast quantities of water have been removed far in excess of the normal replenishment rate. The overdraft is enormous. Those of us who were aware of the groundwater conditions and viewed with alarm in 1948 the rate of the lowering groundwater levels, now have greater concern. Water conditions in marginal areas are now more serious than we anticipated." | G | http://www.scefiling.org/filingdocs/214/89241/PWS-116.pdf |

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| PWS - 117 | F.W. Giessner and S.G. Robson, "Ground-Water Inventory for 1964, Edwards Air Force Base, California," USGS OFR 65-0062 (10/21/1965) (Certified) | Under the heading "Summary and Conclusions," in the section entitled "Ground water in storage" (p. 7), the report states: "Depletion of ground water in storage during the period March 1964 to March 1965 is about 15,800 acre-feet. Depletion during the period 1952-65 is about 135,300 acre-feet, an average of about 10,400 acre-feet per year." | G | http://www.scefiling.org/filingdocs/214/89241/PWS-117.pdf |
| PWS - 118 | Tom Cameron, "West Growth Still Vigorous," Los Angeles Times (4/17/1966) | Water from State Water Project will fuel more growth in southern California. "When the water comes, so will the fulfillment of Antelope Valley's destiny." | G | http://www.scefiling.org/filingdocs/214/89241/220151e_PWSx118xx1966x04x17xAntelopexValleyxgrowthxhinderedxbyxwaterxlimits.pdf |
| PWS - 119 | "State Asked to Build Reservoir," Los Angeles Times (8/31/1966) | AVEK asks California Department of Water Resources to build "a mammoth reservoir for the agency." Reservoir may be part of State Water Project. | G | http://www.scefiling.org/filingdocs/214/89241/220152e_PWSx119xx1966x08x31xAVEKxasksxstatextoxbuildxlargexreservoir.pdf |
| PWS - 120 | F.W. Giessner and J.A. Westphal, "Ground-Water Inventory for 1965, Edwards Air Force Base, California," USGS OFR 66-0049 (11/3/1966) (Certified) | Under the heading "Summary and Conclusions," in the section entitled "Ground water in storage" (p. 7), the report states: "Depletion of ground water in storage during the period April 1, 1965, through March 31, 1966, was about 10,200 acre-feet. Depletion during the period 1952-66 is about 145,500 acre-feet, an average of about 10,400 acre-feet per year." | G | http://www.scefiling.org/filingdocs/214/89241/PWS-120.pdf |
| PWS - 121 | California DWR Bulletin 91-12, | This report was prepared under a joint agreement with the | G | http://www.scef |

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| | "Water Wells in the Eastern Part of the Antelope Valley Area, Los Angeles County, California," CA Dept. of Water Resources, 12/1/1966 | USGS. The report states on p. 10: "The average annual recharge [in the Antelope Valley] is less than the pumpage; consequently, in excessively pumped areas the water levels have declined." | | iling.org/filingdocs/214/89241/220154e_PWSx121xx1966x12x00xxCAxDWRxBulletinx91x12xxpartxxxxxWellsxinxAV.pdf |
| PWS - 122 | S.J. Tyley, "Ground-Water Inventory for 1966, Edwards Air Force Base, California," USGS OFR 67-0223 (1967) (Certified) | The "Summary and Conclusions" section, under the subheading "Ground-water depletion" (p. 1), states: "The estimated depletion of ground water in storage during the period April 1, 1966, to March 31, 1967, is 13,000 acre-feet." Under the heading "Ground-Water Depletion" on the last page of the report (unpaginated), the report also states: "Giessner and Westphal (1966, p. 16) estimated the ground-water depletion for the period 1953-66 to total 146,000 acre-feet per year. However, since 1960 the average rate of depletion has been nearly 13,000 acre-feet per year. . . . The total ground-water depletion since 1952 is about 160,000 acre-feet, or only slightly more than 10 percent of the 1,500,000 acre-feet in storage in 1952." | G | http://www.scefiling.org/filingdocs/214/89241/PWS-122.pdf |
| PWS - 123 | "Pact Will Provide More Water for Southland in 1990s," Los Angeles Times (2/28/1967) | Future enlargement of California Aqueduct to provide more water to southern California will be possible under new agreement between State and contracting agencies (including AVEK) which will permit additions to system and greater costs. | G | http://www.scefiling.org/filingdocs/214/89241/220156e_PWSx123xx1967x02x28xPactxwithxStatextoxallowxSWPxexpansion.pdf |
| PWS - 124 | R.M. Bloyd, Jr., , "Water Resources of the Antelope Valley-East Kern Water Agency Area, California," USGS OFR | The title page to this report states that it was "Prepared in cooperation with the Antelope Valley-East Kern Water Agency." The "Abstract" to this report (p. 1) states: "The Antelope Valley-East Kern Water Agency (AVEK) area, | G | http://www.scefiling.org/filingdocs/214/89241/ |

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| | (8/28/1967) | most of which is within the Mojave Desert region of southern California, lacks adequate water resources to sustain the existing rate of ground-water pumpage for irrigation, industrial, and domestic use. However, by 1972 the California Aqueduct, a part of the California Water Plan, will be completed and will begin to convey water from northern California into the area." On p. 2, the report adds: "A long-existing condition of ground-water overdraft in the AVEK area has become an increasingly serious problem as water levels in wells annually decline." On p. 49, the report states: "As irrigated agriculture expanded in the AVEK area, pumping from ground-water storage increased greatly, and overdraft has become increasingly serious." Details from historical reports are then added. | | PWS-124.pdf |
| PWS - 125 | R.M. Bloyd, Jr, "Water Resources Inventory for 1966 Antelope Valley-East Kern Water Agency Area, California," USGS OFR 67-0020 (11/14/1967) (Certified) | USGS has established an annual basin water management program to assist AVEK, which includes collecting groundwater data. This report contains the first year's information. "Figures 5 and 6 show contours to depth of ground water and average annual water-level decline for spring 1967 in the main aquifer." (p. 13). The report then provides details on the rate of groundwater decline in different parts of the AVEK area. (p. 13). The report adds: "If this trend [groundwater declines] continues, and economic pumping limits are reached, parts of the AVEK area will have to be supplied with supplemental water." (p. 14). | G | http://www.scefiling.org/filingdocs/214/89241/PWS-125.pdf |
| PWS - 126 | "Ground Water and Waste Water Quality Study, Antelope Valley, Los Angeles and Kern Counties," CA Dept of Water Resources report (Mar. 1968) | This report was to the Lahontan Regional Water Quality Control Board (No. 6). The report states on p. 7: "Due to extensive and increasing agricultural pumping, however, ground water levels in the [Antelope] Valley have declined steadily, particularly in the Lancaster Subarea. For example, wells about one mile northeast of Palmdale have dropped about 180 feet between 1927 and 1966, an average of 4.6 feet a year. Long-term hydrographs are available for a dozen wells in Antelope Valley and they indicate a steady | G | http://www.scefiling.org/filingdocs/214/89241/220159e_PWSx126xx1968x03x00xxGroundwaterxandxWastexWaterxStudyxx |

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| | | decline in water level elevations over that 39-year period." The report adds that imported state water may have slowed this rate of decline. | | AVxxpartx.pdf |
| PWS - 127 | J.H. Koehler, "Ground-Water Inventory for 1967, Edwards Air Force Base, California," USGS OFR 69-0140 (1969) (Certified) | (This is the last annual groundwater inventory report by the USGS for Edwards Air Force Base because, according to the report, of a lack of funds for future reports.) "Summary and Conclusions" section on p. 1 states under the heading "2. Water levels," The annual rate of water-level decline has remained relatively constant throughout 1967 and can be expected to continue, providing the annual pumpage remains constant." Under the heading "3. Ground-water depletion," the report states: "The estimated depletion of ground water in storage during the period April 1, 1967, to March 31, 1968, is 13,000 acre-feet. The quantity remaining in storage is about 1,300,000 acre-feet." The section beginning on p. 11 under the heading "Ground-water Depletion" states that groundwater has been depleted since 1952 "to a total [of] 146,000 acre-feet, an average of approximately 10,000 acre-feet per year. However, since 1960 the average rate of depletion has been nearly 13,000 acre-feet per year (Tyley, 1967, p. 7). Because no large changes in pumping patterns have occurred, a reasonable estimate for ground-water depletion during the period April 1, 1967, to March 31, 1968, is 13,000 acre-feet." The report continues: "The total ground-water depletion since 1952 is about 170,000 acre-feet, or about 11 percent of the 1,500,000 acre-feet in storage in 1952. Assuming no change in the present rate of us, the estimated 1,300,000 acre-feet of water remaining in storage is sufficient for about 100 years."<br><br>The "Summary and Conclusions" section, under the subheading "Ground-water depletion" (p. 1), states: "The estimated depletion of ground water in storage during the period April 1, 1967, to March 31, 1968, is 13,000 acre- | G | http://www.scefiling.org/filingdocs/214/89241/PWS-127.pdf |

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| | | feet." Under the heading "Ground-Water Depletion" (p. 11), the report states: "Giessner and Westphal (1966, p. 16) estimated ground-water depletin for the period 1952-66 to total 146,000 acre-feet, an average of approximately 10,000 acre-feet per year. However, since 1960 the average rate of depletin has been nearly 13,000 acre-feet per year (Tyley, 1967, p. 7). . . . The total ground-water depletion since 1952 is about 170,000 acre-feet, or about 11 percent of the 1,500,000 acre-feet in storage in 1952." | | |
| PWS - 128 | Dan Cooper, "Borax Miner, Who 'Digs' Valley Need for Water," Antelope Valley Press (1/3/1971) | Article is about Dan Cooper, an "oldtimer" and member of the board of directors of AVEK for nine years. Article states that when Cooper moved to the AV in 1937, there were artesian wells and elsewhere pump lift was only 20 feet. According to the article (as of 1971), "Today, some of these same pumps have to lift water from as deep as 600 feet. Throughout the valley, [ground] water is being used faster than it can be replaced by nature." | G | http://www.scefiling.org/filingdocs/214/89241/220161e_PWSx128xx1971x01x03xxDanxCooperxAVxPress.pdf |
| PWS - 129 | "School, Water Items Discussed by C of C," Antelope Valley Press (1/7/1971) | Newspaper article discusses election to consider proposed AVEK bond issue. Article states that AVEK officials "say the aquaduct [sic] water is necessary due to decline in the underground water tables and increased need for water with development in the valley." | G | http://www.scefiling.org/filingdocs/214/89241/220162e_PWSx129xx1971x01x07xxSchoolxxWaterxItemsxAVxPressxx2x.pdf |
| PWS - 130 | "Mrs. Arnold, Vreeland Named to Water Group," Antelope Valley Press (1/14/1971) | Newspaper article discusses two people named as co-chairs of the AVEK Citizens for Water and Jobs," a group backing approval of AVEK bonds in forthcoming election. Bonds were to pay for local system to distribute State Water Project water supplies. One co-chair, Della K. Arnold, is quoted in article: "The unpleasant truth is, however, that we cannot continue to grow and improve unless we do something about our inadequate groundwater supplies. The | G | http://www.scefiling.org/filingdocs/214/89241/220163e_PWSx130xx1971x01x14xxAVxPress.pdf |

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| | | only source of supplemental water is the State Water Project." | | |
| PWS - 131 | "AVEK Water to Boost Supply for Quartz Hill County District," Antelope Valley Press (1/14/1971) | Newspaper article discusses proposed system for AVEK to distribute State Water Project supplies. Article states: "The purpose of AVEK is to 'wholesale' supplemental water to existing and future 'retail' water purveyors, in order to relieve the present serious overdraft on local groundwater supplies." Paper states that Quartz Hill water district manager Herb Spitzer (in AVEK territory) says "Growth demands also pose a problem for Quartz Hill because of the massive overdraft of groundwater now occurring throughout the Antelope Valley-East Kern area." Spitzer also says, according to the newspaper, that because Quartz Hill is on the rim of the groundwater basin, "the water level in wells there has been dropping an average of six feet a year. . . . With increased pumping necessary to meet growing demands, he [Spitzer] expects the groundwater table to drop even faster in the future." | G | http://www.scefiling.org/filingdocs/214/89242/220165e_PWSx131xx1971x01x14xxAVxPressxx2x.pdf |
| PWS - 132 | "AVEK . . . A Travesty" [political advertisement], Antelope Valley Press (1/17/1971) | This political advertisement in the newspaper discusses reasons to oppose voter approval of the bond issue to pay for AVEK's local system for distributing State Water Project supplies. Focus of ad is whether the decline in groundwater levels in the AV is severe enough to warrant approval of bonds for new water supply. The ad doesn't dispute declining groundwater levels; it simply argues that those declines are not bad enough to warrant a "yes" vote on the bond ballot measure. | G | http://www.scefiling.org/filingdocs/214/89242/220166e_PWSx132xx1971x01x17xxAVxPress.pdf |
| PWS - 133 | "Palmdale C of C Backs AVEK's Bond Election," Antelope Valley Press (1/21/1971) | Newspaper states that AVEK General Manager Wally Spinarski told the Palmdale Chamber of Commerce that that group should endorse the bond election to fund a local system to deliver State Water Project supplies. The paper says Spinarski told the chamber of commerce that "the [Antelope] Valley faces a serious water problem since the ground supply is diminishing on an average throughout the | G | http://www.scefiling.org/filingdocs/214/89242/220167e_PWSx133xx1971x01x21xxAVxPress. |

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| | | area of between 5 and 6 feet annually. And it follows, he said, that it's becoming more expensive each year to pump the ground water supply." | | pdf |
| PWS - 134 | "AVEK Citizens for Water and Jobs Pushes for Votes," Antelope Valley Press (1/28/1971) | Newspaper article discusses "AVEK Citizens for Water and Jobs," an organization that backs approval of bonds to pay for distribution system for water from State Water Project. Article says in several places that the reason why the group backs the bond issue is because groundwater has been dropping since at least World War II. | G | http://www.scefiling.org/filingdocs/214/89242/220168e_PWSx134xx1971x01x28xxAVxPressxx2x.pdf |
| PWS - 135 | "Why Has AVEK Acted Contrary?", Antelope Valley Press (1/31/1971) | Political ad opposing bond issue to pay for AV distribution system for water from State Water Project. Ad claims there is plenty of groundwater in the AV area, but ad states that AVEK states groundwater levels are dropping: "To prove that our water level HAS NOT BEEN DROPPING at such an alarming rate as AVEK claims, let's look at the record. . . ." | G | http://www.scefiling.org/filingdocs/214/89242/220169e_PWSx135xx1971x01x31xxAVxPress.pdf |
| PWS - 136 | "AVEK Officials Addressed Mojave C of C Thursday," Antelope Valley Press (2/9/1971) | Newspaper article discusses two top AVEK officials, Wally Spinarski and Dan Cooper, who spoke to the Mojave Chamber of Commerce about the forthcoming election about the bond proposal to finance the local distribution system for State Water Project water. Among other things, the article states: "The supplemental water is needed, both AVEK officials said, due declining water tables brought on by increased usage." | G | http://www.scefiling.org/filingdocs/214/89242/220170e_PWSx136xx1971x02x09xxAVxPress.pdf |
| PWS - 137 | "Gianelli, Lambie, Offer Strong Support for AVEK's Program," Antelope Valley Press (2/11/1971) | Newspaper article describes William Gianelli, director of the California Department of Water Resources, and Jack Lambie, Los Angeles County Engineer, who both endorsed AVEK's water program. Lambie stated in a prepared statement read by someone else (Lambie had to stay in LA due to an earthquake): " At the present time, approximately 14,000 acre feet of water are extracted annually from the 26 active wells in this district [AVEK]. This has resulted in a | G | http://www.scefiling.org/filingdocs/214/89242/220171e_PWSx137xx1971x02x11xxAVxPress.pdf |

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| | | pumping hole being developed in the Lancaster groundwater basin and the average decline in the static water level is over 6 feet per year. Some wells have experienced a lesser drop per year and others have dropped as much as 18 feet per year." | | |
| PWS - 138 | "AVEK Tomorrow," Antelope Valley Press (2/14/1971) | Lengthy series of articles explaining history of AVEK and reasons why proposed distribution system by AVEK is necessary to supply State Water Project supplies to the area. Essentially a lengthy editorial in favor of the forthcoming bond issue that would finance the AVEK local distribution system. | G | http://www.scefiling.org/filingdocs/214/89242/PWS-138.pdf |
| PWS - 139 | "Antelope Valley Water Election to Be Tuesday," Los Angeles Times (2/14/1971) | AVEK voters to vote on $49 million bond proposal to bring CA Aqueduct water to AVEK area. AVEK General Manager is quoted as saying: "The state water is needed because of the over-draft on ground supplies." | G | http://www.scefiling.org/filingdocs/214/89242/220173e_PWSx139xx1971x02x14xxAVxPress.pdf |
| PWS - 140 | "Future Steps Under Study by AVEK," Antelope Valley Press (4/11/1971) | Newspaper article reports on AVEK president Al E. Skelton's remarks on what to do for more water in the area after the loss of the bond issue that would have funded connecting the local water system to the State Water Project. Skelton is quoted as explaining the loss of the election: "Those who have the barest knowledge of our water situation find it hard to believe that large numbers of voters would doubt the fact that we're running out of groundwater . . . but it becomes more plausible when we stop to think that few people have any direct awareness of the seriousness of our groundwater overdraft." The newspaper added: "When this same data [the data used by opponents of the bond election] is examined in its entirety, he [Skelton] said, it proves that the water table is dropping at an alarming rate of nearly seven feet a year in the heavily | G | http://www.scefiling.org/filingdocs/214/89242/220174e_PWSx140xx1971x03x11xxAVxPress.pdf |

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| | | populated Lancaster area." | | |
| PWS - 141 | "AVEK Seeks to Explain Paradoxical Bond Issue," Antelope Valley Press (5/6/1971) | Newspaper article discusses AVEK President Al E. Skelton's efforts to explain to AVEK water users the need to pass a bond issue to pay for building a system to distribute State Water Project supplies. Skelton is quoted as saying: "Homeowners are insulated from the facts of life about our serious groundwater overdraft because they nearly always get water when they turn on their faucets. . . . Hardly anybody realizes how much skill and planning has gone into this kind of service. Few yet are aware how dangerously close we are to being unable to provide enough good quality water to our people without supplemental water from the State Water Project." | G | http://www.scefiling.org/filingdocs/214/89242/220175e_PWSx141xx1971x05x06xxAVxPress.pdf |
| PWS - 142 | "Welcome to Water, Water But Not a Drop to Drink," Antelope Valley Press (10/7/1971) | Newspaper article states that because voters in the AV did to pass the bond issue in February 1971 to pay for a system to distribute water from the State Water Project, they will get none of that water until a future bond approval provides money. Until that time, the article states, "the water table throughout Antelope Valley continues to drop . . . about 5 feet per year. This means that wells go dry, become less productive, and that it costs more to pump water for both agriculture and domestic uses." | G | http://www.scefiling.org/filingdocs/214/89242/220176e_PWSx142xx1971x10x07xxAVxPress.pdf |
| PWS - 143 | "AVEK Directors OK First Sale of Water," Antelope Valley Press (1/13/1972) | Newspaper article discusses AVEK meeting during which AVEK officials "debated" Jack Ashworth, an opponent of spending money to build a distribution system to deliver State Water Project supplies to the AV. When Ashworth cited statistics to assert that there was adequate groundwater supplies in the AV, according to the newspaper, "AVEK directors and General Manager Wallace Spinarski disputed Ashworth's figures." | G | http://www.scefiling.org/filingdocs/214/89242/220177e_PWSx143xx1972x01x13xxAVxPress.pdf |
| PWS - 144 | "AVEK Listens for the Voice of the People," Antelope Valley | Newspaper editorial supporting AVEK's desire to secure funding to pay for a distribution system for AVEK's share of State Water Project supplies. Editorial states: "The | G | http://www.scefiling.org/filingdocs/214/89242/ |

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| | Press (1/14/1972) | arguments have been pounded into the ground over and over. It can be -- and has been -- factually documented that the water table is dropping at an alarming rate -- about 7 feet per year. The fact that this causes greater pumping costs is not debateable. When wells go out of production because of the water table drop, replacement wells cost tens of thousands of dollars." | | 220178e_PWSx144xx1972x01x14xxAVxPress.pdf |
| PWS - 145 | "More Water Needed Now Spinarski Tells AVBOR," Antelope Valley Press (7/23/1972) | According to this newspaper article, AVEK General Manager Wally Spinarski told the Antelope Valley Board of Realtors (AVBOR): "More pollution is being poured into good water reservoirs every year, Spinarski said. Pumping levels are now at 300 feet and in some places in this valley, the ground is sinking because of the lack of subsurface water." | G | http://www.scefiling.org/filingdocs/214/89242/220179e_PWSx145xx1972x07x23xxAVxPress.pdf |
| PWS - 146 | "Board of Trade to Hear AVEK Water Report," Antelope Valley Press (7/25/1972) | Newspapaer article states that AVEK General Manager Wally Spinarski "will describe how over-pumping of groundwater is threatening the health and welfare of local people and costing the taxpayers more than it would cost them to solve the problem through use of State Water Project water. Spinarski's presentation will be augmented with visual aids, showing how the average groundwater level in Antelope Valley-East Kern has dropped nearly 300 feet in recent years. Other slides will explain how this groundwater overdraft is increasing the threat of watre pollution." | B | http://www.scefiling.org/filingdocs/214/89242/220180e_PWSx146xx1972x07x25xxAVxPressxx2x.pdf |
| PWS - 147 | "Need More Water or Less People – Spinarski," Antelope Valley Press (7/27/1972) | Newspaper article describes AVEK General Manager Wally Spinarski's presentation to the Antelope Valley Board of Trade. According to the article, Spinarski "claims that the groundwater level in most areas of the Antelope Valley is getting so low that it is causing a water pollution problem. 'We're fast approaching the bottom of the barrel,' the AVEK manager declared. 'Our only hope is to bring good water in, such as the water being provided by the state water project.' Spinarski says that overpumping is causing the pollution | G | http://www.scefiling.org/filingdocs/214/89242/220181e_PWSx147xx1972x07x27xxAVxPress.pdf |

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| | | problem because as levels of good water are depleted, bad water flows in from other surrounding areas. Also, he said, 'used' water from above ground dumps pollutants into the shrinking underground lake." | | |
| PWS - 148 | "Desert Area Water Bonds Set for Ballot," Los Angeles Times (8/20/1972) | Bond issue to be voted on by AVEK voters (1971 vote failed). "Water leaders in Antelope Valley say that there is no water shortage at present, but that supplemental water is needed to halt the severe annual overdraft on the area's underground water supply." | G | http://www.scefiling.org/filingdocs/214/89242/220182e_PWSx148xx1972x08x20xxAVxPressx.pdf |
| PWS - 149 | "Kern County Water Status Compared to Local Problem," Antelope Valley Press (9/17/1972) | Newspaper article describes approval of bond issue in Bakersfield area and compares that region's water problems to those of the AV area. Article concludes: "Both the Bakersfield and Tehachapi areas have experienced serious drops in groundwater tables for many years. The average decline in neither area, however, has matched the seven-foot-a-year drop now taking place in the Antelope Valley, according to hydrologists." | G | http://www.scefiling.org/filingdocs/214/89242/220183e_PWSx149xx1972x09x17xxAVxPress.pdf |
| PWS - 150 | "AV Water Table Dropping; Local Alfalfa Quality Good," Antelope Valley Press (10/10/1972) | Newspaper article reports that Los Angeles County Agricultural Commissioner Ralph W. Lichty stated that "an abundance of irrigation water is available except in the Antelope Valley where some wells have had to be lowered to reach a dropping water table." | G | http://www.scefiling.org/filingdocs/214/89242/220184e_PWSx150xx1972x10x10xxAVxPress.pdf |
| PWS - 151 | "Water Table Declining, costs rising, BOT Told," Antelope Valley Press (10/12/1972) | Newspaper article reports that Kenneth Putnam, the Division Engineer, Waterworks and Utilities Division for the Los Angeles County Engineer, told the AV Board of Trade, "Water resources in [the] Antelope Valley are rapidly declining and [the] cost of extracting it [sic] from the ground is increasing." The article also stated: "The water in the Lancaster area has been dropping at a rate of | G | http://www.scefiling.org/filingdocs/214/89243/220186e_PWSx151xx1972x10x12xxAVxPress. |

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| | | about seven feet a year for the last 10 years, Putnam reported, and we're continuing to drill wells, with two new ones to be drilled in the next year. . . . Putnam pointed out that while the level continues to drop, water usage at the same time is climbing, due to increased population." | | pdf |
| PWS - 152 | "'What Happens When the Well Goes Dry?' Mayor Riley Asks," Antelope Valley Press (10/15/1972) | Newspaper article reports on various local officials in AV meeting with WISE (Water Importation for a Stable Environment) -- an AV group promoting water solutions for the AV that did not include spending money for a system to deliver water from the State Water Project. At the meeting, many AV officials declare that their local AV groundwater supplies are declining. | G | http://www.scefiling.org/filingdocs/214/89243/220187e_PWSx152xx1972x10x15xxAVxPress.pdf |
| PWS - 153 | "W. Spinarski Spells Out Need for Water," Antelope Valley Press (10/22/1972) | Newspaper article reports that AVEK General Manager Wally Spinarski gave a presentation to the Palmdale Board of Realtors about the declining groundwater levels in the AV. | G | http://www.scefiling.org/filingdocs/214/89243/220188e_PWSx153xx1972x10x22xxAVxPress.pdf |
| PWS - 154 | "AVEK to Hold Water Hearing," Antelope Valley Press (1/21/1973) | Newspaper article states that AVEK will hold hearings on how to solve area's water problems. One purpose of the hearings, according to the newspaper, is to "give local taxpayers and water users 'hard' facts on which to base their own conclusions about the best way to combat the area's problem of declining groundwater supplies." | G | http://www.scefiling.org/filingdocs/214/89243/220189e_PWSx154xx1973x01x21xxAVxPress.pdf |
| PWS - 155 | "Water Use Will Increase in AV Area . . C.D. Smith," Antelope Valley Press (2/15/1973) | Newspaper article reports that C.D. Smith, a member of the Board of Directors of AVEK, says that per-capita use of water was on the rise. The article quotes Smith: "When we apply this trend [increasing uses of water] locally," said Smith, "it indicates that the gradual population increase foreseen here will vastly accelerate the present groundwater overdraft problem, unless we begin using supplemental | G | http://www.scefiling.org/filingdocs/214/89243/220190e_PWSx155xx1973x02x15xxAVxPress. |

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| | | water from the State Water Project as soon as possible." | | pdf |
| PWS - 156 | "County Water Chief Urges AVEK to Lower Bond Vote Requirement," Antelope Valley Press (2/15/1973) | Newspaper article reports that Los Angeles County Waterworks and Utilities Division Engineer Kenneth Putnam appeared at an AVEK hearing on obtaining new water supplies and told the hearing that AV groundwater levels were dropping. The paper quoted Putnam as stating: "Continued use in excess of natural recharge of the natural resource of the ground water basins of the area is a depletion of the resource. There does not appear to be an reversal of that situation coming in the immediate future." According to the paper, Putnam presented tables showing that AV groundwater levels were continuing to decline. | G | http://www.scefiling.org/filingdocs/214/89243/220191e_PWSx156xx1973x02x15xxAVxpressxx2x.pdf |
| PWS - 157 | "AVEK Moving to Solve Area Water Problems . . . Putnam," Antelope Valley Press (2/20/1973) | Newspaper states that LA County water officials dispute arguments that groundwater in Lancaster area was rising. | G | http://www.scefiling.org/filingdocs/214/89243/220192e_PWSx157xx1973x02x20xxAVxPress.pdf |
| PWS - 158 | "Vocal Critic of AVEK Invited to Attend Hearing," Antelope Valley Press (2/25/1973) | Newspaper article states that LA County water engineer Kenneth Putnam disputes claims that groundwater levels in Lancaster area are not dropping. Putnam presents evidence that long-term trends show declines. | G | http://www.scefiling.org/filingdocs/214/89243/220193e_PWSx158xx1973x02x25xxAVxPress.pdf |
| PWS - 159 | "AVEK Releases Information on Costs to AV Taxpayers," Antelope Valley Press (9/11/1973) | Newspaper article states that if AV water users never build a distribution system to make use of State Water Project water, they will still be paying for that water because of contracts AVEK signed with the state. The article also says that AVEK President Al E. Skelton said that if local water users would approve funding for a AV water distribution system, the State Water Project contracted payments could | G | http://www.scefiling.org/filingdocs/214/89243/220194e_PWSx159xx1973x09x11xxAVxPress. |

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| | | be recovered from additional water sales "while at the same time, the steady drop in the groundwater table could be arrested." Skelton also said there was a continuing overdraft of groundwater, according to the article. | | pdf |
| PWS - 160 | "AVEK Defers Engineering, Financial Service Pacts," Antelope Valley Press (10/11/1973) | Newspaper reports that AVEK directors deferred action on a proposal for engineering and financial consulting services. The directors also discussed "at length a recently published report relating to land subsidence in the Antelope Valley. The report shows that at one location -- 70th St. E. and Av. 1 -- the land has subsided 1.5 feet in a five-year period (from the 1966-67 fiscal year to the 1971-72 fiscal year). Land subsidence is caused by the removal of underground water, thus reducing the ground water storage capacity of the ground." | G | http://www.scefiling.org/filingdocs/214/89243/220195e_PWSx160xx1973x10x11xxAVxPressxx2x.pdf |
| PWS - 161 | "Engineering, Financial Services Oked by AVEK," Antelope Valley Press (10/25/1973) | Newspaper article says that AVEK's directors approved consulting services to address how to deal with water and financial issues. Article states: "During Tuesday night's meeting, [AVEK] General Manager Wally Spinarski presented the latest tables and charts documenting the continuing general decline of he water table in Los Angeles County Waterworks District 4, which serves the Lancaster and Desert View Highlands areas." | S | http://www.scefiling.org/filingdocs/214/89243/220196e_PWSx161xx1973x10x25xxAVxPress.pdf |
| PWS - 162 | "AVEK Releases New Report on Utilization of Water," Antelope Valley Press (11/1/1973) | Newspaper article states that C.D. Smith, a Director of AVEK, had stated that "we can see that stopping the present decline in the water table, or raising it [the water table], will save hundreds of thousands of dollars in energy costs for a long time in the future." | G | http://www.scefiling.org/filingdocs/214/89243/220197e_PWSx162xx1973x11x01xxAVxPress.pdf |
| PWS - 163 | "Engineer Cites Groundwater Depletion," Antelope Valley Press (12/2/1973) | Newspaper article reports that David Hardan, an engineer with Boyle Engineering (a consultant to AVEK), stated that delay in using water from the State Water Project in the AV was speeding up groundwater depletions. The newspaper | G | http://www.scefiling.org/filingdocs/214/89243/220198e_PWSx |

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| | | stated: "David Hardan of Boyle Engineering says local community water suppliers are having to drill new wells that are worsening the already dangerous groundwater 'overdraft.'" | | 163xx1973x12x02xxAVxPress.pdf |
| PWS - 164 | "Quartz Hill County Water District Wants More Water," Antelope Valley Press (12/27/1973) | Newspaper article states that Quartz Hill Water District (in the AV) wanted to ask for water from the State Water Project. The article states that the District's Manager, Herb Spitzer, had said: "Water levels in our wells dropped about eight feet during the past year." The article also said Spitzer had said that good well sites were getting scarce within the district. | G | http://www.scefiling.org/filingdocs/214/89243/220200e_PWSx164xx1973x12x27xxAVxPress.pdf |
| PWS - 165 | "Water to be Discussed at AVBOT Seminar," Antelope Valley Press (1/20/1974) | Newspaper article states that the AV Board of Trade was planning a seminar to be held in Palmdale to discuss agricultural issues later that month. The article adds: "Information received in the Board of Trade office from questionnaires mailed to 150 farmers in the valley indicate an average water level drop of about 10 feet per year in wells used by farmers for irrigation. It is becoming economically impossible for farmers to pump from the deep wells and new wells are not always productive." | G | http://www.scefiling.org/filingdocs/214/89243/220201e_PWSx165xx1974x01x20xxAVxPress.pdf |
| PWS - 166 | "Lee Discusses Water Proposal at Lancaster C of C Meeting," Antelope Valley Press (1/24/1974) | Newspaper article discusses a meeting of the Lancaster Chamber of Commerce at which Antelope Valley Board of Trade Manager Chris Lee explained an idea for AV farmers to band together and purchase State Water Project water directly from AVEK. The new plan was necessary because AVEK voters had rejected bond issues to build a distribution system for water AVEK had contracted for from the State Water Project. Lee also explained that the plan was necessary because of declining groundwater levels and because groundwater replenishment was not as fast as groundwater useage. | G | http://www.scefiling.org/filingdocs/214/89243/220202e_PWSx166xx1974x01x24xxAVxPressxx3x.pdf |
| PWS - 167 | "Survey Reveals AV Groundwater Level Dropping," | Newspaper article states: "Severe declines in groundwater levels in [the] Antelope Valley are revealed by the latest | G | http://www.scefiling.org/filingd |

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| | Antelope Valley Press (1/31/1974) | data from [the] U.S. Geological Survey. A new USGS map, 'Water Level Contours for Spring 1973' indicates the general groundwater table has declined at an average yearly rate of from 3 to more than 10 feet per year." Article adds further details about the decline in groundwater levels. | | ocs/214/89243/220203e_PWSx167xx1974x01x31xxAVxPress.pdf |
| PWS - 168 | "Water and Oil Stories are Similar," Antelope Valley Press (1/31/1974) | Newspaper article compares oil shortages with declining groundwater levels in AV. | G | http://www.scefiling.org/filingdocs/214/89243/220204e_PWSx168xx1974x01x31xxAVxPressxx3x.pdf |
| PWS - 169 | "Aqueduct Water for Farming Decision Will Take Some Time," Antelope Valley Press (1/31/1974) | Newspaper article describes seminar held by the AV Board of Trade in Palmdale. Speaking at the meeting, Kenneth Putnam of the Los Angeles County Water Works Division, stated that groundwater levels were dropping in the AV area about 6-7 feet per year. Also, the Quartz Hill Water District's Michael Risolo said his district's groundwater levels were dropping 7-8 feet per year. | G | http://www.scefiling.org/filingdocs/214/89243/220205e_PWSx169xx1974x01x31xxAVxPressxx4x.pdf |
| PWS - 170 | "Water Experts Urge Aqueduct Water Use," Antelope Valley Press (2/3/1974) | Newspaper article reports on seminar on water issues held in late January 1974 in Palmdale. At the meeting, a USGS official, William Hardt, stated that "continuing water table declines in nearly every groundwater basin from Pearblossom to Cantil. The groundwater levels have declined as much as 175 feet during the past 15 years, he [Hardt] revealed." LA County water engineer also warned that "the present groundwater overdraft is 'abusing a natural resource' and boosting costs fo householders." | G | http://www.scefiling.org/filingdocs/214/89243/220206e_PWSx170xx1974x02x03xxAVxPress.pdf |
| PWS - 171 | "Wally Spinarski Will Address Southland Group," Antelope Valley Press (2/7/1974) | Newspaper article reports that AVEK General Manager Wally Spinarski will address the monthly meeting of the California Water Resources Association, during which he will "describe the rapid decline in local groundwater | G | http://www.scefiling.org/filingdocs/214/89258/220247e_PWSx171xx1974x02x |

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| | | tables." | | 07xxAVxPress.pdf |
| PWS - 172 | "AVEK Water Users Consuming Twice as Much Ground Water," Antelope Valley Press (2/14/1974) | Newspaper article states: "Water users in Antelope Valley-East Kern are consuming twice as much groundwater each year as is being replaced, according to a U.S. Government source [the USGS]." Considerable detail in article describing the USGS's findings on this matter | G | http://www.scefiling.org/filingdocs/214/89258/220248e_PWSx172xx1974x02x14xxAVxPressxx3x.pdf |
| PWS - 173 | "Water Plan May Spell Out Dawn of a New Day," Antelope Valley Press (3/5/1974) | Newspaper editorial describes planning for DAWN (Domestic-Agriculture Water Network), a plan to utilize State Water Project water supplies due to declining groundwater levels. Newspaper states: "A number of Antelope Valley farmers have indicated that they are interested in obtaining supplemental water. The water table is dropping at an alarming rate throughout the Valley and the various water purveyors who have contracted with AVEK for supplemental water are anxious to 'get on the line.'" Newspaper urges quick approval for DAWN plan. | G | http://www.scefiling.org/filingdocs/214/89258/220249e_PWSx173xx1974x03x05xxAVxPress.pdf |
| PWS - 174 | "County Backs AVEK Water Bond Election," Antelope Valley Press (4/19/1974) | Newspaper article states that DAWN plan will be on the June 4, 1974, ballot to pay for the DAWN distribution system. Article states that "County waterworks districts supplies are generally obtained from ground water of the Antelope Valley basin and are seriously depleted due to an extended history of overdraft." | G | http://www.scefiling.org/filingdocs/214/89258/220250e_PWSx174xx1974x04x19xxAVxPress.pdf |
| PWS - 175 | "Farm Use of Aqueduct Water Will Help Save Supply, Williams Says," Antelope Valley Press (4/28/1974) | Newspaper article states that AVEK Board Member Ruel G. Williams said that using State Water Project water will be a fast and economical way to improve groundwater conditions in the AV. Newspaper states: "Williams said farmers now pump all their water from the declining groundwater supply. When they can use State Project water, he said, it will allow them to reduce their pumping | G | http://www.scefiling.org/filingdocs/214/89258/220251e_PWSx175xx1974x04x28xxAVxPress. |

| Exhibit No. | Description | Dr. Douglas R. Littlefield's Notations (From PWS-43A) | Groundwater (G), Subsidence (S), or Both (B) | Court's Webpage Link |
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| | | from wells and relieve the 'overdraft' on the ground-basin that is now lowering the water table an average of 9 feet a year, according to data from water-well operators in the Lancaster basin." Williams also said seepage from State Water Project water use will help replenish groundwater supplies. | | pdf |
| PWS - 176 | "Overdraft of 71,000 Acre Feet Each Year Reported by Teerink," Antelope Valley Press (5/16/1974) | Newspaper article states that John R. Teerink, the Director of the California Department of Water Resources, stated that AV groundwater overdraft is occurring at a rate of 71,000 acre-feet per year and is expected to double within the next twenty years without imported water. Teerink made these statements at a meeting of the Antelope Valley Board of Trade, and he added that the overdraft on AV groundwater would exceed AVEK's total share of State Water Project water within two years. | G | http://www.scefiling.org/filingdocs/214/89258/220252e_PWSx176xx1974x05x16xxAVxPress.pdf |
| PWS - 177 | "15 of 33 Bond Issues Win Voter Approval," Los Angeles Times (6/6/1974) | AVEK bond proposal fails in vote. | G | http://www.scefiling.org/filingdocs/214/89258/220253e_PWSx177xx1974x06x06xxAVxPressx.pdf |
| PWS - 178 | "Bond Issue Okd, Final Tally Shows," Los Angeles Times (6/7/1974) | $71 million AVEK bond issue did not fail; passed by 47 votes final count shows. Proceeds from bonds will be used to build distribution system for California Aqueduct water. | G | http://www.scefiling.org/filingdocs/214/89258/220254e_PWSx178xx1974x06x07xxAVxPress.pdf |
| PWS - 179 | "$18 Per Acre Foot Set for Agricultural Water," Antelope Valley Press (9/26/1974) | Newspaper article states that AVEK was considering prices for surplus agricultural water. The article states that voters the previous June had approved legislation to permit AVEK to "sell water for the purpose of relieving the overdraft on | G | http://www.scefiling.org/filingdocs/214/89258/220255e_PWSx |

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| | | the ground basin." | | 179xx1974x09x26xxAVxPress.pdf |
| PWS - 180 | George Alexander, "Palmdale Bulge--It's Sinking in One Place," Los Angeles Times (2/17/1977) | Mysterious uplifting and sinking of ground around Palmdale discussed. | G | http://www.scefiling.org/filingdocs/214/89258/220256e_PWSx180xx1977x02x17xxLAxTimes.pdf |
| PWS - 181 | Ken Lubas, "DWP: Rationing Unlikely but Conservation Essential," Los Angeles Times (2/20/1977) | Drought causes concern for southern California water officials. ". . . water districts in the Santa Clarita and Antelope valleys, which have over-pumped, today are facing the chance that wells will go dry." | S | http://www.scefiling.org/filingdocs/214/89258/220257e_PWSx181xx1977x02x20xxLAxTimes.pdf |
| PWS - 182 | Timothy J. Durbin, "Calibration of a Mathematical Model of the Antelope Valley Ground-Water Basin, California," USGS WSP 2046 (1978) (Certified) | On p. 1 of this report, the section entitled "Abstract" states: "During the last 50 years, pumpage of ground water in excess of natural recharge has resulted in the steady decline of the ground-water level in the basin. The change in water level has been as much as 200 feet (61 meters). By 1972 the cumulative overdraft was about 9 million acre-feet (11,000 cubic hectometers)." Under the heading "Introduction" on p. 1, the report states: "Ground water has been the principal source of water for economic development in the [Antelope] valley. During the last 50 years, however, pumpage of ground water -- chiefly for agricultural uses -- in excess of natural recharge has resulted in the steady decline of the ground-water level in the basin. During this prior, water levels in wells near Lancaster have declined as much as 200 ft (61 m). By 1972 the cumulative overdraft was about 9 million acre-ft (11,000 hm3)." On p. 2, the report adds: "Because of the | G | http://www.scefiling.org/filingdocs/214/89259/220264e_182xPartx1.pdf<br><br>http://www.scefiling.org/filingdocs/214/89259/220265e_182xPartx2.pdf |

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| | | depletion of local ground-water supplies in Antelope Valley, the Antelope Valley-East kern Water Agency, the Little Rock Irrigation District, and the Palmdale Water District have contracted for a combined maximum annual entitlement of 158,000 acre-ft (195 hm3) of imported water from he California Water Project." | | |
| PWS - 183 | Cathleen Decker, "Palmdale Backed as Airport Site," Los Angeles Times (4/10/1978) | Report on proposed airport near Palmdale says: "Unless a distribution system for imported water is initiated by the early 1980s, groundwater resources . . . will be unable to support future activity." | G | http://www.scefiling.org/filingdocs/214/89259/220266e_PWSx183xx1978x04x10xxLAxTimes.pdf |
| PWS - 328 | "Palmdale water district looks to year of growth," Antelope Valley Press (2/12/1980) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-328.pdf |
| PWS - 329 | "AVEK continues contract for study of groundwater," Antelope Valley Press (7/13/1980) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-329.pdf |
| PWS - 184 | "Planned Utilization of Water Resources in the Antelope Valley," by the CA Dept of Water Resources, So. District, CA Dept of Water Resources report (Oct. 1980) | The "Foreword" to this report states on p. iii: "Heavy reliance on the local ground water supply is characteristic of many areas in Southern California. The Antelope Valley, which lies astrice the Los Angeles, Kern, and San Bernardino County lines, is no exception. Currently, about 90 percent of the total water supply comes from the Valley's ground water basins. The remainder comes from the limited local surface water and reclaimed water and | G | http://www.scefiling.org/filingdocs/214/89265/220271e_184xxpart1.pdf<br><br>http://www.scef |

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| | | increasing amounts of imported water from the State Water Project. This heavy burden on the ground water basins has resulted in marked declines in ground water levels in the Valley." Under the heading "Introduction and Summary" (p. 1), the report states: "Since 1900, when the initial steps were taken toward the full development of irrigated agriculture, ground water levels have consistently declined, especially in the heavy agricultural pumping area centered around Lancaster where as much as 60 metres (200 feet) of decline have been found." | | iling.org/filingdocs/214/89265/220272e_184xxpartx2.pdf |
| PWS - 330 | J. Sage, "A water district manager's thoughts," Antelope Valley Press (8/6/1982) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-330.pdf |
| PWS - 331 | "Water: essential to all despite its high price," Antelope Valley Press (7/1/1983) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-331.pdf |
| PWS - 185 | Thomas L. Holzer, "Ground Failure Caused by Groundwater Withdrawal from Unconsolidated Sediments -- United States," USGS unpublished report (3/14/1984) | Page 1 of this report states: "Aseismic ground failure is associated with regional land subsidence caused by ground-water withdrawal in at least 14 areas in 6 states in the United States." The places where such ground failure has occurred is shown on a map included with the report, and one of those places is the Antelope Valley in California. The report then discusses ground failures in a general way with very little mention of specifics dealing with just the Antelope Valley. | G | http://www.scefiling.org/filingdocs/214/89265/220273e_PWSx185xx1984x03x14xxHolzerxxGroundxfailurexduextoxgroundwaterxpumping.pdf |

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| PWS - 332 | A. Randolph, "Water limiting growth in Littlerock," Antelope Valley Press (8/17/1984) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-332.pdf |
| PWS - 333 | A. Randolph, "Palmdale gets first aqueduct water," Antelope Valley Press (8/23/1985) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-333.pdf |
| PWS - 334 | "Gegax Water Wells," Antelope Valley Press (1/13/1987) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-334.pdf |
| PWS - 335 | L. Lee, "Water, water – it's not everywhere!," Antelope Valley Press (2/24/1987) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-335.pdf |
| PWS - 336 | "California needs to end its 100-year water war," Antelope Valley Press (4/12/1987) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-336.pdf |
| PWS - 337 | D. Boyle, "AVEK director asks | | | http://www.scef |

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| | groundwater recharging study," Antelope Valley Press (8/14/1987) | | | iling.org/filingdocs/214/89442/pws/PWS-337.pdf |
| PWS - 338 | "Study projects water needs," Antelope Valley Press (12/13/1987) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-338.pdf |
| PWS - 339 | "Palmdale water system projects are approved," Antelope Valley Press (2/14/1988) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-339.pdf |
| PWS - 340 | "California's water problems drip torturously on leaders," Antelope Valley Press (3/31/1988) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-340.pdf |
| PWS - 341 | J. Miller, "Summer water shortage in AV seen unlikely," Antelope Valley Press (4/27/1988) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-341.pdf |
| PWS - 342 | D. Foy, "Water shortage a threat to Valley," Antelope Valley | | | http://www.scefiling.org/filingdocs/214/89442/ |

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| | Press (11/23/1988) | | | pws/PWS-342.pdf |
| PWS - 343 | J. Miller, "PWD rate hike eyed to curb water use," Antelope Valley Press (12/30/1988) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-343.pdf |
| PWS - 344 | J. Miller, "Water task force may be in works," Antelope Valley Press (1/11/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-344.pdf |
| PWS - 345 | L. Lee, "Poor Sierra runoff means drought woes for agencies," Antelope Valley Press (2/21/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-345.pdf |
| PWS - 186 | "Antelope Valley Spreading Grounds Study, Phase 1 - Preliminary Report," by Los Angeles County Dept of Public Works, Land Development Division (2/22/1989) | This report discusses possible area for water spreading in the Antelope Valley, and the report explains on p. 6: "Before extensive pumping began in the valley (prior to 1955) artesian conditions were prevalent in the Lancaster Subunit (Reference 30, Plates Ia and Ib). However, groundwater withdrawals have lowered the water table up to several hundred feet, and artesian conditions have ceased to exist. In addition, heaving pumping has resulted in groundwater depressions near Lancaster (see Plate III)." On p. 7, under the heading "VI. Need, Requirements, and Criteria for Potential Recharge and Spreading Areas," the report states: "General Need: The existing and the projected | B | http://www.scefiling.org/filingdocs/214/89265/220274e_PWSx186xx1989x02x22xxAVxSpreadingxGroundsxStudy.pdf |

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| | | development rate in the Antelope Valley area will continue to increase the demand on producing aquifers. Recharge is a logical solution to alleviate the present overdraft condition of the Antelope Valley groundwater basin." | | |
| PWS - 346 | G. Grimes, "Palmdale may face water cuts," Antelope Valley Press (3/17/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-346.pdf |
| PWS - 347 | "Water cuts may endanger canal," Antelope Valley Press (3/30/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-347.pdf |
| PWS - 348 | "Water problem solutions must be developed soon," Antelope Valley Press (3/31/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-348.pdf |
| PWS - 349 | L. Lee, "Officials concerned about Valley water reserves," Antelope Valley Press (5/21/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-349.pdf |
| PWS - 350 | J. Miller, "Local 'drought' not cause of official concern," Antelope Valley Press | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS- |

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| | (8/9/1989) | | | 350.pdf |
| PWS - 351 | L. Lee, "City to join PWD in groundwater study," Antelope Valley Press (6/13/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-351.pdf |
| PWS - 352 | J. Miller, "Public works official: Emergency well will not be recommended," Antelope Valley Press (9/1/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-352.pdf |
| PWS - 353 | L. Lee, "Planners, developers discuss water supplies," Antelope Valley Press (9/21/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-353.pdf |
| PWS - 354 | L. Lee, "Water districts at issue: Council advised to nix takeover," Antelope Valley Press (10/29/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-354.pdf |
| PWS - 355 | J. Skeen, "Scientists study dry lake cracking," Antelope Valley Press (11/2/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-355.pdf |

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| PWS - 356 | R. Welch, "Lancaster faces opposition over water control," Antelope Valley Press (12/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-356.pdf |
| PWS - 357 | S. Roush, "Hearings on water plan set," Antelope Valley Press (12/6/1989) | | | http://www.scefiling.org/filingdocs/214/89442/pws/PWS-357.pdf |
| PWS - 187 | John Chandler, "Air Base to Buy a Billion Gallons of Water Annually," Los Angeles Times (3/28/1990) | "The new water supply will allow Edwards to curtail ground-water pumping, which is believed to be contributing to the sinking and cracking of the lake bed." | B | http://www.scefiling.org/filingdocs/214/89265/220275e_PWSx187xx1990x03x28xxLAxTimes.pdf |
| PWS - 188 | John Rivera, "Antelope Valley Water in Healthy Supply for Now," Los Angeles Times (1/20/1991) | Conservation measures have helped ease water limitations in AV. "As a result, underground wells that were in danger of being depleted by the demands of farmers have been recharged, and the once dangerously low water table has begun rising. Although rationing may be needed in the future, the present supply of ground water satisfies the demand, a water official said. . . . The outlook for water in this desert basin was not always so rosy. From the 1920s until the mid-1970s, agriculture, consisting mainly of alfalfa farmers, was the biggest user of water in the area. The water came from ground wells and, during that period, the water table dropped 100 to 150 feet, Hartley [an LA County water official] said. 'Obviously, if you continue with that kind of | G | http://www.scefiling.org/filingdocs/214/89265/220276e_PWSx188xx1991x01x20xxLAxTimes.pdf |

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| | | operation, you're not going to have any more water left in the basin,' he said. Ground-water pumping also caused areas near Lancaster and the southern portion of the Rogers Dry Lake Bed at Edwards Air Force Base to subside by as much as three to five feet." | | |
| PWS - 189 | John Chandler, "Official Now Says High Desert Faces Rationing," Los Angeles Time (1/22/1991) | Drought may force AVEK-area rationing, despite earlier predictions of enough water supplies. Newspaper states: "The Antelope Valley gets about half of its water from the California Aqueduct and most of the rest from ground water. Pumping of ground water could be increased, but local officials have been reluctant to increase it by much because it appears to be causing the ground to sink, which could damage buildings." | G | http://www.scefiling.org/filingdocs/214/89265/220277e_PWSx189xx1991x01x22xxLAxTimes.pdf |
| PWS - 190 | "Antelope Valley Groundwater Recharge Study, Phase 2, Air Force Site Along Amargosa Creek," by Los Angeles Department of Public Works (3/13/1991) | Report examines possibilities of groundwater recharge in Antelope Valley. On p. 2, the report states: "At the turn of the century, the water table of the upper confined aquifer was relatively shallow (60-100 feet deep), and the flow from wells onto the surface occurred int he low-lying areas due to artesian conditions. Due to agricultural, industrial and domestic use, the water table has since dropped dramatically int he Lancaster Subunit. Currently, the water table in the City of Lancaster is at a depth of about 350 feet." | G | http://www.scefiling.org/filingdocs/214/89274/220283e_190xxPartx1.pdf<br><br>http://www.scefiling.org/filingdocs/214/89274/220284e_190xxpartx2.pdf |
| PWS - 191 | John Chandler, "Pumping Threatens to Sink High Desert's Future," Los Angeles Times (3/17/1991) | Newspaper states: "Scientists believe that the cracks, called fissures, are the result of too much pumping of ground water for residents and crops in recent decades. With the removal of the water, some areas of the valley have fallen up to five feet in 20 years, in a process called subsidence." | B | http://www.scefiling.org/filingdocs/214/89274/220285e_PWSx191xx1991x03x17xxLAxTimes.pdf |

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| PWS - 192 | "Underground Water Level Falling at a Dramatic Rate," Los Angeles Times (6/10/1991) | Over-pumping of groundwater is a problem throughout California. Newspaper offers examples, and states: "Closer to home, 70 cracks have materialized recently on a swath of desert scheduled for development near Lancaster, and at nearby Edwards Air Force Base, a 12-foot-deep fissure stretching for half a mile has forced the closure of a runway. Scientists blame the cracks on extensive ground-water pumping, which has caused some sections of the rapidly growing Antelope Valley to sink more than five feet in 20 years." | B | http://www.scefiling.org/filingdocs/214/89274/220286e_PWSx192xx1991x06x10xxLAxTimes.pdf |
| PWS - 193 | James C. Blodgett and J.S. Williams, "Land Subsidence and Problems Affecting Land Use at Edwards Air Force Base and Vicinity, California, 1990," USGS WRI 92-4035 (1992) (Certified) | The "Abstract" on p. 1 of this report states: "Land subsidence in Antelope Valley, which includes Edwards Air Force Base, was first reported in the 1950's; by 1967, about 200 square miles of Antelope Valley were affected by as much as 2 feet of subsidence." The second paragraph of the "Abstract" adds: "A gradual decline of ground-water levels, more than 90 feet at some wells since 1947, is associated with the land subsidence. The amount of land subsidence at the base varies depending on the relative quantities of water pumped from various well fields and the differences in geologic substrata." The third paragraph of the "Abstract" states: "Land subsidence is causing surface deformation at Edwards Air Force Base and surrounding areas." The "Introduction" to the report on p. 1 states: "Land subsidence is a long-term phenomenon in the Antelope Valley of California. . . . In the Antelope Valley, subsidence is attributed to compaction of fine-grained materials in the aquifer system that are dewatered because of groundwater pumping." On p. 4, the report states: "During 1922-90, ground-water pumping in excess of natural recharge has resulted in a steady decline of the ground-water level in the basin. . . . Land subsidence is associated with declining ground-water levels caused by pumping and the presence of beds of fine-grained (lacustrine) material that are subject to compaction." This | B | http://www.scefiling.org/filingdocs/214/89290/220307e_193xxpartx1.pdf<br><br>http://www.scefiling.org/filingdocs/214/89291/220309e_193xxpartx2.pdf<br><br>http://www.scefiling.org/filingdocs/214/89292/220311e_193xxpartx3.pdf |

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| | | report contains maps and photos showing areas of subsidence. . . . Land subsidence in Antelope Valley was first reported by Lewis and Miller (1968) after several differential leveling survey lines through Rosamond, Palmdale, and Redman (fig. 1) were compared. Between 1955 and 1967, about 200 mi2 in Antelope Valley were affected by land subsidence, with subsidence of 1.8 feet in Lancaster (fig. 1) and more than 2 ft in two areas 6 to 10 mi east of Lancaster." The "Summary" section of the report (p. 24) adds: "A gradual decline of ground-water levels, more than 90 feet at some wells since 1947, is associated with the land subsidence." | | |
| PWS - 194 | C.J. Londquist, D.L. Rewis, et al., "Hydrogeology and Land Subsidence, Edwards Air Force Base, Antelope Valley, California, January 1989-December 1991," USGS WRI 93-4114 (1993) | The first page of the "Abstract" section of this report (paginated at "Abstract 1") states: "Land subsidence has long been recognized as a problem in some parts of the Antelope Valley area of California. . . . The land subsidence has been attributed to the pumping of ground water around the margins of the [Rogers] lakebed [at Edwards Air Force Base]." In the "Introduction" section on p. 2, the report states: "Land subsidence has long been recognized as a problem in some parts of the Antelope Valley area of California. . . . During the early stages of the study [to determine the reason for subsidence at Edwards Air Force Base], the distribution of land subsidence near Rogers Lake [at the base] was correlated with the distribution of ground-water level declines resulting primarily from ground-water withdrawals from base production wells. . . . The investigations reported on here focus on the area of EAFB; however, because the hydrologic processes under study are governed by physical, hydrologic, and geologic boundaries that occur at the scale of Antelope Valley, the investigations [in this report] necessarily include areas of Antelope Valley outside of the boundaries of EAFB (fig. 1)." | B | http://www.scefiling.org/filingdocs/214/89293/220313e_194xx1.pdf<br><br>http://www.scefiling.org/filingdocs/214/89294/220315e_194xx2.pdf<br><br>http://www.scefiling.org/filingdocs/214/89295/220317e_194xx3.pdf<br><br>http://www.scefiling.org/filingdocs/214/89297/ |

| Exhibit No. | Description | Dr. Douglas R. Littlefield's Notations (From PWS-43A) | Groundwater (G), Subsidence (S), or Both (B) | Court's Webpage Link |
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| | | | | 220319e_194xx4.pdf |
| PWS - 195 | Marti E. Ikehara and Steven P. Phillips, "Determination of Land Subsidence Related to Ground-Water-Level Declines Using Global Positioning System and Leveling Surveys in Antelope Valley, Los Angeles and Kern Counties, California, 1992," USGS WRI 94-4184 (1994) (Certified) | This document states on the title page that it was "Prepared in cooperation with the Antelope Valley Water Group." The "Abstract" section (p. 1) states: "Land subsidence has occurred where compressible sediments are present in Antelope Valley, California, as a result of ground-water-level declines, particularly in the Lancaster ground-water subbasin." The "Abstract" then explains that over a subsidence had taken place over a 60-year period, and the "Abstract" adds: "A contour map of land subsidence shows a 210-square-mile (542-square-kilometer) area of Antelope Valley, generally bounded by Avenue K, Avenue A, 90th Street West, and 120th Street East, has subsided between 2 and 7 feet (0-61 and 2.13 meters.)" The "Abstract" continues: "Land subsidence in Antelope Valley is caused by aquifer-system compaction that is related to ground-water-level declines and the presence of fine-grained, compressible sediments." The first sentence of the "Introduction" (p. 2) states: "Land subsidence, related to ground-water-level declines resulting primarily from ground-water withdrawals, historically has been a problem in parts of Antelope Valley, California (fig. 1) (Poland, 1984)." The report then adds all the detail based on benchmark measurements around the Antelope Valley. | B | http://www.scefiling.org/filingdocs/214/89299/220331e_195xxpartx1.pdf<br><br>http://www.scefiling.org/filingdocs/214/89301/220334e_195xxpartx2.pdf |
| PWS - 196 | Keith R. Prince, Devin L. Galloway, et al., "U.S. Geological Survey Subsidence Interest Group Conference, Edwards Air Force Base, Antelope Valley, California, November 18-19, 1992: | This is a collection of papers delivered at the conference. One that addresses the Antelope Valley is: "Hydrogeology and Land Subsidence, Antelope Valley, California," by Clark J. Londquist. The article begins on p. 38. Clark states that groundwater pumping in the Antelope Valley began in the early 1900s and peaked in the 1950s. He adds: "After this peak period, ground-water use in the valley | B | http://www.scefiling.org/filingdocs/214/89302/220337e_196xx1.pdf |

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| | Abstracts and Summary," USGS OFR 94-0532 (1995) (Certified) | began to decline because of declining water levels, increasing energy costs, and the availability of imported water." (p. 38). He continues: "The estimated ground-water pumpage from the Antelope Valley has exceeded the estimated annual recharge almost every year since the early 1920's. This imbalance is reflected in the declining aquifer hydraulic heads over most of the valley. In some areas there have been declines of more than 100 ft since the early 1950's, and indications are that declines before this period may have been as great or greater." (p. 38). Another paper in this collection is: "Land Subsidence and Problems Affecting Land Use at Edwards Air Force Base and Vicinity, California, 1990," by James C. Blodgett, which begins on p. 40. Blodgett states on p. 40: "The amount of land subsidence at the base varies depending on the decline of aquifer heads related to ground water pumping from various well fields, and the occurrence of fine-grained compressible sediments in geologic substrata near the zones of ground-water production (Londquist and others, 1993)." Another paper in this collection is: "Land Subsidence as a Resource Management Objective in Antelope Valley, California," by Steven P. Phillips (beginning on p. 44). Phillips states (p. 44): "The combination of about 6.6 ft of land subsidence (4.9 ft from 1961-92; Ikehara and Phillips, 1994) attributable to ground-water withdrawal (Londquist and others, 1993), and the unpredictable nature of surface-water supply, underscores the need for management of Antelope Valley water resources (see Ikehara #1 and Blodgett abstracts for additional information on the measurement of land subsidence in the Antelope Valley)." | | http://www.scefiling.org/filingdocs/214/89302/220338e_196xx2.pdf |
| PWS - 197 | William E. Templin, Steven P. Phillips, et al., "Land Use and Water Use in the Antelope Valley, California," USGS OFR 94-4208 (1995) (Certified) | The "Abstract" to this report says that although groundwater pumping in the Antelope Valley declined after the California Aqueduct brought water to the region in the early 1970s, a drought and increased urbanization in the late 1980s and early 1990s "renewed concern about a possible return to extensive depletion of ground-water storage and | B | http://www.scefiling.org/filingdocs/214/89311/220352e_197xx1.pdf |

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| | | increased land subsidence." (p. 1). | | http://www.scefiling.org/filingdocs/214/89311/220353e_197xx2.pdf |
| PWS - 198 | Diane L. Rewis "Ground-Water-Level Monitoring, Basin Boundaries, and Potentiometric Surfaces of the Aquifer System at Edwards Air Force Base, California, 1992," USGS OFR 95-4131 (1995) (Certified) | The "Introduction" to this report states on p. 1: "Land subsidence, resulting from aquifer-system compaction caused by declining ground-water levels, and the associated playa-surface deformation of Rogers Lake affect the strategic and economic operations at Edwards Air Force Base (EAFB), Antelope Valley, California (fig. 1)." The report adds that a monitoring program was developed, described in the report, to track subsidence. | B | http://www.scefiling.org/filingdocs/214/89313/220355e_198xx1.pdf<br>http://www.scefiling.org/filingdocs/214/89314/220357e_198xx2.pdf<br>http://www.scefiling.org/filingdocs/214/89315/220359e_198xx3.pdf |
| PWS - 199 | Devin L. Galloway, Steven P. Phillips, & Marti E. Ikehara "Land Subsidence and Its Relation to Past and Future Water Supplies in Antelope | This paper is a chapter in "Current Research and Case Studies of Land Subsidence: Proceedings of the Dr. Joseph F. Poland Symposium, Association of Engineering Geologists Special Publication No. 8. The "Abstract" to the paper states: "Extensive ground-water pumpage for | B | http://www.scefiling.org/filingdocs/214/89318/220364e_PWSx199xx1995x10x |

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| | Valley, California" (10/4/1995) | agriculture during the period 1952 to 1968 played a significant role in the development of more than 6 ft of land subsidence measured between 1926 and 1992 in Antelope Valley, California." The report adds that although groundwater pumping has declined since the 1970s, "annual ground-water extraction still exceeds the estimated mean natural recharge to the valley by nearly two-fold. As a result, ground-water levels, historically depleted throughout the central part of the valley, continue to decline in urban and isolated agricultural areas where ground-water is high." The report adds that future subsidence can be expected even if existing ground-water levels are maintained. The also is considerable discussion of the history of subsidence and its linkage to groundwater depletion in this paper. | | 04xxLandxSubsidencexandxrelationxtoxAntelopexValley.pdf |
| PWS - 200 | Kennedy/Jenks Consultants, "Final Report: Antelope Valley Water Resource Study, Antelope Valley Water Group," Antelope Valley Water Group report (Nov., 1995) | This report is extremely detailed and has many examples of the linkages between groundwater depletion and subsidence. For example, on p. 7-5, the report states: "Groundwater levels have declined by as much as 200 feet (USGS, 1994). This decline has significantly increased pumping costs, resulting in overdrafting of the aquifer and land subsidence." On p. 7-6, the report states: "The high pumping rates of the 1950s and 1960s resulted in groundwater overdraft and subsidence of the ground surface as shown on Figure 7-6. Some of the areas of highest subsidence are coincident with current groundwater depressions." Search this document on "subsidence" for multiple examples. | B | http://www.scefiling.org/filingdocs/214/89318/220365e_200.1.pdf<br><br>http://www.scefiling.org/filingdocs/214/89318/220366e_200.2.pdf<br><br>http://www.scefiling.org/filingdocs/214/89319/220370e_200.3.pdf<br><br>http://www.scef |

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| PWS - 201 | Lawrence A. Freeman, "Time-Series Ground-Water-Level and Aquifer-System Compaction Data, Edwards Air Force Base, Antelope Valley, California, January 1991 through September 1993," USGS OFR 96-0186 (1996) (Certified) | The "Introduction" to this report states on p. 1: "Long-term withdrawal of ground water at Edwards Air Force Base has resulted in aquifer-system compaction. This has produced three results: 1. Land-surface deformation resulting in the formation of earth fissures and erosion caused by altered surface-water drainage gradients; 2. Permanent loss of ground-water storage capacity of the aquifer system (Ikehara and Philips, 1994); and 3. Structural damage to man-made facilities as a result of land surface subsidence." | B | http://www.scefiling.org/filingdocs/214/89330/220408e_201.pdf<br><br>http://www.scefiling.org/filingdocs/214/89331/220416e_201.2.pdf<br><br>http://www.scefiling.org/filingdocs/214/89332/220419e_201.3.pdf |
| PWS - 202 | Carl S. Carlson, David A. Leighton, et al., "Regional Water Table (1996) and Water-Table Changes in the Antelope Valley Ground-Water Basin, California," USGS WRI 98-4022 (1998) | The "Introduction" to this report states: "Antelope Valley is located in the western part of the Mojave Desert in southern California, about 50 mi northeast of Los Angeles (fig. 1). Ground water historically has been the primary source of water in this region because of the scarcity of surface water. Water use in the valley has increased significantly since development began in the late 1800's. Ground-water pumping for agricultural uses peaked in the 1950's, possibly exceeding 400,000 acre-feet per year (acre-ft/yr) in 1953 (Snyder, 1955). Increased pumping costs from greater pumping lifts (greater depth to water because of declining ground-water levels) and increased electric power costs | G | http://www.scefiling.org/filingdocs/214/89444/220712e_AVxExhx202.pdf |

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| | | (Templin and others, 1995) resulted in a decrease in agricultural pumping in the early 1970's. By the early 1980's, ground-water pumping for urban use ground-water pumping for urban use, which grew rapidly with urban development in the 1970's and 1980's, exceeded agricultural use. Since the late 1940's, ground-water pumping has exceeded estimated average annual recharge, 40,700 acre-ft/yr (Durbin, 1978), resulting in hundreds of feet of drawdown and more than 6 ft of land subsidence in some areas (Ikehara and Phillips, 1994). Since 1972, supplemental surface water has been imported from the California Water Project to help meet the demand for water in the Antelope Valley. To plan for future development in the Antelope Valley, an understanding of present ground-water conditions, and recent changes, is needed." Under "Water-Level Changes," the report notes that in some areas since the 1970s, groundwater levels have risen due to declines in pumping (after the California Aqueduct brought supplies), but that regardless of this situation, groundwater levels remain at historic lows. | | |
| PWS - 203 | "Water Levels in Antelope Valley Wells, 1975-1998," (table) USGS OFR 98-561 (1998) (Certified) | This is a table from USGS OFR 98-561 showing well measurements in AV wells from 1975-1998. Many show declines. | G | http://www.scefiling.org/filingdocs/214/89336/220461e_document.pdf |
| PWS - 204 | "Water System Master Plan for Los Angeles County, Waterworks District No. 40 (Antelope Valley)," draft report by Krieger & Stewart, Inc., Engineering Consultants, for Los Angeles County Dept of Public Works (4/29/1999) | Multiple examples of the linkage between groundwater declines and land subsidence in the Antelope Valley. Search this document on "subsidence" to show these examples. | B | http://www.scefiling.org/filingdocs/214/89324/220488e_document.pdf |

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| PWS - 205 | Michelle Sneed and Devin L. Galloway, "Aquifer-System Compaction: Analyses and Simulations-the Holly Site, Edwards Air Force Base, Antelope Valley, California," USGS WRI 00-4015 (2000) | The "Abstract" to this report on p. 1 states: "Land subsidence resulting from ground-water-level declines has long been recognized as a problem in Antelope Valley, California. At Edwards Air Force Base (EAFB), ground-water extractions have caused more than 150 feet of water-level decline, resulting in nearly 4 feet of subsidence. | B | http://www.scefiling.org/filingdocs/214/89324/220489e_document.pdf |
| PWS - 206 | Tracy Nishikawa, Diane L. Rewis, & Peter Martin, "Numerical Simulation of Ground-Water Flow and Land Subsidence at Edwards Air Force Base, Antelope Valley, California," USGS WRI 01-4038 (2001) | The "Abstract" of this report on p. 1 states: "Edwards Air Force Base (EAFB) in southern California historically has relied on ground water for its water-supply needs. Pumping of ground water at the base has led to problems such as declining water levels and land subsidence." Under the heading "Introduction" on p. 2, the report states: "Pumping of ground water at the base has led to declining water levels [about 90 ft between 1950-96 (Londquist and others, 1993; Carlson and others, 1998] and land subsidence [more than 3.5 ft between 1926-92 (Ikehara and Phillips, 1994)]." [The brackets in the previous quote are in the original.] Under "Purpose and Scope" on p. 2, the report states: "In 1988, the U.S. Geological Survey (USGS), in cooperation with the Department of the Air Force, began investigations of the effects of land subsidence and declining ground-water levels at EAFB." | B | http://www.scefiling.org/filingdocs/214/89324/220490e_document.pdf |
| PWS - 207 | Loren F. Metzger, Marti E. Ikehara, & James F. Howle, "Vertical-Deformation, Water-Level, Microgravity, Geodetic, Water-Chemistry, and Flow-Rate Data Collected During Injection, Storage, and Recovery Tests at Lancaster, Antelope Valley, California, September 1995 through September 1998," USGS OFR 01-0414 (2002) (Certified) | The "Introduction" to this report states on p. 1: "Historically, ground-water withdrawals in the Lancaster area of the Antelope Valley in southern California have exceeded natural replenishment, resulting in overdraft and land subsidence. Since the 1920's ground-water levels have declined as much as 200 feet (ft) in the area and land subsidence has exceeded 6 ft in some areas (Ikehara and Phillips, 1994). Reliance on ground water eased somewhat int he 1970's due to the importation of surface water from northern California by way of the State Water Project (SEP) and the California Aqueduct. However, rapid population | B | http://www.scefiling.org/filingdocs/214/89324/220491e_document.pdf |

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| | | growth and the resulting demand for water has [sic] increased ground-water withdrawals and renewed concerns about overdraft and subsidence." | | |
| PWS - 208 | David A. Leighton and Steven P. Phillips, "Simulation of Ground-Water Flow and Land Subsidence, Antelope Valley Ground-Water Basin, California," USGS WRI 03-4016 (2003) | This report was "Prepared in cooperation with the Antelope Valley Water Group." The "Abstract" on p. 1 states: "The Antelope Valley ground-water basin is about 940 square miles and is separated from the northern part of the Antelope Valley by faults and low-lying hills. Prior to 1972, ground-water provided more than 90 percent of the total water supply in the valley; since 1972, it has provided between 50 and 90 percent. Most ground-water pumping in the valley occurs in the Antelope Valley ground-water basin, which includes the rapidly growing cities of Lancaster and Palmdale. Ground-water declines of more than 200 feet in some parts of the ground-water basin have resulted in an increase in pumping lifts, reduced well efficiency, and land subsidence of more than 6 feet in some areas." | B | http://www.scefiling.org/filingdocs/214/89324/220493e_document.pdf |
| PWS - 209 | James F. Howle, Steven P. Phillips, et al., "Determination of Specific Yield and Water-Table Changes Using Temporal Microgravity Surveys Collected During the Second Injection, Storage, and Recovery Test in Lancaster, Antelope Valley, California, November 1996 through April 1997," USGS WRI 03-4019 (2003) | Prepared in cooperation with the Los Angeles Department of Public Works and the Antelope Valley-East Kern Water Agency. The "Introduction" to this report states beginning on p. 1: "Historically, ground-water withdrawals from the alluvial-aquifer system in the Lancaster area of the Antelope Valley in southern California (fig. 1) have exceeded natural replenishment, resulting in overdraft and land subsidence. Since the 1920s, ground-water levels have declined as much as 200 ft in the study area, and land subsidence has exceeded 6 ft (Ikehara and Phillips, 1994). Reliance on ground water eased somewhat in the 1970s because of the importation of surface water from northern California by way of the State Water Project (SWP) and the California Aqueduct. However, rapid population growth and the resulting demand for water has increased ground-water withdrawals and renewed concerns about overdraft and subsidence." This report examines the feasibility of | B | http://www.scefiling.org/filingdocs/214/89324/220494e_document.pdf |

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| | | recharging the aquifer in the Antelope Valley. | | |
| PWS - 210 | Miranda S. Fram, Brian A. Bergamaschi, et al., "Processes Affecting the Trihalomethane Concentrations Associated with the Third Injection, Storage, and Recovery Test at Lancaster, Antelope Valley, California, March 1998 through April 1999," USGS WRI 03-4062 (2003) | The "Introduction" to this report at p. 3 states: "Ground water is an important source of water supply in the Antelope Valley, California (fig. 1). Since the late 1940s, ground-water pumpage has exceeded natural recharge, resulting in as much as 350 feet (ft) of water-level declines and more than 6 ft of land subsidence in some areas (Ihehara and Phillips, 1994). The report discusses injecting water to offset groundwater declines and subsidence. | B | http://www.scefiling.org/filingdocs/214/89324/220495e_document.pdf |
| PWS - 211 | G.W. Bawden, M. Sneed, et al., "Measuring Human-Induced Land Subsidence from Space," USGS FS [Fact Sheet] 069-03 (12/2003) | This report discusses land subsidence in several regions. The report is not paginated, but under the heading "Antelope Valley, California," the report states: "Extensive pumping in Antelope Valley since the 1940s contributed to nearly 2 m of subsidence in Lancaster and more than 1 m south of Rogers Lake, Edwards Air Force Base." There are two maps on this page with color-illustrated images of the Antelope Valley indicating subsidence. | B | http://www.scefiling.org/filingdocs/214/89324/220496e_document.pdf |
| PWS - 212 | CA DWR Bulletin 118 update, CA Dept of Water Resources (2/27/2004) | Un-paginated page 2 says: "Because of recent groundwater pumping, groundwater levels and flow have been altered in urban areas such as Lancaster and Edwards Air Force Base. Groundwater pumping has caused subsidence of the ground surface as well as earth fissures to appear in Lancaster and on Edwards Air Force Base. By 1992, 292 square miles of Antelope Valley had subsided more than one foot. This subsidence has permanently reduced aquifer-system storage by about 50,000 acre-feet[.]" | B | http://www.scefiling.org/filingdocs/214/89324/220497e_document.pdf |
| PWS - 213 | "California's Groundwater, Bulletin 118," 2004 update (section entitled "Antelope Valley Groundwater Basin), CA Dept of Water Resources report | Under the heading "Groundwater Level Trends" (the report is unpaginated), the report states: "From 1975 through 1998, groundwater level changes ranged from an increase of 84 feet to a decrease of 66 feet (Carlson and Phillips 1998). The parts of the basin with declining water levels are along | B | http://www.scefiling.org/filingdocs/214/89324/220498e_docu |

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| | (2/27/2004) | the highway 14 corridor from Palmdale through Lancaster to Rosamond and surrounding Rogers Lake on Edwards Air Force Base (Carlson and Phillips 1998). . . . Because of recent groundwater pumping, groundwater levels and flow have been altered in urban areas such as Lancaster and Edwards Air Force Base. Groundwater pumping has caused subsidence of the ground surface as well as earth fissures to appear in Lancaster and on Edwards Air Force Base. By 1992, 292 square miles of Antelope Valley had subsided more than one foot. This subsidence has permanently reduced aquifer-system storage by about 50,000 acre-feet (Sneed and Galloway 2000; Ikehara and Phillips 1994)." | | ment.pdf |
| PWS - 214 | "California Water Plan Update 2005, Vol. 3, Chapter 10, South Lahontan Hydrologic Region," CA Dept of Water Resources report (1/1/2005) | On page 10-5 of the report, under the heading "State of the Region: Challenges," the report states: "Many of the rapidly developing urban parts of this region are susceptible to shortfalls in available water supplies. For example, a recent study by the Antelope Valley Water Group concluded that the valley has low reliability to meet demands from existing and future groundwater supplies., the SWP [State Water Project], Littlerock Reservoir, and recycling. The report further stated that the region could only expect to meet full 1998 water demands about half the time without overdrafting the groundwater resources." On page 10-10, the report states: "The [Palmdale Water District] master plan highlights PWD's desire to maintain the capability to obtain 40 percent of its water supply from groundwater. However, becauseof declining groundwater levels are an ongoing concern in the Palmdale area, there is uncertainty about whether the groundwater basin's perennial yield could support the desired level of pumping. . . . The Draft Environmental Impact Report for the [PWD] plan identified a continuing decline in groundwater levels as an unavoidable effect from building new wells and pumping additional groundwater, as desired to maintain groundwater | G | http://www.scefiling.org/filingdocs/214/89324/220499e_document.pdf |

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| | | as 40 percent of PWD's total supply." | | |
| PWS - 215 | Regional Water Management Group of the Antelope Valley Integrated Regional Water Management Plan, "Antelope Valley Integrated Water Management Plan" (2005) | This report was prepared by the Regional Water Management Group of the Antelope Valley Integrated Regional Water Management Plan, which resulted from the passage of Proposition 50 in 2002, authorizing the issuance of California State bonds to finance water project. The "Executive Summary" of this report states on p. ES-xx: "Because the amounts [of groundwater in the Antelope Valley] pumped were greater than the amounts being replenished, groundwater levels have declined significantly through the Antelope Valley Region. The long-term depletion of aquifers cannot be continued indefinitely without serious consequences. The historical declines in groundwater levels with the Antelope Valley Region have caused permanent damage to aquifers in some area through land subsidence, or sinking." There are multiple other examples within this report noting groundwater declines and linking those declines to land subsidence (search "subsidence"). | B | http://www.scefiling.org/filingdocs/214/89324/220500e_document.pdf |
| PWS - 216 | Allen H. Christensen, "Generalized Water-Level Contours, September-October 2000 and March-April 2001, and Long-Term Water-Level Changes at the U.S. Air Force Plant 42 and Vicinity, Palmdale, California," USGS SIR 2004-5074 (2005) | The "Introduction" to this report states on p. 1: "Historically, the U.S. Air Force Plant 42 (Plant 42) has relied on ground water as the primary source of water owing, in large part, to the scarcity of surface water in the region. Since 1972, supplemental surface water has been imported from the California State Water Project to help meet the demand for water. Despite the importation of surface water, ground-water withdrawal for municipal, industrial, and agricultural use has resulted in ground-water-level declines at Plant 42 and vicinity as large as 200 ft since the early 1900s." | G | http://www.scefiling.org/filingdocs/214/89324/220501e_document.pdf |
| PWS - 217 | Michelle Sneed, Tracy Nishikawa & Peter Martin, "Water Resources Investigations at Edwards Air Force Base since | The "Introduction" to this report beginning on p. 1 states: "Edwards Air Force Base (EAFB) in southern California (fig. 1) has relied on ground water to meet its water-supply needs. The extraction of ground water has led to two major | B | http://www.scefiling.org/filingdocs/214/89324/220502e_docu |

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| | 1988," USGS WRI (Fact Sheet) 2005-3112 (12/2005) | problems that can directly affect the mission of EAFB: declining water levels (more than 120 ft since the 1920s) and land subsidence, a gradual downward movement of the land surface (more than 4 ft since the late 1920s). As water levels decline, this valuable resource becomes depleted, thus requiring mitigating measures. Land subsidence has caused cracked (fissured) runways and accelerated erosion on Rogers lakebed." | | ment.pdf |
| PWS - 218 | Kennedy/Jenks Consultants, "Final Facilities Planning Report, Antelope Valley Recycled Water Project" (8/8/2006) | This report was prepared for the Los Angeles County Waterworks District No. 40, which includes the Antelope Valley. Page A-6 of this report states: "According to the USGS, groundwater levels in the Lancaster area have declined by as much as 200 feet from 1915 to 1988 (USGS, 1994). The report also notes that in some parts of the Antelope Valley, groundwater levels have been increasing. There are multiple examples within this report discussing the groundwater changes as well as subsidence. (Search "groundwater" or "subsidence".) | B | http://www.scefiling.org/filingdocs/214/89324/220503e_document.pdf |
| PWS - 219 | RMC Water and Environment, "City of Lancaster Groundwater Recharge Feasibility Study," 5/1/2007 | This report examines the feasibility of recharging groundwater supplies. Page ES-1 notes that a number of water resources issues face the Antelope Valley, one of which is: "An overdrafted groundwater basin, which limits the amount of water that can be economically and sustainably pumped in the long-term." The study also generally notes the connection between groundwater pumping and land subsidence. | B | http://www.scefiling.org/filingdocs/214/89324/220504e_document.pdf |
| PWS - 220 | Alisha Semchuck, "City Seeking Help to Recharge Amargosa," Antelope Valley Press (2/29/2008) | Article says City of Palmdale has asked Palmdale Water District to become a partner in a program to recharge groundwater using water from California Aqueduct. The article states: "The project was proposed because of overdrafted groundwater in the Antelope Valley basin -- too much water pumped from wells." The article also states: "In certain spots the water table dropped 200 fet within 18 years, [Leon] Swain [Palmdale's director of public works] | B | http://www.scefiling.org/filingdocs/214/89324/220506e_document.pdf |

| Exhibit No. | Description | Dr. Douglas R. Littlefield's Notations (From PWS-43A) | Groundwater (G), Subsidence (S), or Both (B) | Court's Webpage Link |
|---|---|---|---|---|
| | | said. "'That's a real concern. It allows land subsidence,' he said. 'In land subsidence, the earth settles, making less room for underground water storage capacity.'" The article concludes: "Palmdale Water District Board President Dick Wells gave the project his nod of approval, though no official decision has been made by the water board. 'We're putting a recharge where the overdraft is greatest,' Wells said." | | |