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COUNTY OF INYO
WATER DEPARTMENT

April 29, 2016

Mr. Jim Yannotta, Aqueduct Manager
Los Angeles Department of Water and Power
300 Mandich Street
Bishop, California 93514

Subject: Inyo County comments on LADWP's proposed Annual Operations Plan for Runoff Year 2016-2017

Dear Mr. Yannotta:

In accordance with Section V.D of the Inyo/Los Angeles Long Term Water Agreement, the following are the Inyo County Water Department's comments on LADWP's proposed Annual Operations Plan for Runoff Year 2016-2017 (Proposed Plan).

Groundwater pumping (valley-wide scale). The Proposed Plan indicates that approximately 75,000 acre-feet (ac-ft) will be pumped during the 2016-2017 runoff year. The Water Department concurs that this amount of pumping is similar to the conservative operations plans approved by the Standing Committee during the drought recovery period of the early 1990s.

Runoff in 2016-17 is forecast to be 71% of normal. This year is the fifth consecutive year of actual or forecasted runoff below 75% of normal, and in accordance with the Water Agreement, Proposed Plan describes operations for the April-September period only, with pumping ranging between 46,160 and 51,510 ac-ft for that period. LADWP also suggested in the cover letter accompanying its 2016 Annual Owens Valley report that the annual pumping for 2016-17 is anticipated to be approximately 75,000 ac-ft.

The Water Department is concerned with the declining water table elevations throughout the Owens Valley. Depth to water and water level changes since April 2015 in selected shallow monitoring wells are shown in Table 1 (appended at the end of this letter). Also shown in Table 1 are water level changes since the current drought began in 2011 and water table change since

the vegetation baseline mapping was done in the mid-1980s. Despite the relative conservatism of the Proposed Plan, the cumulative effect of five years of drought has resulted in a substantial decline in the water table and in the condition of groundwater dependent native vegetation (as shown in Section 3 of the draft LADWP 2016 Annual Owens Valley Report). Groundwater elevations have declined in all well fields as compared to the 1984-87 baseline levels by an average magnitude of several feet. Inyo County does not feel that it is appropriate to pump groundwater for export to Los Angeles in well fields that are significantly below baseline levels. Although the Water Agreement's process for Annual Operations Plans is based on planning for one year at a time, the Water Department recommends that the Technical Group consider multi-year planning to address the need to maintain or raise the water table to meet the Water Agreements native vegetation goals.

Groundwater pumping (well field scale). In order to analyze the proposed plan on a well field scale, the six months of pumping described in the proposed plan were extrapolated out to the end of the 2017 runoff year to allow the use of regression models for indicator wells to estimate water table conditions in April 2017. The models the Water Department uses to analyze the Proposed Plan predict water levels one year in the future (April 2016 to 2017) based on pumping for each wellfield and the forecasted runoff. Minimum pumping during the fall and winter months is approximately 17,905 ac-ft, consisting of town and hatchery supply and stockwater and environmental project replacement water on the Bishop Cone. The sum of the high range of proposed first-six-month pumping and the estimated minimum pumping during the winter is 69,415 ac-ft. The amount of pumping above the minimum during the upcoming winter to achieve the proposed annual total of 75,000 is 5,585 ac-ft. To permit analysis of the Proposed Plan using multiple regression analysis, this amount of pumping must be apportioned among wellfields with ON-status or exempt wells. Until LADWP releases the operations plan in October, this procedure requires judgements as to where the pumping will occur, which makes the regression model predictions uncertain where the allocation of pumping among well fields is unknown. Regression modeling is not completed for Bishop because pumping in that wellfield must comply with the Hillside Decree nor for Lone Pine because the proposed pumping is for mitigation and town supply only.

Two pumping scenarios are described in Table 2. The first scenario evaluates changes in shallow groundwater levels resulting from sole-source pumping only. This scenario is provided as a point of comparison for evaluating the relative effects of the Proposed Plan. Valley-wide pumping in this scenario is 54,435 ac-ft. The pumping allocation and average water table change is given in Table 3, and resulting water table changes in individual monitoring wells are given in Table 4. Pumping was set to sole source supply requirements for Laws, Bishop, Thibaut-Sawmill, and Lone Pine wellfields.

For the analysis of the Proposed Plan, it was assumed that the higher amount of pumping given in Table 2.6 in the proposed plan would be pumped during April through September, plus sole source pumping from October through March. This sums to 69,415 ac-ft of pumping, so, to analyze the Proposed Plan, the question is how to apportion the remainder (5,585 ac-ft) among wellfields to predict the possible impacts of pumping 75,000 ac-ft (Table 2). To systematically evaluate the Proposed Plan, a number of strategies were examined, such as minimizing deviation from baseline, minimizing change from April 2016, or maximizing overall recovery. Scenarios that maximized overall recovery or minimize deviation from baseline tended to concentrate pumping in the Taboose-Aberdeen well field, where Type C parcels would possibly be affected. The constraint that seemed to better distribute pumping among well fields was to distribute the 5,585 ac-ft of unallocated pumping such that 2016 water levels were maintained. This is the scenario presented in Tables 2 and 3 and the results are presented in Table 4. The analysis of this pumping can be refined in October in conjunction with the pumping plan for the second six months of the runoff year.

The average change in water table elevation in each well field for the 75,000 ac-ft scenario is positive except for in Independence-Oak, where it is slightly below zero, and valley-wide average change is an increase of 0.25 feet (Table 3). For the minimum pumping scenario, the average change is an increase of 1.06 feet. These results indicate that pumping 75,000 ac-ft as allocated in Table 3 is consistent with maintaining or slightly raising water table elevations, and the change in water table is less than one foot different than the minimum pumping scenario.

Table 2. 'Minimum pumping' and 'Proposed Plan with minimal water table change' pumping scenarios.

Scenario	Description
Annual Minimum 54,435 ac-ft	Inyo estimated minimum pumping for sole source uses. It is likely that in a dry year some uses would not be able to be met at this level of pumping.
Optimized to maintain 2016 DTW 75,000 ac-ft	April-September pumping proposed by LADWP, winter minimum pumping, and 5,585 ac-ft apportioned among BP, TA, IO, SS, and BG wellfields with available pumping capacity to bring the annual total to 75,000. The apportionment was derived using a procedure to minimize the change in water table depth among all indicator wells/wellfields.

Table 3. Minimum and LADWP proposed pumping totals used as input into the regression models, and resulting average water table change in each well field. Regression modeling was not completed for Bishop because pumping in that wellfield is governed by the Hillside Decree nor for Lone Pine because the proposed pumping is for mitigation and town supply only.

Wellfield	Annual Minimum	Average change	Maintain 2016	Average change
	Ac-ft/year	ft	Ac-ft/year	ft
Laws	6,300	0.32	6,780	0.23
Bishop	10,400	--	11,100	--
Big Pine	20,550	0.79	25,052	0.17
Taboose-Ab.	300	1.55	6,863	0.24
Thibaut-Saw.	8,160	1.75	8,460	1.63
Ind.-Oak	5,990	1.30	10,026	-0.02
Symmes-Shep.	1,200	1.06	4,529	0.04
Bairs-George	500	0.72	1,155	0.12
Lone Pine	1,035	--	1,035	--
Total pump.; avg. ch.	54,435	1.06	75,000	0.25

Well field specific conditions. The following presents a summary of conditions in each well field, LADWP's proposed pumping, predicted effects of the proposed pumping, and the County's comments on LADWP's proposed operations for each well field. In the discussion below, 'baseline water levels' are the average of April water levels for 1985, 1986, and 1987, and 'baseline vegetation conditions' refer to the conditions documented in the baseline maps attached to the Water Agreement as Exhibit A. Predicted water table changes discussed below are based on the pumping amounts given in Table 3 for pumping to total 75,000 ac-ft, distributed among the wellfields to best maintain 2016 water levels.

Predicted water table changes at monitoring sites are based on correlations between wells at monitoring sites and nearby indicator wells. The Water Department's April 2016 water level measurements are attached as Table 1, and multiple linear regression model results are attached as Table 4. Feel free to have your staff contact the Water Department should you have any questions concerning the methods used by the Water Department.

Laws. LADWP proposes to pump between 6,600 ac-ft through September in the Laws well field to supply Owens Valley demands including town water systems, irrigation, and enhancement/mitigation (E/M) projects. Last year, 5,734 ac-ft were pumped from Laws, resulting in water table decreases in indicator monitoring wells ranging from 0.14 feet to 0.81 feet (Table 1). Water levels range from 3.7 to >12.4 feet below the baseline water levels of the mid-1980s. Vegetation parcels LAW052 and LAW062 are chronically below baseline vegetation cover.

The proposed pumping appears to accommodate irrigation, town, and mitigation project needs in Laws. Predicted water levels are expected to rise or decline slightly (depending on location) if these projects are fully supplied with pumped water. Average water table change is expected to be an increase of approximately 0.23 feet.

The Proposed Plan discusses operational testing of wells W385 and W386 to determine the potential effects of the wells on nearby resources. Reiterating the points raised in our October 29, 2015 letter to LADWP concerning testing of these wells, a mitigation measure 10-12 was adopted by LADWP in the 1991 Final Environmental Impact Report to mitigate the impacts caused by the operation of Wells W385 and W386 in the late 1980s (See page 10-58 of the 1990 DEIR, Sept. 1990). The adopted mitigation measure includes a discontinuation of pumping from the two wells. This is apparent from the last paragraph of page 3-16 of the 1991 FEIR (Aug. 1991) which states: "*Approximately 300 acres in the Five Bridges area are being mitigated through a combination of alternatives one and two; that is, pumping has been discontinued in the area, surface water has been supplied to stimulate natural revegetation and active revegetation has occurred in a portion of the area.*" Since the revegetation mitigation goals of the adopted mitigation plan have not been achieved, Mitigation Measure 10-12, including the cessation of pumping from Wells W385 and W386, remains in effect. Under these circumstances, neither well can be operated until the Technical Group agrees upon a modification of the adopted mitigation measure in such a manner that the operation of the wells would be permitted and the LADWP Board adopts the modification. Operation of these wells should not occur until the revegetation goals of the mitigation measure have been meet, the Technical Group has agreed on a modification to the mitigation plan and operational testing plan, and the CEQA requirements for modification of an existing mitigation measure have been met.

Bishop. LADWP proposes to pump 9,000 ac-ft from Bishop through September. Last year, 10,491 AF was pumped from Bishop. Related to last year's Operations Plan, on March 17, 2015, the Inyo County Board of Supervisors approved a reduction in irrigation on the Bishop Cone. LADWP did not agree to Standing Committee approval of this reduction because it is uncertain whether actual uses will fall short or exceed the reduced irrigation amount approved by the Board. We recommend that a similar program be developed for the current runoff year based on the runoff forecast and water stored in Bishop Creek reservoirs.

We do not object to the proposed pumping providing it complies with the Hillside Decree. Concerning LADWP's claim that the Bishop Cone Audit does not account for known uses and losses, any proposed changes to the audit protocol to better account for uses and losses should be described in detail in a report to the Technical Group.

Big Pine. LADWP proposes to pump between 10,995 and 12,345 ac-ft from the Big Pine well field through September contingent on water needs and environmental conditions. This amount

apparently includes hatchery and town supply as well as several months of operation of exempt wells for export. Last year, 20,574 ac-ft were pumped from Big Pine, resulting in water table changes at monitoring sites and in indicator monitoring wells ranging from declines of 2.08 ft to increases of 0.50 ft, and were 3.94 to 7.16 feet below their baseline water levels. Average water table change is expected to be an increase of approximately 0.17 feet. Vegetation BGP162 has been chronically below baseline vegetation cover.

Recognizing that water tables have declined and are substantially below their baseline levels in the Big Pine well field, pumping and surface water should be managed to recover the water table.

Taboose-Aberdeen. LADWP proposes to pump between 2,500 and 6,500 ac-ft in the Taboose-Aberdeen well field through September. Last year, 8,707 ac-ft were pumped from Taboose-Aberdeen, resulting in water table changes at monitoring sites and in indicator monitoring wells ranging from an increase of 1.42 feet to a decrease of 0.90 feet. Water levels ranged from 0.17 to 5.10 feet below baseline water levels. Average water table change is expected to be an increase of approximately 0.24 feet.

Pumping should be managed to avoid significant impacts to Type C vegetation.

Thibaut-Sawmill. LADWP proposes to pump 4,380 ac-ft in the Thibaut-Sawmill well field through September. Last year, 8,371 ac-ft were pumped, resulting in water table changes at monitoring sites and in indicator monitoring wells ranging from an increase of 1.16 feet to a decline of 0.66 feet. Well 415T is continuing to rise due to the reduced pumping at the Blackrock Fish Hatchery. Water levels ranged from 4.80 feet above to 1.41 feet below baseline water levels. Average water table change is expected to be an increase of approximately 1.63 feet.

The Water Department does not object to using ON-status available pumping capacity to supplement surface-water supplied irrigation in the event that surface water is not available.

Independence-Oak. LADWP proposes to pump 6,910 ac-ft in the well field through September. Last year, LADWP pumped 9,563 ac-ft, resulting in water table declines at monitoring sites and in indicator monitoring wells ranging from 0.51 to 4.23 feet. The water table ranged from 4.81 to 15.82 feet below baseline water levels. Average water table change is expected to be a decline of 0.02 feet.

The Water Department does not object to LADWP's proposed pumping if it is to provide irrigation, E/M project, and town supply uses; however, recognizing that the water table has declined and is below baseline levels, pumping and surface water should be managed in the well field to raise the water table.

Symmes-Shepherd. LADWP proposes to pump 3,975 ac-ft from the Symmes-Shepherd well field through September. Last year, LADWP pumped 4,924 ac-ft from Symmes-Shepherd, resulting in water table changes at monitoring sites and in indicator monitoring wells ranging from increases of 1.02 feet to declines of 4.84 feet. Water table levels range from 2.41 to 25.94 feet below baseline levels. Average water table change is expected to be a rise of 0.04 feet.

Due to sustained pumping in the northern part of the well field, monitoring wells at the Independence landfill are within a few feet of becoming dry. If these non-LADWP wells become dry due to pumping, they will be unable to provide access for water quality sampling, and impede Inyo County's ability to comply with the waste discharge requirements for the Independence Landfill. If declining trends continue, these wells will require mitigation, either by deepening or replacing the wells.

Bairs-Georges. LADWP proposes to pump 960 ac-ft in the Bairs-Georges well field through September. Last year, LADWP pumped 1,325 ac-ft from the well field, resulting in water table changes in indicator and monitoring site wells ranging from a decrease of 0.16 feet to an increase of 0.38 feet. Water table levels range from 0.40 feet above to 0.45 feet below baseline levels.

Well W343 is exempt for irrigation in below average runoff years and should be operated to supply pasture irrigation and stock water during the summer in the likely event of insufficient flows in George Creek.

Lone Pine. LADWP proposes to pump 840 ac-ft from the Lone Pine well field through September. Last year, LADWP pumped 888 ac-ft. Concerning operation of well W416, the Proposed Plan notes that LADWP has requested that the Technical Group designate a monitoring site to manage this well. The management requirements of this well differ from those of many of LADWP's aqueduct supply wells in that effects on non-LADWP wells are a much more substantial concern here than in well fields where LADWP wells are much farther from potentially affected non-LADWP wells.

Water for use in Owens Valley. Inyo County agrees in principle with the total amount of Owens Valley Uses proposed in Figure 2.11, given as 161,600 ac-ft (including Indian Lands). If water conservation reduces Owens Lake's projected requirement of 65,100 ac-ft, that water savings should be applied to uses in Owens Valley, including fulfillment of obligations to Indian Lands.

The Proposed Plan indicates that "*LADWP intends to pursue a reduction in irrigation pursuant to the terms of the Long Term Water Agreement and Standing Committee direction*" (Footnote to Figure 2.11 and elsewhere). At the March 31, 2016 Standing Committee meeting, the Standing Committee agreed to the following:

Pursuant to Section IV.A of the Water Agreement, it is recognized that successive dry years could result in insufficient water to meet all needs, therefore, the Standing Committee directs the Technical Group, based on its evaluation of existing conditions, to develop a program, or programs, providing for reasonable reductions in irrigation Water Supply of Los Angeles-owned lands in Owens Valley and for enhancement/mitigation projects, and to submit the programs for consideration and possible approval by the Inyo County Board of Supervisors and the Department acting through the Standing Committee.

Nothing in this motion shall preclude either LADWP or Inyo County from independently developing a program providing for reasonable reductions in irrigation or enhancement/mitigation projects, and presenting such motion for evaluation by the Technical Group for consideration and possible approval by the Inyo County Board of Supervisors and the Department acting through the Standing Committee.

At the Standing Committee meeting where this direction was given, Inyo County's representatives inquired as to what measures LADWP was taking regarding water savings on Owens Lake and requested that a portion of water conserved on the Lake be retained for uses in Owens Valley. LADWP's representatives asserted that this matter was not within the Standing Committee's purview. Nonetheless, water uses on the Owens Lake are included in the Proposed Plan (Figure 2.11) despite LADWP's stated position. The Proposed Plan indicates that water use on Owens Lake will increase by over 18,000 ac-ft. Given the efforts and progress that has been made toward more efficient use of water on Owens Lake, it is surprising to see water use increasing again, especially in light of the successful measures taken last year to conserve water. Inyo County has a long and consistent record of supporting water conservation efforts on the Lake, recognizing that water used on the Lake diminishes water availability elsewhere in Owens Valley. This support was manifested last year in the County's support for LADWP's request to the Great Basin Air Pollution Control District's Hearing Board for a variance from the mandated schedule for shallow flooding dust control measures.

It is the Water Department's expectation that the Technical Group will be able to present to the Standing Committee at its May 12 meeting either a proposed program for irrigation reductions and reductions in supply to enhancement/mitigation projects, or discuss with the Standing Committee where the Technical Group was unable to agree on such a program. Water Agreement (Section IV.A) provides the requirements for such a program:

The Department shall continue to provide water for Los Angeles-owned lands in Inyo County in an amount sufficient so that the water related uses of such lands that were made during the 1981-82 runoff year can continue to be made. The Department shall continue to provide water to Los Angeles-owned lands in the Olancha/Cartago area such that the lands that have received water in the past will continue to receive water.

Additionally, the Department shall provide water to any enhancement/mitigation projects added since 1981-1982, unless the Inyo County Board of Supervisors and the Department agree to reduce or eliminate such water supply.

It is recognized that successive dry years could result in insufficient water to meet all needs. During periods of dry year water shortages, the Technical Group will evaluate existing conditions. A program for reasonable reductions in irrigation water supply for Los Angeles-owned lands in the Owens Valley and for enhancement/mitigation projects may be implemented if such a program is approved by the Inyo County Board of Supervisors and the Department, acting through the Standing Committee.

The factors to be considered in the development of such a plan are given in the Green Book Section I.B.4.a:

...a program to reduce the amount of irrigation water supply for Los Angeles-owned lands may be implemented if such a program is approved by the County Board of Supervisors and the Department. Factors that will be considered in determining if such a program is to be implemented include: 1) water use, supply, and conservation in Los Angeles; 2) flows in the Los Angeles Aqueduct System; 3) surface water runoff conditions; 4) level of groundwater extractions; and 5) extent of well turnoffs implemented for purposes of environmental protection.

Absent such a program, concerning management of Type E vegetation, the Green Book provides that:

If a significant decrease or change in vegetation conditions from those which existed during the 1981/82 runoff year is projected to occur because of a reduction in the supply of water to the affected lands, and the reduction is not a result of an agreement of the parties pursuant to Section IV.A of the Agreement, if feasible, the supply of water will be immediately increased to avoid such a decrease or change.

The Water Department suggests that the Technical Group should consider the following components in a program of reasonable water supply reductions:

1. Bishop Cone surface water management. In 2015, in response to drought conditions, Water Department and LADWP staff developed a proposed flow schedule for flows in Bishop Creek below Plant #6. There was never formal agreement on such a schedule at the Standing Committee level because of uncertainty in the feasibility of implementing the proposed flow given the dire drought conditions; however, this plan was approved by the Inyo County Board of Supervisors. In light of the direction from the Standing Committee, we believe that the Technical Group should consider recommending a similar

program this year. The Technical Group should modify the analysis that was done last year such as would be appropriate for this year's runoff and reservoir storage conditions.

2. McNally Ponds and Pasture Enhancement/Mitigation Project. Given the continued low runoff conditions, Water Department staff recommends that the McNally Ponds and Pasture Enhancement/Mitigation Project receive a reduced water supply. In 2015, the Technical Group made the following request to the Standing Committee (Standing Committee meeting, June 4, 2015, agenda item #4:

   > *The Technical Group requests that, pursuant to Water Agreement Section IV.A, the Standing Committee agree to modify and eliminate the water supply to that potion of McNally Ponds Project, including the waterfowl ponds and adjacent 100 acre native pastureland, during the 2015-16 runoff year. The remainder of the McNally Ponds Project shall remain in effect and shall receive water.*

   The Technical Group should develop a similar recommendation this year, but with an additional commitment that the Technical Group will develop modifications to this project or provide alternatives that could replace the project. These modifications or alternatives should provide equivalent or better mitigation than the project described in the 1991 EIR and negative declaration for Laws/Poleta area E/M projects. If possible an alternative project should be implemented this irrigation season. The Water Department suggests irrigating off of Bishop Creek Canal as an alternative to the project.

3. Valley-wide irrigation water supply. Recognizing that irrigation supply sources and delivery routes vary from lease to lease, the Water Department suggests that the Technical Group make a general qualitative recommendation to the Standing Committee that lessees reliant on creek flows be advised that they may be subject to reductions based on low creek flows, and that lessees reliant on wells may be subject to reductions to avoid impacting non-LADWP wells.

We look forward to addressing these comments at a Technical Group meeting. If you wish to discuss these comments prior to the Technical Group meeting, feel free to contact me.

Sincerely,

Robert Harrington, Water Director

cc: Inyo County Board of Supervisors

Inyo County Water Commission
Kevin Carunchio, County CAO
Marshall Rudolph, County Counsel
Greg James, Special Counsel

Table 1. Depth to Water (DTW) at indicator wells, April 2016. All data are in feet. A negative change from April 2015 indicates the water table declined; negative deviation from baseline indicates the water table is below baseline. Depths are from reference point on the test well. Baseline DTW is the mean April DTW for 1985, 1986, and 1987. Where baseline elevation at monitoring sites does not exist, baseline DTW was predicted from monitoring site/indicator wells regression models.

Well ID	DTW April 2016	Change from April 2015	Change from April 2011	Deviation from Baseline in 2016
Laws				
107T	Dry			
436T	13.95	-0.29	-3.16	-5.85
438T	16.99	-0.81	-5.12	-7.39
490T	18.08	-0.58	-3.23	-5.01
492T	37.17	-0.64	-3.8	-4.37
795T, LW1	Dry			
V001G, LW2	Dry			
574T, LW3†	17.44	-0.14	-1.84	-4.22
Big Pine				
425T	21.87	0.16	-4.29	-6.97
426T	17.28	-0.09	-3.95	-5.71
469T	25.92	-0.43	-2.98	-4.25
572T	18.13	-2.08	-4.31	-6.23
798T, BP1	22.50	-2.08	-5.8	-6.32
799T, BP2	22.32	0.15	-2.82	-3.94
567T, BP3	21.13	0.50	-4.53	-7.16
800T, BP4	20.26	0.00	-4.06	-6.71
Taboose Aberdeen				
417T	28.80	1.13	2.82	-1.83
418T	10.16	-0.06	-0.44	-1.93
419T	9.32	-0.25	-1.44	-2.69
421T	39.45	-0.90	-3.92	-5.10
502T	12.57	-0.23	-3.34	-5.08
504T	13.36	-0.37	-1.97	-2.59
505T	20.67	1.18	2.62	-2.07
586T, TA4	10.68	-0.25	-2.08	-2.39
801T, TA5	16.27	0.45	-3.07	-0.17
803T, TA6	10.30	1.42	3.00	-2.04
Thibaut Sawmill				
415T	13.70	1.16	8.09	4.80
507T	5.69	-0.66	-1.07	-1.02

Well ID	DTW April 2016	Change from April 2015	Change from April 2011	Deviation from Baseline in 2016
806T, TS2	13.85	0.82	-0.75	-1.41
Independence Oak				
406T	6.38	-0.51	-3.02	-4.81
407T	16.20	-0.55	-6.39	-8.90
408T	8.17	-1.14	-5.44	-5.04
409T	17.42	-4.23	-13.15	-15.82
546T	11.62	-0.77	-5.93	-8.19
809T, IO1	16.87	-1.05	-7.57	-10.75
Symmes Shepherd				
402T	11.00	1.02	-1.03	-2.97
403T	9.05	-0.02	-1.82	-3.72
404T	6.17	0.84	-1.32	-2.60
447T	47.81	-4.84	-12.06	-25.94
510T	7.41	0.98	-1.13	-2.41
511T	8.99	0.72	-2.79	-4.36
V009G, SS1	28.05	-2.91	-11.05	-22.64
646T, SS2	Dry			
Bairs George				
398T	5.95	0.09	-1.84	0.40
400T	6.75	0.38	-1.16	-0.45
812T	18.84	-0.16	-3.46	-5.59

Table 4. Predicted shallow groundwater level changes at indicator wells and monitoring sites for pumping for sole source needs only (54,435 ac-ft) and for LADWP's proposed annual operations plan for 2016, with 75,000 ac-ft of pumping allocated to meet solc source uses and minimize water level changes in each each well field. Negative DTW values denote a decline.

Station ID, Monitoring site	Minimum pumping 54,435 ac-ft	Maintain 2016 water levels 75,000 ac-ft
	(ft)	(ft)
Laws		
436T	0.53	0.46
438T	0.82	0.76
490T	-0.2	-0.23
492T	0.11	-0.15
574T	0.35	0.32
Big Pine		
425T	0.19	-0.56
426T	0.05	-0.37
469T	0.69	0.25

Station ID, Monitoring site	Minimum pumping 54,435 ac-ft	Maintain 2016 water levels 75,000 ac-ft
572T	1.89	1.05
798T, BP1	2.61	1.89
799T, BP2	0.3	-0.14
567T, BP3	0.02	-0.62
800T, BP4	0.53	-0.16
Taboose Aberdeen		
418T	0.7	-0.02
419T, TA1	1.78	0.02
421T	2.23	0.44
502T	1.41	0.59
504T	2.23	0.05
586T, TA4	1.57	0.10
801T, TA5	0.9	0.48
Thibaut Sawmill		
415T	1.14	0.91
507T	0.78	0.73
806T, TS2	3.34	3.24
Ind. Oak		
406T	0.24	-0.03
407T	1.34	-0.03
408T	0.83	-0.10
409T	3.93	0.54
546T	0.81	0.52
809T, IO1	0.62	-1.01
Symmes Shep.		
402T	0.14	-0.22
403T	0.82	-0.20
404T	0.47	0.08
510T	2.76	0.32
511T	0.44	0.07
447T	0.49	0.08
V009G, SS1	2.29	0.15
Bairs George		
398T	0.65	-0.24
400T	0.27	0.11
812T[1]	1.25	0.48
Average	1.06	0.24

[1] New model. Regression parameters and statistics available on request.