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COUNTY OF INYO
WATER DEPARTMENT

April 28, 2023

Mr. Adam Perez, 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 2023-2024

Dear Mr. Perez:

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 Draft Owens Valley Operations Plan for Runoff Year 2023-2024 (Draft Plan).

General comments

The Draft Plan indicates that between 40,130 – 51,470 acre-feet (AF) of groundwater will be pumped during the 2023-2024 runoff year and that runoff is forecast to be 233% of normal. The extraordinarily high amount of expected runoff presents an opportunity to recover groundwater levels to those comparable to or higher than the baseline vegetation mapping period of the mid-1980s. Given that LADWP has ample surface water supplies for export to Los Angeles and for use in Owens Valley, groundwater extraction should be minimized to take advantage of this opportunity for water table recovery.

The County is pleased that LADWP recognizes the opportunity to "allow further recovery of the groundwater system from the previous dry years". The Taboose-Aberdeen, Independence-Oak, Symmes-Shepherd, and Bairs-Georges wellfields are in need of water table recovery, and these unusually high runoff conditions should be directed to recover depressed water tables in these wellfields. The County encourages a continued conservative pumping regime in future

years to maximize groundwater and vegetation recovery. Projections and observed patterns in recent years suggest that, under a changing climate, we will expect to see more variable precipitation and larger extremes – wetter wet years and drier dry years. Recognizing that the next drought is likely around the corner and that we have seen several multi-year droughts in the past four decades, it is therefore necessary to consider multiple years when managing the Owens Valley.

The Aqueduct intake is in Inyo County and exports water arising from both Inyo and Mono Counties. The runoff that originates in Mono County flows through Inyo County, and to differentiate the amount of water coming from each county as only available to meet LADWP obligations in the county of origin is a misrepresentation. The ecological communities of the Owens Valley damaged by the City's water gathering activities evolved with the natural runoff regime and are dependent on water flowing from Mono County. This point of disagreement has been raised in previous years and was surfaced again this year by the Water Commission and Board of Supervisors.

The County understands that 2023-24 is an unprecedented runoff year and that some decisions are being made for operational reasons. With respect to spreading water, the County does not want the precedent set that Eastern Sierra water can be recharged into aquifers outside the county. As much as possible, water should be recharged within Owens Valley and Rose Valley in order to promote water table and vegetation recovery. Currently, LADWP is concentrating spreading in Laws and Big Pine wellfields. In addition, we encourage targeting spreading in other wellfields whose water tables have remained below baseline or where water levels have fallen over the last year: Taboose-Aberdeen, Independence-Oak, Symmes-Shepherd, and Bairs-Georges.

The Inyo/Los Angeles Water Agreement (Section VIII) recognizes that development of groundwater storage may be beneficial. The Inyo County Board of Supervisors and Standing Committee must agree with the development of such facilities in Owens or Rose Valleys. The County committed to not unreasonably rejecting such projects provided that they will not cause a significant impact to vegetation or cause other significant effects on the environment. County officials have stated in several venues that the priority should be to bank Eastern Sierra water in Inyo County. In addition to the areas within the Owens Valley currently being considered by LADWP for water banking, the County would like to proactively explore, in conjunction with LADWP, water banking opportunities in other areas within the valley. Specifically, the priority should be to bank water where it will promote phreatophytic vegetation, which requires minimal water table fluctuations. Banking in large unsaturated zones should be a second priority. Such water banking projects would need to occur in accordance with CEQA and the Water Agreement.

At a Water Commission meeting, a member of the public raised concerns about spreading on the alluvial fans above the valley (not on LADWP land). Does LADWP coordinate with the

appropriate land management agencies and obtain any permits that are necessary before conducting such spreading operations?

The County stated in past letters that we disagree with LADWP's calculation of an imbalance in water being supplied to E/M projects. The E/M projects are listed as mitigation measures in the 1991 EIR and as such must be supplied with adequate water for project maintenance. LADWP agreed to pumping management in compliance with the Green Book and to protect vegetation and also agreed to continue to supply E/M projects, many of which were included as mitigation in the 1991 EIR.

There are inconsistencies in numbers provided in the Draft Plan and LADWP's website. Some of the projected minimum and maximum pumping amounts by wellfield shown in Table 1.6 of the Draft Plan are different than the information in Table 1.7. Also, the 2022-23 runoff year total pumping is 66,306 AF on LADWP's website, 66,700 AF in Table 1.9 of the Draft Plan, and 66,094 AF in Table 2.4 of the Draft Plan.

Inyo County Recommendations

The County recommends pumping near the low end of the range (about 40,130 AF) if operationally feasible. As LADWP acknowledges, there is an opportunity to utilize the large runoff year to maximize water table and vegetation recovery. Furthermore, there is ample surface water available for in-valley uses, so the typical minimum amount of groundwater required for in-valley uses (about 56,780 AF) is not necessary this year. The County also recommends that no pumped groundwater be used for aqueduct supply, given the surface runoff available this year.

2022-2023 Groundwater Conditions in Indicator Wells

LADWP reported pumping for the 2022-23 runoff year (ROY) was 66,306 acre-feet (AF). Over this same period, Owens Valley (i.e., Bishop, Big Pine, Independence, and South Haiwee) average rainfall was 16.43 inches (284% of normal to-date on April 4, 2023). This combination of pumping less than anticipated in the 2022 Operations Plan, spreading beginning in January 2023, and precipitation contributed to spring 2023 average groundwater level increases (i.e., recovery) in all seven analyzed wellfields compared to spring 2022.

Table 1 is a summary of groundwater level changes by wellfield observed in spring 2023 compared to 2022 and baseline (average 1985, 1986, and 1987) levels in the 46 indicator well set that is intended to represent changes in the shallow (water table) aquifer system. Table 2 includes these data tabulated by well. Across the 46 indicator well set, water levels decreased (i.e., deepened) in six wells and increased in 40 wells (Table 2). Water levels increased by an average of 2.0 feet from spring 2022 to 2023 and were, on average, equal (i.e., 0.0 feet) to baseline levels (Table 1). Based on spring 2022 water levels and LADWP forecasted pumping, spring 2023 water levels were predicted to decline 1.0 feet. As noted above, the actual observed spring 2023 water level increases are due in part to historic high 2022-23 precipitation and less LADWP

groundwater pumping.

As of April 2023, indicator wells were above baseline average depths in Laws, Big Pine, and Thibault-Sawmill but were below baseline in Taboose-Aberdeen, Independence-Oak, Symmes-Shepherd, and Bairs-Georges (Table 1). Groundwater levels in Independence-Oak and Symmes-Shepherd continue to be significantly below baseline, ranging up to -15 ft in indicator well 447T (Table 2).

Table 1. Summary by wellfield of measured (March 31 and April 1, 2023) depth to water (DTW) in indicator wells.

Wellfield	**Change from April 2022**	**Deviation from Baseline in 2023**
	Ft	ft
Laws	4.6	2.4
Big Pine (BP)	1.0	1.9
Taboose-Aberdeen (TA)	0.6	-0.5
Thibaut-Sawmill (TS)	3.1	5.3
Independence-Oak (IO)	2.2	-2.1
Symmes-Shepherd (SS)	0.8	-4.7
Bairs-Georges (BG)	1.7	-0.3
Avg. of all indicator wells	**+2.0**	**0.0**

Table 2. Indicator well DTW, measured March 31 or April 1, 2023. Negative values denote a decline in water level. Depths are from reference point (RP) on the test well. Baseline elevation at monitoring sites was predicted from monitoring site/indicator wells regression models unless the test well was present 1985-87.

Station ID, Monitoring site	**RP DTW April 2023**	**Change from April 2022**	**Deviation from Baseline in 2023**
	ft	ft	ft
Laws			
107T	25.58	4.51	-1.31
434T	6.32	1.17	1.28
436T	5.78	3.17	2.32
438T	13.03	2.79	-3.43
490T	13.21	2.81	-0.14
492T	25.29	5.75	7.51

Station ID, Monitoring site	RP DTW April 2023	Change from April 2022	Deviation from Baseline in 2023
	ft	ft	ft
795T, LW1	6.77	8.98	6.52
V001G, LW2	20.06	0.37	-0.44
574T, LW3†	3.78	11.86	9.30
Big Pine			
425T	13.96	-0.47	0.94
426T	11.31	0.50	0.26
469T	22.10	0.32	-0.43
572T	8.11	2.19	3.79
798T, BP1	10.66	2.42	5.39
799T, BP2	19.02	0.55	-0.51
567T, BP3	11.61	1.79	2.35
800T, BP4	10.51	0.98	3.08
Taboose-Aberdeen			
417T	28.01	1.20	-1.04
418T	6.37	2.03	1.86
419T, TA1	4.82	1.47	1.81
421T	37.88	-2.77	-3.53
502T	10.97	-0.36	-3.48
504T	9.87	-0.12	0.90
505T	20.04	0.95	-1.44
586T, TA4	6.59	1.22	1.73
801T, TA5	14.33	1.27	-0.81
803T, TA6	9.50	1.10	-0.80
Thibaut-Sawmill			
415T	11.47	1.64	7.03
507T	2.01	3.68	2.66
806T, TS2	6.92	4.07	6.26
Independence-Oak			
406T	1.13	2.98	0.44
407T	10.73	1.08	-3.43
408T	2.60	2.84	0.53
409T	4.96	2.11	-3.36
546T	5.17	2.84	-1.74

Station ID, Monitoring site	RP DTW April 2023	Change from April 2022	Deviation from Baseline in 2023
	ft	ft	ft
809T, IO1	11.79	1.62	-5.22
Symmes-Shepherd			
402T	10.12	0.88	-2.09
403T	6.50	0.86	-1.17
404T	4.64	1.73	-1.07
447T	36.89	-0.79	-15.02
510T	5.93	1.74	-0.93
511T	5.70	1.76	-1.07
V009G, SS1	18.14	-0.46	-11.31
Bairs-Georges			
398T	4.70	3.07	1.65
400T	5.16	1.13	1.14
812T, BG2	17.07	1.04	-3.73

†: Test well 840T (completed in 2001) at LW3 tracks 574T (completed in 1985) except during active spreading on the site, and depth to water is on average 1.23 ft deeper (original note from ICWD 2013-14 Annual Report).
††: Values in this table are significant to 0.1 ft. Extra digits are presented for rounding transparency.

Evaluation of 2023-24 Operations Plan

Methods

ICWD's analysis of the Draft Plan and pumping recommendations are based on the goals and principles of the Water Agreement, the status of individual pumping wells according to Green Book soil water triggers, groundwater dependent vegetation conditions monitored by the Technical Group, water table conditions in each wellfield, and groundwater uses within each wellfield.

The County uses multiple linear regression models at 46 indicator wells to predict water table elevation in April 2024 as a function of minimum and maximum proposed wellfield pumping, 2023 water table elevation, and forecasted Owens Valley runoff. The set of indicator wells used by ICWD differs from the set of indicator wells used by LADWP (Table 1.7 of the Draft Plan), but the Inyo and LADWP average predicted water table changes generally agree (Table 3). LADWP and Inyo County staffs should work together to develop a single set of indicator wells so that model results are more readily comparable.

Groundwater elevation in spring 2024 is predicted to be 6.7-7.0 ft below ground surface (bgs) based on the County's models, with variability among the wellfields from 2.8 to 10.5 ft bgs. In wellfields with shallower depth to water (Thibault-Sawmill, Independence-Oak), this could

promote grass recovery, but in other wellfields (Big Pine, Taboose-Aberdeen, Symmes-Shepherd), water tables may still be disconnected from the rooting zone of grass.

Table 3. Comparison of the range in average predicted water level changes in 2023-2024 for LADWP minimum and maximum proposed pumping using the LADWP set of indicator well models (Table 1.7 of the Draft Plan) and the set of models used by ICWD.

Wellfield	2023-24 avg. change (ft) LADWP (Table 1.7)	2023-24 avg. change (ft) ICWD	2024 avg. depth (ft-bgs) ICWD
Laws	+5.3 to +4.5	+4.9 to +4.2	7.1 to 7.7
Big Pine	+5.5 to +4.4	+3.6 to 3.0	9.0 to 9.7
Taboose-Aberdeen	+2.3 to +1.9	+3.9 to +3.3	9.9 to 10.5
Thibaut-Sawmill	+1.8 to +1.8	+3.3 to +3.3	2.8 to 2.8
Independence-Oak	+6.3 to +6.2	+1.9 to +1.8	3.1 to 3.2
Symmes-Shepherd	+3.6 to +3.3	+2.6 to +2.5	9.0 to 9.1
Bairs-Georges	+1.2 to +1.1	+2.1 to +1.8	5.7 to 6.0
Owens Valley	**+3.7 to +3.3**	**+3.2 to +2.9**	**6.7 to 7.0**

LADWP Proposed Minimum Pumping for 2023-24 (40,130 AF)

Average water levels would be expected to increase from spring 2023 to 2024 under LADWP's minimum pumping scenario in all seven analyzed wellfields: Laws (4.9 ft), Big Pine (3.6 ft), Taboose-Aberdeen (3.9 ft), Thibault-Sawmill (3.3 ft), Independence-Oak (1.9 ft), Symmes-Shepherd (2.6 ft) and Bairs-Georges (2.1 ft). The average increase across the 46 wells is modeled to be 3.2 feet year-to-year (Table 3, Table 4).

With LADWP's minimum pumping, the average water level for all 46 indicator wells is expected to be approximately 3.5 feet above baseline. Water levels in all indicator wells in Laws, Big Pine, Taboose-Aberdeen, Thibault-Sawmill, and Bairs-Georges would be above baseline. Average water levels in Independence-Oak and Symmes-Shepherd would be below baseline (Table 4).

LADWP Proposed Maximum Pumping for 2023-24 (51,470 AF)

Average water levels would be expected to increase from 2023 to 2024 under LADWP's maximum pumping scenario in all seven analyzed wellfields: Laws (4.2 ft), Big Pine (3.0 ft), Taboose-Aberdeen (3.3 ft), Thibault-Sawmill (3.3 ft), Independence-Oak (1.8 ft), Symmes-Shepherd (2.5 ft) and Bairs-Georges (1.8 ft). The average increase across the 46 wells is modeled to be 2.9 feet year-to-year (Table 3, Table 4).

With LADWP's maximum pumping, the average water level for all 46 indicator wells is expected to be approximately 3.1 feet above baseline. Water levels in all indicator wells in Laws, Big Pine, Taboose-Aberdeen, Thibault-Sawmill, and Bairs-Georges would be above baseline. Average water levels in Independence-Oak and Symmes-Shepherd would be below baseline (Table 4).

Table 4. ICWD predicted water level changes at indicator monitoring well sites for LADWP's proposed pumping in its draft 2023-24 annual operations plan. Negative DTW values denote a water level decline.

Station ID, Monitoring site	**LADWP MIN (40,130 AF) 2024 vs 2023**	**LADWP MIN (40,130 AF) 2024 vs Baseline**	**LADWP MAX (51,470 AF) 2024 vs 2023**	**LADWP MAX (51,470) AF 2024 vs Baseline**
	(DTW change ft)	(DTW change ft)	(DTW change ft)	(DTW change ft)
***Laws* (Avg.)**	**4.9**	**7.3**	**4.2**	**6.6**
107T	8.53	7.22	7.70	6.40
434T	1.93	3.21	1.58	2.86
436T	3.23	5.55	2.87	5.19
438T	5.48	2.05	5.18	1.75
490T	3.49	3.35	3.34	3.20
492T	7.20	14.71	5.87	13.38
795T	3.78	10.30	2.60	9.12
V001g	12.23	11.79	11.55	11.11
574T	-2.16	7.14	-2.54	6.76
Big Pine	**3.6**	**5.5**	**3.0**	**4.9**
425T	5.03	5.97	4.31	5.25
426T	3.39	3.65	2.99	3.24
469T	2.59	2.15	2.20	1.77
572T	5.01	8.80	4.23	8.02
798T, BP1	2.37	7.76	1.68	7.07
799T, BP2	2.57	2.06	2.20	1.69
567T, BP3	4.90	7.26	4.26	6.62
800T, BP4	3.25	6.33	2.38	5.46

Station ID, Monitoring site	LADWP MIN (40,130 AF) 2024 vs 2023	LADWP MIN (40,130 AF) 2024 vs Baseline	LADWP MAX (51,470 AF) 2024 vs 2023	LADWP MAX (51,470) AF 2024 vs Baseline
	(DTW change ft)	(DTW change ft)	(DTW change ft)	(DTW change ft)
Taboose-Aberdeen	**3.9**	**3.5**	**3.3**	**2.9**
417T	4.39	3.34	3.68	2.64
418T	2.14	4.01	1.84	3.70
419T, TA1	4.35	6.16	3.62	5.44
421T	6.74	3.21	6.00	2.47
502T	4.39	0.92	4.06	0.58
504T	5.12	6.02	4.22	5.12
505T	4.56	3.12	3.84	2.40
586T, TA4	2.43	4.16	1.83	3.56
801T, TA5	1.26	0.45	1.09	0.29
803T, TA6	3.96	3.16	3.29	2.50
Thibaut-Sawmill	**3.3**	**8.6**	**3.3**	**8.6**
415T	6.40	13.43	6.40	13.43
507T	-0.11	2.54	-0.11	2.54
806T, TS2	3.52	9.78	3.52	9.78
Independence-Oak	**1.9**	**-0.2**	**1.8**	**-0.3**
406T	0.66	1.09	0.64	1.07
407T	-0.10	-3.53	-0.20	-3.63
408T	-0.29	0.24	-0.36	0.17
409T	3.48	0.12	3.27	-0.09
546T	2.33	0.59	2.29	0.55
809T, IO1	5.44	0.22	5.33	0.11
Symmes-Shepherd	**2.6**	**-2.0**	**2.5**	**-2.2**
402T	1.57	-0.52	1.51	-0.59
403T	1.84	0.67	1.67	0.50
404T	0.17	-0.90	0.11	-0.96
447T	9.05	-5.97	8.66	-6.37
510T	0.13	-0.80	0.07	-0.86
511T	0.10	-0.97	0.03	-1.03
V009G, SS1	5.51	-5.81	5.16	-6.16
Bairs-Georges	**2.1**	**1.8**	**1.8**	**1.5**
398T	0.60	2.25	0.19	1.84
400T	-0.36	0.78	-0.44	0.70
812T	5.96	2.36	5.61	2.00

Evaluation by Wellfield

Laws

In 2022-23 ROY, LADWP pumped 7,901 AF of groundwater from Laws wellfield, but water levels increased by an average of 4.6 ft (Table 1). DTW ranged between -3.4 ft (438T) below baseline to 9.3 ft (574T) above baseline in spring 2023 (Table 2), with the wellfield average 2.4 ft above baseline (Table 1). LADWP's maximum pumping allows for an increase in predicted spring 2024 water levels in Laws by an average of 4.2 ft from spring 2023 (Table 4). Some cover and grass recovery has been observed since the end of the 2012-2016 drought. Minimizing water level declines and DTWs greater than 6 ft-bgs should continue to allow the potential for vegetation and grass recovery. Therefore, LADWP's 2023-24 proposed minimum pumping of 2,550 AF is recommended.

Vegetation parcels LAW035, LAW043, LAW052, LAW062, LAW065, LAW070, LAW072, LAW082, and LAW085 are all in the same general vicinity and have chronically below-baseline grass cover, and perennial cover that only infrequently recovers to baseline conditions. The large parcel FSL054 in the Five Bridges area experienced conversion from shrub willow to meadow following the W385/W386 pumping in the late 1980s. Perennial cover in this parcel is therefore significantly below baseline, but grass cover is higher than baseline. After three years of drought (2020-22), parcels that were below baseline in the last drought (2012-16) returned to a similar depressed state. These include LAW078, LAW105, LAW108, and LAW122. Likely, 2023 hydrological conditions will allow some vegetation recovery.

The 2023-24 Draft Plan includes LADWP's desire to conduct an aquifer test at W386 (similar to the two-month 2019-20 test of W385). In order to achieve the "favorable hydrologic conditions" required by the 2019 settlement before conducting a W386 test during the winter of 2023-24, the groundwater level in indicator well 438T, which is in the vicinity of W386 and the Five Bridges Mitigation Project and is currently below baseline (-3.4 ft), should increase. Such an increase should occur through the summer due to historic forecasted runoff. Also, before a test is conducted, the Technical Group will have to once again temporarily modify the mitigation measure which states that the well will not be operated, and the protocol for the test will have to be jointly agreed upon.

Bishop

The Draft Plan indicates that "LADWP is preparing updated preconstruction evaluation reports for the installation wells at sites B-2 and B-5 that addresses County's concern with the potential impacts on nearby non-LADWP well."

There is concern with the operation of the B-5 well potentially impacting many domestic wells in the West Bishop area. In 2013, due to factors including prolonged drought conditions, which caused reduced flows in Bishop Creek and distributary ditches which divert water from Bishop Creek, several private wells providing water for domestic purposes in the West Bishop area

went dry. Many of these shallow wells pumped groundwater only from the shallow aquifer. At the time of the preparation of the 1991 EIR, the sensitivity of domestic wells in this area to the reductions in ditch flow and other factors such as groundwater pumping was unrecognized. The area where the wells went dry is located within the area of influence (AOI) of well B-5. Also, since 1991, approximately 129 new private wells have been constructed and approximately 187 new residences have been constructed within the AOI of wells B-2 and B-5.

Given the changes that have occurred in the West Bishop area since the 1991 EIR was prepared, to protect against impacts to private wells and community supply wells in the Bishop area, a jointly developed monitoring program should be developed and implemented by the Technical Group pursuant to Section VI of the Agreement. Such a program should include:

- reviewing the MODFLOW groundwater model results for the Bishop area to predict changes in the baseline groundwater levels in selected monitoring wells, private wells, and in selected community supply wells that will result from groundwater pumping from wells B-2 and B-5;
- a schedule for monitoring and reporting groundwater levels in the selected monitoring wells, private wells, and community supply wells prior to and after commencement of groundwater pumping from wells B-2 and B-5; and,
- identification of groundwater-level action thresholds in selected monitoring wells which describes the action or actions that will be implemented if an action threshold in a monitoring well is reached.

Finally, since the 1991 EIR did not address the changes in the West Bishop area, a supplemental CEQA document should be prepared which acknowledges the changes that have occurred and describes the additional actions that will be implemented to avoid potential impacts in the West Bishop area that were not identified in the 1991 EIR.

Big Pine

In 2022-23 ROY, LADWP pumped 16,446 AF of water from the Big Pine wellfield. Due to hatchery operations at Fish Springs, Big Pine is the most consistently pumped wellfield in the Owens Valley, and the only wellfield that has been in recent years near its groundwater mining limit. There was reduced pumping at the hatchery in 2020 and 2021 related to a bacterial infestation, and pumping in Big Pine was approximately 68% of previous years (15,531 avg. AF). Due to reduced pumping, recovery was observed in the deeper, volcanic cinder aquifer zones. In 2023, average water levels in the shallow-aquifer indicator wells remained above baseline (1.9 ft) for the fourth consecutive year. LADWP's maximum pumping allows for an increase in predicted spring 2024 water levels by an average of 3.0 ft from spring 2023.

Table 1.6 in LADWP's 2023-24 Draft Plan shows a potential decrease from 1,700 AF/month (April - September 2023) to 1,000 AF/month (October – March 2024) for proposed pumping in

the Big Pine wellfield. This implies only one Fish Spring Hatchery well pumping during this period. CDFW has communicated that it does not anticipate a change in hatchery operations during the year and that relying on a single well may have been included in the Draft Plan as a contingency. Hatchery operations to produce fish at Fish Springs are supported entirely by groundwater and are compensatory mitigation under the Agreement (Mitigation measure 10-14). Wells 330W and 332W are exempt from Green Book soil water triggers for sole source hatchery needs and should only be operated for that purpose to fulfill the mitigation measure. We understand LADWP has agreed that the installation of valves to vary production from 330W and 332W based on hatchery needs can be completed by CDFW and that CDFW is in the contracting process for the work.

One large vegetation parcel in the wellfield, BGP162, has had vegetation cover chronically below baseline, only statistically reaching baseline in 2000 and 2019. Two other parcels, BP154 and FSP006, have not statistically reached baseline grass cover for 11 and 32 years, respectively. FSP015 and FSP020 have been below baseline since 2019. In years where runoff and surface water are available to meet irrigation needs, no additional pumping should occur in Big Pine other than that necessary for in-valley uses. Therefore, LADWPs proposed pumping minimum (16,200 AF) is recommended if feasible to meet hatchery needs.

The Draft Plan states LADWP's intention to conduct operational testing of W415 for supplying both the Big Pine water system and the town ditch system. A proposed 6-month test has been approved by the Technical Group, and vegetation and hydrologic monitoring described in that plan should be conducted jointly this summer before the test proceeds. LADWP and Inyo County staffs should work together to coordinate a schedule for this test.

Taboose-Aberdeen

In Taboose-Aberdeen, LADWP pumped 13,835 AF in 2022-23 ROY. Groundwater levels in indicator wells rose by an average of 0.6 ft but are below baseline by an average of 0.5 ft. Under LADWP's maximum scenario, water levels rise an average of 3.3 ft. Water levels in all indicator wells in Taboose-Aberdeen would rise above baseline in 2024 by an average of 2.9 ft.

Alkali meadow parcels TIN050, TIN053, TIN064, and TIN068 all have chronically lower grass cover than baseline despite water level recovery to baseline, suggesting a Type C to B conversion may have occurred and the water table regime may be insufficient to recover vegetation to baseline. Over the past three years the following parcels have dropped below baseline yet will likely reach baseline this year: BLK006, BLK008, BLK009, BLK021, BLK033, BLK039, BLK044.

Thibault-Sawmill

In Thibaut-Sawmill, LADWP pumped 9,482 AF in 2022-23. Groundwater levels in all three indicator wells are above baseline and would remain so under LADWP's maximum proposed pumping; however, this wellfield can be differentiated into two regions. The northern half of

Thibault-Sawmill has seen significant water table recovery since the reduction in Blackrock Hatchery pumping. All three Thibault-Sawmill indicator wells are in the northern half of the wellfield.

Two parcels, IND026 and IND029, in the southern portion of this wellfield, have chronically depressed water levels and grass cover. Cover in BLK094 is not recovered in terms of perennial or grass cover. During the 2020-22 drought, the following parcels dropped below baseline: BLK069, BLK074, BLK075, BLK095, BLK096, and BLK099. Groundwater levels based on the larger set of monitoring wells, which include the southern portion of the wellfield, show spring 2023 water levels in a few wells deeper than 10 ft-bgs (e.g., 052AT, 413T, 414T and 659T). Water levels are below baseline by more than four feet in three wells.

Therefore, pumping in southern Thibault-Sawmill from W382 is not recommended. Wells W380 and W381 are screened in the deeper aquifer that is potentially associated with Thibaut Springs discharge. Furthermore, W103 and W104 are also deeper aquifer wells in the southern half of Thibault-Sawmill that have consistent artesian outflow (pumping stress). Therefore, ICWD recommends a pumping amount equal to Blackrock Hatchery needs. LADWP's proposed pumping minimum (8,000 AF) is recommended. This amount of pumping will allow water levels to increase 3.3 ft on average in the northern half of the wellfield. The increase under this scenario is unknown in the southern half of the wellfield since there are no established indicator wells for use in predictive modeling. Such an indicator well or wells should be jointly established.

Independence-Oak

In Independence-Oak, LADWP pumped 5,631 AF in 2022-23 ROY. ICWD has expressed concerns about persistent water level declines in Independence-Oak. Water levels have recovered somewhat from depressed levels from pumping and/or drought as a result of 2017-18, 2019-20, and 2022-23 high runoff years and less 2022-23 pumping than initially proposed. However, water levels are on average 2.1 ft below baseline.

IND019 and IND021, adjoining the aqueduct east of Fort Independence, dropped below baseline in 2021, as happened during the 2012-2016 drought, but will likely recover this year as water table rises and surface water spreading increases. Grass cover increased in IND021 from 2017-2020 but hasn't statistically reached baseline since 2012. Additional parcels IND035 and IND111 dropped statistically below baseline over the last three years. The goal for this area should be to limit pumping to raise, or at least maintain, 2022 water levels. Pumping in Independence-Oak should be limited to in-valley uses (estimated 6,420 AF) to the extent practicable to promote continued water table recovery. Therefore, LADWP's proposed pumping minimum (6,900 AF), or less if operationally feasible, is recommended.

Symmes-Shepherd

In Symmes-Shepherd, LADWP pumped 1,765 AF in 2022-23. From 2016-17 through 2019-20,

pumping was limited to irrigation supply from W402 with an average annual pumping of approximately 1,000 AFY. In 2021-22, W092 pumped approximately 1,000 AF. W396 pumped groundwater in addition to W402 in 2022-23.

Water levels in Symmes-Shepherd have recovered from severe drought lows. However, levels remain below baseline in all seven indicator wells located within the wellfield (-4.7 ft average). LADWP's maximum scenario may include pumping from W092 and W396 (SS3 On/Off Site) in the southern portion of the wellfield. On/Off site SS#3 achieved "ON" status in April 2021. If Symmes-Shepherd pumping is limited to in-valley uses only (1,200 AF), then a limited amount of additional pumping could occur. One parcel, IND139, has exhibited chronically depressed grass cover for the past 32 years. Parcels IND132, IND133, IND124, MAN006, and MAN007 dropped statistically below baseline in the last three years of drought.

LADWP's proposed pumping minimum (1,200 AF) is recommended, which is equivalent to estimated sole source uses. Groundwater levels would increase in all Indicator Wells by an average of 2.6 feet; however, levels would remain below baseline in 2024 by an average of 2.0 ft.

Bairs-Georges

In Bairs-Georges, LADWP pumped 697 AF in 2022-23. Average wellfield groundwater levels rose 1.7 ft relative to spring 2022 but were 0.3 feet below baseline. Pumping in this wellfield should be managed to continue total cover and grass cover recovery. Therefore, the ICWD recommended pumping amount for this wellfield is LADWP's proposed pumping minimum (0 AF). Groundwater levels would increase in indicator wells by an average of 2.1 feet, and levels would rise above baseline in 2024 by an average of 1.8 ft.

Pumping of W343 to supplement Georges creek flow would be acceptable, but this is highly unlikely to be needed in the 2023-24 ROY. LADWP drilled W430 to replace W076, which has been out of operation in recent years. LADWP plans to pump-equip W430 during the 2023-24 ROY. It is our understanding that LADWP will produce a plan to test W430 that will be considered by the Technical Group.

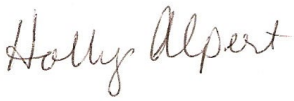
Several parcels dropped below baseline during the last three years, including MAN034, MAN037, MAN042 and MAN038.

Lone Pine

Well 416 was pump tested in 2009. There was an immediate impact on nearby private wells. LADWP has requested a vegetation monitoring site be designated; however, vegetation monitoring alone will not protect private wells. There is a need to jointly develop a separate plan to protect private wells, which would need to be approved by the Technical Group.

We look forward to addressing these comments at the May 9, 2023, Technical Group meeting. If you wish to discuss these comments prior to the meeting, please contact me.

Sincerely,



Holly Alpert, Acting Water Director

cc: Inyo County Board of Supervisors
Inyo County Water Commission
Nate Greenberg, Inyo County CAO
John Vallejo, Inyo County Counsel
Greg James, Special Counsel