

1 **ARIZONA DEPARTMENT OF WATER RESOURCES**
2 **BEFORE THE DIRECTOR**

3 **IN RE: SUBSEQUENT IRRIGATION**
4 **NON-EXPANSION AREA:**
5 **HUALAPAI VALLEY**
6 **GROUNDWATER BASIN, MOHAVE**
7 **COUNTY**

8 **FINDINGS, DECISION AND**
9 **ORDER**

10 Pursuant to Arizona Revised Statute (A.R.S.) § 45-436, the Director of the Arizona
11 Department of Water Resources (“Director”) issues findings and his decision to designate the
12 Hualapai Valley Groundwater Basin, in Mohave County (“Basin”), Arizona as a subsequent
13 Irrigation Non-Expansion Area (“INA”) on the grounds set forth herein.

14 **BACKGROUND**

15 **I. Director’s Order Initiating Designation Procedures**

16 On June 23, 2022, the Mohave County Board of Supervisors requested that the Director
17 take “whatever actions available and necessary to designate the Hualapai Valley Groundwater
18 Basin as a subsequent INA.” The Board of Supervisors cited updated United States Geological
19 Survey (“USGS”) modeling and ongoing and extreme drought conditions as part of the basis for
20 the request.

21 By letter dated June 24, 2022, the Director indicated that the Arizona Department of Water
22 Resources (“ADWR” or “Department”) would review updated modeling and other relevant
23 information, including current and projected drought conditions, and receive public comments on
24 whether to initiate designation procedures.

25 On September 20, 2022, ADWR held an informal public meeting to present hydrologic and
26 regulatory information, accept public comments, and answer questions regarding the possible
initiation of procedures to designate the Basin as a subsequent INA. Comments and questions were
accepted until 5:00PM on September 30, 2022. Based upon hydrologic information and public

1 comments received, the Director issued an Order to Initiate Procedures (“Initiation Order”) and an
2 Order for a Hearing on October 12, 2022.

3 **II. Public Hearing and Comment Period**

4 The Department held a public hearing in Kingman, Arizona on November 12, 2022. At the
5 hearing, the Department presented factual data then in the Department’s possession related to
6 groundwater supply, demand, and hydrologic conditions in the Basin. Specifically, the Department
7 presented information derived from the 2021 USGS Hualapai Valley groundwater model, field
8 verification survey information from the USGS for revised agricultural demand, and water level
9 measurements that the Department collected from monitoring wells in the Basin. The Department
10 also received oral comments at the public hearing and accepted written comments through the close
11 of the hearing record.

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13 The hearing record closed on November 18, 2022. The Director has given consideration
14 to all comments submitted, including those made by political subdivisions of Mohave County.
15 Where particular comments are relevant to a specific Finding made by the Director, the comments
16 are discussed in the “Findings” section below.

17 **III. Determination on Whether to Designate an INA**

18 As provided in A.R.S. § 45-432(A), the Director may designate a groundwater sub-basin as
19 an INA if the Director determines that both of the following apply:

- 20 1. There is insufficient groundwater to provide a reasonably safe supply for irrigation of the
21 cultivated lands in the area at the current rates of withdrawal; and
- 22 2. The establishment of an active management area (“AMA”) pursuant to A.R.S. § 45-412 is
23 not necessary.

24 With respect to whether the establishment of an AMA is necessary, A.R.S. § 45-412
25 provides that the Director may designate an area as an AMA if the Director determines that any of
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1 the following exists: (1) active management practices are necessary to preserve the existing supply
2 of groundwater for future needs; (2) land subsidence or fissuring is endangering property or
3 potential groundwater storage capacity; or (3) use of groundwater is resulting in actual or threatened
4 water quality degradation.

5 **FINDINGS**

6 1. The proposed irrigation non-expansion area encompasses the entire Hualapai Valley
7 Groundwater Basin. The Basin is the surface watershed of the Hualapai Wash, excluding the
8 watershed of Truxton Wash upstream of a boundary formed by the ridge line of the Music and
9 Peacock Mountains.

10 2. Surface water flows in the Basin occur rarely and only after heavy rains in washes
11 and arroyos. The only dependable source of water in the Basin is groundwater, which is used for
12 agricultural, domestic, and municipal water supply.

13 3. The main groundwater-bearing unit in the Basin is the alluvium, which consists of
14 various deposits of clay, silt, sand, and gravel. The thickness of the deposits ranges from less than
15 100 feet at the edges of the Basin to more than 10,000 feet in the Red Lake Playa area.

16 4. At the November 12th hearing, 52 people made oral comments, and the Department
17 received 48 written comments regarding the proposed INA during the public comment period. The
18 comments received expressed a mix of support and opposition to the proposed INA.

19 5. Senator Sonny Borrelli provided oral comments in support of the INA.

20 6. Hildy Angius, Mohave County Board of Supervisors, submitted written comments
21 in support of the INA on September 22, 2022 during the informal comment period.

22 7. Jean Bishop, Mohave County Board of Supervisors, submitted both oral and written
23 comments in support of the INA. Supervisor Bishop also submitted written comments in support of
24 the INA on September 20, 2022 during the informal comment period.
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1 8. Travis Lingenfelter, Mohave County Board of Supervisors, provided oral comments
2 during the public hearing in support of the INA. Supervisor Lingenfelter also submitted written
3 comments in support of the INA on September 30, 2022 during the informal comment period.

4 9. Marion Ward, Kingman City Councilwoman, provided oral comments in support of
5 the INA.

6 10. Jamie Stehly, Kingman City Councilwoman, provided oral comments in support of
7 the INA.

8 11. Mayor Ken Watkins, City of Kingman, submitted oral comments in support of the
9 designation of the INA. Mayor Watkins, on behalf of Kingman Common Council, also submitted
10 written comments in support of the INA on September 6, 2022 during the informal comment period.

11 12. City Manager Ron Foggin, City of Kingman, submitted oral comments in support
12 of the INA.

13 13. Large agricultural users submitted both oral and written comments opposing the
14 designation of the INA.

15 14. Peacock Nuts, LLC, a large agricultural user, submitted groundwater withdrawal
16 data for its operations, as well as groundwater withdrawal data for MOGA, Oasis Organics, and
17 Aileron Orchards.

18 15. However, the Department was not able to verify or confirm that the withdrawal data
19 was obtained with an approved measuring device and/or an approved measuring method as set forth
20 in Arizona Administrative Code (“A.A.C.”) R12-15-903.

21 16. Even taking the reported reduction in water use by Peacock Nuts, LLC as the actual
22 demand the rate of pumping would still exceed the inflows in the Basin.

23 17. Mohave County Development Services submitted documentation of written requests
24 dated February 25, 2022 to area agricultural users, including Peacock Nuts, LLC, looking to
25 establish monitoring equipment on wells owned by the users to improve the USGS’ groundwater
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1 model's predictions and accuracy. Mohave County Development Services indicated that these
2 requests went unanswered.

3 18. Consistent with ADWR practice where reported data are lacking, ADWR used
4 USGS field verified estimates of irrigation withdrawals for the modeling presented to the public
5 and used as the basis for this decision (Read, A.L., Cadogan, A.F., and Mayo, J.P., 2022, Estimated
6 crop irrigation water use withdrawals in Hualapai Valley Groundwater Basin, Arizona for 2021:
7 U.S. Geological Survey data release, <https://doi.org/10.5066/P9GY1WFR>).

8 19. USGS-estimated irrigation withdrawal data, particularly field verified, are
9 extensively relied upon for hydrologic investigations where reported data are lacking and are widely
10 accepted in the industry. The estimated irrigation withdrawal data are then used as input for the
11 model, which is later calibrated to ensure that it correlates to observed well measurements.
12 Additionally, a field application efficiency of 80-90% has been assumed, which matches the
13 published values referenced in the USGS report listed above. ADWR considers these efficiencies
14 to be on the high side of typical estimates, which produces a conservative estimate of withdrawals.

15 20. The current rates of recharge and withdrawals are imbalanced.

16 21. Natural recharge accounts for approximately 4,200 acre-feet per year ("AFY").

17 22. Incidental recharge accounts for approximately 3,000 AFY.

18 23. Enhanced recharge accounts for approximately 2,800 AFY.

19 24. Annual inflow into the Basin totals approximately 10,000 AFY.

20 25. Domestic and Industrial demand accounts for approximately 5,400 AFY.

21 26. Municipal pumping from the City of Kingman accounts for approximately 8,800
22 AFY.

23 27. There are currently approximately 13,800 irrigated acres in the Basin.

24 28. Net agricultural pumping, after accounting for recharge, is approximately 25,800
25 AFY.

26 29. Natural discharge accounts for approximately 4,300 AFY.

1 30. Annual outflow from the Basin totals approximately 44,000 AFY, as described in
2 Findings 10, 11, 13, and 14 above.

3 31. Outflows currently exceed inflows by approximately 34,000 AFY.

4 32. If pumping continues at the current rates of withdrawals, the depth to groundwater
5 will increase.

6 33. If pumping continues at the current rates of withdrawals, approximately 1 in 20 wells
7 will no longer draw water after 100 years.

8 34. The steep declines in available groundwater, the very limited annual recharge
9 available in the Basin, and the extensive irrigated acreage and corresponding groundwater pumping
10 demonstrate that there is insufficient groundwater to provide a reasonably safe supply for irrigation
11 of the cultivated lands in the Basin.

12 35. At this time, active management practices are not necessary to preserve the existing
13 supply of groundwater for future needs.

14 36. There is no evidence of land subsidence and fissuring in the Basin.

15 37. There is no evidence that groundwater pumping is inducing adverse water quality
16 conditions in the Basin.

17 38. The establishment of an AMA pursuant to A.R.S. § 45-412 is not necessary.
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19 **DIRECTOR'S DECISION**

20 In consideration of the Findings set forth above, the Director has determined that the
21 Hualapai Valley Groundwater Basin, as described in Findings #1 above and depicted in the map
22 attached hereto as Exhibit A, meets the criteria for designation of a subsequent INA set forth in
23 A.R.S. § 45-432(A). As a result, the Hualapai Valley Groundwater Basin SHALL be designated as
24 an INA.
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EXHIBIT A

Hualapai Valley Irrigation Non- Expansion Area

