

JUL 28 2025

DAVID H. YAMASAKI, Clerk of the Court

BY: , DEPUTY

SUPERIOR COURT OF CALIFORNIA
COUNTY OF ORANGE, CIVIL COMPLEX CENTER

MOJAVE PISTACHIOS, LLC; et al.,

Plaintiffs,

v.

INDIAN WELLS VALLEY WATER
DISTRICT; et al.,

Defendants.

No. 30-2021-01187275

**PROPOSED STATEMENT OF DECISION
FOR PHASE ONE TRIAL INVOLVING THE
UNITED STATES NAVY'S FEDERAL
RESERVED WATER RIGHT**

This Phase 1 trial adjudicates the federal reserved water right of the United States Navy for the Naval Air Weapons Station-China Lake ("NAWS China Lake" or "China Lake"). The trial stems from the Indian Wells Valley Water District's (the "District") filing of a cross-complaint for a comprehensive groundwater adjudication for the Indian Wells Valley Groundwater Basin No. 6-54 ("Basin") pursuant to the Streamlined Adjudication Act, Code of Civil Procedure 830 et seq. (ROA 155) That cross-complaint was in response to a lawsuit filed by Mojave Pistachios and other landowners seeking to quiet title and declare their rights to groundwater in the Basin. A Phase 2 trial, determining the safe yield of the Basin is set for June 1, 2026. Additional phases, to determine all parties' groundwater rights and to establish a physical solution for the Basin, have not yet been

1 scheduled.

2
3 The Phase 1 Trial was conducted over 7 days between April 28 and May
4 14, 2025. The parties primarily participating in the trial included the United States,
5 Meadowbrook Dairy Real Estate and affiliated entities ("Meadowbrook"), the City
6 of Ridgecrest ("Ridgecrest") and Searles Valley Minerals Inc. ("Searles"). Following
7 the trial, the parties filed comprehensive post-trial briefs. The County of Kern and
8 the Indian Wells Valley Groundwater Authority (the "Authority") joined in
9 Ridgecrest's brief.

10
11 The Navy contends that its federal reserved water right, i.e., the
12 minimum amount of water necessary to accomplish China Lake's primary purpose
13 of weapons development and testing-- is nearly 7000-acre feet per year (APY).
14 Although this amount is more than quadruple current usage levels, the Navy
15 insists this level is necessary given the possibilities of (1) future weapon
16 development and testing programs being assigned to China Lake, and (2) a return
17 to on-base housing levels of the 1970s notwithstanding the demolition of most
18 such housing and current Department of Defense (DOD) policy limiting on-base
19 residences to military personnel.

20
21 Ridgecrest, Kern County and the Authority take it one step further and
22 insist that the reserved water right for China Lake should be 7988 AFY. This
23 number is derived from the amount of water used in 1970—the single highest year
24 of water usage in the base's 80-year history. Even though this usage was at a time
25 when most China Lake personnel lived on the base, and even though only 6% of
26 personnel live there now, these parties assert that this amount is justified since
27 China Lake's mission could not be accomplished without the off-base workforce,
28 most of whom live in Ridgecrest.

1 Meadowbrook and Searles disagree with both the Navy and Ridgecrest
2 et al, contending that the amount of water needed to fulfill the Navy's mission at
3 China Lake is between 1644 AFY (Searles) and/or no more than approximately
4 2000 AFY (Meadowbrook). They assert that it does it not make sense to determine
5 the federal reserved water right based on water usage over 50 years ago, and that
6 the Navy's estimate of potential future use is tainted by two levels of speculation.
7 They argue that whether or not new weapons programs will be assigned to China
8 Lake in the future is pure guesswork as there are no current plans to do so.
9 Notwithstanding this flaw, they acknowledge that it is possible some programs
10 may come to China Lake in the future and that with those programs will be
11 additional water needs.

12
13 But those additional water needs are relatively small. By far and away,
14 the bulk of the Navy's claimed future water needs (over 4000 AFY) hinges on a
15 second level of speculation—namely, the assumption that this additional work will
16 entail a revitalization of on-base housing and, contrary to current Navy policy,
17 thousands of civilian personnel and their families moving on-base.

18
19 As set forth below, this second level of speculation is not supported by
20 sufficient evidence for the Court to give it credence. Certainly, it does not meet
21 the "reasonably probable to occur" standard being applied by this Court. For this
22 reason, and as explained in detail below, the Court finds that the Navy's federal
23 reserved water right is 2008 AFY.

24
25 This Proposed Statement of Decision is issued pursuant to California
26 Rule of Court 3.1590. Any objections to the proposed decision must be filed in
27 compliance with CRC 3.1590(g).
28

1 **1. OVERVIEW**

2
3 The Basin is located in the Mojave Desert and encompasses roughly
4 382,000 acres underlying portions of Kern, Inyo and San Bernardino Counties.
5 Approximately 302,095 acres overlying the Basin are owned by the Navy. The
6 Basin, which is the sole supply of potable water for the Indian Wells Valley, has
7 been designated by the Department of Water Resources as a high priority basin
8 due to critical conditions of overdraft.

9
10 NAWS China Lake is the Navy's largest land holding in the world,
11 encompassing over 1.1 million acres and nearly 20,000 square miles of restricted
12 air space. (Exh. 93, p. 4) Its location in the Mojave Desert is ideal for weapons
13 testing given its remote location away from major population centers, its unique
14 topography—both the lowest (Death Valley) and highest (Mt. Whitney) points in
15 the continental United States are nearby, and 330 sunny, clear days per year allow
16 year-round flying weather. The base serves all branches of the military and
17 cooperates with allies in weapons testing.

18
19 China Lake has 2100+ buildings, including approximately 500 laboratories
20 as well as various facilities for testing and fabrication. Most of its personnel are
21 civilians, none of whom currently reside on the base. The base includes military
22 housing, recreational facilities, schools, runways, hangars and substantial public
23 works infrastructure. The source of water for the base is limited to groundwater
24 pumped from the Basin.

25
26 The District's cross-complaint seeks a comprehensive adjudication to
27 determine the rights to all water within the Basin. The Streamlined Act establishes
28 methods for a comprehensive adjudication, including the federal government's

reserved water right. Notably, the Supremacy Clause of the U.S. Constitution (Art. VI, clause 2) states that the federal government is not subject to state regulation unless Congress clearly and unambiguously waives sovereign immunity. The McCarran Amendment, 43 U.S.C. § 666, establishes such a waiver in cases involving a comprehensive state court adjudication of water rights. The Streamlined Act specifically provides for such an adjudication “consistent with *Winters v. United States* (1908) 207 U.S. 564, the McCarran Amendment . . . and any other federal laws regarding the determination of federal or tribal water rights, as applicable.” (CCP § 830(b)(6))

2. THE FEDERAL RESERVED WATER RIGHTS DOCTRINE

The United States asserts a right to groundwater based on a body of case law known as the federal reserved water rights doctrine. As explained in *Cappaert v. United States* (1976) 426 U.S. 128: “[W]hen the Federal Government withdraws its land from the public domain and reserves it for a federal purpose, the Government, by implication, reserves appurtenant water then unappropriated to the extent needed to accomplish the purpose of the reservation.” 426 U.S. at 138. The government’s right to the water implicitly reserved “vests on the date of the reservation and is superior to the rights of future appropriators.” *Id.* See also *Winters v. United States* (1908) 207 U.S. 564; *United States v. New Mexico* (1978) 438 U.S. 696; *Arizona v. California* (1963) 373 U.S. 546; *Arizona v. Navajo Nation* (2023) 599 U.S. 555.

A federal reserved water right does not extend to land outside the reservation. (*Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water District* (9th Cir. 2017) 849 F.3d 1262, 1268 [“Despite the longstanding recognition that Indian reservations, as well as other reserved lands, require access to water,

1 the *Winters* doctrine only applies in certain situations: it only reserves water to the
2 extent it is necessary to accomplish the purpose of the reservation, and it only
3 reserves water if it is appurtenant to the withdrawn land. *Winters*, 207 U.S. at
4 575–78, 28 S.Ct. 207; *Cappaert*, 426 U.S. at 138, 96 S.Ct. 2062.”.]¹

5
6 Ridgecrest, et al disputes this limitation, arguing that federal reserved
7 water rights extend outside the reservation to the extent that “the water is being
8 used in furtherance of the federal purpose for which the land was reserved.”
9 (Ridgecrest post-trial Brief at pp. 17-18) While Ridgecrest is correct that these
10 rights may affect water sources that are appurtenant to the reservation but
11 outside its perimeter (*e.g.*, *John v. U.S.* (9th Cir. 2013) 720 F. 3d 1214), there is no
12 authority supporting the proposition that federal reserved water rights extend to
13 water used on non-reservation property.

14
15 The Supreme Court has emphasized that the implied-reservation-of-
16 water rights doctrine reserves “only that amount of water necessary to fulfill the
17 purpose of the reservation, no more.” (*Cappaert v. U. S.* (1976) *supra* at 141
18 [emphasis added].) (*U.S. v. New Mexico* (1978) *supra* at 700, quoting *Cappaert*,
19 *supra* at 141.) Conversely, “[w]here water is only valuable for a secondary use of
20 the reservation, however, there arises the contrary inference that Congress
21 intended, consistent with other views, that the United States would acquire water
22 in the same manner as any other public or private appropriator.” *U.S. v. New*
23 *Mexico*, *supra* at 702. Accordingly, under the primary-secondary purpose test,
24 water that does not serve the primary purpose of the reservation is not part of a
25 federal reserved water right. *Id.*

26
27
28 ¹ Because virtually all of the cases cited herein use the term “Indian” when referring to these reservations, the
Court, in order to avoid confusion, also will use this term instead of the term, “Native American,” often used today.

1 The primary-secondary use distinction is illustrated by the Ninth Circuit's
2 description of the *U.S. v. New Mexico* holding:

3
4 Though it was decided seventy years after *Winters*, *New Mexico* remains
5 faithful to this construction. In analyzing the reserved rights doctrine, the
6 Court first sought to determine Congress' intent in creating the Gila National
7 Forest. *New Mexico*, 438 U.S. at 698, 98 S.Ct. 3012. After reviewing the
8 congressional act that established the forest, the Court determined that
9 Congress intended only two purposes—"to conserve the water flows, and to
10 furnish a continuous supply of timber for the people." *Id.* at 707, 98 S.Ct.
11 3012 (citation omitted). It did not, however, reserve the forest lands for
12 aesthetic, environmental, recreational, or wildlife-preservation
13 purposes. *Id.* at 708, 98 S.Ct. 3012. Thus, the Court deemed the latter uses
14 "secondary," for which the reserved right did not attach, and held that only
15 "to fulfill the very purposes for which a federal reservation was created ...
16 [did] the United States intend[] to reserve the necessary water." *Id.* at 702,
17 98 S.Ct. 3012.

18
19 *Agua Caliente Band of Cahuilla Indians, supra* at 1269-70.

20
21 Though not binding, the Court agrees with the Maricopa County
22 (Arizona) Superior Court's ruling pertaining to the military base at Fort Huachuca
23 explaining the limits of the "minimal needs" doctrine: "The quantification of the
24 federal right is the minimum amount necessary to achieve the purpose for which
25 the land for Fort Huachuca was reserved; it is not the maximum amount of water
26 that the United States may use for its military operations." *In re. The General*
27 *Adjudication of All Rights to Use Water in the Gila River System and Source*,
28 Contested Case No. W1-11-605 (Sept. 6, 2024) at p. 6 (Meadowbrook RJN, Exh 1;

1 hereinafter cited as *Fort Huachuca*).

2
3 The Court also agrees with the *Fort Huachuca* court's finding that
4 potential future temporary needs for water are not included in a calculation of
5 federal reserved water rights. (*Id.* pp. 48-49) This conclusion is in line with *Winters*
6 where the Supreme Court tethered those rights to permanent or long-term uses
7 rather than temporary ones: "That the government did reserve then we have
8 decided, and for a use which would be necessarily continued through years."
9 (*Winters, supra*, 207 U.S. at 577).

10
11 It is important to bear in mind that a federal reserved water right does
12 not preclude acquiring additional water rights needed for secondary purposes. As
13 set forth above in *U.S. v. New Mexico, supra* at 702, the United States may acquire
14 those rights on the same basis as any other user under state law.

15
16 **3. CHINA LAKE'S FOUNDING AND ESTABLISHMENT**

17
18 NAWS China Lake, then known as the Naval Ordinance Test Station or
19 NOTS, was initially established for the purpose of "research, development and
20 testing of weapons" pursuant to an order from the Secretary of the Navy on
21 November 8, 1943. (Exh. 207) That order followed an October 30, 1943
22 memorandum stating the need for a test facility for aircraft weapons and detailing
23 the unique physical characteristics of the area, including the consistently good
24 flying weather, the vast available space, and the availability of "necessary scientific
25 personnel." (Exh. 420) Planning for NOTS, including a proposed layout and
26 facilities list, was developed by the Navy in consultation with scientists from Cal
27 Tech. (Exhs. 204, 327)

1 A December 31, 1943 letter to the Secretary of the Interior stated that
2 the Navy intended to make China Lake “permanent in character.” (Exh. 232) The
3 Secretary of the Navy requested “that the Department of the Interior take the
4 necessary action to transfer complete control and jurisdiction over all of the public
5 domain lands in the [proposed area for NAWS China Lake] to the Navy Department
6 and that all revocable permits affecting such land, in favor of private parties, be
7 cancelled.” On March 23, 1944 Secretary of Interior Abe Fortas informed the Navy
8 that the Interior Department had no objection to the Navy’s immediate use of the
9 area “pending the issuance of a public land order.” (Exh. 355) On April 3, 1945, the
10 Interior Department gave the Navy permission to acquire additional acreage and
11 use this added “public domain pending issuance of a public land order.” (Exh. 917)
12 On December 19, 1947, the area now known as China Lake was formally
13 withdrawn from the public domain pursuant to Public Land Order 431 published in
14 the December 31, 1947 Federal Register. (Exh. 944)

15
16 In 1981, the United States issued Public Land Order 5942 to modify
17 Public Land Order 431, and, in so doing, confirmed that December 19, 1947 as the
18 date of the formal withdrawal. Public Land Order 5942 restored certain lands
19 within NAWS China Lake for limited geothermal leasing under the Geothermal
20 Steam Act of 1970, while stating all other aspects of the 1947 withdrawal—
21 including the reservation of land for the Navy’s exclusive use—remained fully in
22 effect: “Public Land Order No. 431 of December 19, 1947, withdrew public lands
23 from appropriation under the public land laws, including the mining and mineral
24 leasing laws, for use of Navy as a naval ordnance testing center and proving
25 range.” (Exh. 1016) In 2016, the Congressional reservation for China Lake was
26 extended to 2064. (Exh. 434)

27
28 In light of this chronology, the Court concludes that China Lake’s implied

1 federal reserve water right became effective as of December 19, 1947. While it is
2 true that the Navy commenced operations at this location four years earlier, the
3 reserved water right dates from the formal withdrawal of the land from the public
4 domain. As stated by the Supreme Court: "When the Federal Government
5 withdraws its land from the public domain and reserves it for a federal purpose,
6 the Government, by implication, reserves appurtenant water then unappropriated
7 to the extent needed to accomplish the purpose of the reservation. In so doing,
8 the United States acquires a reserved right in unappropriated water *which vests on*
9 *the date of the reservation* and is superior to the rights of future appropriators."
10 *Cappaert v. U.S., supra*, 426 U.S. at p. 138 (emphasis added).

11
12 The United States argues that the federal reserved water right vested
13 when the Secretary of the Navy issued his November 8, 1943 order. It contends
14 that the "initiation" of China Lake on that date was sufficient to support the
15 vesting. In this regard, the Secretary of the Navy was authorized by the Second
16 War Powers Act of 1942 to acquire "any real property, temporary use
17 thereof, or other interest therein, . . . that shall be deemed necessary for military,
18 naval, or other war purposes." Ex. 430 (Pub. L. No. 77-507, § 201, 56 Stat. 176, 177
19 (Mar. 17, 1942)). This authority included the power to acquire land "by purchase,
20 donation, or other means of transfer" and to "cause [condemnation] proceedings
21 to be instituted in any court having jurisdiction of such proceedings."

22
23 Contrary to Searles' argument (Searles post-trial brief p. 16), this
24 Congressional authorization allowed the Secretary of the Navy to take necessary
25 steps to withdraw land from the public domain. Nevertheless, it is undisputed that
26 the Navy Secretary deferred to the Secretary of the Interior in doing so. (Exh. 232)
27 And in both 1944 and 1945, the Secretary of the Interior referred to the need for a
28 public land order formally withdrawing China Lake from the public domain. Of

1 course, the 1947 formal withdrawal was reconfirmed in the 1981 order.

2
3 Notwithstanding these formalities and the language in *Cappaert*
4 regarding vesting on “the date of the reservation,” the United States points to
5 *United States v. Walker River Irrigation Dist.* (9th Cir. 1939) 104 F. 2d 334 in support
6 of its argument for the earlier date. In that case President Grant’s 1874 executive
7 order “setting aside the land” for Indian tribes was deemed a “formal sanction to
8 an accomplished fact” since in 1859 an authorized head of an executive
9 department had taken necessary action to reserve the land. (*Id.*, at 338.) Based on
10 this holding, the Government argues that the same result should apply here—
11 China Lake’s reservation should date from when it began operations in 1943 and
12 not four years later when the public land order issued.

13
14 There are several responses to this argument. First, as noted above, the
15 *Walker River* court concluded that a “departmental order” in 1859 was sufficient
16 even without the Presidential proclamation to establish the reservation. Nothing
17 comparable exists in the case at hand.

18
19 Second, cases involving Indian reservations appear to warrant somewhat
20 different treatment than non-Indian cases. For one thing, it is well-settled that the
21 date an Indian reservation was established requires a review of materials that
22 don’t necessarily exist for non-Indian cases: “For Indian reservations, courts look
23 to the treaties, executive orders, and statutes that set aside reservation land for
24 the tribe in question.” (*Navajo Nation v. Department of the Interior* (9th Cir. 2017)
25 876 F. 3d 1144, 1155.) For another, a number of the reported federal reserved
26 water rights cases involving Indian reservations emphasize that “treaties with the
27 Indians and statutes disposing of property for their benefit have uniformly been
28 given a liberal interpretation favorable to the Indian wards.” (*United States v.*

1 *Walker River Irrigation Dist.*, *supra* at p. 337; *Winters v. U.S.*, *supra*, 207 U.S. at pp.
2 576-77) While no reported case has explicitly stated that this principle warrants
3 treating the vesting date of reserved water rights for Indian reservations
4 differently from other federal lands, this concept arguably supports the ruling in
5 *Winters*.

6
7 Third, as noted above, the evidence establishes that the intent of the
8 Interior Department in 1944 and 1945 was that a formal public land order would
9 issue withdrawing China Lake from the public domain. Yet that order did not occur
10 until 1947. There is no reason to ignore the intent for a formal withdrawal order as
11 well as the formal order itself.

12
13 Fourth, and perhaps most importantly, establishing the federal reserved
14 water right based on the date of the public land order provides certainty for all
15 involved. Indeed, this case is prime example of why certainty is needed. Various
16 events from 1943 through 1945 are cited by the United States as triggering the
17 reserved water right. Yet none are conclusive. The October 31, 1943
18 memorandum and the November 8, 1943 order started the ball rolling, but did not
19 clearly establish a permanent facility. The Secretary of Interior's December 31,
20 1943 letter and the March 23, 1944 letter were two more steps in the process, but
21 also were not conclusive, particularly given the latter's statement "pending the
22 issuance of a public land order." The April 3, 1945 letter reiterated this
23 requirement.

24
25 All of these events led to the formal public land order in 1947. One could
26 argue, as the United States has done, that any one or combination of these events
27 was enough to establish the reserved water right. As it is, even without this
28 documentation, there is an argument that China Lake was withdrawn from the

1 public domain by virtue of the work being performed and the personnel situated
2 at this location as early as 1943. But how many personnel are enough to make it a
3 permanent facility? How many buildings are enough. Do the buildings have to be
4 permanent or is temporary enough?

5
6 In the Court's view, the establishment of the reserved water right is too
7 important to be left to a guessing game or the interpretation of qualified historical
8 experts like Dr. Scott Miltenberger or Dr. Douglas Littlefield. This is especially true
9 when there is a formal public land order that had been anticipated for three plus
10 years.

11 12 **4. CHINA LAKE'S PRIMARY PURPOSE**

13
14 All of the key historical documents point to the development and testing
15 of weapons as the primary purpose of China Lake. The November 8, 1943 order
16 establishing the base states: "A station, having for its primary function the
17 research, development, and testing of weapons, and having additional function of
18 furnishing primary training in the use of such weapons. Is hereby established."
19 (Exh. 207) The March 23, 1944 letter from the Secretary of Interior refers to "the
20 establishment of a naval ordinance testing center and proving grounds." (Exh. 942)
21 Similar language is found in the two Public Land Orders. (Exhs. 944, 1016)
22

23 Notwithstanding this undisputed history, Ridgecrest et al contends that
24 the primary purpose of China Lake was "both a military installation and company
25 town." (Ridgecrest post-trial brief p. 9) The United States argues somewhat
26 similarly, although it characterizes housing less in terms of a primary purpose and
27 more about the need to support the military mission: "The housing purpose thus
28 fits within the military purposes for which the base was established." (United

1 States post-trial brief p, 16)

2 The acknowledgement that the base was established for a “military
3 purpose” is the more accurate characterization. While it is true that when the base
4 was established there was no permanent on-base housing and little, if any,
5 housing in what eventually became the City of Ridgecrest, there is no evidence
6 that building a company town was a separate reason for withdrawal of the land
7 from the public domain. To the contrary, it was necessary to provide housing, at
8 first temporary and later permanent, as China Lake’s mission expanded. And to
9 the extent that housing was built on-base, the Court agrees that water needed to
10 support the residents living there was encompassed by the federal reserved water
11 right. Indeed, that remains the case today for the 6% of China Lake’s workforce
12 that still resides on the base.

13
14 But to argue that the reason for the withdrawal was to build a town is a
15 bridge too far. This contention conflates the reason for establishing China Lake,
16 i.e., its primary purpose, with what is needed to *support* that purpose. Moreover,
17 the contention of Ridgecrest et al that the amount of water reserved for this town
18 should be calculated based on the single year of highest usage (55 years ago no
19 less) makes little sense. The fact that this amount of water may been used in the
20 distant past does not take into account the base’s more recent experience, nor
21 does it comport with the minimal need doctrine articulated in *Cappaert* and
22 reiterated in the *Fort Huachuca* case.

23 24 **5. HISTORY OF HOUSING, POPULATION AND WATER USAGE AT CHINA LAKE**

25
26 As things now stand, on-base housing at China Lake consists of 192 units
27 for family housing, 192 beds for unaccompanied personnel housing, and 24 beds
28 for “geobachelor” housing for service members living apart from their families.

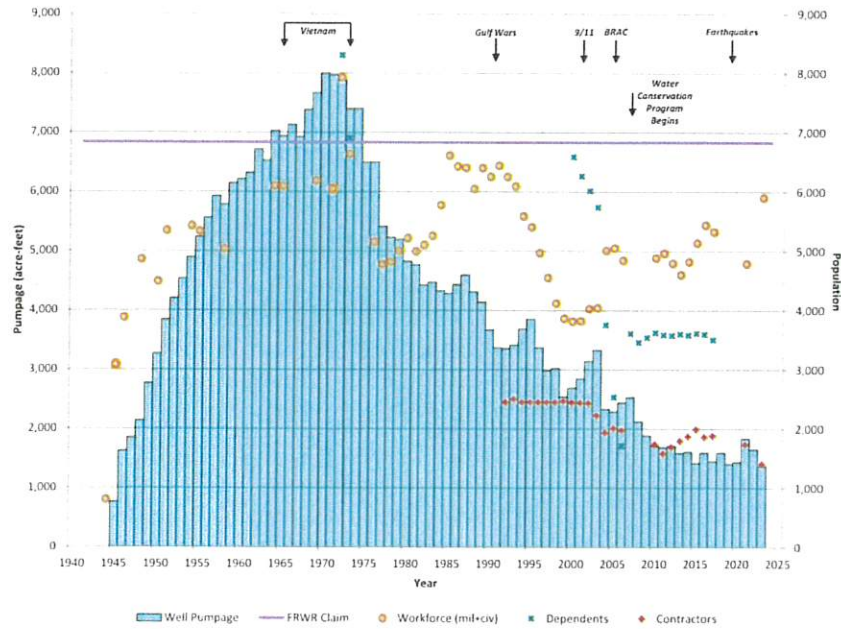
1 (Exh. 93, p. 9) 16 additional family units have been approved for future
2 construction utilizing a public-private joint venture (i.e., no capital outlay from the
3 Navy). (*Id.*) It is estimated that 94% of China Lake's workforce live off the base.
4 (Exh. 500, p.22) This is in sharp contrast to the early years of China Lake when, by
5 1954, there were over 3400 housing units at the base, including 2227 residences,
6 946 dormitory/barrack spaces, and 249 trailers. (Exh. 500, pp. 14-15) As of 1972
7 there were 2916 on-base family units. (*Id.* p. 39; Exh. 2, p. 6)

8
9 By the 1970s the Navy had decided to abandon the "company-town"
10 model and substantially reduce on-base housing. The transition from a large on-
11 base population to mostly off-base housing is described in detail in the report of
12 historian Dr. Miltenberger. (Exh. 424, pp. 78-83) That decision led to the
13 demolition of most of the houses (Exh. 2, p. 12); by 1980, on-base houses had
14 fallen below 1500, by 1990 the number was 818, and by 2004 there were less than
15 200 residences. (Exh. 500, p. 15) Today on-base housing is limited to military
16 personnel with the vastly larger civilian workforce (estimated to be in excess of a
17 10:1 ratio) living off-base, mostly in and around the City of Ridgecrest.

18
19 The elimination of most on-base housing mirrors, to a certain extent, the
20 reduction of personnel at China Lake. At its Cold-War height in 1991, the Base
21 supported 23,406 personnel, including 1,008 military personnel and over 22,000
22 civilians, contractors and their dependents. By 2000, the overall number was
23 12,837, and by 2017 the total was 10,859. (Exh. 2, pp. 21-24)

24
25 With the reduction of both on-base housing and the number of personnel
26 working at China Lake, water usage also has been reduced. From a level of nearly
27 8000 AFY in 1970, the base has dramatically reduced usage and has averaged 1536
28 AFY for the last 10 years with 1367 AFY used in 2024. (Exh. 500, p. 13) The

Figure 3-1. Changes in China Lake Well Pumpage and Populations since Establishment



Plateau Resources

TRIAL EX. 500 page 0044

Note: See Appendix D for supporting data and sources.

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progression of this reduction is illustrated by the graph found in Exh. 500, p. 44:

The most recent 10-year average is reflected in the following chart covering the last 14 years:

Annual Extraction Totals from Production Wells (Acre-feet)

<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
1685	1708	1588	1607	1421	1594	1450
<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>
1596	1407	1436	1830	1651	1367	1380

The foregoing 10-year average is skewed somewhat by 1830 AFY and 1651 AFY in 2021 and 2022 respectively. Those higher usage years were the result of a rebuilding project stemming from substantial damage caused by a 2019

1 earthquake. In addition, the 10-year average includes water allocated to the off-
2 base management of horses and burros, a category of water usage that is not part
3 of China Lake's federal reserved water right.

4
5 To be clear, however, the reduction in water usage is not simply the
6 product of a lower base population. Rather, water conservation efforts have also
7 played a role. In 1989 China Lake implemented a water conservation policy due to
8 a concern with overdraft conditions in the Basin. (Exh. 91) That policy mandated a
9 number of steps to reduce water usage, including replacing existing landscape,
10 limiting lawn watering, installing low flow devices and water meters, and recycling
11 water. In 2009, the Department of Defense issued a directive entitled Installation
12 Energy Management which included a specific water conservation component.
13 (Exh. 81, p. 20) Also addressing water conservation were the DOD's Unified
14 Facilities Criteria (UFC) initially issued in 2009 and updated in 2020 and 2022.
15 (Exhs. 84-86)

16 17 **6. MORALE, WELFARE AND RECREATION (MWR) AND OTHER WATER USES**

18
19 China Lake, like all Navy bases, provides various non-work facilities for
20 base residents to ensure they are best positioned to perform their jobs at a top
21 level. Indeed, MWR programs are required by the Department of Defense at all
22 bases. (Exh. 306) As explained by China Lake's Commanding Officer, Captain
23 Warren Van Allen, MWR programs, by addressing the "whole sailor," are designed
24 to enhance sailor wellness. As stated in a 2009 DOD publication: "Military MWR
25 programs . . . [p]romote esprit de corps and provide for the physical, cultural and
26 social needs; general well-being; [and] quality of life." (Exh. 65, p. 2) This is
27 particularly true at a remote base in the Mojave Desert where there is a nine-hole
28 golf course, a bowling alley, a swimming pool, and dining facilities.

1
2 The total amount of water currently used by these facilities include 325
3 AFY for the golf course, 18.5 AFY for the pool and 8.3 AFY for the dining locations.
4 (Exh. 93) Since 1972, the golf course has been irrigated using treated wastewater
5 supplied by the City of Ridgecrest. That water supply continues pursuant to a 50-
6 year easement signed in 2020. (Exhs. 438, p. 22; Exh. 291) This easement complies
7 with the DOD's policy requiring that golf courses "use alternative water in lieu of
8 potable water if sources are available." (Exh. 83) There is no evidence that this
9 treated wastewater will not continue to be available for the entire term of the
10 easement.
11

12 Treated wastewater is also used to supply water to the Mohave Tui
13 Chub, a fish listed as endangered under both federal and state law and present at
14 China Lake in what is known as the Lark Seep System. (Exhs. 438, p. 22; 312)
15 Pursuant to another agreement with the City of Ridgecrest, up to 200 AFY of this
16 treated water is set aside for percolation into the groundwater through the Lark
17 Seep system. (*Id.* p. 23)
18

19 According to the Navy, other water uses at China Lake include 75.5 AFY
20 for the Sands Unified School District facilities on the base, and 20 AFY for the
21 water needs of horses and burros kept at a Bureau of Land Management (BLM)
22 corral. (Exh. 93) Even though the BLM facility for managing the horses and burros
23 is not on base property (Exh. 49, p. 9), the Navy provides water to the facility
24 pursuant to a Wild Horse and Burro Management Plan with the BLM in 2022. (Exh.
25 292)
26
27
28

7. QUANTIFICATION OF THE NAVY'S FEDERAL RESERVED WATER RIGHTS

A. Date of Quantification

There is no dispute that there exists a federal reserved water right at China Lake. The land for the base was withdrawn from the public domain for the purpose of establishing a research, development and testing facility for military weapons. With that withdrawal came the implied right to use an amount of water necessary to serve the primary purpose of the military base.

What remains in dispute is how and when to quantify that amount. Although it does not say so directly, several statements in the United States' post-trial brief suggest that quantification is determined as of the date the base was established. For example, page 10 of the brief states: "Because a federal reserved water right "vests" on the date the land is set aside for a particular purpose, *Cappaert*, 426 U.S. at 138, the volume of the right is based on what the government needed, and thus impliedly reserved, to accomplish its purpose looking forward from that date."

To the extent that United States claims that the implied right to water *vested* on the date the base was established (1947 in the Court's view), it is correct. But to the extent the position of the Government and Ridgecrest et al is that quantification must be based on the amount of water needed at the origin of the base or anticipated to be needed at that time, the Court disagrees.

For one thing, it would have been impossible for the United States to know in 1947 what weapons would be needed in the future, what technological

1 advances affecting water usage would occur, how housing needs would be
2 handled, and a host other important pieces of information. Put another way,
3 determining quantification based on potential future water usage at a time when
4 water usage was around 1000 AFY would have required something that plainly
5 didn't exist—a crystal ball.

6
7 Notwithstanding the lack of such a device, the United States argues that
8 “the government’s [water] needs are evaluated at the time it reserved the land.”
9 (U.S. post-trial brief p. 16) Curiously, if the United States is correct in its contention
10 that the volume of water reserved is measured from the date the installation was
11 established (*Id.* p. 19), then that would mean no water was reserved for needs
12 that didn't exist in the 1940s—e.g., the Mojave Tui Chub--that the U.S. now
13 contends are part of the reserved water right. (*Id.* p. 31)

14
15 The relatively few reported decisions dealing with the quantification issue
16 focus on a reservation’s water needs going forward instead of what the precise
17 needs were when the land was removed from the public domain. For example, in
18 *United States v. Walker River Irrigation Dist. supra*, the court was faced with the
19 question of quantifying the amount of reserved water for an Indian Reservation
20 established in 1859. Rather than basing a ruling solely on the amount of irrigable
21 acreage that existed on this date, the court approved a report summarizing how
22 much water had been used since inception and concluded that the appropriate
23 calculation was “demonstrated by seventy years of experience.” (104 F. 2d at 340.)

24
25 In *Colville Confederated Tribes v. Walton* (9th Cir. 1981) 647 F. 2d 42, the
26 court applied a similar analysis. There, the purpose of the Indian Reservation that
27 was created in 1872 was to create a homeland that relied on agriculture and
28 fishing (primarily salmon and trout) to support the tribe. Because salmon runs had

1 been destroyed in the 1900s by dams on the Columbia River, a fishery stocked
2 with non-indigenous trout was established in 1968. Although that fishery was
3 created nearly 100 years after the reservation's establishment, and undoubtedly
4 was not contemplated in 1872, the court held that the reserved water right
5 included sufficient water to maintain the fishery. (*Id.* at 48.)
6

7 These and a handful of other cases support the notion that actual water
8 usage should be considered when determining quantification. While the United
9 States appears to acknowledge this principle at page 13 of its post-trial brief, its
10 continued reliance on early historical data for China Lake can fairly be
11 characterized as myopic. Instead of considering the more relevant recent history
12 of the base, the Government points to the "company town" that was built in the
13 1950s and 1960s and asserts that quantification should be based on the possibility
14 that the town will be rebuilt and water usage will revert to Vietnam War levels of
15 more than 50 years ago.
16

17 The problem with this approach is that it ignores the evidence presented
18 at trial. The housing that existed in the 1970s has largely been demolished, the
19 Navy has formalized a policy that civilian personnel should live off-base, and there
20 are no plans to increase on-base housing beyond the 16 houses that have been
21 approved. China Lake has continued its mission without interruption by using an
22 average of 1536 AFY for the last 10 years, and there is no indication that this
23 amount (along with the 108 AFY from non-potable wells for test and target areas
24 and wildland firefighting) is inadequate. And while the United States has
25 presented credible evidence that additional programs *might* be assigned to China
26 Lake at some unknown point in the future (discussed below), that possibility does
27 not also support the notion that the Navy suddenly will reverse course and house
28 thousands of civilian employees on the base.

1
2 **B. Future Water Needs**
3

4 Much of the testimony in this trial focused on the Navy's potential future
5 water needs. In *Arizona v. California, supra* at 601, the Supreme Court ruled that a
6 reservation of water rights must be sufficient to meet the "future requirements"
7 for accomplishing the purpose of the reservation. Significantly, future water needs
8 must be tethered to the primary purpose of the reservation.
9

10 Not surprisingly, many of the leading cases discussing future water use
11 involve Indian reservations, forest reserves, national parks and national
12 monuments. The Court is unaware of any appellate decisions that focus in detail
13 on military installations. Indeed, of all the cases cited by the parties, the only one
14 providing a thorough analysis and involving a comparable situation to the present
15 case is *Fort Huachuca*. There, the trial court considered the reserved water right
16 for a 73,000-acre Army base in southeastern Arizona. Among other things, the
17 Army argued that the calculation of its water right should take into account the
18 possibility of an increase in base population from about 14,000 to nearly 64,000
19 for a "total mobilization" in the event of a calamitous occurrence such as a war.
20

21 In analyzing this issue, the *Fort Huachuca* court concluded that a
22 potential future event can be a basis for quantification of a reserved water right if
23 (1) it is "likely that a future use will occur," and (2) the proposed use "will be a
24 long-term use." *Fort Huachuca* at p. 48. In other words, the federal reserved water
25 right "must be based on a reasonably probable long-term use." *Id.* at p. 49.
26

27 The Court agrees that this standard makes sense as applied to a military
28 installation. Unlike agricultural land or a national forest where the amount of

1 water needed to support the basic purpose of the reservation is not likely to
2 dramatically change, a military base's water needs will fluctuate depending on a
3 multitude of factors—new technology, budgetary concerns, base closings, military
4 policies, the cost of housing, international relations and politics top the list. These
5 and other factors are difficult to predict.

6
7 More significantly, the time frame in which the reserved water right is
8 adjudicated is critical. Thus, if quantification of China Lake's reserved right was
9 determined in the 1940s during World War II, then that right likely would have
10 taken into account the ongoing war effort, the need for new weapons, the ever-
11 increasing size of the base and the lack of a viable off-base housing alternative
12 such as exists today in the City of Ridgecrest. Any determination at that time could
13 not have contemplated base closings and consolidations that happened many
14 decades later, nor could it account for the many water-conservation methods that
15 have developed over the years.

16
17 Likewise, if the reserved water right had been adjudicated in 1969 at the
18 height of the Vietnam War (Exh. 952), then the water use (nearly 8000-acre feet
19 per year), the base's total population (nearly 20,000) and the available on-base
20 housing (3800+ residences/dorm spaces) undoubtedly would have dictated a
21 different result from today. However, because this proceeding is occurring 50+
22 years after Vietnam and 80+ years after World War II, the previous historical use is
23 of little value given the many significant changes that have occurred since those
24 wars ended.

25
26 In short, in determining China Lake's reserved water right, the Court
27 starts with current water usage as a baseline, taking into account fluctuations that
28 have occurred in the relevant past. And while the Court agrees that potential

1 future expansion of China Lake's mission should be taken into account in
2 calculating that water right, that expansion must meet the "reasonably probable
3 to occur" criterion. Although that standard admittedly does not equate with an
4 exacting scientific formula, it is sufficient for analyzing the evidence in this case.

5
6 **8. MINIMUM AMOUNT OF WATER NECESSARY TO ACCOMPLISH THE**
7 **PRIMARY PURPOSE OF CHINA LAKE UNDER CURRENT CONDITIONS**
8

9 The amount of water used for existing programs and personnel is largely
10 undisputed. What remains in dispute is (1) how much of that existing use qualifies
11 for federal reserved water right protection, and (2) perhaps more importantly,
12 how much additional water will be needed to fulfill China Lake's primary purpose
13 in the future given the lack of a clear plan as to how the base will be used and
14 function in the coming years.

15
16 While the concept of weapon development and testing as a primary
17 purpose of the base is easy enough to understand, quantification of water needs
18 for this purpose is anything but simple. As noted above, the analysis today is
19 undoubtedly different than it would have been 78 years ago when the base was
20 formally established, and also quite different from 50+ years ago during the
21 Vietnam War. Those earlier eras required far more manpower than today and
22 were guided by military planning, technology and thinking developed in World
23 War II and Vietnam. It also was before the growth of the City of Ridgecrest and
24 when few alternatives for off-base housing existed. While the AFY needed in
25 earlier years provides perspective on how China Lake has changed, there simply is
26 no basis to rely on water usage in 1970 (about 8000 AFY) when considering
27 current and future needs. Among other things, the radical change in housing at
28 China Lake—i.e., demolition of most on-base housing—dramatically alters the

1 analysis.

2 As of today, China Lake is able to accomplish its primary purpose using
3 1536 AFY based on a 10-year average. And while it is true that in two of the non-
4 earthquake years, the AFY was slightly higher (1594 AFY in 2016 and 1596 AFY in
5 2018), the average over the last four non-earthquake years is 1398 AFY,
6 demonstrating a declining trend. On top of the 1536 AFY longer term average, the
7 Navy claims 108 AFY needed for wildland firefighting and certain test and target
8 area support. (Exh. 93, p. 6) This part of the reserved right claim is not the subject
9 of any contrary argument. To be clear, there is no evidence that the total of 1644
10 AFY is not sufficient to cover China Lake's current needs under present conditions.
11 Of course, included in this amount is 20 AFY for the non-primary purpose of off
12 base management of burros and horses.

13
14 Put another way, because China Lake is able to fulfill its mission using
15 1624 AFY and has been able do so consistently over at least the last 10 years, the
16 Court concludes that this amount of water is the minimum currently needed to
17 accomplish its primary purpose. In reaching this conclusion, several observations
18 are in order.

19
20 First, water necessary to support MWR programs is part of the federal
21 reserved water right since the evidence establishes that these programs are
22 needed for Navy personnel to perform at a high level. Such performance is integral
23 to China Lake fulfilling its primary purpose of weapon development and testing.
24 (*See, e.g., Fort Huachuca, supra* pp. 9-18) That being said, because the 325 AFY
25 needed for golf course irrigation comes from treated wastewater provided by the
26 Ridgecrest and not from groundwater, and since there is nothing to suggest that
27 this source won't be available for the full 50-year agreement with Ridgecrest, it is
28 not included in the reserved water right calculation. Notably, this ruling is

1 consistent with the position the United States took in the Fort Huachuca case
2 where the golf course also was irrigated with treated wastewater. (*Fort Huachuca*,
3 *supra*, at p. 22.)

4
5 Second, the same is true with respect to the 200 AFY needed to support
6 the Tui Chub. The availability of treated wastewater for this purpose supports the
7 conclusion that it need not be included in the reserved water right. More to the
8 point, ensuring the protection of this endangered species, while worthwhile and
9 subject to monitoring by the Department of the Interior (Exh. 312), is not essential
10 to the Navy's primary purpose of weapon development and testing.

11
12 Third, the 20 AFY dedicated to the BLM's off-base management of burros
13 and horses also is not necessary to the primary purpose of the Navy's mission at
14 China Lake. Among other things, water for purposes outside the reservation is not
15 encompassed by the federal reserved water right doctrine. (*Agua Caliente Band of*
16 *Cahuilla Indians v. Coachella Valley Water District, supra*, p. 1268.)

17
18 Fourth, along the same lines, the Court rejects Ridgecrest's argument
19 that China Lake's reserved water right should include water used by base
20 personnel living in that City. While water used by personnel while working on base
21 is included in the reserved right, there is no authority for adding off-base water
22 usage to this calculation.

23
24 Fifth, the Navy used a 1633 AFY figure (slightly reduced from 1644 AFY)
25 plus a 25% "growth contingency" when it submitted information to the Indian
26 Wells Valley Groundwater Authority in connection with the Authority's adoption
27 of a groundwater sustainability plan in 2020. (Exh. 2) According to the Navy, this
28 figure—2041 AFY—reflected its "Baseline pumping through 2070" (Exh. 17).

1 Although the Navy qualified this figure by stating that it did not necessarily reflect
2 its federal reserved water right, it is evidence of stated basic water needs
3 predating this litigation.

4 5 **9. FUTURE WATER NEEDS**

6
7 Much of the trial testimony and written evidence focused on potential
8 future weapons development and testing that might be assigned to China Lake. In
9 considering this evidence, the Court analyzes whether it is reasonably likely that
10 this future use will occur and how much water will be needed to fulfill this need.
11 Among other things, a critical issue is whether there is sufficient reliable evidence
12 supporting the Navy's contention that this potential additional work will lead to a
13 substantial increase in on-base housing.

14
15 The Navy's position, as articulated by expert Michael Bizon, Chief
16 Engineer Matt Boggs and in the Third Amended Initial Disclosures (Exh. 93), is that
17 the additional amount of water required by 8 potential new programs assigned to
18 China Lake is 215 AFY, that 5427 additional personnel will be needed to support
19 these new programs, that 80% of the new personnel would live on base, that on-
20 base personnel would have an average of 2.6 dependents, and that the total water
21 needs of personnel both living on and off the base will be 4103 AFY. Also included
22 in the estimate of future water needs is 380 AFY for future construction, 325 AFY
23 for golf course irrigation and 200 AFY for endangered species, i.e., the Tui Chub.

24
25 An opposing view was presented by Meadowbrook expert witness Rich
26 Burtell. He accepts the projected additional 215 AFY for future programs but
27 contends that the water usage associated with these programs is 169 AFY based
28 on up to 5667 additional personnel, with 10% living on base. He asserts that 1.0 is

1 a more reasonable number of assumed dependents, and that the amount of water
2 used each day by both on-base personnel and off-base residents is lower than the
3 Navy's estimates. Excluded from his calculation is water designated for future
4 construction, golf course irrigation and water for endangered species. (Exhs. 500,
5 548)

6
7 **A. Potential Future New Programs Assigned to China Lake**

8
9 The United States' Third Amended Initial Disclosures (Exh. 93) identify 8
10 programs which "would be feasible to be developed on the North Range of China
11 Lake." Those programs are the basis of the Navy's estimates of future water needs
12 even though it is acknowledged that "they are examples of hypothetical plausible
13 future scenarios for mission growth at China Lake, and are not currently planned
14 or programmed actions." (*Id.* p. 16)

15
16 As things now stand, there are no plans to assign these or any other
17 additional programs to China Lake. Significantly, all three Navy officials testifying
18 at trial acknowledged this status. Captain Van Allen testified he was unaware of
19 future mission growth plans, and that there was no program in the process of
20 being relocated to the base. Rear Admiral Brad Rosen confirmed that no new
21 particular program or project has been assigned to China Lake, though he was
22 confident additional programs would be assigned in the future. He acknowledged
23 that while previous base closures pursuant to Congress's initiation of a process
24 known as Base Relocation and Closure (BRAC) resulted in consolidation of
25 programs at China Lake in the past, he "cannot predict whether Congress will
26 initiate another round of BRAC." (Exh. 53, p. 7) Indeed, he stated that he was
27 unable to assign a percentage as to the likelihood of growth actually occurring
28 given the uncertainty of the budget process. Rear Admiral Keith Hash testified

1 similarly. While acknowledging that no substantial growth is forecasted to occur at
2 China Lake in the next 4 to 5 years, he approved the assumptions of future growth
3 set forth in in the United States' Third Amended Initial Disclosures. (Exh. 93)
4

5 Given this undisputed testimony, Searles and Meadowbrook argue that
6 to base the reserved water right on the possibility of future programs is nothing
7 more than speculation. According to Searles, this means that the anything more
8 than the most recent 10-year average of 1644 AFY (1536 AFY for all base uses plus
9 108 AFY for firefighting, etc.) cannot be included in the reserved water right.
10 Meadowbrook argues similarly, though it acknowledges via its expert that an
11 increase to about 2000 AFY is plausible.
12

13 As noted above, the fact that China Lake's purpose involves
14 development and testing of weapons puts it on different footing than most other
15 federal reservations. Unlike Indian reservations, national forests and national
16 monuments where the amount of water needed to support the reservation's
17 primary purpose is relatively stable and focuses on things such as irrigable
18 acreage, supplies of timber and fish survival, a military base is different. This is
19 particularly true when it comes to China Lake where, given the pace of technology,
20 the ever-changing nature of warfare, and the unpredictability of political issues,
21 it's virtually impossible to predict what the future will bring.
22

23 In this sense, all parties are forced to speculate to a certain extent. The
24 Navy and Ridgecrest et al speculate about programs that might come to China
25 Lake, while Searles and Meadowbrook (albeit to a lesser extent) essentially
26 speculate that the volume of work will remain the same.
27

28 In the Court's view, a number of factors support the notion that there is

1 a reasonable likelihood that additional future programs will come to China Lake.
2 The declarations and testimony of Captain Van Allen and Admirals Hash and Rosen
3 emphasize the unique qualities of the base—its size, its remote location, varied
4 terrain, 330 days of clear weather per year, over 500 facilities designated as
5 laboratories, and the variety of programs it supports. Although it is not clear what
6 new programs will be assigned to the base and when any such assignments will
7 occur, the fact that China Lake was evaluated for the 8 programs listed in the Third
8 Amended Initial Disclosures demonstrate its importance. Likewise, Congress'
9 recent allocation of \$4 billion for earthquake-related repairs, along with the
10 decision in 2017 to extend China Lake's public land withdrawal to 2064, tend to
11 support the Navy's position on increased future programs.

12
13 **B. It is Not Reasonably Likely that There Will Be an Increase in On-Base**
14 **Housing**

15
16 While any attempt to predict what might happen in coming years is, by
17 definition, speculative, the Court is comfortable with concluding that there is a
18 reasonable likelihood that future weapons programs will come to China Lake
19 because of the above-listed factors. In this sense, the Court is giving the Navy the
20 benefit of the doubt given the overriding importance of its mission.

21
22 But the same is not true when it comes to the likelihood of increasing
23 the amount of personnel living on the base in future years. Indeed, not only does
24 the evidence strongly suggest this will not occur, but it amounts to a second layer
25 of speculation on top of the layer regarding future programs. While the Court can
26 live with that first layer, the second layer goes too far.

27
28 In contrast to testimony regarding the possibility of future weapons

1 programs being assigned to China Lake, there was no evidence suggesting that
2 additional housing beyond the 16 houses currently on the drawing board will be
3 built, or that the Navy somehow will reverse course on a decades-long process of
4 eliminating on-base housing for non-military personnel. To their credit, none of
5 the testifying Navy officers suggested that such a change in direction is even in the
6 discussion stage.

7
8 Yet despite this testimony, Navy expert witness Michael Bizon
9 hypothesized that at some point in the future 80% of China Lake's personnel and
10 their dependents would eventually live on the base. (Exh. 438, p. 26) In support of
11 this statement and others, Bizon's expert report relied on "staffing and programs
12 personnel numbers . . . supplied by Naval Command." (*Id.* p. 24) When asked at
13 trial who or what he meant by "Naval Command," he acknowledged that he did
14 not know. Indeed, neither did Captain Van Allen nor Admirals Rosen and Hash. As
15 it turned out, this assumption was developed by civilian employee Matt Boggs
16 "through coordination with counsel." If nothing else, this admission highlights the
17 lack of credible evidence on the future housing issue.

18
19 Given this lack of evidence, the Court concludes that it is not reasonably
20 likely that on-base housing levels will materially increase, or that they will increase
21 to Vietnam War-era levels. While the Court recognizes that any increase in future
22 programs likely will require additional personnel (see discussion below), the
23 quantification of the reserved water right will not assume that the percentage of
24 military and civilian personnel living on the base will materially change.

25
26 **C. Quantification of Federal Reserved Water Right Considering the**
27 **Reasonable Likelihood that New Programs Will Be Assigned to China Lake**
28

1 In light of the above discussion of potential future programs and the fact
2 that an increase in on-base housing is unlikely, the Court rejects the Navy's
3 proposed figure of 6,783 AFY for its reserved water right. Instead, it finds that the
4 2,028 AFY calculated by Meadowbrook is a more appropriate calculation
5 considering all of the evidence, although that figure must be reduced by 20 AFY
6 since it includes water for the non-primary purpose of off reservation animal
7 management. The 2,028 figure consists of the existing baseline amount of 1644
8 AFY, plus 215 AFY for projected new programs and 169 AFY for additional
9 personnel associated with those programs.

10
11 For the reasons set forth above, the 380 AFY allocated by the Navy for
12 future construction is not supported by the evidence. While it is true that there is
13 ongoing base construction, the water usage for such construction is baked into the
14 10-year average of 1536 AFY. Significantly, that usage includes higher amounts in
15 2021 and 2022 occasioned by extensive construction following the 2019
16 earthquake. To the extent that another singular event occurs in future years, the
17 water usage associated with that event is properly characterized as a temporary
18 need that is not part of the permanent federal reserved right.

19
20 Likewise, the 325 AFY allocated by the Navy for future golf course
21 irrigation, as well as 200 AFY for the Tui Chub, are not part of the reserved water
22 right. As set forth above, the water for both of these needs is supplied by the City
23 of Ridgecrest with treated wastewater pursuant to a 50-year agreement.

24
25 As to the 215 AFY for potential future programs, the Court finds this
26 amount to be a reasonable estimate for calculating the federal reserved water
27 right. As noted above, assumptions about both future programs and the amount
28 of water needed for them are by definition speculative. Nevertheless, given the

1 importance of China Lake's mission and its unique qualities, as well as the lack of
2 argument as to the specific amounts of water associated with these potential new
3 programs, the Court accepts this figure as reasonable.
4

5 The amount of water needed to support the personnel required for
6 these new programs is not as clear. In terms of the number of additional
7 personnel needed, the Navy estimate of 5427 is slightly lower than Burtell's
8 estimate of 5667. With respect to the number of new personnel who would live on
9 Base, the Court accepts Burtell's 10% figure—an amount 4% higher than current
10 personnel housed at China Lake. As to the new on-Base personnel, the Court
11 concludes that Burtell's assumption of 1.0 dependent each makes sense in light of
12 the current data supporting a figure of .72 per personnel.
13

14 What is less clear is the amount of water used on a daily basis by these
15 personnel groups. Note that although there are water meters at various locations
16 at China Lake, they were not used by either the Navy or the various experts to
17 calculate usage. Also, the Court places little weight on Navy expert Bizon's reliance
18 on the DOD's 2012 Unified Facilities Criteria (UFC) for calculating daily usage rates.
19 Those criteria are design standards for water treatment facilities on military bases.
20 While they include flow requirements for base personnel, they do not establish
21 actual use requirements for any particular facility.
22

23 More to the point, both experts' suggested use numbers are essentially
24 educated guesses. To the extent the Court chooses one expert's number over
25 another, it is not concluding that the underlying evidence clearly dictates a
26 particular result. Rather, it reflects the Court's best effort to realistically analyze
27 the somewhat limited information supplied by each side.
28

1 As to actual water usage, Bizon relies on the Indian Wells Valley Water
2 District's (IWWVD) 2022 calculation of 118.8 gallons per capita per day (GPCD) for
3 its users. This figure is not a particularly accurate comparator since approximately
4 92% of Ridgecrest's housing and 24% of Kern County's housing was built more
5 than 25 years ago (Exh. 115, p. 54). There is no data whether any of this older
6 housing incorporates the water conservation requirements found at China Lake.
7 By the same token, Burtell's reliance on water usage at the nearby Army base at
8 Fort Irwin (89 GPCD) is also not a particularly accurate comparator. Among other
9 things, Fort Irwin houses much of its population in barracks and its soldiers spend
10 much of their time in the field.

11
12 Burtell offers two other possible comparators—100 GPCD based on
13 projected usage at Fort Bliss and 104.25 for the IWWVD based on a revised
14 conservative population estimate of 31,000 for Ridgecrest. (Burtell Demonstrative,
15 p. 5) Bearing in mind that all of these daily use amounts are estimates and not
16 exact comparators, the Court adopts the 104.25 GPCD as a reasonable figure.

17
18 For China Lake personnel living off base but working on base, the Navy
19 contends that a daily usage amount of 30 GPCD for 261 days annually should be
20 applied. Again, this figure comes from the UFC which is a design document for
21 water treatment systems. Bizon's supplemental report (actually, a response to
22 Burtell's opinions) acknowledges that "future planning data and daily water
23 demand is not quantifiable for the types of specific industrial activities within
24 NAWSCL [China Lake]." (Exh. 439, p. 6) Neither Bizon nor any of the Navy's other
25 witnesses provided any evidence of actual daily water use at China Lake.

26
27 Burtell disputed Bizon's usage rate on two fronts. First, he notes that 261
28 days of annual water use assumes an individual will work 5 days per week, 52

1 weeks per year. By not including holidays and vacations of at least 20 days, Bizon
2 has inflated water usage. Second, Burtell points to studies of daily water usage
3 rates in office settings (Exh. 500, p. 40) and uses the EPA's 13 GPCD measurement.
4 While this figure also is not supported by specific evidence regarding water usage
5 at China Lake, the Court finds it more reasonable than relying on a 2012 planning
6 document that does not appear to take into account the various water
7 conservation measures in place at the base.

8
9 Adding both on and off base water usage, Burtell concludes that
10 additional personnel associated with potential new programs will result in annual
11 usage of 169 AFY. Meadowbrook asserts that this is a conservative amount given
12 that it is based on several assumptions that favor the Navy, including (1) using 10%
13 as the number of personnel living on base even though the current actual number
14 is closer to 6%, (2) using 1.0 as the assumed number of dependents even though
15 the current actual figure is .72, and (3) assuming personnel living off base will work
16 261 days per year even though a more realistic number is 241 days.


17
18 Bizon does not calculate a number based on the assumptions discussed
19 in the above paragraphs. However, to the extent that the Navy contends that
20 those assumptions translate into an amount somewhat greater than 169 AFY, the
21 Court believes that the above-described conservative approach compensates for
22 the overage.

23 24 **10. CONCLUSION**

25
26 The Court concludes that the Navy's federal reserved water right for
27 China Lake is 2008 AFY. This amount is calculated by adding the following
28 amounts: (1) 1516 AFY based on the most recent the 10-year average annual

1 water usage of 1536 AFY minus 20 AFY used off reservation for animal
2 management (burros and horses); (2) 108 AFY for test and target area plus wildfire
3 management; (3) 215 AFY for potential future weapons programs; and (4) 169 AFY
4 for additional personnel associated with those potential new programs.

5
6 Dated: July 28, 2025



William Claster, Superior Court Judge