



**REPORT ON
TRANSIENT POOL
AND
FOLLOWING PROGRAM**

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Prepared By:

Staff and Consultants for

The Indian Wells Valley Groundwater Authority

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I. BACKGROUND

The Indian Wells Valley Groundwater Basin (IWVGB) is located in the northwestern part of the Mojave Desert in southern California, and it underlies approximately 382,000 acres, or approximately 600 square miles, of land area in portions of the Counties of Kern, Inyo, and San Bernardino. The IWVGB is bordered on the west by the Sierra Nevada Mountain Range, on the north by the Coso Range, on the east by the Argus Range, and on the south by the El Paso Mountains. Surface water flow from the surrounding mountain ranges drains to China Lake, a large normally dry lake, or playa, located in the central north-east part of the Basin. U.S. Route 395 and State Route 14 are the major vehicular arteries through the Indian Wells Valley.

The IWVGB, which has been in an overdraft condition for nearly 6 decades, serves as the sole supply of potable water for the Indian Wells Valley community and NAWS China Lake. Residents are served groundwater through private domestic wells, small cooperative groups sharing wells, small mutual water companies, the Inyokern Community Services District (Inyokern CSD), and the Indian Wells Valley Water District. The U.S. Navy produces and distributes groundwater for the on-station water uses at the NAWS China Lake, which is the Navy's largest single landholding. The installation represents 85 percent of the Navy's land for research, development, acquisition, testing and evaluation (RDAT&E) of cutting-edge weapons systems and 38 percent of the Navy's land holdings worldwide. In total, its two ranges and main site cover more than 1.1 million acres, which is an area larger than the state of Rhode Island.

Searles Valley Minerals Inc. produces groundwater from the IWVGB for use in its mineral's recovery and processing operations in the Searles Valley (located east of the IWVGB) and for potable use in the small communities of Trona, Westend, Argus, and Pioneer Point in the Searles Valley. Additionally, a number of farms use the IWVGB to supply their agricultural operations and the crops grown are primarily alfalfa and pistachios.

The current average estimated water budget for Indian Wells Valley and is shown below.

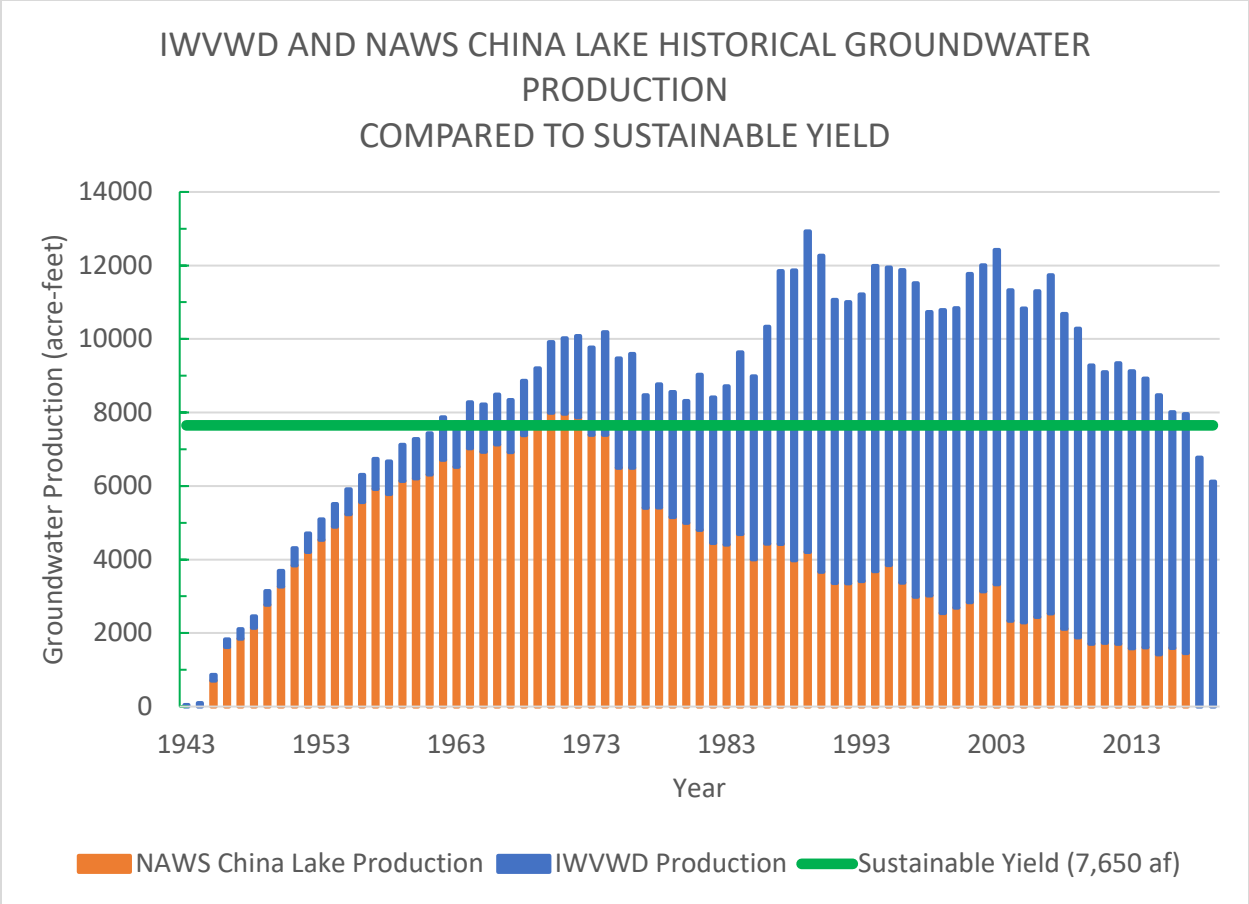
Water Budget Element	Estimated Volume (AFY)
<i>Inflows</i>	
Mountain Front Recharge	7,650
Total Inflow	7,650
<i>Outflows</i>	
ET	4,850
Interbasin Subsurface Flow	50
Groundwater Extractions	27,740
Total Outflow	32,640
Change of Groundwater in Storage	-24,990

The IWVGB water budget is defined by the difference between inflows and outflows (see GSP Section 3.3.4). Overdraft occurs when outflows exceed inflows, and there is a loss of groundwater from storage. In the case of the IWVGB, long-term pumping has exceeded local inflow for nearly 6 decades. Currently (2011 to 2015), outflows are approximately four times the estimated inflows. The magnitude of the overdraft results in an average annual loss of storage from the groundwater basin of approximately 25,000 AFY.

The State of California, Department of Water Resources (DWR) states that “SGMA requires local agencies to develop and implement GSPs that achieve sustainable groundwater management by implementing projects and management actions intended to ensure the Basin is operated within its sustainable yield by avoiding undesirable results.” Consequently, sustainable yield is a crucial and fundamental element for the development of implementation measures of the GSP. After careful public consideration, it has been estimated the long-term average natural recharge, and the Sustainable Yield, of the IWVGB is about 7,650 AFY.

The IWVGB has been significantly studied and voluntary pumping documentation has occurred over the last 70 years. For roughly the 20 years preceding SGMA, the Basin was monitored by the IWV Cooperative Group.

As graphically shown below, the IWVGB’s sustainable yield of 7,650 AFY has been exceeded for nearly 60 years by the pumping demands of the Navy and the Indian Wells Valley Water District alone.



While there have been prior preliminary efforts to study these problematic conditions, to date there have been no basin augmentation programs developed and the groundwater extractions have actually increased in recent years. Most notably, in the fairly recent past, the Basin's burdens were further enhanced by the addition of new groundwater extractions with listed/estimated yearly pumping needs almost equaling the Basin's entire sustainable yield of 7,650 AFY.

The results of the overdraft, and the lack of augmentation projects, have already manifested themselves through various undesirable results; primarily the chronic lowering of groundwater levels, the degradation of water quality, and the reduction of groundwater in storage throughout the Basin. The unregulated overdraft has resulted in Basin groundwater levels dropping in some areas by approximately 0.5 to 2.5 feet annually. Most importantly, the severe over draft has led the GSP Baseline model run to project that without changes the groundwater infrastructure (wells) will not be able to produce the needed groundwater by 2065.

Given these historic overdraft conditions and the lack of any infrastructure to augment supplies, it would be prudent and beneficial to immediately reduce all pumping to the current sustainable yield of 7,650 AFY. Such a drastic change, however, is simply not feasible without extreme changes to the community. As example, when SGMA was enacted in the 2015, the water demands for NAWS China Lake and municipal/domestic use alone were greater than the sustainable yield, and this was after years of voluntary and mandatory use reduction measures because of the drought. Complicating matters further, the Navy's provided production rates lead to a more than convincing argument that the Navy's Federal Reserve Water Right (FRWR) interest consumes the entire sustainable yield.

Given the undeniable complications, demand reductions alone cannot meet the IWVGB supply needs and as a result the GSP's primary strategy is to achieve sustainability through augmentation of Basin supplies. Unfortunately, the economic reality associated with the anticipated costs to import additional water supplies seems to preclude continued agricultural uses in the IWVGB. As a result the GSP assumes that long term IWVGB production will drop to approximately 12,000 AFY, and will be supplemented with import water.

II. TRANSIENT POOL AND FALLOWING PROGRAM

Given the GSP Baseline model run and the economic realities facing the Basin because of the lack augmentation infrastructure, the GSP provides for a Transient Pool Program to help mitigate the shift from overdraft reliance.

During preparation of the GSP, the Authority's DRI/Navy 3D Model was used to evaluate the Basin's reaction to several different pumping scenarios to 2040 (required "sustainability") and to 2070 (50 years). For this Basin modeling work, the ramping-down of agricultural pumping was modeled to help determine the Authority's acceptable level of controlled, but reduced, Basin over-pumping for a specific period of time, and to help facilitate transitional reduced agricultural pumping, to an interim acceptable level. Additionally, because it's not feasible to lower the municipal/domestic demands further than they already have been and because those needs will ultimately become augmented with additional supplies, the modeling considered the impacts of

this over-pumping until 2035, which is the projected latest date by which augmented supplies will become available.

The total assumed over pumping, which also assumes that a small amount of recycled water will become available in 2025, is 116,000af. The breakdown of the 116,000af reflects 51,000af for agricultural users and the remaining 65,000af being used by those that will be obtaining augmented supplies. It is presumed that augmented supplies will be obtained and implemented prior to 2035 and as such it is presumed that the additional 14,000af provided to those that will ultimately use the augmented supplies will not actually be pumped and the actual split is likely a 50/50 split, or better for agricultural users. In the event, that the additional 14,000af is actually used because of delays in implementing the augmentation program, the additional pumping provided to the augmented supply users is more than offset by the advantageous to the Basin those users will be providing through the water purchases and infrastructure improvements that will allow for Basin replenishments in wet years.

The process of quantitatively reducing agricultural pumping on an annual basis was briefly looked at and rejected because of the prevalence of permanent crops in the IWVGB. As such, the Transient Pool, which is totalized at 51,000 af, is individually allotted to each qualified agricultural user to manage independently as their operations permit. The allotment is non-transferable and once exhausted, these qualified agricultural users will be required to cease their extractions with the exception that they may continue to extract water for De Minimis uses.

In accordance with SGMA and California Water law, the Transient Pool allotments are determined pursuant to a five-year base period defined as January 1, 2010 through December 31, 2014 ("Base Period"). To facilitate and document "qualified" Base Period agricultural pumping, the Authority distributed a Pumping Verification Questionnaire" to all known Basin pumpers (except NAWS and De minimis). To be eligible for the Transient Pool allotment, agricultural pumpers must meet the Base Period criteria and, must have submit timely and complete responses to the Questionnaire.

During the Base Period, agricultural water uses in the IWVGB has been on average roughly 4 af per irrigated acre with the outliers being alfalfa operations which have used up to 8 to 9 af per

irrigated acre. Given IWVGB's extremely arid climate and its severe overdraft condition, serious concerns have been raised regarding the significant disparity and alfalfa's extremely high water-use per irrigated acre. Since a more than convincing argument can be made that alfalfa production rates under these conditions are an unreasonable use in violation of State law and Article X, section 2, of the California Constitution, the Transient Pool allotments are based on "irrigated acreage" during the Base Period, as reported in the Pumping Verification Reports.

In sum, all qualified agricultural pumpers will receive a Transient Pool allotment based on their agricultural uses reported in the Questionnaire during the Base Period. They may:

- 1) Reject the allotment and continue pumping in accordance with the Basin Replenishment Fee and other applicable fees; or,
- 2) Accept the allotment and the associated mitigation fee; or,
- 3) Accept the allotment and negotiate a sell of their allotment to the Groundwater Authority through the Fallowing Program.

Acceptance of the allotment (and by extension the ability to negotiate offer to sell the allotment) will include a release of any and all claims against the IWVGA and its members on a form approved by counsel for the IWVGA. With that said, the qualified pumpers in the attached report will have until October 1, 2020 to make that choice. Starting September 1, 2020, those qualified pumpers, however, may forego the payment of the 10730 Basin Extraction Fee while they consider their options but said fees will be retroactively applied if the qualified pumper has not entered into an agreement accepting the allotment by October 1, 2020.

III. MITIGATION FEES CHARGED TO TRANSIENT POOL

The IWVGA Board recognizes that while this additional Transient Pool overdraft will assist agricultural operations adjustment, the continued overdraft will also lead to additional impacts that need to be mitigated through fees to cover those costs.

The procedural requirements of California fee law is met because the use of the Transient Pool is completely voluntary. The substantive requirements are met by taking the assumed total costs

of the Shallow Well Mitigation Program and then dividing those costs by the total amount of overdraft that will occur while the Augmentation Project is being implemented and the amount of overdraft that will occur through the use of the Transient Pool.

As further provided for in the Engineer's Report on the Basin Replenishment Fee, the Shallow Well Mitigation Program assumes a cost of \$2,020,000. Those total costs reflect \$70,000 in development/engineering costs, \$300,000 in total administration costs over the life of the program and \$1,650,000 in implementation/capital costs for the mitigation of 22 shallow wells. This leads to an extraction fee of \$17.50 per acre foot pumped from the Transient Pool.

IV. QUALIFIED BASE PERIOD PUMPERS – FOR TRANSIENT POOL

Based upon the records held by the Authority and the WRM, the current known "potentially" qualified Base Period agricultural pumpers for the Transient Pool are listed below:

- Meadowbrook Dairy
- Mojave Pistachios
- Quist Farms
- Sierra Shadow
- Simmons Farms
- Amberglow
- Terese Farm
- Hickle
- Blubaugh
- McGee

However, the following potentially qualified Base Period agricultural pumpers did not timely submit the required Pumping Verification Questionnaire. As such, the Authority is unable to properly verify the needed data and it would be legally inappropriate to include and/or consider them for the Transient Pool. These agricultural pumpers will not receive a Transient Pool allotment and are therefore required to pay all appropriate Authority fees for their continued pumping.

- Mojave Pistachio
- Blubaugh
- McGee

The following agricultural pumpers have submitted their Pumping Verification Questionnaire data package, and have been verified by the WRM as “qualified” Base Period agricultural pumpers.

- Meadowbrook Farms
- Quist Farms
- Sierra Shadows
- Simmons Farms
- Amberglow
- Terese
- Hickle

Accordingly, the 51,000 acre-feet of the Transient Pool is allotted as follows:

Qualified Base Period Agricultural Pumper	Reported Irrigated Acres	Percent of Total	Total Transient Pool Allocation
Meadowbrook Farms	1,277	68.2	37,781
Quist Farms	150	8.0	4,085
Sierra Shadows	200	10.7	5,447
Simmons Farms	133	7.1	3,622
Amberglow	12	.06	327
Terese Farms	80	4.3	2,179
Hickle	20.5	1.1	558
Totals	1,872.5	100.0	51,000

V. GUIDELINES FOR NEGOTIATING VALUE FOR FALLOWING PROGRAM

The intent and goal of the Transient Pool and Fallowing Program is to significantly reduce the overdraft conditions currently occurring in the IWVGB. As such, holders of Transient Pool allotments may elect to voluntarily negotiate a sale of their Pool allotment to the IWVGA, and thereby reduce their consumptive use. Said negotiations shall be completely voluntary for both the allotment holder and the IWVGA.

While subject to the parameters and appropriate individual variances, it is presumed that payments shall be made in multiple annual installments. Additionally, it is presumed that IWVGA payment will not include the purchase of any other real property (land, equipment, supplies, etc.) and if appropriate the Authority, in conjunction with groundwater pumpers electing to participate in the Fallowing Program, may also explore alternative land uses for the fallowed land, which may include use as enhanced habitat or grazing lands.

Qualified allotment holders may, voluntarily, present their “offer” on/or before October 1, 2020. The IWVGA will review the offer at which time it may:

- 1) accept the “offer to sell” and provide the seller with a purchase agreement,
- 2) provide the seller with a counter-offer,
- 3) schedule a meet and confer negotiation, or
- 4) reject the Qualified Pumpers “offer to sell”.

The last date to complete a Transient Pool Fallowing Agreement is January 31, 2021.

The value of Transient Pool allotments, as determined by the Authority, will be generally based upon the estimated net profit generated by the actual exercise of the Transient Pool allotment pumping for its intended agricultural purposes. Any unused Transient Pool allotment will cease to exist on January 1, 2040.

Schedule for Transient Pool and Fallowing Program

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|---|-------------------|
| 1. Board Adopts Report | August 21, 2020 |
| 2. Allotment Holders Informally Express Interest | September 1, 2020 |
| 3. Allotment Holders Enter Into Agreement | October 1, 2020 |
| 4. Allotment Holder Open Fallow Program Negotiations with Offer | October 1, 2020 |
| 5. Fallowing Program Negotiations Completion Date | January 31, 2021 |
| 6. Transient Pool Pumping Begins | February 1, 2021 |