APPENDIX I-3
WATER SUPPLY ASSESSMENT

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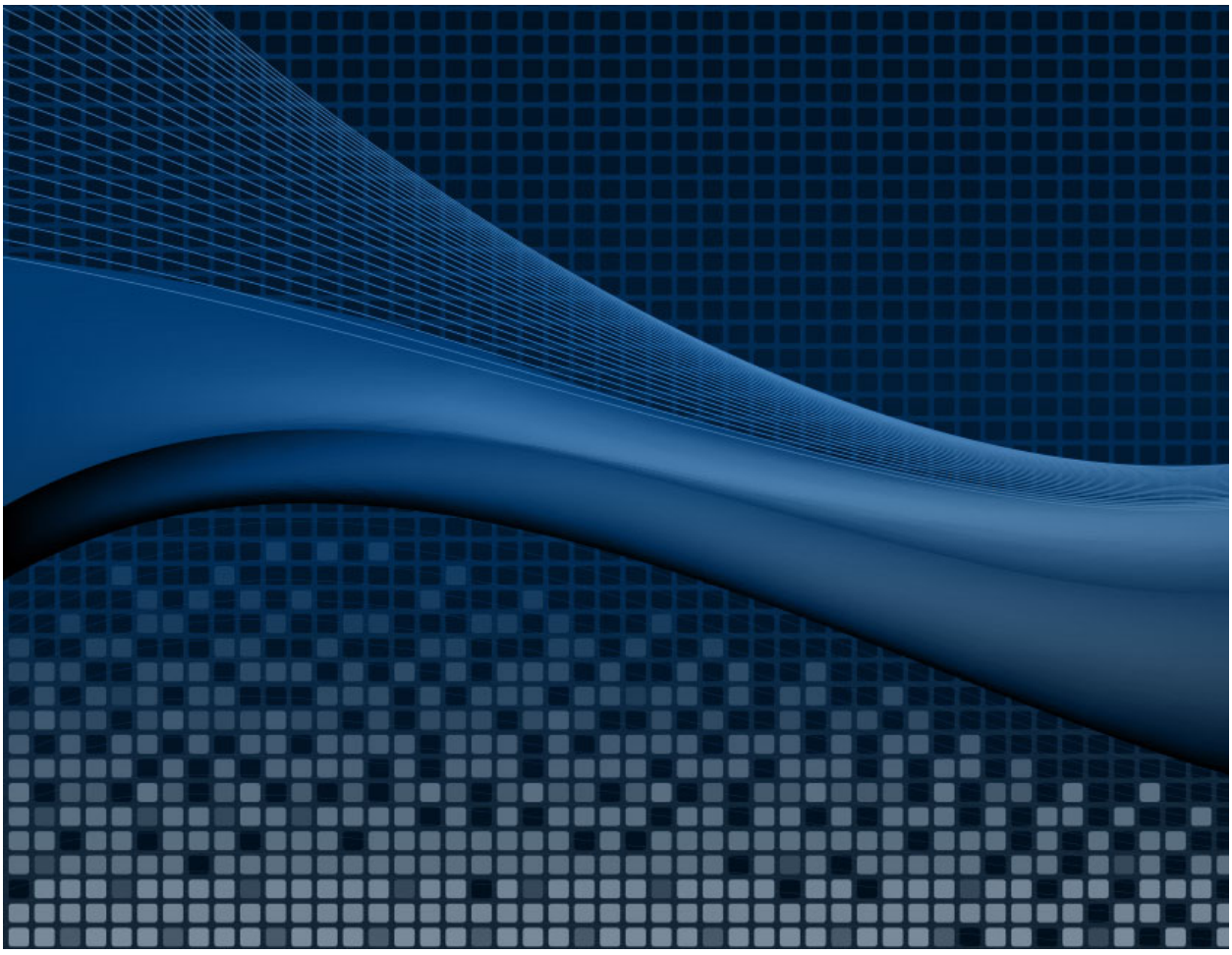
Clearway Energy Group, LLC

Daggett Solar Power Facility
Water Supply Assessment

Administrative Draft



TETRA TECH

December 11, 2018

Daggett Solar Power Facility
Water Supply Assessment

December 10, 2018

Administrative Draft

PREPARED FOR

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1 INTRODUCTION

The objective of this report is to provide a Water Supply Assessment (WSA) pursuant to the requirements of California Senate Bill (SB) 610, for the Daggett Solar Power Facility.

The County of San Bernardino (County) has determined that the Daggett Solar Power Facility is a project as defined by Water Code Section 10912, is subject to the California Environmental Quality Act and shall require a WSA. The objective of this report is to provide analysis of the water supply and determine its availability during normal, single dry, and multiple dry water years during a 20-year projection, which will meet the projected water demand associated with the proposed Daggett Solar Power Facility phases within the 20-year projection, in addition to the area's existing and planned future uses, including agricultural and manufacturing uses pursuant to the requirements of California SB 610.

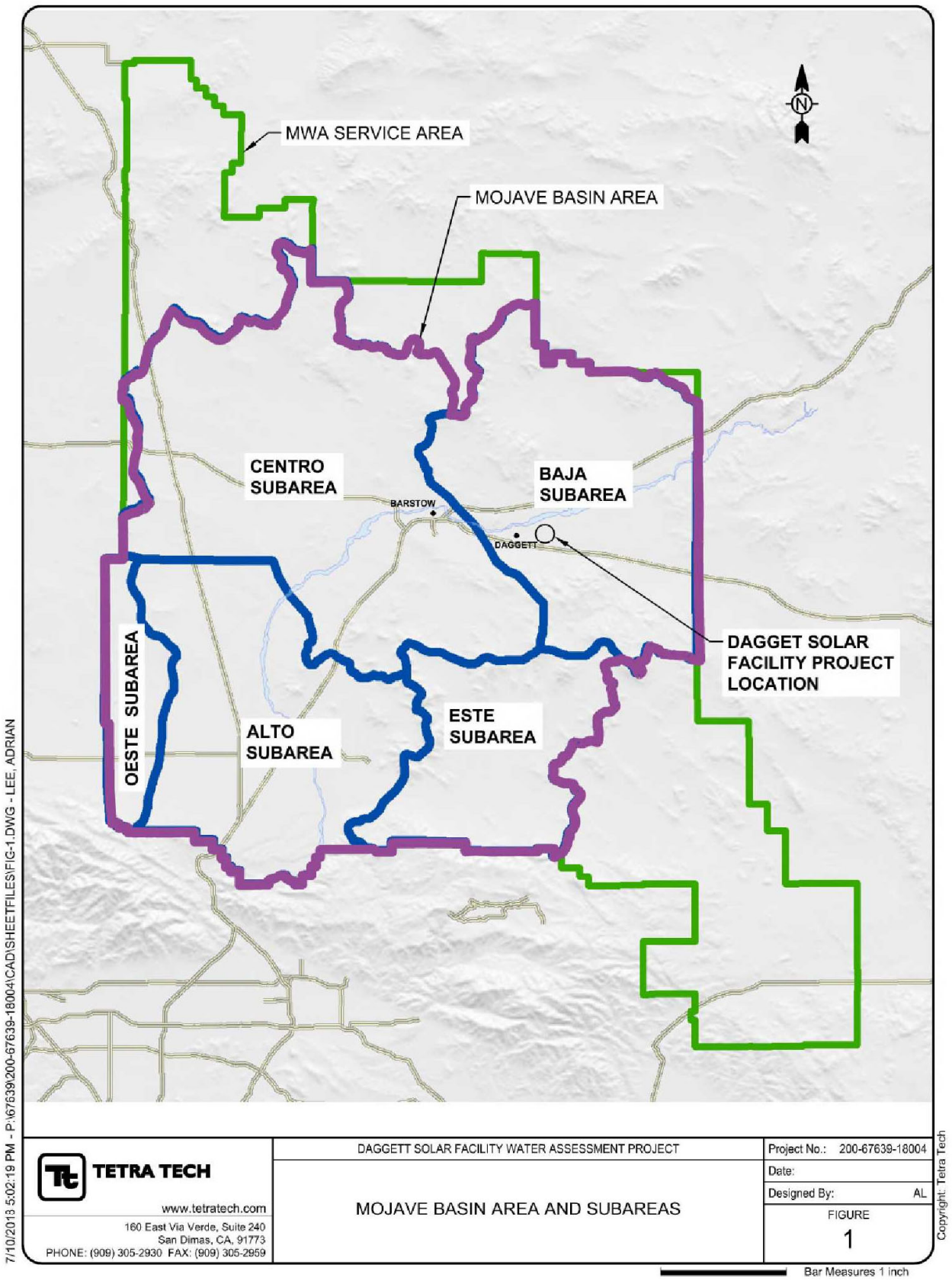
SB 610, passed in 2002, amended the California Water Code to require detailed analysis of water supply availability for certain types of development projects, and to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 requires detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. This information is to be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. SB 610 recognizes local control and decision making regarding the availability of water for projects and the approval of projects.

2 PROJECT LOCATION, DESCRIPTION, AND OVERVIEW

2.1 PROJECT LOCATION

The project site is located east of Barstow and Daggett, south of Interstate 15 and the Mojave River, and north of Interstate 40, and adjacent to Barstow-Daggett Airport (Project Site). The Project Site is situated within Township 9 North and within Ranges 1 East and 2 East. The sections are Sections 13, 23, and 24 in Range 1 East; Sections 7, 8, 15-19, 21, and 23 in Range 2 East. The Project Site is shown on four U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles in California: Yermo, Minneola, Harvard Hill, and Newberry Springs. The Project Site is located approximately within the latitudes of 34.83° and 34.90° and within the longitudes of –116.70° and -116.88° (latitude/longitude 34° 52' 0" N/116° 48' 0" W). Figure 1 shows the approximate Project location.

The proposed project consists of constructing and operating a utility-scale, solar photovoltaic electricity generation and energy storage facility that would produce up to 650 megawatts (MW) of power and include up to 450 MW of battery storage capacity on approximately 3,500 acres of land (Project). Construction is expected to be completed in three phases, ranging in size from approximately 200 MW to 250 MW each phase. Construction would occur over a 27-month period for Phase 1 and 2, and a 19-month period for Phase 3.


MWA SERVICE AREA
MOJAVE BASIN AREA
CENTRO SUBAREA
BAJA SUBAREA
BARSTOW
DAGGETT
DAGGET SOLAR FACILITY PROJECT LOCATION
OESTE SUBAREA
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N
7/10/2013 5:02:19 PM - P:\67639\200-67639-18004\CAD\SHEETFILES\FIG-1.DWG - LEE, ADRIAN
TETRA TECH
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DAGGETT SOLAR FACILITY WATER ASSESSMENT PROJECT
MOJAVE BASIN AREA AND SUBAREAS
Project No.: 200-67639-18004
Date:
Designed By: AL
FIGURE
1
Bar Measures 1 inch
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2.2 PROJECT DESCRIPTION

The Project would include the following components:

- Photovoltaic solar panels mounted on a single axis tracking system arranged into long narrow rows separated by approximately 10 feet.
- Centralized or string inverters and transformers on concrete pads (approximately 10 feet by 50 feet)
- Three proposed on-site substations, approximately 300 feet by 300 feet each, for each of the three phases of construction. The Project gen-tie would connect each substation to one of the two existing substations owned by Southern California Edison.
- Three battery storage facilities adjacent to each substation, in steel enclosures, each occupying several acres of land.
- Gen-tie lines of both 115-kilovolt and 230-kilovolt electrical circuits primarily located along Silver Valley Road and north of Santa Fe Street.
- Operations and Maintenance (O&M) Building on approximately 1.5 acres
- 20-foot wide interior and perimeter access roads consisting of compacted native soil.

Water usage information in this report is provided for the whole Project and includes all phases. Construction-related water demand for the Project is determined by the site preparation activities required, including dust control, soil conditioning, labor workforce needs, and by the duration of the construction period. A conservative estimate for Project water use is that approximately 1,800 acre-feet (AF) of water will be needed for all phases of construction. Approximately 25 acre-feet per year (AFY) for projected operations will be required during operations for panel washing and general maintenance activities. General maintenance activities include washing, and sewage from on-site employees. Bottled water would be brought onsite to provide drinking water for employees. The Project would include an O&M building and would be staffed with full and part-time employees such as a plant manager, maintenance manager, solar technicians, and environmental specialists.

2.2.1 Existing Public Water System

A public water system is defined in Water Code Section 10912 as “a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections.” The Project Site is not connected to a public water system and there are no public water systems that can serve the proposed Project. Where that is the case, the County is required to prepare the WSA under the Water Code Section 10910(b).

2.2.2 Existing Water Management Plans

Public water systems are required by the California Water Code to prepare Urban Water Management Plans (UWMP) to carry out “long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water” (Water Code Section 10610.2). UWMPs are prepared using input from multiple water systems operating in the region and include assessment of the reliability of water supply over a 20-year period and account for known and projected water demands during that time, including during normal, single-dry, and

multiple-dry water years. WSAs commonly incorporate assessment of project-related water demands from UWMPs and other assessments and plans.

An UWMP for 2015 has been created by the Mojave Water Agency (MWA). The UWMP covers the entire MWA service area and provides little information breakdown into the Project Site. As discussed below, the Project Site is located within an adjudicated water basin and the groundwater is carefully managed to achieve sustainability.

2.2.3 Existing Water Use

The Project Site is located south of the Mojave River in an area that includes farmland and scattered residential development. The existing land use is agricultural and consists of approximately 3,393 acres. In the Mojave Basin Area, groundwater rights have been adjudicated. Specifically, Base Annual Production (BAP) rights were assigned per court Judgment to each major producer. Stipulated Judgment, Attachment A. The BAP represents the highest possible production for a given producer. The sum of the total BAP for all current Project Site landowners is 27,054 AFY. As discussed in more detail in Section 3.2, the MWA, as the court-appointed Watermaster, establishes Free Production Allowances (FPA) annually to maintain proper water balances. The FPA is a percentage of the BAP, and the Watermaster recommended the FPA for the Baja Subarea, in which the Project Site occurs, be set at 35 percent of the BAP (7,682 AF for the Project Site landowners) for 2018-2019, as documented in the Twenty-Fourth Annual Report of the Mojave Basin Area Watermaster. For the latest year on record (2017), the amount of water produced by the Project Site landowners was 8,338 AF. In 2013 10,514 AF were pumped, in 2014 10,865 AF were produced, in 2015 10,781 AF were pumped, and in 2016 10,416 AF were produced from the Project Site[1].

Project Impacts on Water Use

If the solar Project is developed, existing local demands within the Project boundaries are expected to drop significantly. Project demands during construction are estimated to average 470 AFY (approximately 4 years) and then decline to 25 AFY during operations. Over 20 years, the existing local use, if continued in its present form, would have amounted to approximately 167,000 AF and the Project implemented local use would amount to 2,280 AF. Project use amounts to less than 1.5 percent of the current agricultural use.

However, it is likely that at least some of the water rights associated with the existing local demands would be exercised in some manner off-site. Due to the costs associated with extractions in another location, it is likely that not all of those available water rights would be exercised elsewhere. The extraction location of the transferred water rights might negatively impact that local area where the extraction would occur. Therefore, the beneficial impacts of the proposed Project to the underlying groundwater basin that would result from reduced local demands will likely be minimized, but not eliminated. Some possible future scenarios for the use of the water rights elsewhere are explored in the Draft Environmental Impact Report.

Source of Water for Project

The anticipated source of water for the Project will come from existing on-site wells. There are seven landowners within the Project area that have a FPA for 2017-2018 (as documented in the May 1, 2018 Twenty-Fourth Annual Report of the Mojave Basin Area Watermaster) of 7,682 AF.

The applicant has entered into agreements with these landowners to acquire their respective property for the Project. For construction water, the current landowners will maintain their water rights under the Stipulated Judgment, and agreements will allow for the acquisition of adequate water supply to meet Project needs from the existing on-site wells. For operations, the Project proposes to purchase 25 AFY of water production rights from the existing holders of those rights.

Long Term Water Supply

Water supply in the Project vicinity is provided from privately owned wells withdrawing water from the hydrogeological area referred to as the Baja Subarea within the Mojave Basin Area (Basin). Historically, well production has outpaced natural groundwater replenishment in the Basin, and in particular in the Baja Subarea. This condition has caused the groundwater levels to drop. In 1996, the Basin was adjudicated and a number of conditions were placed on the amount of water that could be extracted from the Basin (Adjudication).

More specifically, the privately-owned wells withdraw water from the underground aquifer known as the Lower Mojave River Valley Subbasin (Subbasin) which is an area within the Baja Subarea West of the Calico – Newberry Fault. The adjudication of the Basin limits water production with the goal that, the Subbasin will reach the balance point where Subbasin outflows will equal Subbasin inflows. At that point, the Subbasin groundwater levels will be stable and the Subbasin will then provide a sustainable source of water.

However, the Subbasin, has not yet reached the balance point and the groundwater levels are still in decline. The groundwater elevation in the Baja Subarea was approximately 1,875 feet in 1930. Groundwater levels declined to 1,870 feet in 1950; 1,850 feet in 1970; 1,810 feet in 1990; and 1,780 feet in 2000 (Stamos et al. 2001), and approximately 1,765 feet in 2017. These declines in water level correlate to pumpage rates of approximately 5,000 AF in 1930; 6,000 AF in 1950; 45,000 AF in 1970; 60,000 AF in 1990; 40,000 AF in 2000; and 22,300 AF in 2017. Water usage declined from the year 1990 to 2017 as a result of the water usage restrictions (i.e. the Adjudication). The above drop in water level is an estimate, and it should be noted that other factors, not just pumping from the Subbasin, have been attributed to the drop in the water levels. Regional pumping upstream of the Subbasin can be attributed to approximately 21 percent of groundwater lost from storage in the Subbasin over the period from 1931 to 1990[1]. Increased regional production upstream of the Subbasin (i.e. upstream of the Mojave River) has caused below average recharge to the Subbasin from Mojave River leakage.

2.3 SB 610 OVERVIEW AND APPLICABILITY

SB 610 requires that a project be supported by a WSA if the project is subject to the California Environmental Quality Act and is an industrial project of more than 40 acres in size regardless of size or type, or would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project. According to SB 610 Guidelines, one dwelling unit typically consumes 0.3 to 0.5 AFY, which would amount to 150 to 250 AFY for 500 units. Projects must analyze whether the total projected water supplies determined to be available for the respective project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including agricultural and manufacturing uses.

A preliminary estimate for Project water use is that approximately 1,800 AF of water will be needed for all phases of construction (this would equate to an average of 60 AFY over the 30-year life of the Project) and approximately 25 AFY for projected operations will be required.

3 MOJAVE GROUNDWATER BASIN – BAJA SUBAREA – LOWER MOJAVE RIVER VALLEY SUBBASIN

3.1 BASIN OVERVIEW AND STORAGE

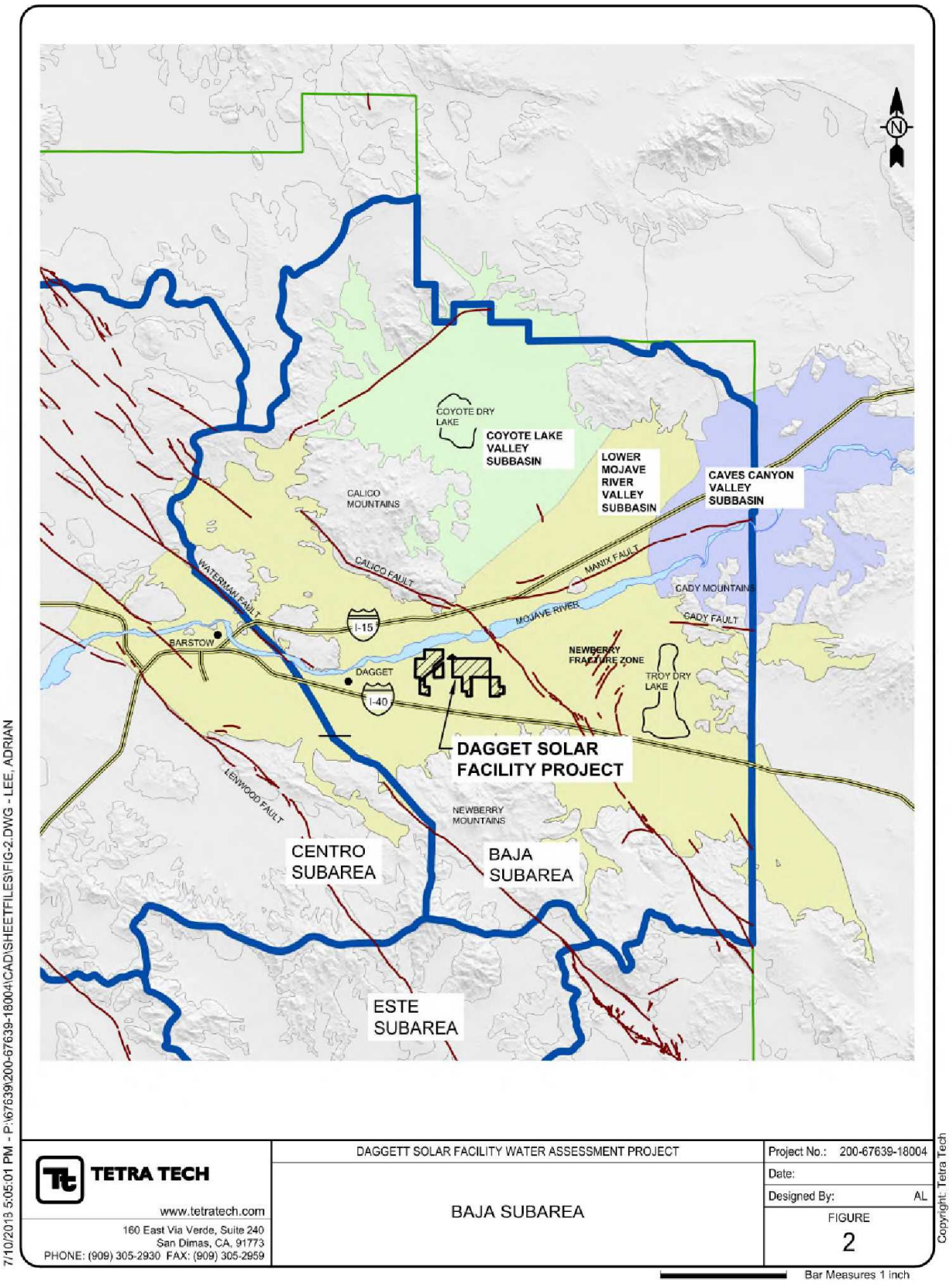
3.1.1 Areas and Features

The Mojave Basin is located in the High Desert of San Bernardino County. The Basin is located within the Mojave Basin Area surface water drainage basin (watershed). The generalized boundaries of the Basin were defined by the USGS. The Basin covers approximately 1,400 square miles, while the total watershed covers about 3,900 square miles. The Project will be located within the Baja subarea of the overall Basin area, and specifically within the Lower Mojave River Valley Subbasin. The Lower Mojave River Valley Subbasin can also be referred to as a basin (instead of a subbasin). It is referred to as a Subbasin herein because it is a part of the larger Mojave Basin which is adjudicated.

The Subbasin is located almost at the downstream end of the Mojave River. The Subbasin underlies the river and covers approximately 130,395 acres.

Major geologic structures in the vicinity of the Subbasin include the Camp Rock-Harper Lake (Waterman) Fault, the Calico Fault (and associated Newberry Fracture Zone), Manix Fault, and (inferred) Baja Fault. Previous researchers have identified these structures as partial barriers to groundwater flow. The Subbasin is characterized by a deep broad basin that extends eastward from the Waterman Fault to the Cady Mountains, with a southern extension to Troy Dry Lake. Another deep basin underlies Coyote Dry Lake. The Subbasin is depicted in Figure 2.

The Subbasin is divided into two sides by the Calico fault, a west side and an east side. The Project is located on the west side. The Calico fault impedes flow between the west side and east side of the Subbasin and the details of this impedance are not well understood. However, water levels on the west side are generally higher than levels on the east side and the difference between the water levels has increased over time. In the 1950's, the west side water level was approximately 30 feet higher than the east side, and this difference has increased to approximately 50 feet in recent years.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COYOTE DRY LAKE
COYOTE LAKE VALLEY SUBBASIN
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CAVES CANYON VALLEY SUBBASIN
CALICO MOUNTAINS
CALICO FAULT
MANIX FAULT
WATERMAN FAULT
CADY MOUNTAINS
CADY FAULT
MOJAVE RIVER
I-15
BARSTOW
DAGGET
I-40
NEWBERRY FRACTURE ZONE
TROY DRY LAKE
DAGGET SOLAR FACILITY PROJECT
LENWOOD FAULT
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DAGGETT SOLAR FACILITY WATER ASSESSMENT PROJECT
BAJA SUBAREA
Project No.: 200-67639-18004
Date:
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2
Bar Measures 1 Inch
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3.1.2 Storage

Total groundwater storage is calculated by multiplying the Subbasin area by the average saturated thickness of unconsolidated sediments by the aquifer storativity (specific yield). The Subbasin is approximately 130,395 acres and the average saturated thickness of the Baja subarea is 329 feet. The storativity of the basin is estimated at 0.05 to 0.22 and an average storativity of 0.16 is used. The total groundwater storage in the Subbasin is estimated at 6,816,000 AF[3]. This value represents the amount of stored groundwater that potentially could be pumped with wells and amounts to 20,717 AF of water per 1-foot depth of subbasin.

3.1.3 Basin Sources of Water

The sources of water for the Basin can be divided into several categories. The main source of water is from stormwater directly percolating through the ground to the groundwater. Another source is from stream or river water that percolates through the ground to the groundwater. This is sometimes referred to as “stream loss” when taken from the perspective of the stream (a “gain” for the groundwater basin). Sometimes the stream or river completely disappears from the surface and the entire stream or river may be considered part of the groundwater basin.

Underneath the surface, water can enter a groundwater basin from an adjacent basin. This typically occurs when there are two adjacent basins which have some kind of imperfect natural separation (such as a fault). The separation allows a restricted amount of flow between the two groundwater basins.

When water is extracted from the groundwater and used, some of it may return to the groundwater basin. For example, for irrigation, some of the water will be used by the plant or will evaporate, but some will percolate into the ground and return to the groundwater basin. Some water used in a home may be “wasted” into a septic tank. The water in the septic tank can then leach into the ground and return to the groundwater basin. This type of water source is referred to as return water.

In addition, supplemental recharge can occur when water which is imported from Northern California is spread and allowed to percolate to the groundwater Subbasin.

3.1.4 Basin Water Extractions

There are several ways in which water can be removed from a groundwater basin. One way is for people to remove it. This is done by placing a pump in a well, and is referred to as pumping or water production. Total pumping is the sum of all of the well water extractions within a certain area. Other basin water extractions are natural such as when the groundwater emerges above the ground like a spring. The water above the surface would no longer be a part of the groundwater. Water can also be lost underground to another groundwater basin.

3.2 GROUNDWATER MANAGEMENT

3.2.1 General

Since its establishment in 1960, the MWA has been responsible for managing the water resources of the High Desert in San Bernardino County to ensure a sustainable water supply for current and future beneficial uses. The Basin represents the predominant source of water supply in the region.

Expansion of agriculture accompanied by urban growth dramatically increased water demands in the Basin. By the 1950's, the Basin was observed to be in overdraft as evidenced by significant regional groundwater level declines. Continued over-pumping in the Basin formed the basis for early Adjudication efforts in the 1960s and formal Adjudication of the basin in 1996. As mandated in the final Judgment of the Adjudication, MWA was appointed as the Basin Watermaster and tasked with administering the Adjudication, including the responsibility of securing and delivering supplemental water to ensure sustainable use of water supplies in the Basin.

3.2.2 Adjudication Brief Summary

The Adjudication provides the institutional framework to allocate equitably the right to produce water from the available natural water supply and to provide equal sharing of costs for supplemental water. (Supplemental water is, generally, water imported into the Basin area from outside of the Basin area.) The Adjudication also limits the produced water so that the Basin, at some point in time, will stabilize with the water extracted out of the Basin being no more than the water that is added to the Basin. Until MWA initiated the Adjudication and the court issued the Judgment in January 1996 (Judgment), water production rights and obligations had not been defined in the Basin. For management and implementation of the Judgment and Adjudication, MWA defined the five management subareas – Alto, Baja, Centro, Este, and Oeste (plus the Alto Transition Zone sub-management unit).

The Judgment determines the water rights for each major producer based on their historical production. These rights are referred to as the BAP. Since the Basin was in overdraft at the time of the Judgment, the Judgment provided a method to incrementally reduce the annual production. To that end, each of the producers is assigned a FPA. The FPA is a percentage of the BAP and can vary based on the weather, specific location within the Basin area, and other factors. The FPA was reduced by 20 percent over 4 years following the Adjudication, and the FPA is now assessed every year, allowing for continued reduction of production. This gradual reduction of FPA prevents a sudden and drastic reduction in production and allows producers time to adjust to producing less water. The result is that producers can pump only a varying percentage of their BAP, and sometimes only a small percentage.

Once a subarea has reached a balance between the water sources adding to the groundwater and the water extractions, that area has reached the Production Safe Yield (PSY). The long-term trend for the FPA in areas that have reached PSY should be flat. Areas that have not reached PSY can be expected to continue to have further reductions of FPA in the long term.

3.2.3 Adjudication Summary

The Judgment assigned water rights to each major producer (defined as a person or entity using 10 AFY or more) based on historical production. Other minimal producers (persons or entities producing less than 10 AFY) are recognized in the Judgment as one entity and are not subject to the Judgment. BAP was determined by the respective producer's highest annual use verified for the five-year base period from 1986 to 1990.

The BAP amounts were determined during a period that extracted far more water from the groundwater basin than was being naturally replenished. Continuation of extracting BAP amounts from the groundwater basin would be unsustainable. To establish a sustainable system, the Judgment created the FPA. The FPA is a variable percentage of the BAP and is set based on the

Subarea among several other factors. The idea is to reduce the FPA (i.e. the water extracted from the basin) until the extractions from the Subarea are sustainable (i.e. groundwater extractions match groundwater additions). The FPA reduction would be a slow, methodical process as opposed to a sudden, drastic reduction in order to allow producers time to adjust.

The years immediately following the Judgment had a specific reduction in FPA. The first year, the FPA was 100 percent of the BAP. The second year was 95 percent and additional reductions of 5 percent were made through the fifth year when the FPA was set to 80 percent of the BAP. After the fifth year, the Judgment requires the Watermaster to evaluate various conditions and then determine the FPA for each Subarea on an annual basis. Some of the parameters the Watermaster includes in the evaluation are precipitation, river flows, anticipated below ground Basin flows, and the condition of the groundwater sub-basins (i.e. whether the sub-basin is stable or in overdraft condition).

The FPA represents a net extraction of water for each producer. A producer is allowed to extract more water than their FPA, provided they replace all of the water they extracted beyond their FPA. The Judgment created the Watermaster, and one of the tasks of the Watermaster is to provide a means to physically replace water. This is typically done by conveying imported water to a spreading area and allowing the imported water to percolate through the ground to the groundwater sub-basin. A producer is able to replace usage in excess of their FPA by simply paying the Watermaster to purchase imported water and physically spread the imported water in the affected area. Alternately, a producer could purchase or otherwise obtain unused FPA from another producer.

The Judgment also allows for a producer to transfer their rights or change the purpose of the use. This can be accomplished through exchanges or sales or filing a notice of a change of use. Since one of the intents of the Judgment is to ensure sustainability of the Basin, the Judgment includes language concerning transfers and changes in purpose of use that do so.

One of the conditions for transfer or changes in purpose of use is that the producer not negatively impact the Subarea by increasing the net water extracted from the Subarea. The Judgment accomplishes this by adjusting the FPA amount for transfer or change. The Judgment recognizes that water use is comprised of two parts: consumptive use and return flow. Consumptive use is that portion which is consumed and used up. For agriculture, it would be water used by the crop or evaporated. The return flow is water that ends up back in the sub-basin. For agriculture, it would be the water that percolates beyond the crop roots and continues to the sub-basin.

The Judgment requires that any transfer or change in purpose of use not increase the consumptive use. As a result, a transfer between similar agricultural uses located within the subarea would not have an adjustment to the FPA; since the original consumptive use would be the same as the transferred consumptive use, the subarea would not be affected. However, a transfer outside of the subarea (or change in purpose of use) would not provide any return flow that would have been provided if the original producer had operated similar to the past. Therefore, the Watermaster would make an adjustment (reduction) to the FPA that could be transferred. That reduction in FPA would account for the fact that there would not be a return flow. The Judgment sets the consumptive use / return flow to 50 / 50, meaning that outside-Basin transfers would have the FPA reduced by 50 percent. Adjustments to FPA based on change in purpose of use (such as from

agricultural to industrial) will made on a case by case basis depending on the change in consumptive use between the new use and the old use.

The Watermaster also determines the PSY for each subarea. The PSY in each subarea represents the average net natural water supply plus the expected return flow from the previous years' water production under a representative land use condition (i.e. the water added to the sub-basin from all sources). The Watermaster will reduce annual FPA until the FPA matches the PSY. When the FPA and PSY match, the Subarea will be stable and groundwater levels will be stable.

The PSY for each Subarea was determined by Webb and Associates based on estimated water supply to the sub-basin(s) with the Subarea and consumptive use (i.e. water extracted from the Subarea) for water year 1996-97. Those PSYs have been in effect since WY 2000-01. The PSY for the Baja Subarea is 20,679 AF.

Specific responsibilities of the Watermaster include verifying water production of all stipulated parties to the Judgment and estimating production of minimal producers, maintaining streamflow, precipitation and other hydrologic data, and maintaining accounts of water rights transfers, the Biological Resources Trust Fund, and other storage agreements. Additionally, because the physical solution incorporated in the Judgment requires the construction of physical facilities to deliver supplemental water to specific regions and enhanced understanding of the region's hydrogeologic conditions, the Watermaster supports the Judgment through implementation of water-related capital improvement projects and sponsorship of regional groundwater monitoring programs and focused hydrogeologic studies and field investigations.

3.3 CLIMATE

The regional climate within the MWA service area varies considerably due to large geographic extent of the service area. Victorville is representative of the regional climate experienced by most of the population, although many areas of the service area are drier, windier, and subject to larger temperature variability. Climate data was taken at Victorville weather station 117. The average maximum air temperature over a 19-year period between 1997 to 2015 is 74.8 degrees Fahrenheit (°F), and average minimum air temperature over this period is 45.8 °F. The average air temperature for this period is 60.9 °F. Average rainfall within the lower lying areas of the Basin is roughly 5 to 7 inches per year. It should be noted that climate, and in particular the rainfall, can vary dramatically in the surrounding mountains. The rainfall in the surrounding mountains has a direct effect on the water supply of the Basin.

The climate in Daggett is somewhat warmer and drier than Victorville. The average high temperature is 81 °F and the average minimum air temperature is 53 °F. The average rainfall is approximately 4 inches per year.

3.4 GROUNDWATER TRENDS

Groundwater level data was collected in 2010. Groundwater elevations in the Subbasin range from 2,000 feet above mean sea level (msl) at the Waterman Fault to less than 1,600 feet msl one mile east of Camp Cady. In the central portion of the Subbasin, between Interstates 15 and 40, groundwater levels upgradient (west) of the Calico Fault are at or above 1,770 feet msl, while groundwater levels over the roughly 5-mile by 5-mile area east (downgradient) of the Calico Fault ranges from 1,700 to 1,710 feet msl.

Depth to water generally ranges from 100 to 160 feet-below ground surface (bgs) in the central portion of the Subbasin. Within the main channel, depth to water is less than 10 to 20 feet-bgs at the Waterman Fault and a few miles east of Harvard Hill in the vicinity of Camp Cady. Elsewhere, groundwater occurs near the ground surface beneath Coyote Dry Lake (less than 10 feet-bgs) and at relatively shallow depths beneath Troy Dry Lake (40 to 50 feet-bgs).

Local groundwater level depressions associated with concentrated pumping are visible at several locations, including the area between Interstates 15 and 30 at Minneola Road, at Harvard Road near the Newberry Fracture Zone, and in the vicinity of Interstate 15 at Harvard Road.

Groundwater wells within the Project Site follow the declining water level trend. Specifically, the records of 4 wells (09NO2E22N01, 09NO2E22E01, 09NO2E22D01, 09NO2E22M03) indicate the following water levels: in 1950, 1862 feet; in 1970, 1837 feet; in 1990, 1810 feet; and in 2010, 1765 feet[3].

Water levels continue to decline due to over-pumping and limited recharge. Wells near the river in the Daggett area respond to recharge following large storm events (UWMP)[6].

In 2009 the State of California implemented the California Statewide Groundwater Elevation Monitoring (CASGEM) Program[4] which tracks seasonal and long-term groundwater elevations in groundwater basins throughout the state. MWA is the entity responsible for reporting groundwater elevations for the Subbasin and has implemented the Groundwater Level Monitoring Plan in order to satisfy those requirements. There are 178 wells within the Subbasin that are included in the CASGEM program.

3.5 GROUNDWATER SOURCES OF WATER

3.5.1 Recharge from Mojave River

The Mojave River runs the length of the Subbasin. It enters the Subbasin in the east at the Harper Lake (Waterman) Fault and exits the Subbasin in the west. The River is a major source of water providing a long-term average of approximately 5,538 AF per year through seepage/percolation.

3.5.2 Imported Water (SWP Enhanced Recharge)

Imported water is an important source of water which originates from the State Water Project (SWP). The SWP imported water is sold to producers as make-up water to put back what is pumped in excess of a producer's FPA. MWA has constructed pipelines and spreading grounds to allow for percolating water in the Daggett and Newberry Springs areas. Imported water began to be spread in 2002 and has averaged about 1,120 AF per year. In the last 10 years, the average has been around 500 AF per year and in the last 5 years, the average has been 360 AF per year from Table 1 below.

3.5.3 Subsurface Inflow

The Subbasin is downstream of the Centro Subarea and receives subsurface flows from the Centro Subarea through the Harper Lake (Waterman) Fault. Subsurface inflows average about 1,460 AFY.

3.5.4 Irrigation / Urban Return Flow

When water is pumped from the Basin and used, some of the water is consumed, and some is returned to the groundwater. For irrigation, the consumed portion is taken up through the plant and

lost through evapotranspiration or evaporated from the soil or plant when it is sprayed. The returned portion is the water that gets past the roots and continues to percolate through the ground until it reaches the groundwater basin. This is a major source of inflow averaging about 10,440 AFY. The historical return flow used by Watermaster for the region is 34 percent of the produced water. The 2015 Urban Water Management Plan for MWA (UWMP)[5] identified return flows by Subareas and use. For the Baja Subarea, the UWMP estimated return flows of 14 percent for agricultural use and 11.2 percent for urban use. The most recent estimate for return flows for the Baja Subarea is in 2017 from the Watermaster Engineer, which estimates 14.6 percent return flows[6].

3.5.5 20-Year Historical Inflow

The USGS had developed a simulation of Ground-Water Flow in the Mojave River Basin, California[2], including a model specifically for the Baja Subarea. In 2013, Todd Engineers developed an improved model of the Centro and Baja Subareas[3]. Table 1 below uses data from the 2013 Todd Engineer's report for historical inflow for the period of 1998 to 2009 for the Baja Subarea. Data from the Todd Engineers report ends at 2009, and from 2010 to 2017 inflow is estimated based on data from the Watermaster's Annual Reports. Over the last 20 years, total groundwater flows often vary between 12,000 AF to 16,000 AF, however, there can be significant variation, most notably as seen by the 91,900 AF inflow in 2004. The long term historical average inflow is about 19,540 AFY.

3.5.6 20-Year Projected Inflow

The 20-year projected inflow for the Baja Subarea is summarized in Table 2. The average projected inflow is estimated to be about 9,496 AFY, which is less than half of the historical inflow. The inflow is expected to decline significantly due to the reduction in future pumping which will reduce the return flow to the Subbasin. In addition, the assumed percentage of return flow was reduced from 34 percent for the historical flows to 14.6 percent for projected flows. This reduction is due to updated studies and data improving the accuracy of the estimates and is partly due to increased irrigation efficiency.

Currently, the pumped water is about 82.5 percent of the FPA. If pumped water for any individual producer exceeds the FPA, water must be recharged in an amount equal to that exceedance. Recharge would be via SWP water. We have assumed that a larger percentage of FPA will be pumped in the future as the FPA is ramped down. We assumed that the percentage will increase 2.5 percent per year until 95 percent of the FPA is pumped. Pumping from then on would be 95 percent of FPA. Although SWP water is not generally considered reliable on an annual basis, over the long term, it is assumed that SWP water can be purchased to make up for the minor amounts of pumping beyond FPA that may occur in the future.

Table 1. 20-Year Historical Inflow (1998-2017)

Water Inflow Source	Average[a]	1998[b]	1999[b]	2000[b]	2001[b]	2002[b]	2003[b]	2004[b]	2005[b]	2006[b]	2007[b]	2008[b]	2009[b]	2010[c]	2011[c]	2012[c]	2013[c]	2014[c]	2015[c]	2016[c]	2017[c]
Net Recharge from River	5,538	(234)	(8)	(110)	0	0	(113)	77,369	(14)	0	(26)	(7)	0	31[d]	1,719[d]	(158)[d]	(114)[d]	(1,347)[d]	(295)[d]	(57)[d]	(192)[d]
Mojave River at Barstow	--	--	--	--	--	--	--	--	--	--	--	--	--	374	23,358	0	0	42	0	0	0
Mojave River at Afton	--	--	--	--	--	--	--	--	--	--	--	--	--	63	6,172	158	114	1,389	295	57	192
SWP Water Enhanced Recharge (Daggett + Newberry Springs)	1,118	0	0	0	0	296	2,807	2,608	3,895	3,133	64	1	311	311	727	1,938	500	0	0	25	1,276
Subsurface Inflow from Centro Subarea (at Waterman Fault)	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462	1,462
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980
Return Flow (total Pumping Net Re-Circulated Less CU)[e]	10,442	13,817	13,742	12,437	13,645	11,021	10,584	9,499	10,781	12,172	11,496	9,937	8,067	7,323	8,281[c]	9,924[c]	9,658[c]	9,472[c]	9,334[c]	9,597[c]	8,055[c]
Consumptive Use Agriculture	*(14,992)*	*(18,700)*	*(17,600)*	*(15,200)*	*(15,200)*	*(14,300)*	*(14,100)*	*(12,600)*	*(14,500)*	*(17,200)*	*(16,200)*	*(13,900)*	*(10,400)*	--	--	--	--	--	--	--	--
Consumptive Use Urban	*(7,275)*	*(8,600)*	*(9,500)*	*(9,900)*	*(9,900)*	*(7,400)*	*(6,900)*	*(6,200)*	*(6,600)*	*(6,200)*	*(5,600)*	*(5,200)*	*(5,300)*	--	--	--	--	--	--	--	--
Total Groundwater Inflows	19,540	16,025	16,176	14,769	16,087	13,759	15,720	91,918	17,104	17,747	13,976	12,373	10,820	10,107	13,169	14,146	12,486	10,567	11,481	12,007	11,581

[a] Average from Todd Report 1994 through 2010, except for SWP Water Enhanced Recharge average which is an average of 2002 to 2017

[b] Estimates are from 'Conceptual Hydrogeologic Model and Assessment of Water Supply and Demand for the Centro and Baja Management Subareas Mojave River Groundwater Basin' July 2013

[c] Estimates are based on data from the Watermaster Annual Reports. Data is from Water Years which begin October 1 and end September 30. Year noted is year ending September 30.

[d] Recharge is roughly estimated to be 10 percent of the difference between flows at Afton and Barstow or when negative, the full amount

[e] Return flows from 2010 to 2017 were estimated by assuming 34 percent of the pumped flow returned to the Basin

Table 2. 20-Year Projected Inflow (2018-2037)

Water Inflow Source	Average	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Net Recharge from River	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538
SWP Water Enhanced Recharge (Daggett + Newberry Springs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subsurface Inflow from Centro Subarea (at Waterman Fault)	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980
Return Flow (total Pumping Net Re-Circulated Less CU)[a]	1,516	3,322	2,845	2,510	2,152	1,769	1,363	1,363	1,363	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136
Total Groundwater Inflows	9,496	11,302	10,825	10,490	10,132	9,749	9,343	9,343	9,343	9,116	9,116	9,116	9,116	9,116	9,116	9,116	9,116	9,116	9,116	9,116	9,116

[a] Return flows were estimated by assuming 14.6 percent of the pumped flow returns to the Basin

3.6 GROUNDWATER DEMAND/OUTFLOW

3.6.1 Groundwater Discharge to Stream

The Mojave River disappears and reappears a number of times along its length. It disappears when the water surface drops below the ground surface. It reappears when the water surface rises above the ground surface such as at a spring. Some groundwater is lost to the stream at Afton. This outflow averages about 267 AFY.

3.6.2 Evapotranspiration

Evapotranspiration is the water use by native plants (i.e. non-irrigated) and soil. Water is taken up through the roots, used by the plant, and evaporated into the air from the plant. In addition, moisture in the soil is directly evaporated into the air. The outflow from evapotranspiration is significant and is estimated to average 1,000 AFY. This estimate is based on 50 percent of the Watermaster estimate of 2,000 AFY for the Baja Subarea.

3.6.3 Pumped Water

Water pumped by producers via groundwater wells is pumped water, which is also referred to as produced water. Pumped water is by far the largest outflow of water and averages 30,448 AFY. However, this amount has been dropping due in large part to the Adjudication. In 1990, over 57,000 AF was pumped and this reduced to approximately 40,706 AF in 1998 and to 23,454 AF in 2017. Pumped water from the Subbasin is estimated to be 99 percent of the pumped water from the Baja Subarea. The Adjudication can be credited with this persistent and dramatic reduction of outflow.

3.6.4 20-Year Historical Outflow

The 20-year historical outflow is summarized on Table 3 and shows that the average outflow is approximately 32,524 AFY. However, the outflow has been consistently dropping (43,060 AF in 1998; 30,742 in 2008; 25,392 in 2017) and the average outflow overstates recent outflows as well as future outflows. The reduction in outflow is directly related to the reduced pumped water and the Adjudication.

Historical outflow for the years 1998 to 2009 is taken from the Model of the Centro and Baja Subareas[2] by Todd Engineers, and historical outflow for the years 2010 to 2017 is taken from the Watermaster's Annual Reports[1]. Adjustments were made for the estimated evapotranspiration.

3.6.5 20-Year Projected Outflow

The 20-year projected outflow is summarized in Table 4. The historical trend of reduced pumping will continue to 2026 at which time pumping will stabilize at 7,778 AFY. At that time, the Subbasin is projected to be sustainable and Watermaster will not be obligated to reduce FPA further.

Table 3. 20-Year Historical Outflow (1998-2017)

Water Outflow	Average[c]	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010[b]	2011[b]	2012[b]	2013[b]	2014[b]	2015[b]	2016[b]	2017[b]
Groundwater Discharge to Stream at Afton (baseflow)	(267)	(344)	(275)	(240)	(239)	(249)	(281)	(204)	(172)	(150)	(130)	(105)	(190)	(127)	(230)	(144)	(4)	(15)	(71)	(103)	(101)
Evapotranspiration	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)
Total Pumping (Net Re-Circulated Water)	(30,448)	(40,706)	(40,434)	(37,162)	(38,358)	(32,394)	(31,268)	(28,016)	(31,562)	(35,216)	(32,963)	(28,747)	(23,529)	(21,324)	(24,112)	(28,896)	(28,121)	(27,579)	(27,177)	(28,227)	(23,691)
Total Pumping net re-circulated (not including aquaculture and rec lakes)	*(28,875)*	*(36,335)*	*(35,512)*	*(32,825)*	*(33,842)*	*(27,903)*	*(26,701)*	*(23,395)*	*(27,044)*	*(30,891)*	*(28,544)*	*(24,557)*	*(18,953)*	--	--	--	--	--	--	--	--
Minimal Producers	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	--	--	--	--	--	--	--	--
Aquaculture and Recreational Lakes (evaporation)	*(2,806)*	*(2,782)*	*(3,330)*	*(2,712)*	*(2,903)*	*(2,818)*	*(2,883)*	*(2,904)*	*(2,837)*	*(2,681)*	*(2,752)*	*(2,480)*	*(2,586)*	--	--	--	--	--	--	--	--
Total Groundwater Outflows	(32,524)	(43,061)	(42,717)	(39,377)	(40,584)	(34,570)	(33,465)	(30,103)	(33,653)	(37,322)	(35,026)	(30,742)	(25,557)	(23,266)	(26,186)	(30,932)	(30,009)	(29,473)	(29,123)	(29,930)	(25,392)

[a] Data from USGS Groundwater Model (Stamos et al. 2001)

[b] Based on Water Year beginning October 1 and ending September 30. Year noted is year ending September 30

[c] Average from Todd Report (1994 through 2010)

Table 4. 20-Year Projected Outflow (2018-2037)

Water Outflow	Average	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Groundwater Discharge to Stream at Afton (baseflow)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)
Evapotranspiration	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)
Total Pumping (Net Re-Circulated Water)	(10,381)	(22,755)	(19,485)	(17,193)	(14,736)	(12,117)	(9,333)	(9,333)	(9,333)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)
Minimal Producers		*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*	*(2,000)*
Aquaculture and Recreational Lakes (evaporation)		*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*	*(2,806)*
Total Groundwater Outflows	(11,648)	(24,022)	(20,752)	(18,460)	(16,003)	(13,384)	(10,600)	(10,600)	(10,600)	(9,045)	(9,045)	(9,045)	(9,045)	(9,045)	(9,045)	(9,045)	(9,045)	(9,045)	(9,045)	(9,045)	(9,045)

4 GROUNDWATER BUDGET

A water budget is an identification, estimate, and comparison of the groundwater inputs and outputs that affect the overall trend of groundwater balance in the Baja Subarea. Inputs such as recharge from precipitation, underflow from other groundwater basins, and other sources are compared to outputs such as loss to other groundwater basins, extractions by humans, and evapotranspiration. Total inflow minus total outflow equals change in storage.

The primary question to be answered in a WSA that is compliant with SB 610 requirements is:

> Will the total projected water supply available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to existing and planned future uses of the identified water supplies, including agricultural and manufacturing uses?

In order to determine whether there are sufficient supplies to serve the Project over the next 20 years, this section provides a baseline normal-year groundwater budget for the Baja Subarea as a whole, based on the information provided in Section 5.5. This section includes a normal-year groundwater budget assuming the Daggett Solar Power Facility Project is not in place, and a normal-year groundwater budget assuming the Daggett Solar Power Facility Project is in place. The same is repeated for single and multiple dry-year scenarios. The following is an explanation of water budget terms used in this document.

4.1 BASELINE GROUNDWATER BUDGET

The baseline groundwater budget is the groundwater budget for the Baja subarea groundwater basins in the absence of the Project and all other known cumulative projects not already in place.

4.1.1 Normal (Average) Year

Table 5 provides a baseline normal groundwater budget for the Subbasin based on the adopted information presented in sections 5.4 and 5.5. The baseline normal groundwater budget is calculated based on the average of the 20-year historical inflows and outflows and is not a projection of future conditions. The baseline budget shows the Subbasin to be in deficit, with a loss of 14,380 AFY in the groundwater resource. This amounts to a drop of groundwater elevation of 0.7 feet per year.

Table 5. Water Budget Normal (Average) Year	
Water Inflow Source	
Net Recharge from Stream	**3822**
SWP Water Enhanced Recharge (Daggett + Newberry Springs)	**1118**
Subsurface Inflow from Centro Subarea (at Waterman Fault)	**1462**
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	**980**
Return Flow (total Pumping Net Re-Circulated Less CU) [a]	**10,352**
Total Groundwater Inflows	**17,335**
Water Outflow	
Groundwater Discharge to Stream at Afton (baseflow)	**-267**
Evapotranspiration	**-1000**
Total Pumping (Net Re-Circulated Water)	**-30,448**
Total Groundwater Outflows	**-31,715**
Change in Storage (AF)	**-14,380**

[a]Return flow is calculated as 34 percent of Total Pumping

If a 14,380 AFY average year deficit were assumed, the Baja subarea would have a total deficit of approximately 287,600 AF at the end of a 20-year period. The Subarea would not recover losses during this period. However, the amount of groundwater available in the Subbasin is large, and this cumulative deficit after 20 years would amount to approximately 4.2 percent of the total estimated storage. In addition, the Adjudication in 1996 has already and will continue to reduce Total Pumping over time so that this annual deficit will eventually be eliminated.

Due to the Adjudication, the Total Pumping has been consistently trending down. Since 2008, total pumping has not exceeded 30,000 AFY, whereas prior to 2008, Total Pumping had consistently exceeded 30,000 AFY. Since the downward trend in pumping has dramatically decreased over the past 10 years, the average total pumping assumed in this baseline budget will be much higher than total pumping in the future, and even higher than the total pumping predicted in recent years. The Total Pumping for the Normal (Average) Year budget in Table 5 is 30,448 AF and is significantly higher than current pumping. Change in storage is not representative of the future storage, which will become balanced in the future as a result of the Adjudication.

4.1.2 Dry Year

This section provides a revised baseline groundwater budget based on historical dry year conditions. Recharge from precipitation is the primary factor in determining the dry year groundwater budgets. Dry years are expected to produce less recharge from precipitation, due to the fact that less runoff would generally be expected to occur in dry years, resulting in less runoff leading to infiltration.

According to the SB 610 guidebook, a “dry year” can be considered to be a year with a precipitation amount that has a 10 percent probability of occurrence, meaning 10 percent of the years would be drier. A critical dry year would be a year with 3 percent probability. The historic precipitation data from the Squirrel Inn 2 weather station (from 1939-40 to 1940-41) to the Lake Arrowhead (from 1940-41 to present) weather station were used as reference as these weather stations were utilized in developing the Baja Subarea model[7]. (These weather stations are located in the mountains to the south of the Project and correlate with runoff water which recharges the sub-basins in the Baja Subarea.) Historical precipitation data, dating from 1931 to 2017 is available from the United States

Historical Climatology Network. The average of the annual precipitation from 1931 to 2018 in Arrowhead was 41.5 inches.

The 10-percent probability dry year was determined to occur in 1957 with 20.1 inches of precipitation in the mountains to the south. The critical dry year was found to occur in 2007 with 13 inches of precipitation.

Table 6 provides the assumed baseline groundwater budget for a dry year, assuming average historical and current Total Pumping (i.e., not ramped down by the Watermaster). A groundwater deficit is expected for the year, meaning groundwater withdrawals would exceed groundwater input. A dry year is expected to have a deficit of approximately 23,344 AF which amounts to a drop in the aquifer surface of 1.1 feet. The budget estimates for this dry year period represent a historical case scenario which is a worse case than future dry year scenarios.

Table 6. Water Budget Dry Year	
Water Inflow Source	**1958-1959**
Net Recharge from Stream	**627**
SWP Water Enhanced Recharge (Daggett + Newberry Springs)	**0**
Subsurface Inflow from Centro Subarea (at Waterman Fault)	**1804**
Subsurface Inflow from Coyote Subarea	**933**
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	**647**
Return Flow (total Pumping Net Re-Circulated Less CU)	**8717**
WWTP Effluent Return Flow	**350**
Total Groundwater Inflows	**13,078**
Water Outflow	
Groundwater Discharge to Stream at Afton (baseflow)	**-2892**
Subsurface Outflow	**-1191**
Evapotranspiration	**-830**
Total Pumping (Net Re-Circulated Water)	**-31,510**
Total Groundwater Outflows	**-36,422**
Change in Storage (AF)	**-23,344**

4.1.3 Multiple Dry Years

The longest consecutive series of years with below average precipitation (40.5 inches) on record at Lake Arrowhead was 5 years, from 2010 to 2014. This period was considered to be representative of a series of multiple dry years for the purposes of this analysis.

Table 7 presents the results of an estimated 5-year groundwater budget assuming a repeat of the 2010-2014 multiple dry year period. The results show that at the end of the 5-year period, the cumulative groundwater deficit would be approximately 74,392 AF. This equates to about 1 percent of the total groundwater storage (74,392 AF / 6,816,000 AF) or a drop of 3.6 feet of the aquifer surface. It should be noted that projected outflow due to pumping for a future scenario will be less than that assumed for this period since FPA will continue to be ramped down to meet PSY of the Subarea basin. The budget estimates for this 5-year period represent a historical case scenario, which is a worse case than future multiple dry year scenarios.

Table 7. Water Budget Multi-Dry Year					
Water Inflow Source	**1**	**2**	**3**	**4**	**5**
Net Recharge from Stream	31	1,719	(158)	(114)	(1,347)
SWP Water Enhanced Recharge (Daggett + Newberry Springs)	311	727	1,938	500	0
Subsurface Inflow from Centro Subarea (at Waterman Fault)	1,462	1,462	1,462	1,462	1,462
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	980	980	980	980	980
Return Flow (total Pumping Net Re-Circulated Less CU)	7,323	8,281	9,924	9,658	9,472
Total Groundwater Inflows	**10,107**	**13,169**	**14,146**	**12,486**	**10,567**
Water Outflow					
Groundwater Discharge to Stream at Afton (baseflow)	(127)	(230)	(144)	(4)	(15)
Evapotranspiration	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)
Coyote Dry Lake Evaporation	(600)	(600)	(600)	(600)	(600)
Total Pumping (Net Re-Circulated Water)	(20,539)	(23,356)	(28,188)	(27,405)	(26,858)
Total Groundwater Outflows	**(22,266)**	**(25,186)**	**(29,932)**	**(29,009)**	**(28,473)**
Change in Storage (AF)	**(12,159)**	**(12,017)**	**(15,786)**	**(16,523)**	**(17,906)**
Cumulative Change in Storage (AF)	**(12,159)**	**(24,176)**	**(39,962)**	**(56,485)**	**(74,392)**

4.2 GROUNDWATER BUDGET WITH DAGGETT SOLAR POWER FACILITY

4.2.1 Project Water Requirements

A photovoltaic solar facility uses very little water per Project area compared to the historic agricultural use. Project water will primarily be used for construction, and some will be used for operational purposes. For construction, water is used to keep dust down (especially during breezy conditions) and water is used to condition the soil. The soil must have adequate moisture to allow it to be adequately compacted which will provide the subbase for concrete foundations. It is estimated that both of these uses will allow for some moisture to return to the sub-basin, and the rest will evaporate. Since there are few or no plants when the water is applied, we estimate that the percent of return water for construction will be higher than the return water used for agriculture. A total of 1,800 AF is anticipated for construction over an approximately 3.5-year period. For the life of the Project this averages to 60 AFY.

During operation of the Project, the majority of water will be used for panel washing. Panel washing will not be a regular task; it will be conducted only as needed. Precipitation provides occasional cleaning and the panels will only be washed when their performance degrades to the point where it makes sense to wash them between precipitation events. When washing the panels, a portion of the water would be expected to return to the sub-basin as recharge. Since no water would be consumed for plant transpiration and since the water will tend to pool as it drips to the ground, we expect that a somewhat higher percentage of washing water would be returned to the Subbasin

compared to water used to irrigate crops. The estimated water produced for washing and other operational needs is estimated to be 25 AFY.

4.2.2 Existing Water Production

Existing land use is largely farming. The farms include about 1,600 acres of the approximate 3,500 acre Project Site. There are 18 existing wells within the Project Site and those wells will remain. The water produced for the Project Site in 2017 was estimated to be approximately 8,338 AF. Refer to Figure 3 for a depiction of the Project Site, existing wells, and agriculture.

4.2.3 Project Impacts to Water Production

During the construction years, all water for the Project will be produced from on-site and no off-site sources will be required. During construction, on-site water production for use at the Project area will be dramatically reduced (compared to the current agriculture production) and it will be reduced even further during Project operational years. During construction, water production will be reduced by approximately 7,860 AF and during operational years it will be reduced by approximately 8,313 AF.

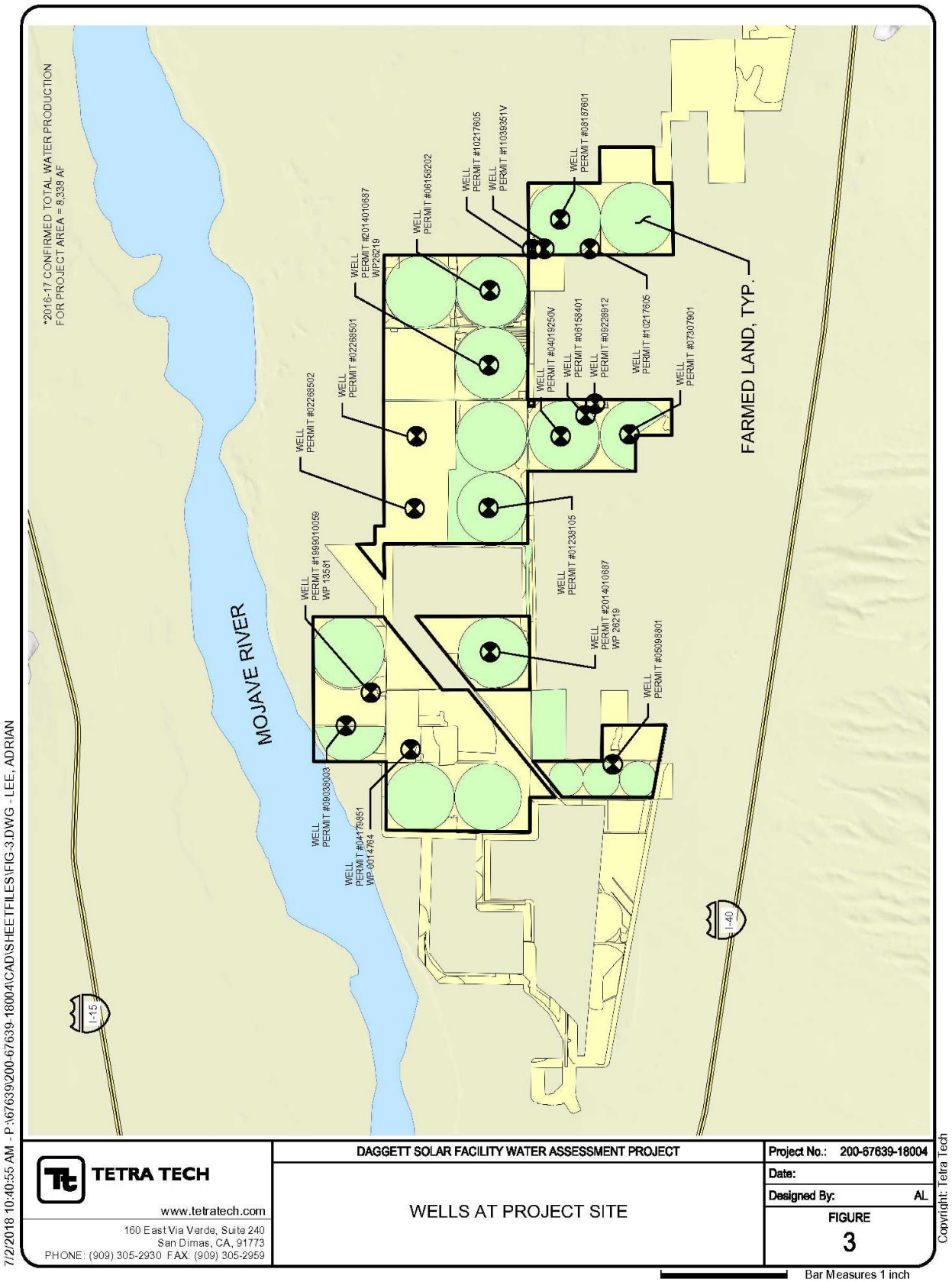
The producers of the water will retain the right to use the remaining water, by transfer or other means (such as change in purpose of use), outside of the Project area. However, due to the rules imposed by the Adjudication, the producers cannot take away more from the Subarea than previously used for agriculture. By rules from the Adjudication, *consumptive use cannot* be increased with a transfer or a change in the purpose of the use. *Therefore, the Subarea cannot be negatively impacted by this proposed change in purpose of use from agricultural to industrial use.*

The result is that, by rule of law, the Project cannot consumptively use more water than current conditions. We estimate that, in fact, the Project will consume less water than current conditions because the Project will have a higher return flow than current agricultural uses. Therefore, the Project could provide a minor positive impact to the sub-basin by reducing consumptive use.

For the purposes of this report, however, we have not attempted to calculate a precise value for the return flow of Project water, or the values for transfer adjustments that will be made by the Watermaster when approving transfers. We have included the conservative assumption that the Project will simply leave consumptive uses unchanged.

4.2.4 20 Year Projection with Project

The Watermaster sets the FPA for the Subarea and when the FPA is more than 5 percent higher than the PSY, the Watermaster can reduce the FPA by up to 5 percent. The Watermaster will reduce FPA until the Subarea becomes balanced. Actually, balancing the Subarea Basin though, may take some time. A combination of accurate and well-placed measurements and a detailed understanding of the sub-basin are required to accurately determine the PSY and therefore an FPA that will allow the sub-basin to become balanced. Improvements to both measurements and sub-basin understanding are needed to improve estimated PSY. Over time, whether or not the sub-area is balanced will be determined by measurements of the water levels in the sub-basin. If water levels continue to decline, however, the Watermaster would be obligated to reduce FPA in order to bring the Subarea into balance and the County understands reductions in FPA will be recommended. On July 13, 2018, the FPA was reduced from 40 percent to 35 percent of BAP for all Baja subarea producers for 2018-19.


*2016-17 CONFIRMED TOTAL WATER PRODUCTION FOR PROJECT AREA = 8,338 AF
MOJAVE RIVER
FARMED LAND, TYP.
I-15
I-40
WELL PERMIT #02269502
WELL PERMIT #02269501
WELL PERMIT #2014010687 WP26219
WELL PERMIT #08163202
WELL PERMIT #10217605
WELL PERMIT #11038361V
WELL PERMIT #08187801
WELL PERMIT #04019250V
WELL PERMIT #08158401
WELL PERMIT #08229812
WELL PERMIT #10217605
WELL PERMIT #07307801
WELL PERMIT #1999010059 WP 13551
WELL PERMIT #01238105
WELL PERMIT #2014010687 WP 26219
WELL PERMIT #05098801
WELL PERMIT #09038003
WELL PERMIT #04179851
WELL PERMIT #0014764
TETRA TECH
www.tetratech.com
160 East Via Verde, Suite 240
San Dimas, CA, 91773
PHONE: (909) 305-2930 FAX: (909) 305-2959
DAGGETT SOLAR FACILITY WATER ASSESSMENT PROJECT
WELLS AT PROJECT SITE
Project No.: 200-67639-18004
Date:
Designed By: AL
FIGURE
3
Bar Measures 1 inch
7/2/2018 10:40:55 AM - P:\67639\200-67639-18004\CAD\SHEETFILES\FIG-3.DWG - LEE, ADRIAN
Copyright: Tetra Tech

For the above reasons, the 20-year projection shows the Subarea slowly coming into balance and finally reaching balance in 2026. The Subarea deficit over the 20-year period amounts to approximately 43,000 AF. With a sub-basin capacity of 6,816,000 AF, this only amounts to a reduction of less than 1 percent. This demonstrates that there is ample time to bring the Subbasin into balance. Calculations for the 20-year projected water budget are summarized in Table 8 below.

The water budget for the dry year (1995-96) that includes the Project is summarized in Table 9. A groundwater deficit is expected for the year, meaning groundwater withdrawals would exceed groundwater input. A dry year is expected to have a deficit of approximately 9,614 AF. Similarly, Table 10 presents the results of an estimated 5-year groundwater budget with the Project assuming a repeat of the 2010-2014 multiple dry year period. The results show that at the end of the 5-year period, the cumulative groundwater deficit would be approximately 28,893 AF. This equates to less than 0.5 percent of the total groundwater storage (28,893 AF / 6,816,000 AF).

While the production rights in the Baja subarea are projected to ramp down over time, given: (i) the Adjudication's directive is to maintain a useable amount of water in the Baja Subarea, (ii) the protocols established within the Adjudication for Replacement Water, and (iii) the minimal amounts of water that the Project will require for operational uses, at present there is no reason to believe that the water supply within the Baja subarea will be ramped down so severely over the next 20 years that there will be insufficient water to supply the Project's modest operational requirements together with other demands on the Baja subarea. Although additional ramp downs in the Baja subarea are anticipated, BAP ramp downs are applied pro rata to all producers. The purpose for such ramp down is to provide for a scheduled reduction in pumping with the intent of balancing water production with available natural supply and purchase of supplemental water supply.

MWA completed an UWMP for the year 2015. Since the Project is not adding new water demands and will be re-allocating water to the Project from agriculture, the Project will not affect the UWMP water demands. As part of the UWMP, an analysis was performed to determine if MWA has adequate water supplies to meet demands during average, single-dry, and multiple-dry years. The report concluded that there will be adequate water supplies for those conditions over the next 25 years.[5]

Table 8. 20-Year Projected Inflow with Project (2018-2037)

Water Inflow Source	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Net Recharge from Stream	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538	5,538
SWP Water Enhanced Recharge (Daggett + Newberry Springs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subsurface Inflow from Centro Subarea (at Waterman Fault)	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462	1462
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980	980
Return Flow (total Pumping Net Re-Circulated Less CU)	3,322	2,845	2,510	2,152	1,769	1,363	1,363	1,363	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136	1,136
Total Groundwater Inflows	**11,302**	**10,825**	**10,490**	**10,132**	**9,749**	**9,343**	**9,343**	**9,343**	**9,116**	**9,116**	**9,116**	**9,116**	**9,116**	**9,116**	**9,116**	**9,116**	**9,116**	**9,116**	**9,116**	**9,116**
Water Outflow Source																				
Groundwater Discharge to Stream at Afton (baseflow)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(267)	(373)	(373)
Evapotranspiration	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)
Total Pumping (Net Re-Circulated Water)	(22,755)	(19,485)	(17,193)	(14,736)	(12,411)	(9,333)	(9,333)	(9,333)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)	(7,778)
Daggett Solar Facility Project	*(470)*	*(470)*	*(470)*	*(470)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*	*(25)*
Total Groundwater Outflows	**(24,022)**	**(20,752)**	**(18,460)**	**(16,003)**	**(13,678)**	**(10,600)**	**(10,600)**	**(10,600)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**	**(9,045)**
Budget	**(12,720)**	**(9,927)**	**(7,970)**	**(5,871)**	**(3,929)**	**(1,257)**	**(1,257)**	**(1,257)**	**71**	**71**	**71**	**71**	**71**	**71**	**71**	**71**	**71**	**71**	**71**	**71**

Table 9. Water Budget Dry Year with Project (1995-96)	
Water Inflow Source	**1995-96**
Net Recharge from Stream	**627**
SWP Water Enhanced Recharge (Daggett + Newberry Springs)	**0**
Subsurface Inflow from Centro Subarea (at Waterman Fault)	**1804**
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	**933**
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	**647**
Return Flow (total Pumping Net Re-Circulated Less CU)	**8717**
WWTP Effluent Return Flow	**350**
Total Groundwater Inflows	**13078**
Water Outflow	
Groundwater Discharge to Stream at Afton (baseflow)	**-2892**
Subsurface Outflow	**-1191**
Evapotranspiration	**-1659**
Total Pumping (Net Re-Circulated Water)	**-8475**
Daggett Solar Facility Project	**-470**
Total Groundwater Outflows	**-22692**
Change in Storage (AF)	**-9614**

Table 10. Water Budget Multi-Dry Year with Project					
Water Inflow Source	**1**	**2**	**3**	**4**	**5**
Net Recharge from Stream	31	1,719	(158)	(114)	(1,347)
SWP Water Enhanced Recharge (Daggett + Newberry Springs)	311	727	1,938	500	0
Subsurface Inflow from Centro Subarea (at Waterman Fault)	1,462	1,462	1,462	1,462	1,462
Mountain-Front Recharge (0.5 percent Runoff Non-Basin Area)	980	980	980	980	980
Return Flow (total Pumping Net Re-Circulated Less CU)	1,237	1,237	1,237	1,237	1,237
Total Groundwater Inflows	**4,021**	**6,125**	**5,459**	**4,065**	**2,332**
Water Outflow					
Groundwater Discharge to Stream at Afton (baseflow)	(127)	(230)	(144)	(4)	(15)
Evapotranspiration	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)
Coyote Dry Lake Evaporation	(600)	(600)	(600)	(600)	(600)
Troy Dry Lake Evaporation	0	0	0	0	0
Total Pumping (Net Re-Circulated Water)	(8,475)	(8,475)	(8,475)	(8,475)	(8,475)
Daggett Solar Facility Project	(470)	(470)	(470)	(470)	(25)
Total Groundwater Outflows	**(10,202)**	**(10,305)**	**(10,219)**	**(10,079)**	**(10,090)**
Change in Storage (AF)	**(6,181)**	**(4,180)**	**(4,760)**	**(6,014)**	**(7,758)**
Cumulative Change in Storage (AF)	**(6,181)**	**(10,361)**	**(15,121)**	**(21,135)**	**(28,893)**

5 SUMMARY AND CONCLUSIONS

5.1 PROTECTION OF THE WATER SUPPLY

The Adjudication provides for a number of goals including 1) to protect and allocate the rights of water producers and 2) to protect the water supply and ensure its sustainability and availability in the future. It accomplishes these goals by first assigning rights to the producers and then by controlling the amount of water that can be produced by those rights in a manner that will bring the groundwater levels into balance (i.e. the inflow to the basin matches the outflow) and then maintain that balance.

The details of the Adjudication can be complex since the Adjudication addresses all of the essential aspects of the water supply such as water rights, transfer or selling of rights, water supply assessments and evaluations, funding, creation of an administrative entity, and many other issues. Of particular importance is that the Adjudication considers changes to the needs of production and allows for flexibility to accommodate those changes while maintaining the two goals previously mentioned (protect producer's rights and protect the water supply).

The Adjudication created an ongoing process where reports are provided to the court on a regular basis and the court maintains control of significant decisions regarding the health of the Basin.

The MWA's 2014 Groundwater Level Monitoring Plan intended to satisfy the requirements for the CASGEM program. This Plan, with a list of details for the monitoring wells used for measuring groundwater levels will be monitored by MWA to assure the above goals are met.

5.2 CURRENT STATUS OF THE WATER SUPPLY

The Adjudication covers a large area and that area was divided into subareas. The management of the water supply considers both the entire area as a whole, and each of the subareas as separate entities.

Some of the subareas have become balanced since the Adjudication, meaning that over a long period of time, the outflows of the supply match the inflows. The Project is located in the Baja Subarea and this area has not yet been balanced. The Baja Subarea was extremely out of balance at the time of the Adjudication and significant progress has been made. However, water levels within the Baja Subarea have continued to decline and it is uncertain when those declines will cease, but the Adjudication ensures that those declines will be controlled at some point.

The FPA of the Baja Subarea is getting closer to the estimated PSY, which when accomplished would put the Baja Subarea in balance. The PSY is only an estimate though, and if, after having reached FPA equating to PSY, the water supply continues to experience a decline in water levels, the PSY will be re-evaluated and adjusted as needed. Adjustment of the PSY would allow for further rampdown of the FPA and to the eventual balancing of the Baja Subarea.

All production in the Baja Subarea has been ramped-down to 35 percent of BAP, principally due to the extent of the overdraft and the predominance of agricultural production in Baja. Because there are few industrial and municipal producers, there is limited opportunity for these users to contribute significantly to additional rampdowns to achieve balance.

5.3 PROJECT IMPACTS TO WATER SUPPLY

The Project will eliminate approximately 1,600 acres of agriculture which required water production of approximately 8,338 AF in 2017. The Project will only require approximately 450 AFY for about 3.5 years for a total of 1,800 acres (during construction), and then reduces to 25 AFY (during Project operation). This will result in a reduction of need for production at the Project Site of more than 164,000 AF over 20 years. However, the remaining rights to the production will still exist and, assuming those rights are exercised, there will be little or no net reduction in production. In other words, the Project will not increase, nor likely decrease, the amount of pumping from the sub-basin. The maximum amount of pumping is capped and controlled under the Stipulated Judgment and the amount of water to be used by the Project is within the existing allocation and cannot by law exceed it without replacement.

Although the sub-basin is not yet considered to be balanced, and FPA is expected to decline in the future, there will be sufficient water available for the Project because it will be using only a fraction of the water that it is making available due to the elimination of agriculture. The large Subbasin capacity as compared to the projected water budget deficit allows for the Subbasin to provide sufficient water supply to the Project, while the Watermaster works to bring the Basin into balance.

It is important to recognize that the rules created by the Adjudication concerning transfers of water rights will not allow a net increase of outflow of the Subbasin due to a transfer or change in purpose of use. Water rights are measured in terms of production. But some of the water produced gets returned back to the Subbasin via percolation through the ground. The type of production determines how much return water there is and how much water is “consumed” (the consumptive use is water that is not returned to the basin).

The transfer and change in purpose of use rules do not allow an increase in consumptive use. If the water was historically produced for agriculture, then the rules identify a return of 50 percent. In this case, in 2017, only approximately 4,169 AF was consumptively removed from the sub-basin within the Project area. So, if the water rights were transferred to another agriculture use within the same vicinity, all of the FPA can be transferred because there will be the same amount of consumptive use and return water. If the water rights were transferred outside of the Subarea or for a different use, the rights would be adjusted so that the consumptive use is not increased. Should the parties change production locations and this were to cause imbalances and unacceptable draw- downs in other areas of the Baja subarea, the Stipulated Judgment provides the Watermaster with mechanisms to adjust BAP and the obligation to provide replacement water. (See, for example, Section 22 of Stipulated Judgment requiring the adverse impacts of production in a particular subarea “to be the responsibility of the Producers in each such Subarea.”) For an analysis of possible future water use scenarios, see the Draft Environmental Impact Report.

Due to the transfer rules, the Project will likely be considered industrial and would then be assumed to return no water to the Subbasin. The water for the Project would be used to condition soil, control dust, and wash solar panels. Each of these uses would, in actuality, return some water to the sub-basin. Therefore, the Project could pose a net, small, reduction in consumptive use resulting in a net benefit to the Subbasin. The remaining water rights, if in fact transferred to another use, may also result in a small benefit to the Subbasin, or no change, depending on the actual use and transfer rules for that use. It is not possible for this WSA to speculate about where within the Baha Subarea the current producers may pump or to what uses they will put the water.

However, under the rules of the Judgment, the Watermaster is authorized to manage pumping to eventually achieve PSY either through the reduction of FPA or purchase of supplemental water or both.

5.4 IMPACTS OF DROUGHT

The Subbasin is large in comparison to the pumped water and that is what has allowed the Subbasin to be overpumped for so many years. Of course, over pumping could not continue indefinitely, and the Adjudication assures that it will not. Another feature of the Adjudication is the realization that Subbasin inflows can vary significantly from year to year due to the variability of precipitation. The Adjudication allows the Subbasin to be used as a water 'bank' providing for withdrawing water in excess of inflows in times of drought. Then, in times of surplus water, extra withdrawals are not allowed and the sub-basin will be replenished.

Since the Subbasin is so large compared to the produced water, the Subbasin can easily provide the FPA during significant droughts. As the Basin is brought into balance by adjustments to BAP and purchases of Supplemental Water, the Subbasin will be recharged when precipitation increases.

5.5 SUFFICIENT WATER SUPPLY FOR THE PROJECT

Based on the foregoing, there is sufficient water supply available for the Project during normal, single dry, and multiple dry water years during a 20-year projection. There is sufficient water supply to meet the projected water demand associated with the proposed Project, in addition to existing and planned future uses, including agricultural and manufacturing uses. The Project would replace a much more water-intensive land use with a much less water-intensive land use. While this WSA assumes conservatively that the reduction in water usage at the Project site due to the conversion of agricultural land uses to a solar facility may be transferred to other areas within the subarea, resulting in decreased local water usage, the Project will require a minimal amount of water as compared to the size of the Subbasin.

At this time, the FPA of the Baja Subarea continues to get closer to the PSY (FPA is 35 percent of BAP as of July 13, 2018), which when accomplished would put the Baja Subarea in balance. The large Subbasin capacity as compared to the projected water budget deficit allows for the Subbasin to provide sufficient water supply to the Project, even while the Watermaster works to bring the Subbasin into balance. If the property owners continue to use their full water rights by shifting usage to other areas within the subarea, and if such action were to cause imbalances and unacceptable drawdowns in other areas of the subarea, the Stipulated Judgment provides the Watermaster with mechanisms to adjust BAP and the obligation to provide supplemental water. Two of the largest landowners on the Project Site indicated in conversations in November 2018 that they plan to use their water rights for pistachio farming in the vicinity and that use of water rights for new investments in other parts of the subarea would be risky given the continued FPA rampdowns.

6 REFERENCES

1 Mojave Water Agency, *Watermaster Annual Reports*, 1993 through 2018.

2 Stamos, Christina L., Martin, Peter, Nishikawa, Tracy, and Cox, Brett F. *Simulation of Ground-Water Flow in the Mojave River Basin, California. U.S. Geological Survey Investigations Report 01-4002 Version 3*, 2001.

3 Todd Engineers, *Conceptual Hydrogeologic Model and Assessment of Water Supply and Demand. Centro and Baja Subareas, Mojave River Groundwater Basin*, July 2013.

4 California Department of Water Resources, *California Statewide Groundwater Elevation Monitoring Online System*. https://water.ca.gov/Programs/Groundwater-Management/Groundwater-Elevation-Monitoring--CASGEM. Accessed November 30, 2018.

5 Kennedy/Jenks Consultants, *2015 Urban Water Management Plan for Mojave Water Agency,* June 2016.

6 R.C. Wagner Presentation (Watermaster Engineer), February 22, 2017 Presentation Exhibit 13a.

7 San Bernardino County Department of Public Works, *Lake Arrowhead Fire Station #1 Precipitation Data*.

8 California Department of Water Resources, SB *610 Guidebook*, October 8, 2003.

9 Superior Court, *Judgment after Trial for City of Barstow, et al Vs. City of Adelanto, et al Case No. 208568*, January 10, 1996

ATTACHMENT A. STIPULATED JUDGMENT

JUDGMENT AFTER TRIAL

JANUARY 10, 1996

MOJAVE BASIN AREA ADJUDICATION
CITY OF BARSTOW, ET AL V. CITY OF ADELANTO, ET AL
RIVERSIDE COUNTY SUPERIOR COURT CASE NO. 208568

CHAMBERS OF
VICTOR MICELI
JUDGE OF THE SUPERIOR COURT

Superior Court

STATE OF CALIFORNIA
COUNTY OF RIVERSIDE

COURTHOUSE
4050 MAIN STREET
RIVERSIDE, CALIFORNIA 92501

January 10, 1996

TO: ALL PARTIES LISTED ON THE ATTACHED MAILING LIST

FROM: E. MICHAEL KAISER, JUDGE

SUBJECT: CITY OF BARSTOW VS CITY OF ADELANTO, Case No.: 208568

The Judgment in the above-entitled case was signed on January 10, 1996. Please find attached the amended two pages of Exhibit B, Table B-1.

Please find attached two amended pages of Exhibit B, Table B-1.

~~12/10/92~~
~~01/20/93~~
~~02/03/93~~
~~04/18/93~~
~~04/30/93~~
09/25/95

EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	928	879	830	781
STORM, RANDALL	62	0.0507	62	58	55	52	49
SUDMEIER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA E	126	0.1030	126	119	113	107	100
✲ VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

✲ Durston Well, location 06N/04W-18F, APN 468-151-11 - water production right of 357 acre/feet, claimed by Durston/Van Burger/CVB Investments and Industrial Asphalt. Product right to be determined in a subsequent severed proceeding, jurisdiction reserved.

~~12/10/92~~
~~01/30/93~~
~~02/02/93~~
~~04/16/93~~
~~04/28/93~~
09/25/95

EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA / PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
AGCON, INC	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	114	108	102	96
AVDEEF, THOMAS	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY (Now, Virgil Gorman)	220	0.3883	220	209	198	187	176
BARNES, PAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, MARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAPA, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GESIRIECH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSEN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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FILED
RIVERSIDE COUNTY
JAN 16 1996
ARTHUR A. SHAW, CLERK
By Y.A. Burns Y.A. Burns
Deputy

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF RIVERSIDE

CITY OF BARSTOW, et al, Plaintiff, v. CITY OF ADELANTO, et al, Defendant.	CASE NO. 208568 ASSIGNED TO JUDGE KAISER DEPT.4 FOR ALL PURPOSES JUDGMENT AFTER TRIAL
MOJAVE WATER AGENCY, Cross-complainant, v. ANDERSON, RONALD H. et al, Cross-defendants.	

TABLE OF CONTENTS

I. INTRODUCTION

A. The Complaint. The original complaint herein was filed by the City of Barstow and Southern California Water Company (collectively "Plaintiffs") in San Bernardino Superior Court, North Desert District, on May 30, 1990 as Case No. BCV6672, and transferred to Riverside County Superior Court on November 27, 1990. Plaintiffs allege that the cumulative water Production upstream of the City of Barstow Overdrafted the Mojave River system, and request an average Annual flow of 30,000 acre-feet of surface water to the City of Barstow area. The complaint also includes a request for a writ of mandate to require the Mojave Water Agency ("MWA") to act pursuant to its statutory authority to obtain and provide Supplemental Water for use within the Mojave Basin Area.

B. The MWA Cross-Complaint. On July 26, 1991, the MWA filed its first amended cross-complaint in this case. The MWA first amended cross-complaint and its ROE amendments name Producers who collectively claim substantially all rights of water use within the Mojave Basin Area, including Parties downstream of the City of Barstow. The MWA cross-complaint, as currently amended, requests a declaration that the available native water supply to the Mojave Basin Area (not including water imported from the California State Water Project) is inadequate to meet the demands of the combined Parties and requests a determination of the water rights of whatever nature within the MWA boundaries and the Mojave Basin Area. The MWA has named as Parties several hundred Producers within the Basin Area.

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C. The Arc Las Flores Cross-Complaint. On July 3, 1991, Arc Las Flores filed a cross-complaint for declaratory relief seeking a declaration of water rights of certain named cross-defendants and a declaration that the appropriative, overlying and riparian rights of Arc Las Flores be determined to be prior and paramount to any rights of the Plaintiffs and other appropriators.

D. Stipulation and Trial. On October 16, 1991, the Court ordered a litigation standstill. The purpose of the standstill was to give the parties time to negotiate a settlement and develop a solution to the overdraft existing in the Mojave River Basin.

A committee of engineers and attorneys, representing a variety of water users and interests throughout the Mojave River Basin, was created to develop a physical solution to the water shortage problem. The work of the committee resulted in a stipulated interlocutory order and judgment, which was entered by the court on September 23, 1993.

Several non-stipulating parties requested a trial. On April 20, 1994, the Court issued a memorandum setting forth the trial issues. This cause came on regularly for trial on February 6, 1995, and was tried in Department 4 of the above-entitled Court, the Honorable E. Michael Kaiser, Judge, Presiding, without a jury. Oral and documentary evidence was introduced on behalf of the respective parties and the cause was argued and submitted for decision.

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II. DECREE

NOW, THEREFORE, IT IS ORDERED, ADJUDGED AND DECREED:

A. JURISDICTION, PARTIES, DEFINITIONS.

1. Jurisdiction and Parties.

a. Jurisdiction. This Court has jurisdiction to enter Judgment declaring and adjudicating the rights to reasonable and beneficial use of water by the Parties in the Mojave Basin Area pursuant to Article X, Section 2 of the California Constitution. This Judgment constitutes an adjudication of water rights of the Mojave Basin Area pursuant to Section 37 of Chapter 2146 of Statutes of 1959 ("the MWA Act").

b. Parties. All Parties to the MWA cross-complaint are included in this Judgment. The MWA has notified those Persons claiming any right, title or interest to the natural waters within the Mojave Basin Area to make claims. Such notice has been given: 1) in conformity with the notice requirements of Water Code §§ 2500 et seq.; 2) pursuant to Section 37 of the MWA Act; and 3) pursuant to order of this Court. Subsequently, all Producers making claims have been or will be included as Parties. The defaults of certain Parties have been entered, and certain named cross-defendants to the MWA cross-complaint who are not Producers have been dismissed. All named Parties who have not been dismissed have appeared herein or have been given adequate opportunity to appear herein. The Court has jurisdiction of the subject matter of this action and of the Parties hereto.

c. Minimal Producers. There are numerous Minimal Producers in the Basin Area and their number is expected to increase in the future. In order to minimize the cost of

administering this Judgment and to assure that every Person producing water in the Basin Area participates fairly in the Physical Solution, MWA shall:

i. within one Year following entry of this Judgment, prepare a report to the Court: 1) setting forth the identity and verified Base Annual Production of each Minimal Producer in each Subarea of the Basin Area; and 2) recommending a proposed system of Minimal Producer Assessments. The system of Minimal Producer Assessments shall achieve an equitable allocation of the costs of the Physical Solution that are attributable to Production of verified Base Annual Production amounts by Minimal Producers in each Subarea to and among such Minimal Producers. Minimal Producer Assessments need not be the same for existing Minimal Producers as for future Minimal Producers.

ii. within one Year following entry of this Judgment, prepare a report to the Court setting forth a proposed program to be undertaken by MWA, pursuant to its statutory authority, to implement the proposed system of Minimal Producer Assessments. The Court may order MWA to implement the proposed program or, if MWA's statutory authority is inadequate to enable implementation, or if either the proposed program or the proposed system of Minimal Producer Assessments is unacceptable to the Court, the Court may then order MWA either to implement an alternative program or system, or in the alternative, to name all Minimal Producers as Parties to this litigation and to serve them for the purpose of adjudicating their water rights.

Any Minimal Producer whose Annual Production exceeds ten (10) acre-feet in any Year following the date of entry of Judgment shall be made a Party pursuant to Paragraph 12 and shall be subject to Administrative, Replacement Water, Makeup Water and Biological Resources Assessments. Any Minimal Producer who produced during the 1986-1990 period may become a Party pursuant to Paragraph 40 with a Base Annual Production Right based on such Minimal Producer's verified Base Annual Production. To account properly for aggregate Production by Minimal Producers in each Subarea, Table B-1 of Exhibit B shall include an estimated aggregate amount of Base Annual Production by all Minimal Producers in each Subarea. The Base Annual Production of any Minimal Producer who becomes a Party shall be deducted from the aggregate amount and assigned to such Minimal Producer.

2. Physical and Legal Complexity. The physical and legal issues of the case as framed by the complaint and cross-complaints are extremely complex. Production of more than 1,000 Persons producing water in the Basin Area has been ascertained. In excess of 1,000 Persons have been served. The water supply and water rights of the entire Mojave Basin Area and its hydrologic Subareas extending over 4000 square miles have been brought into issue. Most types and natures of water right known to California law are at issue in the case. Engineering studies by the Parties, jointly and severally, leading toward adjudication of these rights and a Physical Solution, have required the expenditure of over two Years' time and hundreds of thousands of dollars.

3. Need for a Declaration of Rights and Obligations and for Physical Solution. A Physical Solution for the Mojave Basin

Area based upon a declaration of water rights and a formula for Intra- and Inter-Subarea allocation of rights and obligations is necessary to implement the mandate of Article X, Section 2 of the California Constitution and California water policy. Such Physical Solution requires the definition of the individual rights of all Producers within the Basin Area in a manner which will equitably allocate the natural water supplies and which will provide for equitable sharing of costs for Supplemental Water. Nontributary supplemental sources of water are or will be available in amounts, which when combined with water conservation, water reclamation, water transfers, and improved conveyance and distribution methods within the Basin Area, will be sufficient in quantity and quality to assure implementation of a Physical Solution. Sufficient information and data are known to formulate a reasonable and just allocation of existing water supplies as between the hydrologic Subareas within the Basin Area and as among the water users within each Subarea. Such Physical Solution will allow the public water supply agencies and individual water users within each hydrologic Subarea to proceed with orderly water resource planning and development. It will be necessary for MWA to construct conveyance facilities to implement the Physical Solution. Absent the construction of conveyance facilities, some Subareas may be deprived of an equitable share of the benefits made possible by the Physical Solution. Accordingly, this Physical Solution mandates the acquisition or construction of conveyance facilities for importation and equitable distribution of Supplemental Water to the respective Subareas. Such construction is dependent on the availability of appropriate financing, and any such financing

assessed to the Parties will be based upon benefit to the Parties in accordance with the MWA Act.

4. Definitions. As used in this judgment, the following terms shall have the meanings herein set forth:

a. Afton - The United States Geological Survey gauging station "Mojave River at Afton, CA."

b. Annual or Year - As used in this Judgment refers to the Annual period beginning October 1 and ending September 30 of the following Year.

c. Aquaculture Water - Water so identified in Exhibit "B". Such water may be used only for fish breeding and rearing. The Annual Consumptive Use of such water in acre-feet is equal to the water surface area, in acres, of the fish rearing facilities multiplied by seven (feet).

d. Assessments - Those Assessments levied and collected pursuant to this judgment including Replacement Water, Makeup Water, Administrative and Biological Resource Assessments.

e. Barstow - The United States Geological Survey Gauging Station "Mojave River at Barstow, CA."

f. Base Annual Production - The verified maximum Year Production, in acre-feet, for each Producer for the five Year Period 1986-1990 as set forth in Table B-1 of Exhibit "B", except where otherwise noted therein. The maximum Year Production for each Producer was verified based on one or more of the following: flow meter readings, electrical power

or diesel usage records or estimated applied water duty. The Base Annual Production for recreational lakes in the Baja Subarea and for Aquaculture shall be equal either to the area of water surface multiplied by seven feet or to verified Production, whichever is less. The five Year period 1986-1990 shall also be the time period for which Base Annual Production for Minimal Producers shall be calculated.

g. Base Annual Production Right - The relative Annual right of each Producer to the Free Production Allowance within a given Subarea, expressed as a percentage of the aggregate of all Producers' Base Annual Production in the Subarea. The percentage for each Producer is calculated by multiplying that Producer's Base Annual Production in a Subarea times one hundred (100) and dividing the result by the aggregate Base Annual Production for all Producers in the Subarea. The percentage shall be rounded off to the nearest one ten-thousandth of one per cent.

h. Base Flow - That portion of the total surface flow measured Annually at Lower Narrows which remains after subtracting Storm Flow.

i. Carry Over Right - The right of a Producer to delay and accumulate the Production of such Producer's share of a Subarea Free Production Allowance until

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and only until the following Year free of any Replacement Water Assessment.

j. Consumption or Consumptive Use - The permanent removal of water from the Mojave Basin Area through evaporation or evapo-transpiration. The Consumptive Use rates resulting from particular types of water use are identified in Paragraph 2 of Exhibit "F".

k. Free Production Allowance - The total amount of water, and any Producer's share thereof, that may be Produced from a Subarea each Year free of any Replacement Obligation.

l. Groundwater - Water beneath the surface of the ground and within the zone of saturation; i.e., below the existing water table, whether or not flowing through known and definite channels.

m. Harper Lake Basin - That portion of the Centro Subarea identified as such on Exhibit "A".

n. Lower Narrows - The United States Geological Survey gauging station "Mojave River near Victorville, CA."

o. Makeup Water - Water needed to satisfy a Minimum Subarea Obligation.

p. Makeup Obligation - The obligation of a Subarea to pay for Makeup Water to satisfy its Subarea Obligation.

q. Minimal Producer - Any Person whose Base Annual Production, as verified by MWA is not greater than

ten (10) acre-feet. A Person designated as a Minimal Producer whose Annual Production exceeds ten (10) acre-feet in any Year following the date of entry of Judgment is no longer a Minimal Producer.

r. Minimum Subarea Obligation - The minimum Annual amount of water a Subarea is obligated to provide to an adjoining downstream Subarea or the Transition Zone or, in the case of the Baja Subarea, the minimum Annual Subsurface Flow at the MWA eastern boundary toward Afton in any Year, as set forth in Exhibit "G".

s. Mojave Basin Area or Basin Area - The area shown on Exhibit "A" that lies within the boundaries of the line labelled "Limits of Adjudicated Area" which generally includes the area tributary to the Mojave River and its tributaries except for such area not included within the Mojave Water Agency's jurisdiction.

t. MWA - Cross complainant Mojave Water Agency.

u. Overdraft - A condition wherein the current total Annual Consumptive Use of water in the Mojave Basin Area or any of its Subareas exceeds the long term average Annual natural water supply to the Basin Area or Subarea.

v. Party (Parties) - Any Person(s) named in this action who has intervened in this case or has

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become subject to this Judgment either through stipulation, default, trial or otherwise.

w. Person(s) - Any natural person, firm, association, organization, joint venture, partnership, business, trust, corporation, or public entity.

x. Produce - To pump or divert water.

y. Producer(s) - A Person, other than a Minimal Producer, who Produces water.

z. Production - Annual amount of water produced, stated in acre-feet of water.

aa. Production Safe Yield - The highest average Annual Amount of water that can be produced from a Subarea: (1) over a sequence of years that is representative of long-term average annual natural water supply to the Subarea net of long-term average annual natural outflow from the Subarea, (2) under given patterns of Production, applied water, return flows and Consumptive Use, and (3) without resulting in a long-term net reduction of groundwater in storage in the Subarea.

bb. Purpose of Use - The broad category of type of water use including but not limited to municipal, irrigation, industrial, aquaculture, and lakes purposes. A change in Purpose of Use includes any reallocation of water among mixed or sequential uses, excluding direct reuse of municipal wastewater.

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cc. Recirculated Water - Water that is Produced but not consumed by the Parties listed in Table B-2 of Exhibit "B" and then returned either to the Mojave River or to the Groundwater basin underlying the place of use.

dd. Replacement Obligation - The obligation of a Producer to pay for Replacement Water for Production from a Subarea in any Year in excess of the sum of such Producer's share of that Year's Free Production Allowance for the Subarea plus any Production pursuant to a Carry Over Right.

ee. Replacement Water - Water purchased by Watermaster or otherwise provided to satisfy a Replacement Obligation.

ff. Responsible Party - The Person designated by a Party as the Person responsible for purposes of filing reports and receiving notices pursuant to the provisions of this Judgment.

gg. Stored Water - Water held in storage pursuant to a Storage Agreement with Watermaster.

hh. Storm Flow - That portion of the total surface flow originating from precipitation and runoff without having first percolated to Groundwater storage in the zone of saturation and passing a particular point of reckoning, as determined annually by the Watermaster.

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ii. Subareas - The five Subareas of the Mojave Basin Area -- Este, Oeste, Alto, Centro and Baja -- as shown on Exhibit "A".

jj. Subarea Obligation - The average Annual amount of water that a Subarea is obligated to provide to an adjoining downstream Subarea or the Transition Zone or, in the case of the Baja Subarea, the average Annual Subsurface Flow toward Afton at the MWA eastern boundary as set forth in Exhibit "G".

kk. Subsurface Flow - Groundwater which flows beneath the earth's surface.

ll. Supplemental Water - Water imported to the Basin Area from outside the Basin Area, water that would otherwise be lost from the Basin Area but which is captured and made available for use in the Basin Area, or any Producer's share of Free Production Allowance that is not Produced and is acquired by Watermaster pursuant to this Judgment.

mm. Transition Zone - The portion of the Alto Subarea, shown on Exhibit "A", that lies generally between the Lower Narrows and the Helendale Fault.

nn. Watermaster - The Person(s) appointed by the Court to administer the provisions of this Judgment.

5. Exhibits. The following exhibits are attached to this Judgment and made a part hereof.

Exhibit "A" - Map entitled, "Map showing Mojave Water Agency, Mojave River, Mojave Basin Area and Hydrologic Subareas and

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Limits of Adjudicated Area Together with Geologic and Other Pertinent Features."

Exhibit "B" - Table entitled, "Table B-1: Table Showing Base Annual Production and Base Annual Production Right of Each Producer Within Each Subarea, and Free Production Allowances for Subareas for First Five Years after entry of the Interlocutory Judgment" and "Table B-2: Table Showing Total Water Production for Aquaculture and Recreational Lake Purposes."

Exhibit "C" - Engineering Appendix.

Exhibit "D" - Time Schedules.

Exhibit "E" - List of Producers and Their Designees.

Exhibit "F" - Transfers of Base Annual Production Rights.

Exhibit "G" - Subarea Obligations.

Exhibit "H" - Biological Resource Mitigation.

Exhibit "I" - Map Showing Potential Groundwater Recharge Areas

B. DECLARATION OF HYDROLOGIC CONDITIONS.

6. Mojave Basin Area as Common Source of Supply. The area shown on Exhibit "A" as the Mojave Basin Area is comprised of five Subareas. The waters derived from the Mojave River and its tributaries constitute a common source of supply of the five Subareas and of the Persons producing therefrom.

7. Existence of Overdraft. In each and every Year, for a period in excess of five (5) years prior to the May 30, 1990 filing date of Plaintiffs' Complaint, the Mojave Basin Area and each of its respective Subareas have been and are in a state of Overdraft, and it is hereby found that there is no water available

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for Production from the Basin Area or any Subarea therein except pursuant to this Judgment.

C. DECLARATION OF RIGHTS AND OBLIGATIONS.

8. Production Rights of the Parties. The Base Annual Production and Base Annual Production Right of each Party are declared as set forth in Table B-1 of Exhibit "B". Certain Parties also have the right to continue to Produce Recirculated Water in the amounts set forth in Table B-2 of Exhibit "B", subject to the following:

a. Aquaculture. Two of the Producers listed in Table B-2 of Exhibit "B", California Department of Fish and Game Mojave River Fish Hatchery (Hatchery) and Jess Ranch Water Company (Jess), Produce Recirculated Water for Aquaculture. The Hatchery and Jess or their successors or assignees shall have the right to continue to Produce up to the amounts listed in Table B-2 of Exhibit "B" as Recirculated Water for Aquaculture on the property where it was used in the Year for which Base Annual Production was verified. Production of such amount of Recirculated water by Jess shall be free of any Replacement Water Assessments, Makeup Water Assessments or Administrative Assessments but shall be subject to Biological Resources Assessments and each Jess well producing Recirculated Water shall be subject to an Annual administrative fee equal to the lowest Annual fee paid to MWA by a Minimal Producer. Neither the Hatchery nor Jess Recirculated Water may be transferred or used for any other purpose or transferred for use on any other property, except as provided in Paragraph 7 of Exhibit "F" for the Hatchery. Any Production of Recirculated Water by Jess in excess of the amount shown in Table B-2 shall be subject to all

Assessments. Production of Recirculated Water by the Hatchery will be subject to the rules set forth in Paragraph 7 of Exhibit "F". All Jess Aquaculture Recirculated Water shall be discharged immediately and directly to the Mojave River.

b. Camp Cady. One Producer listed in Table B-2 of Exhibit "B", California Department of Fish and Game-Camp Cady (Camp Cady), Produces Recirculated Water for Lakes containing Tui Chub, an endangered species of fish. Camp Cady or its successors or assignees shall have the right to continue to Produce up to the amount listed in Table-B-2 of Exhibit "B" as Recirculated Water at Camp Cady. Production of each amount of Recirculated water shall be free of any Assessments. Camp Cady Recirculated Water may not be transferred or used for any other purpose or transferred for use on any other property. Any Production of Recirculated Water by Camp Cady in excess of the amount shown in Table B-2 of Exhibit "B" shall be subject to all Assessments except Biological Resource Assessments. All Camp Cady Recirculated Water shall be allowed to percolate immediately and directly to the Groundwater basin underlying Camp Cady.

c. Recreational Lakes in Baja Subarea. All Producers listed in Table B-2 of Exhibit "B" except the Hatchery, Jess and Camp Cady Produce Recirculated Water for recreational lakes in the Baja Subarea. Such Producers or their successors or assignees shall have the right to continue to Produce up to the amounts identified in Table B-2 of Exhibit "B" as Recirculated Water for use in recreational lakes on the property where it was used in the Year for which Base Annual Production was verified, free of any Replacement Water Assessments, Makeup Water

Assessments, or Administrative Assessments, but such Production shall be subject to any Biological Resource Assessment. Each well producing such Recirculated Water shall be subject to an Annual administrative fee equal to the lowest Annual fee paid by a Minimal Producer. Recirculated Water cannot be transferred or used for any other purpose. All recreational lake Recirculated Water shall be allowed to percolate immediately and directly to the Groundwater basin underlying the recreational lake.

9. MWA Obligations. The Physical Solution is intended to provide for delivery and equitable distribution to the respective Subareas by MWA of the best quality of Supplemental Water reasonably available. MWA shall develop conveyance or other facilities to deliver this Supplemental Water to the areas depicted in Exhibit "I," unless prevented by forces outside its reasonable control such as an inability to secure financing consistent with sound municipal financing practices and standards.

a. Secure Supplemental Water. MWA, separate and apart from its duties as the initial Watermaster designated under this Judgment, shall exercise its authority under Sections 1.5 and 15 of the MWA Act to pursue promptly, continuously and diligently all reasonable sources to secure Supplemental Water as necessary to fully implement the provisions of this Judgment.

b. Supplemental Water Prices. The MWA shall establish fair and equitable prices for Supplemental Water delivered to the Watermaster under this Judgment.

c. Supplemental Water Delivery Plan. Not later than September 30, 1996, MWA shall prepare a report on potential alternative facilities or methods to deliver Supplemental Water to

the areas shown on Exhibit "I." The report shall include, for each alternative, a development time schedule, a summary of cost estimates, an analysis of the relative benefits to Producers in each Subarea and an analysis of alternative methods of financing and cost allocation, including any state or federal sources of funding that may be available.

d. Water Delivery Cost Allocation. The report required by subdivision (c) above shall recommend methods of financing and cost allocation that are based on benefits to be received. MWA's cost allocation plan shall be subject to Court review as provided in subdivision (f) below to verify that costs are allocated fairly and according to benefits to be received. The MWA financing and cost allocation plan may include a mix of revenue sources including the following:

(1) Developer or connection fees to the extent MWA can demonstrate a nexus, as required by law, between the fees and the impact of the development upon the water resources of the Mojave Basin Area and each subarea thereof;

(2) Other methods of financing available to MWA, including but not limited to property based taxes, assessments or standby charges;

(3) Water sales revenues, but only to the extent other sources are not available or appropriate, and in no event shall the water sales price to cover facility

capital costs exceed a rate equal to fifty percent of the variable cost rate charged to MWA under its contract for water delivery from the California State Water Project;

e. Legislative Changes. MWA shall seek promptly to have enacted amendments to the MWA Act (Water Code Appendix, Part 97) that allow MWA to implement any methods of governmental financing available to any public entity in California.

f. Court Review and Determination of Benefit. Not later than September 30, 1996, MWA shall submit its report to the Court in a noticed motion pursuant to Paragraph 36. The report shall set forth MWA's recommendations as to the following: (1) which alternatives should be implemented; (2) methods of cost allocation for the recommended alternatives; (3) financing for the recommended alternatives; and (4) a time schedule to complete the recommended alternatives. The Court may approve or reject the recommendations. The Court may further order the use of alternatives and time schedules or it may order additional studies and resubmittals, as it may deem proper.

10. Priority and Determination of Production Rights. The water rights involved herein are of differing types and commenced at different times. Many of the rights involved are devoted to public uses. The Declaration of Water Rights that is part of the judgment and the Physical Solution decreed herein takes into consideration the competing priorities which have been asserted in addition to the equitable principles applicable to apportionment of water in this situation. The following factors

have been considered in the formulation of each Producer's Base Annual Production Right:

a. The Mojave Basin Area and each of its hydrologic Subareas have continuously for many Years been in a state of system-wide Overdraft;

b. All Producers have contributed to the Overdraft;

c. None of the priorities asserted by any of the Producers is without dispute;

d. Under the complex scheme of California water law, the allocation of water and rights mechanically based upon the asserted priorities would be extremely difficult, if not impossible, and would not result in the most equitable apportionment of water;

e. Such mechanical allocation would, in fact, impose undue hardship on many Parties;

f. There is a need for conserving and making maximum beneficial use of the water resources of the State;

g. The economy of the Mojave Basin Area has to a great extent been established on the basis of the existing Production;

h. The Judgment and Physical Solution take into consideration the unique physical and climatic conditions of the Mojave Basin Area, the Consumptive Use of water in the several sections of the Basin, the character and rate of return flows, the extent of established uses, the availability of storage water, the relative benefits and detriments between upstream areas and downstream areas if a limitation is imposed on one and not the

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other, and the need to protect public interest and public trust concerns.

In consideration of the foregoing factors, and in accordance with the terms and conditions of this Judgment, the Parties are estopped and barred from asserting special priorities or preferences.

11. Exercise of Carry Over Rights. The first water Produced by a Producer during any Year shall be deemed to be an exercise of any Carry Over Right. Such Carry Over Right may be transferred in accordance with Exhibit "F".

12. Production Only Pursuant to Judgment. This Judgment, and the Physical Solution decreed herein, addresses all Production within the Mojave Basin Area. Because of the existence of Overdraft, any Production outside the framework of this Judgment and Physical Solution will contribute to an increased Overdraft, potentially damage the Mojave Basin Area and public interests in the Basin Area, injure the rights of all Parties, and interfere with the Physical Solution. Watermaster shall bring an action or a motion to enjoin any Production that is not pursuant to the terms of this Judgment.

13. Declaration of Subarea Rights and Obligations. In the aggregate, Producers within certain Subareas have rights, as against those in adjoining upstream Subareas, to receive average Annual water supplies and, in any one Year, to receive minimum Annual water supplies equal to the amounts set forth in Exhibit "G", in addition to any Storm Flows. In turn, in the aggregate, Producers within certain Subareas have an obligation to provide to adjoining downstream Subareas such average Annual water supplies in

the amounts and in the manner set forth in Exhibit "G". In any one Year, Producers within certain Subareas have an obligation to provide to adjoining downstream Subareas such minimum Annual water supplies in the amounts and in the manner set forth in Exhibit "G". The Producers in the Baja Subarea have an obligation to provide average and minimum Subsurface Flows toward Afton at the MWA eastern boundary equal to the amounts shown in Exhibit "G". Producers in each of the Subareas have rights in the aggregate, as against each adjoining downstream Subarea or, in the case of the Baja Subarea, as against flows at the MWA eastern boundary toward Afton, to divert, pump, extract, conserve, and use all surface water and Groundwater supplies originating therein or accruing thereto, and so long as the adjoining downstream Subarea Obligations are satisfied under this Judgment and there is compliance with all of its provisions. Watermaster shall maintain a continuing account of the status of each Subarea's compliance with its Subarea Obligation, including any cumulative credits or debits and any requirement for providing Makeup Water. The accounting and determinations relative to Subarea Obligations shall be made in accordance with procedures set forth in Exhibit "G".

III. INJUNCTION

14. Injunction Against Unauthorized Production. Each and every Party, its officers, agents, employees, successors, and assigns, is ENJOINED AND RESTRAINED from Producing water from the Basin Area except pursuant to the provisions of the Physical Solution in this Judgment.

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15. Injunction Re Change in Purpose of Use Without Notice Thereof to Watermaster. Each and every Party, its officers, agents, employees, successors, and assigns, is ENJOINED AND RESTRAINED from changing its Purpose of Use at any time without first notifying Watermaster of the intended change.

16. Injunction Against Unauthorized Recharge. Each and every Party, its officers, agents, employees, successors and assigns, is ENJOINED AND RESTRAINED from claiming any right to recapture Water that has been recharged in the Basin Area except pursuant to a Storage Agreement with Watermaster. This provision does not prohibit Parties from importing Supplemental Water into the Basin Area for direct use.

17. Injunction Against Transportation from Mojave Basin Area. Except upon further order of the Court, each and every Party, its officers, agents, employees, successors and assigns, is ENJOINED AND RESTRAINED from transporting water hereafter Produced from the Basin Area to areas outside the Basin Area.

18. Injunction Against Diverting Storm Flows. No Party may undertake or cause the construction of any project that will directly reduce the amount of Storm Flow that would otherwise go through the naturally occurring hydrologic regime to a downstream Subarea or that will reduce the surface area over which Storm Flow currently occurs by alteration to the bed of the Mojave River. This paragraph shall not prevent any flood control agency or municipality from taking such emergency action as may be necessary to protect the physical safety of its residents and its structures from flooding. Any such action shall be done in a manner that will minimize any reduction in the quantity of Storm Flows.

IV. CONTINUING JURISDICTION

19. Jurisdiction Reserved. Full jurisdiction, power and authority are retained by and reserved to the Court for purposes of enabling the Court upon the application of any Party, by a motion noticed in accordance with the notice procedures of Paragraph 36 hereof, to make such further or supplemental order or directions as may be necessary or appropriate for interim operation before the Physical Solution is fully operative, or for interpretation, enforcement or carrying out of this Judgement, and to modify, amend or amplify any of the provisions of this Judgment or to add to the provisions thereof consistent with the rights herein decreed; provided, that nothing in this paragraph shall authorize either a reduction of the Base Annual Production Right of any Party, except in accordance with the rules set forth in Exhibit "F", or a reduction of the Base Flow portion of any Subarea Obligation.

V. Physical Solution

A. GENERAL

20. Purpose and Objective. The Court hereby declares and decrees that the Physical Solution herein contained: 1) is a fair and equitable basis for satisfaction of all water rights in the Mojave Basin Area; 2) is in furtherance of the mandate of the State Constitution and the water policy of the State of California; and 3) takes into account applicable public trust interests; and therefore adopts and orders the Parties to comply with the Physical Solution. As noted in Paragraph 3 of this Judgment, the declaration of rights and obligations of the Parties and Subareas is a necessary component of this Physical Solution. The purpose of

the Physical Solution is to establish a legal and practical means for making the maximum reasonable beneficial use of the waters of the Basin Area by providing for the long-term conjunctive utilization of all water available thereto to meet the reasonable beneficial use requirements of water users therein.

21. Need for Flexibility. It is essential that this Physical Solution provide maximum flexibility and adaptability in order that the Court may be free to use existing and future technological, social, institutional and economic options in order to maximize reasonable beneficial use of the waters of the Basin Area. To that end, the Court's retained jurisdiction may be utilized where appropriate, to supplement the Physical Solution.

22. General Pattern of Operations. The Producers will be divided into five Subareas for purposes of administration. The Subarea rights and obligations are herein decreed. A fundamental premise of the Physical Solution is that all Parties will be allowed, subject to this Judgment, to Produce sufficient water to meet their reasonable beneficial use requirements. To the extent that Production by a Producer in any Subarea exceeds such Producer's share of the Free Production Allowance of that Subarea, Watermaster will provide Replacement Water to replace such excess Production according to the methods set forth herein. To the extent that any Subarea incurs a Makeup Obligation, Watermaster will provide Supplemental Water to satisfy such Makeup Obligation according to the methods set forth herein. For the initial five (5) full Years after entry of this Judgment (including any interlocutory Judgment), the Free Production Allowance for each Subarea shall be set as the amount of water equal to the following

percentages of the aggregate Base Annual Production for that Subarea:

	Judgment Year	Percentage
1993-1994	First Full Year	100
1994-1995	Second Full Year	95
1995-1996	Third Full Year	90
1996-1997	Fourth Full Year	85
1997-1998	Fifth Full Year	80

The extent of Overdraft now varies between Subareas and the reasonableness of any physical solution as applied to each Producer depends in part upon such Producer's foreseeable needs and the present and future availability of water within the Subarea in which each Producer is located. The Physical Solution described in this Judgment in part generally contemplates (i) initially allowing significant unassessed production on a substantially uniform basis for all Producers and Subareas and (ii) a phasing in of the monetary obligations necessary to obtain Supplemental Water. The above two provisions will affect each Subarea differently, may not be sufficient to ultimately eliminate the condition of Overdraft in each Subarea and could result in increased Overdraft within a Subarea. Any adverse impact to any Subarea caused by the implementation of the provisions shall be the responsibility of the Producers in each such Subarea.

B. ADMINISTRATION.

23. Administration by Watermaster. Watermaster shall administer and enforce the provisions of the Judgment and any subsequent instructions or orders of this Court.

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(a) Standard of Performance. Watermaster shall, in carrying out its duties, powers and responsibilities herein, act in an impartial manner without favor or prejudice to any Subarea, Producer, Party or Purpose of Use.

(b) Removal of Watermaster. Full jurisdiction, power and authority are retained and reserved by the Court for the purpose of enabling the Court on its own motion, or upon application of any Party, and upon notice in accordance with the notice procedures of paragraph 36 hereof, and after hearing thereon, to remove any appointed Watermaster and substitute a new Watermaster in its place. The Court shall find good cause for the removal of Watermaster upon a showing that Watermaster has failed to perform its duties, powers and responsibilities in an impartial manner, or has otherwise failed to act in the manner consistent with the provisions set forth in this Judgment or subsequent order of the Court.

(c) MWA Appointed as Initial Watermaster. The MWA is hereby appointed, until further order of the Court, as Watermaster to administer and enforce the provisions of this Judgment and any subsequent orders of this Court issued in the performance of its continuing jurisdiction. In carrying out this appointment, MWA shall segregate and separately exercise in all respects the Watermaster powers delegated by the Court under this Judgment from MWA's statutory powers. All funds received, held, and disbursed by MWA as Watermaster shall be by way of separate Watermaster accounts, subject to separate accounting and auditing. Meetings and hearings held by the MWA Board of Directors when acting as Watermaster shall be noticed and conducted separately from MWA

meetings. All Watermaster staff and consultant functions shall be separate and distinct from MWA staff and consultant functions; provided, however, that pursuant to duly adopted Watermaster rules, which shall be subject to review according to Paragraph 36 hereof, Watermaster staff and consultant functions may be accomplished by MWA staff and consultants, subject to strict time and cost accounting principles so that Watermaster functions, and the Assessments provided under this Judgment, do not subsidize, and are not subsidized by, MWA functions. Subject to these principles, MWA shall implement practicable cost efficiencies through consolidation of Watermaster and MWA staff and consultant functions.

24. Powers and Duties. Subject to the continuing supervision and control of the Court, Watermaster shall have and may exercise the following express powers, and shall perform the following duties, together with any specific powers, authority and duties granted or imposed elsewhere in this Judgement or hereafter ordered or authorized by the Court in the exercise of its continuing jurisdiction:

a. Rules and Regulations. To adopt any and all appropriate rules and regulations for conduct pursuant to this Judgment after public hearing. Notice of hearing and a copy of the proposed rules and regulations, and any amendments thereof, shall be mailed to all Parties thirty days prior to the date of the hearing thereon.

b. Employment of Experts and Agents. To employ such administrative personnel, engineering, legal, accounting, or other specialty services and consulting assistants as may be deemed appropriate in carrying out the terms of this Judgment.

c. Makeup and Replacement Obligations. To determine the Makeup Obligations for each Subarea and Replacement Obligations for each Producer and each Subarea, pursuant to the terms of the Judgment.

d. Measuring Devices, etc. To adopt rules and regulations regarding determination of amounts of Production and installation of individual water meters. The rules and regulations shall provide for approved devices or methods to measure or estimate Production. Producers who meter Production on the date of entry of this Judgment shall continue to meter Production. Thereafter, Producers who do not meter Production on the effective date of entry of this Judgment may be required by Watermaster rules and regulations to install water meters upon a showing that then employed measurement devices or methods do not accurately determine actual Production. The rules and regulations shall require that within three Years after the date of entry of this Judgment, any Producer who provides piped water for human Consumption to more than five service connections shall have installed an individual water meter on each service connection.

e. Hydrologic Data Collection. To install, operate and maintain such wells, measuring devices and/or meters necessary to monitor stream flow, precipitation and groundwater levels and to obtain such other data as may be necessary to carry out the provisions of this Judgment, including a study of the Basin Area phreatophyte consumptive use.

f. Assessments. To set, levy and collect all Assessments specified herein.

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g. Purchase of and Recharge with Supplemental Water. In accordance with Paragraph 27, to the extent Supplemental Water is available and is reasonably needed for Replacement Water or Makeup Water, to use Replacement Water Assessment proceeds to purchase Replacement Water, and to use Makeup Water Assessment proceeds to purchase Makeup Water and to have such Replacement Water and Makeup Water provided to the appropriate Subarea as soon as practicable. Watermaster may prepurchase Supplemental Water and apply subsequent Assessments towards the costs of such prepurchases.

h. Water Quality. To take all reasonable steps to assist and encourage appropriate regulatory agencies to enforce reasonable water quality regulations affecting the Basin Area, including regulation of solid and liquid waste disposal.

i. Notice List. To maintain a current list of Responsible Parties to receive notice hereunder.

j. Annual Administrative Budget. To prepare a proposed administrative budget for each Year, hold hearings thereon, and adopt an administrative budget according to the time schedule set forth in Exhibit "D". The administrative budget shall set forth budgeted items and Administrative Assessments in sufficient detail to show the allocation of the expense among the Producers. Following the adoption of the budget, expenditures within budgeted items may thereafter be made by Watermaster in the exercise of powers herein granted, as a matter of course.

k. Annual Report to Court.

(1) To file an Annual report with this Court not later than April 1 of each Year beginning April 1 following the

first full Year after entry of Judgment. Prior to filing the Annual report with the Court, Watermaster shall notify all Parties that a draft of the report is available for review and shall provide notice of a hearing to receive comments and recommendations for changes in the report. The public hearing shall be conducted on the same date and at the same place as the hearings required by Paragraphs 3 and 4 of Exhibit "D". The notice of hearing may include such summary of the draft report as Watermaster may deem appropriate. Watermaster shall also distribute the report to the Parties requesting copies.

(2) The Annual report shall include an Annual fiscal report of the preceding Year's operation and shall include details as to operation of each of the Subareas and an audit of all Assessments and expenditures pursuant to this Physical Solution and a review of Watermaster activities pursuant to this Judgment. The Annual report shall include a compilation of at least the following:

Determinations and data required by:

i) Paragraph 24(c) (Makeup and Replacement Obligations)

ii) Paragraph 24(e) (Hydrologic Data Collection)

iii) Paragraph 24(g) (Purchase of and Recharge with Supplemental Water)

iv) Paragraph 24(i) (Notice List)

Rules and regulations adopted pursuant to:

v) Paragraph 24(a) (Rules and Regulations)

vi) Paragraph 24(d) (Measuring Devices, etc.)

vii) Paragraph 24(s) (Storage Agreements)

Reports required by:

viii)Paragraph 24(j) (Annual Administrative Budget)

ix) Paragraph 24(n) (Transfers)

x) Paragraph 24(o) (Free Production Allowance)

xi) Paragraph 24(p) (Production Reports)

xii)Exhibit "D" (Prior Year Report)

xiii)Exhibit "F" (Transfers of Base Annual Production Rights)

xiv) Exhibit "G" (Status of Subarea Obligation)

xv) Exhibit "H" (Biological Resource Mitigation)

l. Investment of Funds. To hold and invest any funds in investments authorized from time to time for public agencies in the State of California.

m. Borrowing. To borrow in anticipation of receipt of Assessment proceeds in an amount not to exceed the Annual amount of Assessments levied but uncollected.

n. Transfers. To prepare on an Annual basis and maintain a report or record of any transfer of Base Annual Production Rights. Such report or record shall be available for inspection by any Party upon reasonable notice to the Watermaster.

o. Free Production Allowance. Not later than the end of the 1997-1998 Water Year, and Annually thereafter, to recommend in the Watermaster Annual Report an adjustment, if needed, to the Free Production Allowance for any Subarea. In making its recommendation, Watermaster shall be guided by the factors set forth in Exhibit "C", including but not limited to an annual calculation of the change of water in storage. The Annual report shall include all assumptions and calculations relied upon in making its recommendations. Following the 1997-1998 Water Year,

or any time thereafter, Watermaster shall obtain prior Court approval for any increase or reduction of any Subarea's Free Production Allowance. In no event shall a reduction in any Year for a Subarea exceed five percent of the aggregate Base Annual Production of that Subarea. In the event Watermaster recommends in its report to the Court that the Free Production Allowance for any Subarea may need to be increased or reduced, the Court shall conduct a hearing, after notice given by Watermaster according to paragraph 36, upon Watermaster's recommendations and may order such changes in Subarea Free Production Allowance. The most recent Subarea Free Production Allowances shall remain in effect until revised according to this Paragraph 24(o).

p. Production Reports. To require each Producer to file with Watermaster, pursuant to procedures and time schedules to be established by Watermaster, a report on a form to be prescribed by Watermaster showing the total Production of such Party for each reporting period rounded off to the nearest tenth of an acre foot, and such additional information and supporting documentation as Watermaster may require.

q. Production Adjustment for Change in Purpose of Use. If Watermaster determines, using the Consumptive Use rates set forth in Exhibit "F", that a new Purpose of Use of any Producer's Production for any Year has resulted in a higher rate of Consumption than the rate applicable to the original Purpose of Use of that Producer's Production in the Year for which Base Annual Production was determined, Watermaster shall use a multiplier (1) to adjust upward such Production for the purpose of determining the Producer's Replacement Water Assessment and, (2) to adjust upward

the Free Production Allowance portion of such Production for the purpose of determining the Producer's Makeup Water Assessment. The multiplier shall be determined by dividing the number of acre feet of Consumption that occurred under the new Purpose of Use by the number of acre feet of Consumption that would have occurred under the original Purpose of Use for the same Production.

r. Reallocation of Base Annual Production Rights. To reallocate annually the Base Annual Production Rights in each Subarea to reflect any permanent transfers of such Rights among Parties.

s. Storage Agreements. To enter into Storage Agreements with any Party in order to accommodate the acquisition of Supplemental Water. Watermaster may not enter into Storage Agreements with non-Parties unless such non-Parties become subject to the provisions of this Judgment and the jurisdiction of the Court. Such Storage Agreements shall by their terms preclude operations which will have a substantial adverse impact on any Producer. If a Party pursuant to a Storage Agreement has provided for predelivery or postdelivery of Replacement Water for the Party's use, Watermaster shall at the Party's request credit such water to the Party's Replacement Obligation. Watermaster shall adopt uniformly applicable rules for Storage Agreements. Watermaster shall calculate additions, extractions and losses of water stored under Storage Agreements and maintain an Annual account of all such water.

t. Subarea Advisory Committee Meetings. To meet on a regular basis and at least semi-annually with the Subarea Advisory Committees to review Watermaster activities pursuant to

this Judgment and to receive advisory recommendations from the Subarea Advisory Committees.

u. Unauthorized Production. To bring such action or motion as is necessary to enjoin unauthorized Production as provided in Paragraph 12 hereinabove.

v. Meetings and Records. To ensure that all meetings and hearings by Watermaster shall be noticed and conducted according to then current requirements of the Ralph M. Brown Act, Government Code Sections 54950, et seq. Watermaster files and records shall be available to any person according to the provisions of the Public Records Act, Government Code §§ 6200 et seq.

w. Data, Estimates and Procedures. To rely on and use the best available records and data to support the implementation of this Judgment. Where actual records of data are not available, Watermaster shall rely on and use sound scientific and engineering estimates. Watermaster may use preliminary records of measurements, and, if revisions are subsequently made, Watermaster may reflect such revisions in subsequent accounting. Exhibit "C" sets forth methods and procedures for determining surface flow components. Watermaster shall use either the same procedures or procedures that will yield results of equal or greater accuracy.

x. Biological Resource Mitigation. To implement the Biological Resource Mitigation measures set forth in Exhibit "H" herein.

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C. ASSESSMENTS

25. Purpose. Watermaster shall levy and collect Assessments from the Parties based upon Production in accordance with the time schedules set forth in Exhibit "D". Watermaster shall levy and collect such Assessments as follows:

a. Administrative Assessments. Administrative Assessments to fund the Administrative Budget adopted by the Watermaster pursuant to Paragraph 24(j) shall be levied uniformly against each acre foot of Production. A Producer who does not Produce in a given Year shall pay an Administrative Assessment in amount equal to the lowest MWA assessment for Minimal Producers for that Year.

b. Replacement Water Assessments. Replacement Water Assessments shall be levied against each Producer on account of such Producer's Production, after any adjustment pursuant to Paragraph 24(q), in excess of such Producer's share of the Free Production Allowance in each Subarea during the prior Year.

c. Makeup Water Assessments. Makeup Water Assessments shall be levied against each Producer in each Subarea on account of each acre-foot of Production therein which does not bear a Replacement Assessment hereunder, after any adjustment pursuant to Paragraph 24(q), to pay all necessary costs of satisfying the Makeup Obligation, if any, of that Subarea.

d. Biological Resource Assessment. To establish and, to the extent needed, to maintain the Biological Resource Trust Fund balance at one million dollars (in 1993 dollars) pursuant to Paragraph 24(x) and Exhibit "H", a Biological Resource Assessment in an amount not to exceed fifty cents (in 1993 dollars)

for each acre-feet of Production shall be levied uniformly against each producer except the California Department of Fish and Game.

e. MWA Assessment of Minimal Producers. The MWA shall identify and assess Minimal Producers through its own administrative procedures, and not acting as Watermaster.

26. Procedure. Each Party hereto is ordered to pay the Assessments herein provided for, which shall be levied and collected in accordance with the procedures and schedules set forth in Exhibit "D". Any Assessment which becomes delinquent, as defined in Paragraph 7 of Exhibit "D", shall bear interest at the then current San Bernardino County property tax delinquency rate Said interest rate shall be applicable to any said delinquent Assessment from the due date thereof until paid. Such delinquent Assessment, together with interest thereon, costs of suit, attorneys fees and reasonable costs of collection, may be collected pursuant to motion giving notice to the delinquent Party only, or Order to Show Cause proceeding, or such other lawful proceeding as may be instituted by the Watermaster; and shall, if provided for in the MWA Act, constitute a lien on the property of the Party as of the same time and in the same manner as does the tax lien securing County property taxes. The Watermaster shall Annually certify a list of all such unpaid delinquent Assessments to the MWA (in accordance with applicable provisions of the MWA Act). The MWA (in accordance with applicable provisions of the MWA Act) shall include the names of those Parties and the amounts of the liens in its list to the County Assessor's Office in the same manner and at the same time as it does its administrative assessments. MWA shall account for receipt of all collections of Assessments collected pursuant to

this Judgment, and shall pay such amounts collected pursuant to this Judgment to the Watermaster. The Watermaster shall also have the ability to enjoin production of those Persons who do not pay Assessments pursuant to this Judgment.

27. Availability of Supplemental Water. All Replacement and Makeup Water Assessments collected by the Watermaster shall be used to acquire Supplemental Water from MWA. Watermaster shall determine when to request Supplemental Water from MWA and shall determine the amount of Supplemental Water to be requested. MWA shall use its best efforts to acquire as much Supplemental Water as possible in a timely manner. If MWA encounters delays in the acquisition of Supplemental Water which, due to cost increases, results in collected assessment proceeds being insufficient to purchase all Supplemental Water for which the Assessments were made, MWA shall purchase as much water as the proceeds will allow when the water becomes available. If available Supplemental Water is insufficient to meet all Makeup and Replacement Water obligations, Watermaster shall allocate the Supplemental Water for delivery to the Subareas on an equitable and practicable basis pursuant to duly adopted Watermaster rules and regulations, giving preference to: First, Transition Zone Replacement Water Obligations as set forth in Exhibit "G"; Second, Makeup Water Obligations; and Third, other Replacement Water Obligations. MWA may acquire Supplemental Water at any time. MWA shall be entitled to enter into a Storage Agreement with Watermaster to store water MWA acquires prior to being paid to do so by Watermaster. Such water, including such water acquired and stored prior to the date of this Judgment or prior to the entry of

a Storage Agreement, may later be used to satisfy MWA's duty under this paragraph.

28. Use of Replacement Water Assessment Proceeds and Makeup Water Assessment Proceeds. The Proceeds of Replacement Water Assessments and any interest accrued thereon shall only be used for the purchase of Replacement Water for that Subarea from which they were collected. In addition, the proceeds of Replacement Water Assessments collected on account of Production in the Transition Zone, except as provided in Exhibit "G", shall only be used for the purchase of Replacement Water for the Transition Zone, and the proceeds of Replacement Water Assessments collected on account of Production in that portion of the Baja Subarea downstream of the Calico-Newberry fault shall only be used for the purchase of Replacement Water for that portion of the Baja Subarea downstream of the Calico-Newberry fault. The proceeds of Makeup Water Assessments and any interest accrued thereon shall only be used for the purchase of Makeup Water to satisfy the Makeup Obligation for which they are collected.

29. MWA Annual Report to the Watermaster. MWA shall Produce and deliver to Watermaster an Annual written report regarding actions of MWA required by the terms of this Judgment. The report shall contain: 1) a summary of the actions taken by MWA in identifying and assessing Minimal Producers, including a report of Assessments made and collected; 2) a summary of other MWA activities in collecting Assessment on behalf of Watermaster; 3) a report of water purchases and water distribution for the previous Year; 4) actions taken to implement its Regional Water Management Plan, including actions relating to conveyance facilities referred

to in this Judgment. The MWA report will be provided to Watermaster not less than 30 days prior to the Annual Watermaster report to the Court required by this Judgment.

D. SUBAREA ADVISORY COMMITTEES.

30. Authorization. The Producers in each of the five Subareas are hereby authorized and directed to cause committees of Producer representatives to be organized and to act as Subarea Advisory Committees.

31. Composition and Election. Each Subarea Advisory Committee shall consist of five (5) Persons who shall be called advisors. In the election of advisors, every Party shall be entitled to one vote for every acre-foot of Base Annual Production for that Party in that particular Subarea. Parties may cumulate their votes and give one candidate a number of votes equal to the number of advisors to be elected multiplied by the number of votes to which the Party is normally entitled, or distribute the Party's votes on the same principle among as many candidates as the Party thinks fit. In any election of advisors, the candidates receiving the highest number of affirmative votes of the Parties are elected. Elections shall be held upon entry of this Judgment and thereafter every third year. In the event a vacancy arises, a temporary advisor shall be appointed by unanimous decision of the other four advisors to continue in office until the next scheduled election. The California Department of Fish and Game shall serve as a permanent ex-officio member of the Alto and Baja Subarea Advisory Committees. Rules and regulations regarding organization, meetings and other activities shall be at the discretion of the individual

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Subarea Advisory Committees, except that all meetings of the committees shall be open to the public.

32. Compensation. The Subarea Advisory Committee members shall serve without compensation.

33. Powers and Functions. The Subarea Advisory Committee for each Subarea shall act in an advisory capacity only and shall have the duty to study, review and make recommendations on all discretionary determinations made or to be made hereunder by Watermaster which may affect that Subarea.

E. TRANSFERABILITY.

34. Assignment, Transfer, etc. of Rights. In order to further the purposes of this Judgment and Physical Solution, any Base Annual Production Right, or any portion thereof, may be sold, assigned, transferred, licensed or leased pursuant to the rules and procedures set forth in Exhibit "F".

F. MISCELLANEOUS PROVISIONS.

35. Water Quality. Nothing in this Judgment shall be interpreted as relieving any Party of its responsibilities to comply with state or federal laws for the protection of water quality or the provisions of any permits, standards, requirements, or orders promulgated thereunder.

36. Review Procedures. Any action, decision, rule or procedure of Watermaster pursuant to this Judgment shall be subject to review by the Court on its own motion or on timely motion by any Party, as follows:

a. Effective Date of Watermaster Action. Any order, decision or action of Watermaster pursuant to this Judgment on noticed specific agenda items shall be deemed to have occurred

on the date of the order, decision or action.

b. Notice of Motion. Any Party, may, by a regularly noticed motion, petition the Court for review of Watermaster's action or decision pursuant to this Judgment. The motion shall be deemed to be filed when a copy, conformed as filed with the Court, has been delivered to Watermaster together with the service fee established by Watermaster sufficient to cover the cost to photocopy and mail the motion to each Party. Watermaster shall prepare copies and mail a copy of the motion to each Party or its designee according to the official service list which shall be maintained by Watermaster according to Paragraph 37. A Party's obligation to serve notice of a motion upon the Parties is deemed to be satisfied by filing the motion as provided herein. Unless ordered by the Court, any such petition shall not operate to stay the effect of any Watermaster action or decision which is challenged.

c. Time for Motion. A motion to review any Watermaster action or decision shall be filed within ninety (90) days after such Watermaster action or decision, except that motions to review Watermaster Assessments hereunder shall be filed within thirty (30) days of mailing of notice of the Assessment.

d. De Novo Nature of Proceeding. Upon filing of a petition to review Watermaster action, the Watermaster shall notify the Parties of a date when the Court will take evidence and hear argument. The Court's review shall be de novo and the Watermaster decision or action shall have no evidentiary weight in such proceeding.

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e. Decision. The decision of the Court in such proceeding shall be an appealable Supplemental Order in this case. When the same is final, it shall be binding upon Watermaster and the Parties.

f. Payment of Assessments. Payment of Assessments levied by Watermaster hereunder shall be made pursuant to the time schedule in Exhibit "D"; notwithstanding any motion for review of Watermaster actions, decisions, rules or procedures, including review of Watermaster Assessments.

37. Designation of Address for Notice and Service. Each Party shall designate the name and address to be used for purposes of all subsequent notices and service herein, either by its endorsement on the Stipulation for Judgment or by a separate designation to be filed within thirty (30) days after Judgment has been entered. Said designation may be changed from time to time by filing a written notice of such change with Watermaster. Any Party desiring to be relieved of receiving notices of Watermaster activity may file a waiver of notice on a form to be provided by Watermaster. Watermaster shall maintain at all times a current list of Parties to whom notices are to be sent and their addresses for purposes of service. Watermaster shall also maintain a full current list of names and addresses of all Parties or their successors, as filed herein. Copies of such lists shall be available to any Person. If no designation is made, a Party's designee shall be deemed to be, in order of priority: i) the Party's attorney of record; ii) if the Party does not have an attorney of record, the Party itself at the address on the Watermaster list.

38. Service of Documents. Delivery to or service upon any Party by Watermaster, by any other Party, or by the Court, of any document required to be served upon or delivered to a Party under or pursuant to the Judgment shall be deemed made if made by Deposit thereof (or by copy thereof) in the mail, first class, postage prepaid, addressed to the designee of the Party and at the address shown in the latest designation filed by that Party.

39. No Abandonment of Rights. It is in the interest of reasonable beneficial use of the Basin Area and its water supply that no Party be encouraged to take and use more water in any Year than is actually required. Failure to Produce all of the water to which a Party is entitled hereunder shall not, in and of itself, be deemed or constitute an abandonment of such Party's right, in whole or in part.

40. Intervention After Judgment. Any person who is not a Party or successor to a Party and who proposes to Produce water from the Basin Area may seek to become a Party to this Judgment through a Stipulation for Intervention entered into with Watermaster. Watermaster may execute said Stipulation on behalf of the other Parties herein but such Stipulation shall not preclude a Party from opposing such Intervention at the time of the Court hearing thereon. Said Stipulation for Intervention must thereupon be filed with the Court, which will consider an order confirming said intervention following thirty (30) days' notice to the Parties. Thereafter, if approved by the Court, such intervenor shall be a Party bound by this Judgment and entitled to the rights and privileges accorded under the Physical Solution herein.

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41. Recordation of Notice. MWA shall within sixty (60) days following entry of this Judgment record in the Office of the County Recorder of the County of San Bernardino a notice substantially complying with the notice content requirements set forth in Section 2529 of the California Water Code.

42. Judgment Binding on Successors, etc. Subject to specific provisions hereinbefore contained, this Judgment and all provisions thereof are applicable to and binding upon and inure to the benefit of not only the Parties to this action, but as well to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys in fact of any such Persons.

43. Costs. No Party stipulating to this Judgment shall recover any costs or attorneys fees in this proceeding from another stipulating Party.

44. Entry of Judgment. The Clerk shall enter this Judgment.

Dated: JAN 10 1996

E. MICHAEL KAISER

E. Michael Kaiser, Judge
Superior Court of the State
of California for the
County of Riverside

EXHIBIT A

MAP OF MOJAVE BASIN AREA

[INDEX MAP AND DETAIL SHEET CONSISTING OF 42 1" = 4,000' SCALE MAPS COVERING THE BASIN AREA; THE MAP IS ON DISPLAY AT THE OFFICE OF THE MOJAVE WATER AGENCY, 22450 HEADQUARTERS, APPLE VALLEY, CA 92307 AND ON FILE WITH THE COURT]

EXHIBIT B

PRODUCTION TABLES

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
ABSHIRE, DAVID V	24	0.1093	24	22	21	20	19
ANDERSON, ROSS C & BETTY J	34	0.1548	34	32	30	28	27
BAR H MUTUAL WATER COMPANY	53	0.2414	53	50	47	45	42
BELL, CHUCK	494	2.2497	494	469	444	419	395
BURNS, BOBBY J & EVELYN J	1,300	5.9204	1,300	1,235	1,170	1,105	1,040
CASA COLINA FOUNDATION	90	0.4099	90	85	81	76	72
CENTER WATER CO	40	0.1822	40	38	36	34	32
CLUB VIEW PARTNERS	1,276	5.8111	1,276	1,212	1,148	1,084	1,020
CROSS, LAWRENCE E	23	0.1047	23	21	20	19	18
CRYSTAL HILLS WATER COMPANY	194	0.8835	194	184	174	164	155
DAHLQUIST, GEORGE R	594	2.7052	594	564	534	504	475
DELPERDANG, ROBERT H	56	0.2550	56	53	50	47	44
DESERT DAWN MUTUAL WATER COMPANY	15	0.0683	15	14	13	12	12
GAETA, TRINIDAD	512	2.3317	512	486	460	435	409
GAYJIKIAN, SAMUEL & HAZEL	102	0.4645	102	96	91	86	81
GRACETOWN INVESTMENT CO - JETCO PROP FUND	752	3.4247	752	714	676	639	601
GUBLER, HANS	30	0.1366	30	28	27	25	24
HAL-DOR LTD	23	0.1047	23	21	20	19	18
HANDLEY, DON R & MARY ANN	73	0.3325	73	69	65	62	58
HART, MERRILL W	473	2.1541	473	449	425	402	378
HERT, SCOTT	276	1.2569	276	262	248	234	220
HI-GRADE MATERIALS	442	2.0129	442	419	397	375	353
HITCHIN LUCERNE, INC	16	0.0729	16	15	14	13	12
JAMS RANCH	28	0.1275	28	26	25	23	22

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ESTE SUBAREA PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
JUBILEE MUTUAL WATER COMPANY	142	0.6467	142	134	127	120	113
JUNIPER RIVIERA COUNTY WATER DISTRICT	37	0.1685	37	35	33	31	29
LEE, DOO HWAN	78	0.3552	78	74	70	66	62
LOPEZ, BALTAZAR	385	1.7533	385	365	346	327	308
LUA, ANTONIO	348	1.5848	348	330	313	295	278
LUCERNE VALLEY MUTUAL WATER COMPANY	54	0.2459	54	51	48	45	43
LUCERNE VALLEY PARTNERS	1,213	5.5242	1,213	1,152	1,091	1,031	970
LUCERNE VISTA WATER CO	21	0.0956	21	19	18	17	16
MITSUBISHI CEMENT CORPORATION	1,299	5.9158	1,299	1,234	1,169	1,104	1,039
MONACO INVESTMENT COMPANY	70	0.3188	70	66	63	59	56
MOSS, LAWRENCE W & HELEN J	43	0.1958	43	40	38	36	34
PARK, CHANHO	597	2.7188	597	567	537	507	477
PARK, JEONG, IL & HEA JA	96	0.4372	96	91	86	81	76
PEREZ, EVA	247	1.1249	247	234	222	209	197
PETTIGREW, DAN	1,422	6.4760	1,422	1,350	1,279	1,208	1,137
PETTIGREW, HOWARD L	1,500	6.8312	1,500	1,425	1,350	1,275	1,200
PLUESS-STAUFER CALIFORNIA INC	23	0.1047	23	21	20	19	18
REED, MIKE	58	0.2641	58	55	52	49	46
ROGERS, ROY	1,449	6.5990	1,449	1,376	1,304	1,231	1,159
SAN BERNARDINO CO SERVICE AREA 29	21	0.0956	21	19	18	17	16
SEALS, LAWRENCE	113	0.5146	113	107	101	96	90
SON'S RANCH	140	0.6376	140	133	126	119	112
SOUTHERN CALIFORNIA WATER COMPANY	178	0.8106	178	169	160	151	142
SPECIALTY MINERALS, INC	42	0.1913	42	39	37	35	33

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FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
SPILLMAN, JAMES R & NANCY J	23	0.1047	23	21	20	19	18
STEWART WATER COMPANY	54	0.2459	54	51	48	45	43
STRINGER, W EDWARD	573	2.6095	573	544	515	487	458
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC	10	0.0455	10	9	9	8	8
TURNER, LOYD & CAROL	77	0.3507	77	73	69	65	61
VISOSKY, JOSEPH F JR	1,120	5.1006	1,120	1,064	1,008	952	896
WEISER, SIDNEY & RAQUEL	90	0.4099	90	85	81	76	72
WILLOW WELLS MUTUAL WATER COMPANY	30	0.1366	30	28	27	25	24

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ESTE SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR [3]	THIRD YEAR [3]	FOURTH YEAR [3]	FIFTH YEAR [3]
MINIMAL PRODUCER POOL	2,000	9.1083	2,000	1,900	1,800	1,700	1,600
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	1,485	6.7629					
ESTE SUBAREA TOTALS =	21,958	100					

1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.

3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN OBSTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

OBSTE SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
AEROCHEM, INC	660	5.3645	660	627	594	561	528
BROWN, DOUG & SUE	46	0.3739	46	43	41	39	36
CHAMISAL MUTUAL	96	0.7803	96	91	86	81	76
DAVIS, PAUL	19	0.1544	19	18	17	16	15
DOSSEY, D A	14	0.1138	14	13	12	11	11
MEADOWBROOK DAIRY	2,335	18.9791	2,335	2,218	2,101	1,984	1,868
RESSEGUE, JOHN & BILL	259	2.1052	259	246	233	220	207
SAN BERNARDINO CO SERVICE AREA 70G	110	0.8941	110	104	99	93	88
SAN BERNARDINO CO SERVICE AREA 70L	1,306	10.6153	1,306	1,240	1,175	1,110	1,044
THORESON, ROBERT F & A KATHLEEN	40	0.3251	40	38	36	34	32
TROEGER, RICHARD H	112	0.9103	112	106	100	95	89
VAN DAM BROTHERS	1,860	15.1183	1,860	1,767	1,674	1,581	1,488

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TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

OESTE SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND YEAR [3]	THIRD YEAR [3]	FOURTH YEAR [3]	FIFTH YEAR [3]
MINIMAL PRODUCER POOL	1,500	12.1921	1,500	1,425	1,350	1,275	1,200
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	3,946	32.0735					
OESTE SUBAREA TOTALS =	12,303	100					

1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.

3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
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TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
ABBOND, EDWARD & GRACE	28	0.0229	28	26	25	23	22
ABBOTT, LEONARD C	284	0.2321	284	269	255	241	227
ADELANTO, CITY OF	1,573	1.2855	1,573	1,494	1,415	1,337	1,258
ADELANTO, CITY OF - GEORGE A F B	3,433	2.8055	3,433	3,261	3,089	2,918	2,746
AGCON, INC	384	0.3138	384	364	345	326	307
APPLE VALLEY COUNTRY CLUB	709	0.5794	709	673	638	602	567
APPLE VALLEY DEVELOPMENT	724	0.5917	724	687	651	615	579
APPLE VALLEY FOOTHILL CO WATER DISTRICT	167	0.1365	167	158	150	141	133
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	125	0.1022	125	118	112	106	100
APPLE VALLEY RANCHOS WATER COMPANY	13,022	10.6419	13,022	12,370	11,719	11,068	10,417
APPLE VALLEY RECREATION & PARKS	45	0.0368	45	42	40	38	36
APPLE VALLEY VIEW MUTUAL WATER CO	36	0.0294	36	34	32	30	28
APPLE VALLEY, TOWN OF	298	0.2435	298	283	268	253	238
ARC LAS FLORES	6,331	5.1739	6,331	6,014	5,697	5,381	5,064
BACA, ENRIQUE	74	0.0605	74	70	66	62	59
BALDY MESA WATER DISTRICT	1,495	1.2218	1,495	1,420	1,345	1,270	1,196
BASS, NEWTON T	514	0.4201	514	488	462	436	411
BASTIANON, REMO	77	0.0629	77	73	69	65	61
BASURA, STEVE	25	0.0204	25	23	22	21	20
BEINSCHROTH, A J	90	0.0736	90	85	81	76	72
BOYCE, KENNETH & WILLA	102	0.0834	102	96	91	86	81
BROWN, BOBBY G & VALERIA R	42	0.0343	42	39	37	35	33
BURNS, ULYSSES & ANNIE L	164	0.1340	164	155	147	139	131
CARDOZO, MANUEL & MARIA	909	0.7429	909	863	818	772	727

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ALTO SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND YEAR [3]	THIRD YEAR [3]	FOURTH YEAR [3]	FIFTH YEAR [3]
CDFG - MOJAVE NARROWS REGIONAL PARK	2,107	1.7219	2,107	2,001	1,896	1,790	1,685
CDFG - MOJAVE RIVER FISH HATCHERY	20	0.0163	20	19	18	17	16
CLARK, KENNETH R	223	0.1822	223	211	200	189	178
CLEAR VIEW FARMS	501	0.4094	501	475	450	425	400
COPELAND, ET AL (C/O DON W. LITTLE)	175	0.1430	175	166	157	148	140
CRAMER, MARGARET MUIR	280	0.2288	280	266	252	238	224
CUNNINGHAM, WILLIAM	29	0.0237	29	27	26	24	23
DEXTER, CLAIR F	175	0.1430	175	166	157	148	140
DEXTER, J P	515	0.4209	515	489	463	437	412
DIBERNARDO, JOHN	203	0.1659	203	192	182	172	162
DOLCH, ROBERT & JUDY	426	0.3481	426	404	383	362	340
DOMBROWSKI, MICHAEL W & SUSAN M	19	0.0155	19	18	17	16	15
DOWSE, PHILIP	20	0.0163	20	19	18	17	16
EVENSON, EDWIN H & JOYCELAINE	70	0.0572	70	66	63	59	56
FISHER, DOLORES DR	48	0.0392	48	45	43	40	38
FISHER, JEROME	633	0.5173	633	601	569	538	506
FITZWATER, R E	291	0.2378	291	276	261	247	232
GARCIA, SONIA L	288	0.2354	288	273	259	244	230
GOMEZ, CIRIL - LIVING TRUST	330	0.2697	330	313	297	280	264
GREEN ACRES ESTATES	25	0.0204	25	23	22	21	20
GULBRANSON, MERLIN	163	0.1332	163	154	146	138	130
HELENDALE SCHOOL DISTRICT	18	0.0147	18	17	16	15	14
HESPERIA GOLF AND COUNTRY CLUB	678	0.5541	678	644	610	576	542
HESPERIA WATER DISTRICT	12,213	9.9808	12,213	11,602	10,991	10,381	9,770

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ALTO SUBAREA PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
HI-GRADE MATERIALS	149	0.1218	149	141	134	126	119
HODGE, STANLEY W	67	0.0548	67	63	60	56	53
HOLWAY, ROBERT	88	0.0719	88	83	79	74	70
HRUBIK, THOMAS A	3,862	3.1561	3,862	3,668	3,475	3,282	3,089
INDUSTRIAL ASPHALT	109	0.0891	109	103	98	92	87
JESS RANCH WATER COMPANY	7,480	6.1129	7,480	7,106	6,732	6,358	5,984
JOHNSON, LARRY & CARLEAN	82	0.0670	82	77	73	69	65
JOHNSON, RONALD	31	0.0253	31	29	27	26	24
JOHNSTON, HARRIET AND LARRY W	127	0.1038	127	120	114	107	101
KEMPER CAMPBELL RANCH	473	0.3865	473	449	425	402	378
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	658	0.5377	658	625	592	559	526
LAWSON, ERNEST & BARBARA	15	0.0123	15	14	13	12	12
LENHERT, RONALD & TONI	37	0.0302	37	35	33	31	29
LEWIS HOMES OF CALIFORNIA	1,693	1.3836	1,693	1,608	1,523	1,439	1,354
LONGMAN, JACK	115	0.0940	115	109	103	97	92
LOUNSBURY, J PETER & CAROLYN	208	0.1700	208	197	187	176	166
LOW, ROBERT	399	0.3261	399	379	359	339	319
LUCKEY, MANLEY J	800	0.6538	800	760	720	680	640
LUTH, KEN	27	0.0221	27	25	24	22	21
MARIANA RANCHOS COUNTY WATER DISTRICT	245	0.2002	245	232	220	208	196
MCCALL, REX	44	0.0360	44	41	39	37	35
MCINNIS, WILLIAM S	30	0.0245	30	28	27	25	24
MITCHELL, ROBIN & JUDITH	36	0.0294	36	34	32	30	28
MURPHY, BERNARD H	25	0.0204	25	23	22	21	20

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MURPHY, BERNARD TRUST	162	0.1324	162	153	145	137	129
MURPHY, KENNETH	42	0.0343	42	39	37	35	33
MUTUAL FUNDING CORP	101	0.0825	101	95	90	85	80
NAVAJO MUTUAL WATER CO	88	0.0719	88	83	79	74	70
NUNN, DONALD & PEARL	66	0.0539	66	62	59	56	52
O'BRYANT, ROBERT C & BARBARA	107	0.0874	107	101	96	90	85
ORMSBY, HARRY G	386	0.3154	386	366	347	328	308
PALISADES RANCH	824	0.6734	824	782	741	700	659
PARKER, DAVID E	37	0.0302	37	35	33	31	29
PEARL, ALICE	147	0.1201	147	139	132	124	117
PEARSON, DERYL B	22	0.0180	22	20	19	18	17
PERRY, THOMAS A	35	0.0286	35	33	31	29	28
PETTIS TRUST	126	0.1030	126	119	113	107	100
PHENIX PROPERTIES LTD	652	0.5328	652	619	586	554	521
PITTMAN, LEROY W	148	0.1209	148	140	133	125	118
POLICH, LEE & DONNA	65	0.0531	65	61	58	55	52
RANCHERITOS MUTUAL WATER CO	169	0.1381	169	160	152	143	135
RIVERSIDE CEMENT CO - ORO GRANDE PLANT	3,452	2.8211	3,452	3,279	3,106	2,934	2,761
ROGERS, ROY (ORO GRANDE RANCH)	115	0.0940	115	109	103	97	92
RUDMAN, ROBERT T	300	0.2452	300	285	270	255	240
RUE RANCH	30	0.0245	30	28	27	25	24
SAN BERNARDINO CO SERVICE AREA 42	465	0.3800	465	441	418	395	372
SAN BERNARDINO CO SERVICE AREA 64	3,822	3.1234	3,822	3,630	3,439	3,248	3,057
SAN BERNARDINO CO SERVICE AREA 70C	2,346	1.9172	2,346	2,228	2,111	1,994	1,876

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FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	928	879	830	781
STORM, RANDALL	62	0.0507	62	58	55	52	49
SUDMEIER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA E	126	0.1030	126	119	113	107	100
VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

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EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
VANNI, MIKE	54	0.0441	54	51	48	45	43
VICTOR VALLEY COMMUNITY COLLEGE DIST	240	0.1961	240	228	216	204	192
VICTOR VALLEY WATER DISTRICT	13,354	10.9133	13,354	12,686	12,018	11,350	10,683
VICTORVILLE, CITY OF	12	0.0098	12	11	10	10	9
VOGLER, ALBERT H	132	0.1079	132	125	118	112	105
WACKEEN, CAESAR	1,635	1.3362	1,635	1,553	1,471	1,389	1,308
WAKULA, JOHN	291	0.2378	291	276	261	247	232
WARD, KEN & BARBARA	65	0.0531	65	61	58	55	52
WEBBER, DAVE	80	0.0654	80	76	72	68	64
WEST, CAROLYN & SMITH, RICHARD	24	0.0196	24	22	21	20	19
WEST, HOWARD & SUZY	72	0.0588	72	68	64	61	57
WHITTINGHAM, RICHARD V	15	0.0123	15	14	13	12	12
YEAGER, E L - CONSTRUCTION COMPANY INC	34	0.0278	34	32	30	28	27

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TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA / PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
MINIMAL PRODUCER POOL	4,000	3.2689	4,000	3,800	3,600	3,400	3,200
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	4,967	4.0592					
ALTO SUBAREA TOTALS =	122,365	100					

1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.

3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND YEAR [3]	THIRD YEAR [3]	FOURTH YEAR [3]	FIFTH YEAR [3]
AGCON, INC	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	114	108	102	96
AVDEEF, THOMAS	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY	220	0.3883	220	209	198	187	176
BARNES, FAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, HARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAFA, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GESIRICH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSEN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA / PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
HI DESERT MUTUAL WATER CO	34	0.0600	34	32	30	28	27
HILEMAN, KATHERINE	19	0.0335	19	18	17	16	15
HILL, MELVIN	2,335	4.1213	2,335	2,218	2,101	1,984	1,868
HOY, MIKE	632	1.1155	632	600	568	537	505
JORDAN, RAYMOND	460	0.8119	460	437	414	391	368
JUSTICE, CHRIS	421	0.7431	421	399	378	357	336
KING, GENEVIEVE E	69	0.1218	69	65	62	58	55
LEE, SEPOONG ETAL & WOO POONG	77	0.1359	77	73	69	65	61
LEYERLY, GENEVA	65	0.1147	65	61	58	55	52
LEYERLY, RICHARD	862	1.5214	862	818	775	732	689
LUDINGTON, JAMES E & JO ANN	58	0.1024	58	55	52	49	46
LYON, LOUIS & ERIKA	130	0.2295	130	123	117	110	104
MARTIN, LENDELL	14	0.0247	14	13	12	11	11
MCCOLLUM, CHARLES L	347	0.6125	347	329	312	294	277
MEAD, G C	90	0.1589	90	85	81	76	72
MEYERS, LONNIE	27	0.0477	27	25	24	22	21
MITCHELL, CHARLES A	201	0.3548	201	190	180	170	160
MOFFITT, THOMAS R & EDITH I	62	0.1094	62	58	55	52	49
MOST, MILTON W	9,660	17.0500	9,660	9,177	8,694	8,211	7,728
NELSON, MILDRED L	52	0.0918	52	49	46	44	41
NEWBERRY SPRINGS COMPANY, INC	2,489	4.3931	2,489	2,364	2,240	2,115	1,991
OHAI, REYNOLDS & DOROTHY	137	0.2418	137	130	123	116	109
OROPEZA, JOSE M	190	0.3354	190	180	171	161	152
OSTERKAMP, GEROLD	260	0.4589	260	247	234	221	208

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TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA / PRODUCER	BASE ANNUAL [1] PRODUCTION (ACRE-FEET)	BASE ANNUAL [2] PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
OWL ROCK PRODUCTS COMPANY	466	0.8225	466	442	419	396	372
PG & E	1,657	2.9246	1,657	1,574	1,491	1,408	1,325
REDDY, BOMMI V & KARUNA V	24	0.0424	24	22	21	20	19
ROWLAND, JAMES & HELEN	22	0.0388	22	20	19	18	17
RUISCH, DALE W	650	1.1473	650	617	585	552	520
SHIRKEY, ALAN G & MARY E	35	0.0618	35	33	31	29	28
SMITH, ROBERT A	43	0.0759	43	40	38	36	34
SOPPELAND, WAYNE	783	1.3820	783	743	704	665	626
SOUTHERN CALIFORNIA WATER COMPANY	11,309	19.9605	11,309	10,743	10,178	9,612	9,047
SPINK, WALTHALL	44	0.0777	44	41	39	37	35
ST CHARLES, DONALD B	609	1.0749	609	578	548	517	487
SUN 'N SKY COUNTRY CLUB	337	0.5948	337	320	303	286	269
TALLAKSON, WILLIAM V	17	0.0300	17	16	15	14	13
TILLEMA, HAROLD	874	1.5426	874	830	786	742	699
VAN DAM, ELDERT & SUSAN	722	1.2743	722	685	649	613	577
VAN LEEUWEN, JOHN	1,922	3.3923	1,922	1,825	1,729	1,633	1,537
VAN VLIET, HENDRIKA	820	1.4473	820	779	738	697	656
VANHOY, LUTHER C	23	0.0406	23	21	20	19	18
VERNOLA, PAT	3,116	5.4998	3,116	2,960	2,804	2,648	2,492
VISSER, ANNIE	91	0.1606	91	86	81	77	72
YANG, YOUNG HO	371	0.6548	371	352	333	315	296
YKEMA HARMSEN DAIRY	1,000	1.7650	1,000	950	900	850	800