THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

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July 12, 2013

Mr. Steven C. Hvinden
Office Chief
Boulder Canyon Operations Office
U.S. Bureau of Reclamation
P.O. Box 61470
Boulder City, NV 89006-1470

Dear Mr. Hvinden:

Metropolitan's Intentionally Created Surplus Certification Report, Calendar Year 2012

Enclosed is The Metropolitan Water District of Southern California's (Metropolitan) calendar year 2012 Certification Report for Extraordinary Conservation Intentionally Created Surplus (ICS) for the Metropolitan funded: Palo Verde Irrigation District (Palo Verde) Forbearance and Fallowing Program, Imperial Irrigation District (Imperial) Water Conservation Program, and Water Supply from Desalination. The Certification Report demonstrates:

- the amount of Extraordinary Conservation ICS created, and

- that the method of creation was consistent with Metropolitan's approved ICS Plan of creation and the requirements outlined in Section 3 of the *Interim Guidelines for the Operation of Lake Powell and Lake Mead* (Guidelines).

The Guidelines require a Contractor to:

- enter into a *Delivery Agreement* with the United States, and Forbearance Agreements necessary to bring the delivery of ICS into compliance with Articles II(B)(2) and II(B)(6) of the Consolidated Decree of the U.S. Supreme Court in *Arizona v. California*, 547 U.S. 150 (2006), and

- submit a plan for the creation of ICS.

Metropolitan entered into a *Delivery Agreement* with the United States, and Forbearance Agreements on December 13, 2007. Metropolitan received approval for its calendar year 2012 Plan of creation in the Bureau of Reclamation's (Reclamation) letter of March 29, 2012.

Metropolitan sought and received approval for the creation of 200,000 acre-feet of Extraordinary Conservation ICS based on the funding of: our Forbearance and Fallowing Program with Palo Verde, our Water Conservation Program with Imperial, and groundwater desalination programs with our member agencies. After verification, Reclamation, Palo Verde, and Metropolitan estimated that 73,662 acre-feet of water were developed through extraordinary conservation measures by the Forbearance and Fallowing Program. In accordance with the amended 1988 *Agreement for the Implementation of a Water Conservation Program and Use of Conserved Water* and the amended 1989 *Approval Agreement*, 104,140 acre-feet of water was conserved through extraordinary conservation measures by the Imperial-Metropolitan Water Conservation Program. Of that amount, 10,463 acre-feet was utilized by Coachella Valley Water District. In accordance with agreements with a number of our member agencies, 35,127 acre-feet of water was conserved through desalination programs with financial support provided by Metropolitan.

Metropolitan has satisfied the requirement that the ICS be created through extraordinary conservation programs that existed on January 1, 2006, or through desalination programs in which the desalinated water is used in lieu of Colorado River water. Metropolitan's consumptive use of Colorado River water did not include any of the water developed by the Forbearance and Fallowing Program and conserved by the Water Conservation Program. As such, 73,662 acre-feet and 93,677 acre-feet, respectively, became Extraordinary Conservation ICS in calendar year 2012, along with 12,338 acre-feet of desalinated water used in lieu of Colorado River water, prior to the one-time deduction of five percent specified in the Guidelines to result in additional system water in storage in Lake Mead.

Metropolitan looks forward to your review and verification of the information contained in the Certification Report, on behalf of the Secretary of the Interior, and your written decision regarding the amount of Extraordinary Conservation ICS created. Should you have any questions regarding the Certification Report, your staff may contact Mr. Jan Matusak of my staff at (213) 217-6772.

Very truly yours,

Deven N. Upadhyay
Manager, Water Resource Management

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Enclosure

Metropolitan Funded
Palo Verde Irrigation District Forbearance and Fallowing Program, Imperial Irrigation District Water Conservation Program, and Water Supply from Desalination Intentionally Created Surplus Certification Report

Calendar Year 2012

June 2013

The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

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Introduction

The Secretary of the Interior (Secretary) approved a *Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead*, on December 13, 2007, which established guidelines for the creation and delivery of Intentionally Created Surplus (ICS). One type of ICS is Extraordinary Conservation, which allows a Contractor to utilize extraordinary conservation programs that existed on January 1, 2006, and desalination programs in which the desalinated water is used in lieu of Mainstream Colorado River water to create ICS.

The *Interim Guidelines for the Operation of Lake Powell and Lake Mead (Interim Guidelines)* contained in the Record of Decision condition the delivery of ICS on the terms of:

- a Delivery Agreement with the United States, and

- Forbearance Agreements necessary to bring the delivery of ICS into compliance with Articles II(B)(2) and II(B)(6) of the Consolidated Decree entered by the U.S. Supreme Court in *Arizona v. California*, 547 U.S. 150 (2006).

The Metropolitan Water District of Southern California (Metropolitan) entered into:

- a *Delivery Agreement* with the United States on December 13, 2007,

- a *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement* with the State of Arizona, acting through the Arizona Department of Water Resources, Palo Verde Irrigation District (PVID), Imperial Irrigation District (IID), the City of Needles, Coachella Valley Water District (CVWD), Southern Nevada Water Authority, and the Colorado River Commission of Nevada on December 13, 2007, and

- a *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus* with PVID, IID, CVWD, and the City of Needles on December 13, 2007.

Exhibit G of the *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement* describes the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, an extraordinary conservation program that existed on January 1, 2006. Exhibit H of the *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement* describes the Metropolitan Funded Imperial Irrigation District Water Conservation Program, an extraordinary conservation program that existed on January 1, 2006. Exhibit M of the *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement* describes Metropolitan Funded Water Supply from Desalination, an extraordinary conservation program in which desalinated water is used in lieu of Mainstream Colorado River water. These three programs formed the basis for Metropolitan's creation of Extraordinary Conservation ICS in 2012. A copy of Exhibits G, H, and M are contained in Appendix A. The *Interim Guidelines*, the *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement*, and the *Delivery Agreement* require a plan for creation of ICS (ICS Plan). A *Plan for the Creation of*

Extraordinary Conservation Intentionally Created Surplus During Calendar Year 2012 was submitted to the Bureau of Reclamation (Reclamation) on July 25, 2011 for the Secretary of the Interior's approval. A revised version was submitted on September 7, 2011 for approval. Metropolitan received a March 29, 2012 letter from Reclamation approving Metropolitan's ICS Plan for the creation of not to exceed 200,000 acre-feet of Extraordinary Conservation ICS for 2012. A copy of the ICS Plan and Reclamation's letter is contained in Appendix B.

This *Certification Report* satisfies the requirements of the *Interim Guidelines* to submit for the Secretary's review and verification, appropriate information, to demonstrate the amount of ICS created and that the method of creation was consistent with Metropolitan's approved ICS Plan, the Forbearance agreements, and the *Delivery Agreement*.

Project Description--Metropolitan Funded PVID Forbearance and Fallowing Program

Under the August 18, 2004, *Forbearance and Fallowing Program Agreement* with PVID and landowner agreements for fallowing in PVID, Metropolitan pays landowners within the Palo Verde Valley to annually fallow a portion of their land, foregoing the planting and irrigation of crops. The agreements allow PVID to forbear use of water on lands that historically were and otherwise would be irrigated, increasing the amount of water available to Metropolitan.

The volume of water that becomes available to Metropolitan is governed by the October 10, 2003, *Quantification Settlement Agreement*[1] and the October 10, 2003, *Colorado River Water Delivery Agreement*.[2] Under these agreements:

- Metropolitan must reduce its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2[3] that is greater than 420,000 acre-feet in a calendar year, or

- Metropolitan may increase its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is less than 420,000 acre-feet in a calendar year.

In both cases, each acre-foot of reduced consumptive use by PVID is an additional acre-foot that becomes available to Metropolitan.

Palo Verde Valley landowners decided whether to participate in the 35-year program and those participating stop irrigating from 9 to 35 percent of their land in any year at Metropolitan's request. Upon one-year notice, Metropolitan has the option to change the percentage of land fallowed, with the change being effective for a two-year period. The land taken out of agricultural production is maintained and rotated once every one to five years. The maximum amount of farmland taken out of production is 25,947 acres; however, fallowing in excess of 23,508 acres is limited to a total of ten years under the 35-year program. The landowner is

[1] The parties to the Quantification Settlement Agreement are IID, CVWD, and Metropolitan.
[2] The parties to the Colorado River Water Delivery Agreement are the United States, IID, CVWD, Metropolitan, and the San Diego County Water Authority (SDCWA).
[3] The Yuma Project Reservation Division holds California's Priority 2.

responsible for payment of taxes, PVID water tolls, vegetation abatement, dust control and all other costs related to the fallowed lands. A history of farming is required for fields to be fallowed. Parcels to be fallowed must be at least 5 acres. Through May 2013, Metropolitan has paid $192.9 million in Program costs and another $4.6 million in Program costs are expected through December 2013.

This activity is separate and distinct from Metropolitan's "Emergency Short-Term Fallowing Program" with PVID under which additional Palo Verde Valley lands were fallowed from April 2009 through July 2010. The Emergency Short-Term Fallowing Program costs incurred in September 2009 were $21.7 million.

Term of the Activity--Metropolitan Funded PVID Forbearance and Fallowing Program

The *Forbearance and Fallowing Program Agreement* with PVID terminates on July 31, 2040. Metropolitan's "Fallowing Call" in effect for the period commencing August 1, 2010 through July 31, 2012 was for 25,947 acres. However, a number of Program participants requested an opportunity to reduce their fallowed acreage during Program year 2011/12 to take advantage of record high crop prices, mainly cotton and alfalfa. Metropolitan allowed all Program participants to reduce their fallowed acreage by any amount during Program year 2011/12. Twelve participants opted to reduce their fallowed acreage by a total of 5,526 acres during Program year 2011/12 of which 4,250 acres were returned into crop production early in calendar year 2012. The land fallowed totaled 24,671 acres on January 1, 22,304 acres on February 1, 21,102 acres on March 1, and 20,421 acres on April 1. The "Fallowing Call" in effect for the period commencing August 1, 2012 through July 31, 2014 was for 6,493 acres.

Summary of Results for Calendar Year 2012--Metropolitan Funded PVID Forbearance and Fallowing Program

The total volume of Extraordinary Conservation ICS that Metropolitan created in calendar year 2012 from the Metropolitan Funded PVID Forbearance and Fallowing Program under the *Interim Guidelines* was 73,662 acre-feet, prior to the one-time deduction of 5 percent specified in the *Guidelines* to result in additional system water in storage in Lake Mead. This volume, in conjunction with the 93,677 acre-feet of Extraordinary Conservation ICS that Metropolitan created from the Metropolitan Funded Imperial Irrigation District Water Conservation Program and the 12,338 acre-feet of Extraordinary Conservation ICS that Metropolitan created from the Metropolitan Funded Water Supply from Desalination, is within the 200,000 acre-feet outlined in the Reclamation approved ICS Plan. An estimated 73,662 acre-feet of water was saved by the Metropolitan Funded PVID Forbearance and Fallowing Program (Program that Existed on January 1, 2006) in calendar year 2012. Detailed data and calculations are described in subsequent sections of this report.

Extraordinary Conservation through a Program that Existed on January 1, 2006--Metropolitan Funded PVID Forbearance and Fallowing Program

By continuing to fund extraordinary conservation through a program that existed on January 1, 2006, Colorado River water was successfully conserved in calendar year 2012 that remained in

Lake Mead for Extraordinary Conservation ICS credits. The section below describes the conservation of the water.

Methodology

As indicated in the PVID-Metropolitan-Reclamation *Calendar Year 2012 Fallowed Land Verification Report*, although it is evident that water is saved through fallowing, it is not possible to measure the exact amount because the types and acreage of crops that would have been grown on the fallowed lands absent the fallowing program are unknown. Appendix C contains a copy of the *Calendar Year 2012 Fallowed Land Verification Report* in which the water savings were estimated using two methods. Under the first method—the Historical Use Method, three periods of past years deemed representative of conditions in PVID were selected and irrigation water use rates during each period were calculated and used to estimate water savings from the fallowed lands for calendar year 2012. Under the second method—the Actual Use Method, irrigation water use rates on irrigated lands during calendar year 2012 were calculated and used to estimate water savings from the fallowed fields. The Actual Use Method is deemed the method most reflective of the agronomic, weather, and market conditions prevailing in the Palo Verde Valley during calendar year 2012. As such, the best estimate of the amount of water saved during calendar year 2012 by the Program that Existed on January 1, 2006 is 73,662 acre-feet.

Verification Process of Fallowed Lands

Following the designation of fallowed acreage, a Metropolitan representative visited the field on the date when fallowing was to commence and verified that fallowing conditions had been met. The same procedure was followed when program participants would make changes in the area and/or location of fallowed lands.

In addition to field verification by Metropolitan, Reclamation conducted an independent verification with its own staff during the spring and fall of 2012. Similar to past years' practice, Reclamation selected 5 percent of the acreage fallowed for inspection. On-site inspection was made of 1,021 acres of fallowed fields in April 2012 and 325 acres in October 2012 to observe fallowing conditions and take photographs. Reports entitled, *Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, Spring 2012 Verification Report* and *Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, Fall 2012 Verification Report* were prepared by Reclamation that confirm extraordinary conservation implementation, and include field observations and relevant photographs of fallowing conditions on the acreage inspected in PVID. A copy of Metropolitan's February and September 2012 verification inspection reports and Reclamation's reports are contained in Appendix D.

Documentation of Conserved Water

Two methods were used to estimate the amount of saved water for calendar year 2012.

Historical Use Method

Three historical periods were selected that were deemed representative of typical conditions in PVID when cropping practices were not influenced by outside factors such as an impending fallowing program or a return to irrigation following a fallowing program. The lengths of the three periods selected were: 12 years, 5 years, and 3 years; and three separate analyses were conducted.

The first period extended from 1988 through 2002, but excluded 1992, 1993, and 1994 because the August 1992-July 1994 PVID-Metropolitan Test Fallowing Program affected water use and the amount of cropped acreage during those three years. This adjustment left 12 years of data for the analysis. Gross diversions at the Palo Verde Diversion Dam were tabulated by month for each year in the analysis. The 12 data points for each month were averaged, and the resulting averages for each month were summed to determine the annual diversions.

Similarly, data were tabulated for measured and unmeasured return flows and for water delivered to the Mesa portion of PVID. Gross diversions were reduced by measured returns, unmeasured returns, and deliveries to the Mesa to provide an estimate of irrigation use for the Valley lands of PVID. An annual average estimated irrigation use of 400,512 acre-feet was calculated. Over the same 12-year period, the irrigated acreage on Valley lands averaged 88,053 acres. Dividing the average annual estimated irrigation use by the average irrigated acreage results in an average annual estimate of 4.55 acre-feet of water use per irrigated acre of land. The next step is to extrapolate the irrigation use per acre estimate to the fallowed lands in calendar year 2012.

Calculation of the average monthly net irrigation use yields an approximation for consumptive use by month and results in a pattern that is representative of water use throughout a typical year. Incorporation of a representative water use pattern is important in estimating the amount of saved water because a fallowed acre in one month does not yield the same amount of saved water as that of a different month due to changes in crop water requirements and climatic conditions. Average monthly net diversions were converted to percentages of the yearly total net diversions. Applying the resulting monthly percentages to the average annual irrigation use estimate of 4.55 acre-feet per acre, results in an estimate of the monthly quantity of water consumed by each acre of cropped land in PVID. This is called the monthly irrigation use factor and represents crop consumptive use in acre-feet per acre for each month. These monthly irrigation use factors were used to provide an estimate of saved water in PVID during calendar year 2012. The number of fallowed acres during each month in calendar year 2012 was determined from a database. The monthly factors were multiplied by the average number of fallowed acres during the corresponding month to estimate the corresponding amount of saved water.

This procedure was applied to the fallowed acreage for all 12 months during calendar year 2012 and resulted in an estimated 68,747 acre-feet of saved water for the Program that Existed on January 1, 2006. The monthly calculations to arrive at these values are found in Appendix C.

The 5-year historical use was based on PVID data for the period 1998 through 2002. The procedure used to calculate the estimated water saved from fallowing Valley lands during calendar year 2012 was the same as that applied in computing the 12-year historical use estimate.

The 5-year historical use method yielded an irrigation use factor of 4.75 acre-feet/acre and 71,380 acre-feet of saved water for the Program that Existed on January 1, 2006 during calendar year 2012.

The 3-year historical use method was based on PVID data for the period 2000 through 2002. Following the same procedure as used for the other historical use methods, computations based on the 3-year historical use resulted in an irrigation use factor of 5.03 acre-feet/acre and 76,119 acre-feet of saved water for the Program that Existed on January 1, 2006 during calendar year 2012.

Actual Use Method

Under the actual use method, water use and acreage data from PVID records for calendar year 2012 were used to estimate the amount of saved water. The amount of water diverted into the PVID system less measured and unmeasured returns and water pumped to the Mesa resulted in the net amount of irrigation water used in the Valley. Monthly irrigation water use was divided by the average number of acres in production for each month during calendar year 2012 and summed for the 12 months, resulting in an average annual irrigation use of 4.66 acre-feet per acre.

The percentage of net diversions by month formed the basis for developing the monthly irrigation use factors. Each monthly factor was multiplied by the number of fallowed acres for each month during calendar year 2012. The actual irrigation water use per acre was extrapolated to the fallowed acres for each month to estimate the annual total of 73,662 acre-feet of saved water for the Program that Existed on January 1, 2006.

Project Description--Metropolitan Funded IID Water Conservation Program

Under the December 22, 1988 *Agreement for the Implementation of a Water Conservation Program and Use of Conserved Water* (Conservation Agreement) as amended and the December 19, 1989 *Approval Agreement* as amended, Metropolitan has funded water efficiency improvements within IID's service area in return for IID's agreement to not use an amount of water equal to the amount conserved by the program.

The program implemented structural and non-structural measures, including the concrete lining of 13 miles of existing main canals and 200 miles of lateral canals, construction of two local reservoirs and three spill-interceptor canals with four reservoirs, installation of 14 non-leak gates, and automation of the distribution system. Other implemented projects include the delivery of water to farmers on a 12-hour basis and improvements in on-farm water management through the installation of drip irrigation systems and tailwater pumpback systems. A copy of the Final Program Construction Report providing details on the implementation of each project was provided to Reclamation as Appendix E to the *Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program and Imperial Irrigation District Water Conservation Program Intentionally Created Surplus Certification Report, Calendar Year 2011.*

In 2012, 104,140 acre-feet was conserved and IID reduced its use by that amount. Through May 2013, Metropolitan has paid IID $276 million for program costs.

Term of the Activity--Metropolitan Funded IID Water Conservation Program

The Conservation Agreement with IID as amended and the *Approval Agreement* with IID, PVID, and CVWD as amended may be terminated by IID, effective December 31, 2041, or 270 days beyond the termination of the Quantification Settlement Agreement, whichever is later, plus any extensions required pursuant to Section 3.5 of the Conservation Agreement and Section 3.3 of the *Approval Agreement* and continues thereafter until terminated as specified in Section 7.2 or in Article V of the Conservation Agreement.

Summary of Results for Calendar Year 2012--Metropolitan Funded IID Water Conservation Program

The total volume of Extraordinary Conservation ICS that Metropolitan created in calendar year 2012 from the Metropolitan Funded Imperial Irrigation District Water Conservation Program under the *Interim Guidelines* was 93,677 acre-feet, prior to the one-time deduction of 5 percent specified in the *Guidelines* to result in additional system water in storage in Lake Mead. This volume, in conjunction with the 73,662 acre-feet of Extraordinary Conservation ICS that Metropolitan created from the Metropolitan Funded Palo Verde Forbearance and Fallowing Program and the 12,338 acre-feet of Extraordinary Conservation ICS that Metropolitan created from the Metropolitan Funded Water Supply from Desalination, is within the 200,000 acre-feet outlined in the Reclamation approved ICS Plan. Of the 104,140 acre-feet of water conserved by the Metropolitan Funded Imperial Irrigation District Water Conservation Program (Program that Existed on January 1, 2006) in calendar year 2012, 10,463 acre-feet was used by CVWD.

Extraordinary Conservation through a Program that Existed on January 1, 2006--Metropolitan Funded IID Water Conservation Program

By continuing to fund extraordinary conservation through a program that existed on January 1, 2006, Colorado River water was successfully conserved in calendar year 2012 that remained in Lake Mead for Extraordinary Conservation ICS credits. Through 2006, the Conservation Verification Consultants prepared and presented to the Water Conservation Measurement Committee an annual report on the estimated amount of water conserved by the Metropolitan Funded Imperial Irrigation District Water Conservation Program and each project thereof. A Systemwide Monitoring Program was developed to identify and explain trends in IID system performance as a function of the operational environment within which the conservation projects operated. The Systemwide Monitoring Program was designed to function over the life of the Metropolitan Funded Imperial Irrigation District Conservation Program to:

- Identify changes in on-farm irrigation practices.
- Identify changes in main and lateral canal operations and zanjero accounting procedures.
- Provide data support for the five-year verification updates.

- Provide a basis for separating water savings associated with the IID/Metropolitan-sponsored conservation projects from water savings associated with measures implemented by others. In this case, the Systemwide Monitoring Program provides valuable baseline data for separating the effects of a new program from those attributable to the Metropolitan Funded Imperial Irrigation District Water Conservation Program.
- Fulfill the requirement for overall verification specified in the December 19, 1989 Approval Agreement.

Forty sites were selected and developed to provide data required for systemwide monitoring. In order to collect and process the flow data needed in support of the water conservation verification activities for the IID/Metropolitan Water Conservation Agreement projects, an automated data collection, quality control, processing and retrieval system was developed under the Metropolitan Funded Imperial Irrigation District Water Conservation Program. The system was designed to include many of the control sites for the various projects as well as the sites needed for systemwide monitoring. In December 1995, data processing procedures developed by the Conservation Verification Consultants were institutionalized and incorporated into IID's Water Information System.

Since January 1, 1996, conservation verification data have been processed and stored using Water Information System applications and capabilities. IID data collected prior to January 1, 1996, which were processed by the Conservation Verification Consultants for use in determining annual projected water conservation savings over the life of the program, were also stored in the Water Information System. The Water Information System management system has been developed to generate daily, monthly, calendar year, and water year tables, summary tables and bar charts that have been presented in the past in an annual Processed Flow Data document and an annual Projected Water Conservation Savings report.

IID reduces its net diversions at Imperial Dam as specified in the May 14, 2007 second amendment to the Conservation Agreement. IID's reduction in net diversions at Imperial Dam permits the Secretary of the Interior to deliver water made available for Metropolitan and to verify creation of Extraordinary Conservation ICS.

Project Description--Metropolitan Funded Water Supply from Desalination

Metropolitan provided financial support to its member agencies to implement ten groundwater desalination projects in its service area in 2012. Metropolitan has entered into agreements to pay for water produced by each individual project for multi-year terms. Metropolitan contributions are based on a sliding scale up to $250 per acre-foot. To receive a contribution, project unit costs must exceed a unit rate established by Metropolitan, which was $817 per acre-foot for calendar year 2012.

In order to determine the appropriate Metropolitan contribution, agencies submit to Metropolitan annual project costs and production data at the conclusion of each fiscal year of operation. Metropolitan verifies the amount of desalted water production and associated project unit cost

through an annual reconciliation process. In addition, Metropolitan periodically conducts an audit of agencies' records pertaining to desalted water production and costs.

Term of the Activity--Metropolitan Funded Water Supply from Desalination

The 20-year agreement between Metropolitan and the City of Beverly Hills for the Beverly Hills Desalter terminates at the end of April 2023. The 20-year agreement between Metropolitan, the Municipal Water District of Orange County and South Coast Water District for the Capistrano Beach Desalter will terminate on June 30, 2026.

For the Chino Basin Desalter No. 1, the 20-year agreement among Metropolitan, Inland Empire Utilities Agency, and Western Municipal Water District terminates at the end of September 2020. For the Chino Basin Desalter No. 2, the 25-year agreement among Metropolitan, Inland Empire Utilities Agency, the Chino Desalter Authority, and Western Municipal Water District terminates at the end of July 2032.

The 20-year agreement between Metropolitan, Municipal Water District of Orange County, Orange County Water District and the Irvine Ranch Water District for the Irvine Desalter will terminate at the end of August 2027. The 20-year agreement between Metropolitan and the City of Torrance for the Madrona Desalination Facility terminates at the end of June 2022.

The 20-year agreement between Metropolitan and Eastern Municipal Water District for the Menifee Desalter terminates at the end of November 2022. The 20-year agreement between Metropolitan and the Municipal Water District of Orange County for the San Juan Basin Desalter terminates at the end of December 2024.

The 20-year agreement between Metropolitan and Western Municipal Water District for the Temescal Basin Desalter terminates at the end of July 2021. The 20-year agreement between Metropolitan and the Municipal Water District of Orange County for the Tustin Desalter terminates at the end of August 2016. The 20-year agreement between Metropolitan and West Basin Municipal Water District for the West Basin Desalter terminates at the end of May 2013.

Summary of Results for Calendar Year 2012--Metropolitan Funded Water Supply from Desalination

The total volume of Extraordinary Conservation ICS that Metropolitan created in calendar year 2012 from the Metropolitan Funded Water Supply from Desalination under the *Interim Guidelines* was 12,338 acre-feet, prior to the one-time deduction of 5 percent specified in the *Guidelines* to result in additional system water in storage in Lake Mead. This volume, in conjunction with the 73,662 acre-feet of Extraordinary Conservation ICS that Metropolitan created from the Metropolitan Funded Palo Verde Forbearance and Fallowing Program and the 93,677 acre-feet of Extraordinary Conservation ICS that Metropolitan created from the Metropolitan Funded Imperial Irrigation District Water Conservation Program, is within the 200,000 acre-feet outlined in the Reclamation approved ICS Plan. The actual 2012 yield from the desalination projects in its service area for which Metropolitan provided financial support is shown in Table 1 and exceeded the amount of Extraordinary Conservation ICS created.

Table 1 Metropolitan Funded Water Supply from Desalination	
Project	**Actual 2012 Yield** (acre-feet)
Beverly Hills Desalter	721
Capistrano Beach Desalter	913
Chino Basin Desalination Program	13,383
Irvine Desalter	2,282
Madrona Desalination Facility	1,427
Menifee Desalter	2,998
San Juan Basin Desalter	3,208
Temescal Basin Desalter	8,762
Tustin Desalter	698
West Basin Desalter	735
Total	35,127

Metropolitan's reconciliation summaries containing the most recent information available, verifying the amount of desalted water production and associated project unit costs are contained in Appendix E. Additional information will be provided once it becomes available.

Extraordinary Conservation through Desalination Programs in which the Desalinated Water is Used in Lieu of Mainstream Colorado River Water

By continuing to fund extraordinary conservation through desalination programs in which the desalinated water is used in lieu of Mainstream water, Colorado River water was successfully conserved in calendar year 2012 that remained in Lake Mead for Extraordinary Conservation ICS credits. The section below describes the conservation of the water.

The Beverly Hills Desalter includes a treatment plant, extraction wells, a collection pipeline, a booster pump, a product water pipeline to connect to Beverly Hills' water distribution system, and a concentrate waste disposal pipeline. The project pumped and treated brackish groundwater from the Hollywood Basin in 2012. Concentrate was discharged to the sanitary sewer system through which it was conveyed to the City of Los Angeles' Hyperion Wastewater Treatment Plant.

The Capistrano Beach Desalter includes a treatment plant, extraction wells, a collection pipeline, a booster pump, a product water pipeline to connect to South Coast Water District's water distribution system, and a concentrate waste disposal pipeline. The project pumped and treated brackish groundwater from the San Juan Basin in 2012. Concentrate was discharged to the Chiquita Ocean Outfall.

The Chino Basin Desalter No. 1 treated groundwater containing high concentrations of total dissolved solids and nitrates, and conveyed product water to the cities of Chino, Chino Hills, and Norco and Jurupa Community Services District in 2012. Groundwater was pumped from 14

wells throughout the Chino Basin area to the Desalter, where reverse osmosis was utilized. The project includes a pipeline and structures connecting existing Jurupa and City of Ontario water systems, a three-million gallon reservoir, and two booster pumping stations. Brine is transported by a regional brine line and subsequently discharged to the ocean. The Chino Basin Desalter No. 1 has been expanded to 14.2 million gallons per day by including an ion exchange treatment system and product water is conveyed to the City of Ontario as well.

The Chino Basin Desalter No. 2 served water to Jurupa, Ontario, Norco and the Santa Ana River Water Company in 2012. Groundwater from eight wells in the Mira Loma area was treated by reverse osmosis (six million gallons per day) and ion exchange (four million gallons per day) treatment systems. The project includes pipelines to convey degraded water to the desalting facilities, pipelines to convey treated water to the existing potable systems, a three-million gallon clearwell, a five-million gallon storage reservoir, and three booster pumping stations.

The Irvine Desalter includes a seven million gallon per day reverse osmosis desalination system, nine wells, yard piping, and brine disposal piping. Treatment facilities consist of threshold inhibitor and acid injection systems, cartridge filters, booster pumps, reverse osmosis membrane units, decarbonation facilities, chlorine disinfection, and an on-site storage reservoir. Brackish water was pumped from the Orange County Basin in 2012. Product water was delivered to the Irvine Ranch Water District's service area. Brine was discharged at the County Sanitation Districts of Orange County facility in Fountain Valley.

The Madrona Desalination Facility includes two wells and treatment of water from the West Coast Basin by reverse osmosis. Product water was conveyed in 2012 to the City of Torrance's distribution system by booster pump. Concentrate was discharged to the ocean.

The Menifee Desalter treats brackish water from five wells in the Perris and Menifee Subbasins through reverse osmosis. Product water was pumped into Eastern Municipal Water District's potable distribution system in 2012. Concentrate was disposed through the Temescal Valley and Santa Ana regional interceptors to the ocean.

The San Juan Basin Desalter consists of five wells, a four million gallon per day reverse osmosis treatment plant, pretreatment to remove iron and manganese, a pump station, a product water pipeline, and a concentrate disposal pipeline. Brackish water was pumped from the Lower San Juan Basin in 2012. Product water was delivered to the Capistrano Valley Water District. Concentrate was conveyed to the ocean through the Chiquita Land Outfall and the Serra Ocean Outfall.

The Temescal Basin Desalter includes wells, reverse osmosis treatment, transmission, product water, and brine disposal pipelines. Brackish water was pumped from the Temescal Subbasin in 2012. Product water was delivered to the City of Corona. Brine was discharged to the ocean through the Santa Ana Regional Interceptor.

The Tustin Desalter includes wells, a two million gallon per day reverse osmosis desalination plant, and pipeline. Brackish water was pumped from the Orange County Basin in 2012.

Product water was delivered to the City of Tustin. Brine was conveyed to the County Sanitation Districts of Orange County wastewater treatment facilities via a sewer.

The West Basin Desalter includes a 1.5 million gallon per day reverse osmosis desalination system, yard piping, and brine disposal piping. Treatment facilities consist of threshold inhibitor and acid injection systems, cartridge filters, booster pumps, reverse osmosis membrane units, decarbonation facilities, chlorine disinfection, and an on-site storage reservoir. Brackish water was pumped from the West Coast Basin in 2012. Product water was delivered to the California Water Service Company. Brine was disposed and conveyed to the Los Angeles County Sanitation District's Carson Industrial Wastewater Treatment Plant.

Conclusion--Metropolitan Funded PVID Forbearance and Fallowing Program, Metropolitan Funded IID Water Conservation Program, and Metropolitan Funded Water Supply from Desalination

Appendix C and Metropolitan's ICS Plan of Creation serve as the basis for determining the amount of Extraordinary Conservation ICS that can be created from the Metropolitan Funded PVID Forbearance and Fallowing Program in 2012. The Actual Use Method described in Appendix C is deemed the method most reflective of the agronomic, weather, and market conditions prevailing in the Palo Verde Valley during calendar year 2012. As such, the best estimate of the amount of water saved during calendar year 2012 by the Program that Existed on January 1, 2006 is 73,662 acre-feet. Metropolitan created 73,662 acre-feet of Extraordinary Conservation ICS as shown in Table 2, prior to the one-time deduction of 5 percent specified in the *Interim Guidelines* to result in additional system water in storage in Lake Mead.

The table "2012 IID Water Use" on page 2 of Appendix 1 of the *2012 Annual Report of Imperial Irrigation District Pursuant to SWRCB Revised Order WRO 2002-013,* and Metropolitan's ICS Plan of Creation serve as the basis for determining the amount of Extraordinary Conservation ICS that can be created from the Metropolitan Funded Imperial Irrigation District Water Conservation Program in 2012. Of the 104,140 acre-feet of water conserved by the Metropolitan Funded Imperial Irrigation District Water Conservation Program in calendar year 2012, 10,463 acre-feet was used by CVWD. Metropolitan created 93,677 acre-feet of Extraordinary Conservation ICS with the remaining amount as shown in Table 2, prior to the one-time deduction of 5 percent specified in the *Interim Guidelines* to result in additional system water in storage in Lake Mead.

Table 1, Metropolitan's ICS Plan of Creation, the actual Metropolitan consumptive use shown on page 13 of Reclamation's *Colorado River Accounting and Water Use Report, Arizona, California, and Nevada, Calendar Year 2012,* and Table 2 water budget items shown on pages 35, 37, and 39 of that report serve as the basis for determining the amount of Extraordinary Conservation ICS that can be created from the Metropolitan Funded Water Supply from Desalination in 2012. Metropolitan created 12,338 acre-feet of Extraordinary Conservation ICS, the total amount of Extraordinary Conservation ICS Created as shown in Table 2 less the amount of Extraordinary Conservation ICS created from the Metropolitan Funded PVID Forbearance and Fallowing Program and the Metropolitan Funded IID Water Conservation Program.

Table 2 Metropolitan Creation of Extraordinary Conservation ICS in 2012	
Water Budget Item	**Amount** (acre-feet)
Priority 4	550,000
IID-Metropolitan Water Conservation Program	93,677
Coachella Canal Lining Project (Metropolitan Exchange with SDCWA)	23,939
Coachella Canal Lining Project (2003 Allocation Agreement)	4,500
All-American Canal Lining Project (Metropolitan Exchange with SDCWA)	56,200
All-American Canal Lining Project (2003 Allocation Agreement)	11,500
IID Transfer to SDCWA (Metropolitan Exchange with SDCWA)	106,722
Priority 1, 2, and 3b Use Below 420,000 Acre-feet (Amount Influenced by Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program)	4,329
Miscellaneous and Indian Present Perfected Rights Use	-1,163
Lower Colorado Water Supply Project	3,253
Total Supply Available for Consumptive Use	915,796
Actual Metropolitan Consumptive Use	-736,119
Creation of Extraordinary Conservation ICS	179,677
Metropolitan Funded PVID Forbearance and Fallowing Program	73,662
Metropolitan Funded IID Water Conservation Program	93,677
Metropolitan Funded Water Supply from Desalination	12,338

The amount of Extraordinary Conservation ICS created in 2012 is less than the annual amount of Extraordinary Conservation ICS that can be created by Metropolitan under the December 13, 2007, *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus*. The amount of Extraordinary Conservation ICS created in 2012, when added to the amount of Extraordinary Conservation ICS available to Metropolitan as of December 31, 2011, is less than the total amount of Extraordinary Conservation ICS which may be accumulated by Metropolitan under the December 13, 2007, *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus*.

As limited by Exhibits G, H, and M of the *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement,* Metropolitan did not consumptively use the 179,677 acre-feet of Extraordinary Conservation ICS created through the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, the Metropolitan Funded Imperial Irrigation District Water Conservation Program, and the Metropolitan Funded Water Supply from Desalination. Absent the creation of Extraordinary Conservation ICS, the 179,677 acre-feet would have been beneficially used by Metropolitan. The amount of Extraordinary Conservation ICS that Metropolitan created in 2012 was limited to the amount of Colorado River

water that, when added to its consumptive use, did not result in an inadvertent overrun pursuant to the October 10, 2003 *Inadvertent Overrun and Payback Policy* as shown in Table 1. The total amount of Extraordinary Conservation ICS created by the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, the Metropolitan Funded Imperial Irrigation District Water Conservation Program, and the Metropolitan Funded Water Supply from Desalination was less than the amount of water that could have been delivered for beneficial use from the Colorado River Aqueduct. The amount of Extraordinary Conservation ICS created by the Metropolitan Funded Imperial Irrigation District Water Conservation Program (93,677 acre-feet) was less than the IID reduction shown in column 4 of Exhibit B to the October 10, 2003 *Colorado River Water Delivery Agreement* (110,000 acre-feet), less the portion of that reduction (10,463 acre-feet) that results in delivery of water to CVWD. Thus, Metropolitan has:

- satisfied all of the conditions to create,

- has demonstrated the creation of 73,662 acre-feet of Extraordinary Conservation ICS through the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program in 2012,

- has demonstrated the creation of 93,677 acre-feet of Extraordinary Conservation ICS through the Metropolitan Funded Imperial Irrigation District Water Conservation Program in 2012,

- has demonstrated the creation of 12,338 acre-feet of Extraordinary Conservation ICS through Metropolitan Funded Water Supply from Desalination, and

- has demonstrated that the methods of creation are consistent with Metropolitan's approved ICS Plan, Forbearance agreements, and the *Delivery Agreement*.

Appendix A

Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement
Exhibits G, H, and M

Exhibit G

Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program

Type: "2.1 D. Extraordinary conservation programs that existed on January 1, 2006."

Under the August 18, 2004 Forbearance and Fallowing Program Agreement with Palo Verde Irrigation District (PVID) and landowner agreements for fallowing in PVID, The Metropolitan Water District of Southern California (Metropolitan) pays landowners within the Palo Verde Valley to annually fallow a portion of their land, foregoing the planting and irrigation of crops, allowing PVID to forbear use of water, increasing the amount of water available to Metropolitan. The volume of water that becomes available to Metropolitan is governed by the October 10, 2003 Quantification Settlement Agreement[1] and the October 10, 2003 Colorado River Water Delivery Agreement[2]. Under these agreements:

- Metropolitan must reduce its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is greater than 420,000 acre-feet in a calendar year, or

- Metropolitan may increase its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is less than 420,000 acre-feet in a calendar year.

In both cases, each acre-foot of reduced consumptive use by PVID is an additional acre-foot that becomes available to Metropolitan.

Palo Verde Valley landowners decided whether to participate in the 35-year program and those participating stop irrigating from 9 to 35 percent of their land in any year at Metropolitan's request. Upon one-year notice, Metropolitan has the option to change the percentage of land fallowed, with an increase in the percentage effective for a two-year period. The land taken out of agricultural production is maintained and rotated once every one to five years. The maximum amount of farmland taken out of production in any 10 years is 25,947 acres. No more than 23,508 acres is to be fallowed in any 25 years. The landowner is responsible for payment of taxes, PVID water tolls, vegetation abatement, dust control and all other costs related to the fallowed lands. A history of farming is required for fields to be fallowed. Parcels to be fallowed must be at least 5 acres.

Water saved could range from about 29,000 acre-feet per year to about 118,000 acre-feet per year depending on Metropolitan's option on the number of acres fallowed, assuming 4.54 acre-feet is saved per acre fallowed (the estimated average annual Palo Verde Valley irrigation use from 1988-2002 excluding the years of 1992-94 in which fallowing occurred). Through October 2007, Metropolitan has paid $112.6 million in program costs. Absent the creation of

[1] The parties to the Quantification Settlement Agreement are Imperial Irrigation District (IID), Coachella Valley Water District (CVWD), and Metropolitan.

[2] The parties to the Colorado River Water Delivery Agreement are the United States, IID, CVWD, Metropolitan, and San Diego County Water Authority.

Extraordinary Conservation Intentionally Created Surplus (EC ICS), such water would have otherwise been beneficially used.

Verification: Upon designation of fallowed acreage, a Metropolitan representative visits the field on the date when fallowing is to commence and verifies that fallowing conditions had been met. The same procedure is followed when program participants make changes in the area and/or location of fallowed lands.

In addition to field verification by Metropolitan, the Bureau of Reclamation (Reclamation) conducts an independent verification with its own staff, selecting 5 percent of the fallowed land for inspection. An on-site inspection is made of all selected fields to observe fallowing conditions and take photographs. A report is then prepared that contains field observations and relevant photographs of fallowing conditions in PVID.

Total Amount of ICS Credited Annually: The amount of EC ICS that can be created during any Year is limited to the amount of water resulting from the program that Metropolitan does not consumptively use, for example, up to 118,000 acre-feet assuming 4.54 acre-feet is saved per acre fallowed. Annual consumptive use by PVID varies from Year to Year due to a number of factors including weather (temperature and precipitation) and agricultural markets. As consumptive use varies from Year-to-Year, the volume of water saved from not irrigating an acre of land in the Palo Verde Valley also varies from Year-to-Year. Following each Year, PVID, Metropolitan, and the Bureau of Reclamation examine consumptive use on those lands within the Palo Verde Valley that were irrigated and estimate the volume of water saved due to the fallowing of lands pursuant to the program. The agencies issue a joint report documenting the volume of water saved during the Year as a direct result of the program. This annual report would serve as the basis for determining the amount of Extraordinary Conservation ICS that can be created by Metropolitan. The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS dated December 13, 2007:

Limitations on Creation of EC ICS

a) The amount of EC ICS that Metropolitan may create in any Year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that could have been delivered for beneficial use from the Colorado River Aqueduct.

In Witness of this Exhibit G to the Forbearance Agreement executed contemporaneously herewith, the Parties affix their official signatures below, acknowledging approval of this document on the 13th day of December, 2007.

Approved as to form:

By: _____
W. Patrick Schiffer
Chief Counsel

THE STATE OF ARIZONA acting through the ARIZONA DEPARTMENT OF WATER RESOURCES

By: _____
Herbert Guenther
Director

Attest:

By: _____
Edward W. Smith
General Manager

PALO VERDE IRRIGATION DISTRICT

By: _____
Charles VanDyke
Chair

Attest and Approved:

By: _____
John Penn Carter
Legal Counsel

IMPERIAL IRRIGATION DISTRICT

By: _____
Stella Altamirano-Mendoza
President

Approved as to form:

By: _____
Robert Hargreaves
City Attorney

THE CITY OF NEEDLES

By: _____
Jeff Williams
Mayor

Approved as to form:

By: _____
Steven B. Abbott
Legal Counsel

COACHELLA VALLEY WATER DISTRICT

By: _____
Steven B. Robbins
General Manager/Chief Engineer

Approved as to form:

By: _____
Karen L. Tachiki
General Counsel

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: _____
Jeffrey Kightlinger
General Manager

Approved as to form:

By: _____
John J. Entsminger
Deputy General Counsel

SOUTHERN NEVADA WATER AUTHORITY

By: _____
Patricia Mulroy
General Manager

Approved as to form:

By: _____
Jennifer T. Crandell
Deputy Attorney General

COLORADO RIVER COMMISSION OF NEVADA

By: _____
George M. Caan
Executive Director

Exhibit H

Metropolitan Funded Imperial Irrigation District Water Conservation Program

Type: "2.1 D. Extraordinary conservation programs that existed on January 1, 2006."

Under the December 22, 1988 Conservation Agreement as amended and the December 19, 1989 Approval Agreement as amended, The Metropolitan Water District of Southern California (Metropolitan) has funded water efficiency improvements within the Imperial Irrigation District's (IID) service area in return for IID's agreement to not use an amount of water equal to the amount conserved by the program.

The program implemented structural and non-structural measures, including the concrete lining of 13 miles of existing main canals and 200 miles of lateral canals, construction of two local reservoirs and three spill-interceptor canals with four reservoirs, installation of 14 non-leak gates, and automation of the distribution system. Other implemented projects include the delivery of water to farmers on a 12-hour basis and improvements in on-farm water management through the installation of drip irrigation systems and 24 currently operating tailwater pumpback systems.

In 2007, 105,000 acre-feet per Year is being conserved and IID is reducing its use by that amount. Through August 2007, Metropolitan has paid IID $222 million for program costs. Absent the creation of Extraordinary Conservation Intentionally Created Surplus (ICS), such water would have otherwise been beneficially used.

Verification: Through 2006, the Conservation Verification Consultants prepared and presented to the Water Conservation Measurement Committee an annual report on the estimated amount of water conserved by the program and each project thereof. A Systemwide Monitoring Program was developed to identify and explain trends in IID system performance as a function of the operational environment within which the IID/Metropolitan conservation projects operated. The Systemwide Monitoring Program was designed to function over the life of the IID/Metropolitan program to:

- Identify changes in on-farm irrigation practices.
- Identify changes in main and lateral canal operations and zanjero accounting procedures.
- Provide data support for the five-year verification updates.
- Provide a basis for separating water savings associated with IID/Metropolitan-sponsored conservation projects from water savings associated with measures implemented by others. In this case, the Systemwide Monitoring Program provides valuable baseline data for separating the effects of a new program from those attributable to the IID/Metropolitan program.
- Fulfill the requirement for overall verification specified in the December 19, 1989 Approval Agreement.

Forty sites were selected and developed to provide data required for systemwide monitoring.

In order to collect and process the flow data needed in support of the water conservation verification activities for the IID/Metropolitan Water Conservation Agreement projects, an automated data collection, quality control, processing and retrieval system was developed under the IID/Metropolitan program. The system was designed to include many of the control sites for the various projects as well as the sites needed for systemwide monitoring. In December 1995, data processing procedures developed by the Conservation Verification Consultants were institutionalized and incorporated into IID's Water Information System.

Since January 1, 1996, conservation verification data have been processed and stored using Water Information System applications and capabilities. IID data collected prior to January 1, 1996, which were processed by the Conservation Verification Consultants for use in determining annual projected water conservation savings over the life of the program, were also stored in the Water Information System. The Water Information System management system has been developed to generate daily, monthly, calendar year, and water year tables, summary tables and bar charts that have been presented in an annual Processed Flow Data document and an annual Projected Water Conservation Savings report.

IID reduces its net diversions at Imperial Dam by 105,000 acre-feet annually as specified in the May 14, 2007 second amendment to the Conservation Agreement. IID's reduction in net diversions at Imperial Dam permits the Secretary of the Interior to deliver water made available for Metropolitan.

Total Amount of ICS Credited Annually: The amount of EC ICS that can be created during any Year is limited to the amount of water resulting from the program that Metropolitan does not consumptively use, up to 105,000 acre-feet, plus any reduction in calculated IID conveyance losses as a result of IID conveying less water through its conveyance and distribution system due to the conservation of water from this program. The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS dated December 13, 2007:

Limitations on Creation of EC ICS

a) The amount of EC ICS that Metropolitan may create in any Year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that could have been delivered for beneficial use from the Colorado River Aqueduct.
c) The amount of EC ICS created pursuant to this Exhibit is limited to the IID reduction shown in column 4 of Exhibit B to the October 10, 2003 Colorado River Water Delivery Agreement, less any portion of that reduction that results in delivery of water to Coachella Valley Water District.

In Witness of this Exhibit H to the Forbearance Agreement executed contemporaneously herewith, the Parties affix their official signatures below, acknowledging approval of this document on the 13th day of December, 2007.

Approved as to form:

By: _____
W. Patrick Schiffer
Chief Counsel

THE STATE OF ARIZONA acting through the ARIZONA DEPARTMENT OF WATER RESOURCES

By: _____
Herbert Guenther
Director

Attest:

By: _____
Edward W. Smith
General Manager

PALO VERDE IRRIGATION DISTRICT

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Charles VanDyke
Chair

Attest and Approved:

By: _____
John Penn Carter
Legal Counsel

IMPERIAL IRRIGATION DISTRICT

By: _____
Stella Altamirano-Mendoza
President

Approved as to form:

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Robert Hargreaves
City Attorney

THE CITY OF NEEDLES

By: _____
Jeff Williams
Mayor

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Steven B. Abbott
Legal Counsel

COACHELLA VALLEY WATER DISTRICT

By: _____
Steven B. Robbins
General Manager/Chief Engineer

Approved as to form:

By: _____
Karen L. Tachiki
General Counsel

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: _____
Jeffrey Kightlinger
General Manager

Approved as to form:

By: _____
John J. Entsminger
Deputy General Counsel

SOUTHERN NEVADA WATER AUTHORITY

By: _____
Patricia Mulroy
General Manager

Approved as to form:

By: _____
Jennifer T. Crandell
Deputy Attorney General

COLORADO RIVER COMMISSION OF NEVADA

By: _____
George M. Caan
Executive Director

Exhibit M

Metropolitan Funded Water Supply from Desalination

Type: "2.1 C. Desalination programs in which the desalinated water is used in lieu of Mainstream water."

The Metropolitan Water District of Southern California (Metropolitan) provides financial support to its member agencies to implement desalination projects in its service area. These projects to desalt water in Metropolitan's service area are:

Arlington Desalter-The Arlington Desalter includes extraction wells, pumps and piping, desalter modules, granular activated carbon filters and brine disposal facilities. The project extracts, and desalts non-potable groundwater from the Arlington Basin. Product water is then distributed for general municipal, domestic, and industrial purposes. Concentrate is disposed to the ocean through the Santa Ana Regional Interceptor line. In fiscal year 2003/04, the Project commenced production of potable water, which was purchased by the City of Norco.

Beverly Hills Desalter-The Beverly Hills Desalter includes a treatment plant, extraction wells, a collection pipeline, a booster pump, a product water pipeline to connect to Beverly Hills' water distribution system, and a concentrate waste disposal pipeline. The project pumps and treats brackish groundwater from the Hollywood Basin. Concentrate is discharged to the sanitary sewer system through which it is conveyed to the City of Los Angeles' Hyperion Wastewater Treatment Plant.

Chino Basin Desalter No. 1 and No. 2-The Chino Basin Desalter No. 1 treats groundwater containing high concentrations of total dissolved solids and nitrates, and conveys product water to the cities of Chino, Chino Hills, and Norco and Jurupa Community Services District. Groundwater is pumped from 14 wells throughout the Chino Basin area to the Desalter, where reverse osmosis is utilized. The project includes a pipeline and structures connecting existing Jurupa and City of Ontario water systems. Brine is transported by a regional brine line and subsequently discharged to the ocean. The Chino Basin Desalter No. 1 has been expanded to 14.2 million gallons per day by including an ion exchange treatment system and product water is conveyed to the City of Ontario as well. The Chino Basin Desalter No. 2 serves water to Jurupa, Ontario, Norco and the Santa Ana River Water Company. Groundwater from eight wells in the Mira Loma area is treated by reverse osmosis (6 million gallons per day) and ion exchange (4 million gallons per day) treatment systems.

Long Beach Pilot Project-The City of Long Beach intends to develop a 10,000 acre-foot per year seawater desalination facility consisting of a seawater intake, pretreatment, membrane desalination, post-treatment, and a brine disposal system. Long Beach is researching an under ocean floor seawater intake, pretreatment and discharge system. With the under-ocean-floor seawater intake and discharge method, collector screens will be extended horizontally out into the ocean below the beach floor. Long Beach has also developed a proprietary technology for desalination using a two-pass nanofiltration system. Treated water would be distributed into the

distribution system through new treated water pipelines. Project water would be used in Long Beach.

Los Angeles Pilot Project-The City of Los Angeles Department of Water and Power is proposing implementation of a pilot project to assist in evaluating the technical, environmental, institutional, and economical merits of desalinating seawater within its service area. The proposed pilot project at the Scattergood Generating Station is aimed at collecting the needed information from which LADWP can make an informed decision.

Lower Sweetwater Desalter-The Lower Sweetwater Desalter includes wells, replenishment facilities, a treatment plant, neutralization plant, brine disposal, and pipelines. The treatment plant employs reverse osmosis and blending to desalt brackish water. Product water is pumped to the Sweetwater Authority's distribution system for use by National City and South Bay Irrigation District. Concentrate is discharged to San Diego Bay through the Upper Paradise Creek flood control channel.

Madrona Desalination Facility-The Madrona Desalination Facility includes two wells and treatment of water from the West Coast Basin by reverse osmosis. Product water is conveyed to the City of Torrance's distribution system by booster pump. Concentrate is discharged to the ocean.

Menifee Desalter-The Menifee Desalter treats brackish water from five wells in the Perris and Menifee Subbasins through reverse osmosis. Product water is pumped into Eastern Municipal Water District's potable distribution system. Concentrate is disposed through the Temescal Valley and Santa Ana regional interceptors to the ocean.

Municipal Water District of Orange County Pilot Project-The Municipal Water District of Orange County intends to develop a 25 million gallon per day seawater desalination facility in Dana Point. The subsurface feedwater supply intake system will be situated within Doheny State Beach and the desalination plant will be located a short distance inland just east of San Juan Creek. The project consists of a subsurface slant well intake system, pretreatment, membrane desalination, post-treatment, power supply, brine conditioning (if needed) and disposal, and a pumping station connection to the regional distribution system to serve customers in south Orange County.

Oceanside Desalter (Mission Basin Expansion)-The Oceanside Desalter (Mission Basin Expansion) includes three wells, a cartridge filtration facility, and water conveyance facilities. Brackish water is pumped from the Mission Basin. Product water is delivered to the City of Oceanside. Concentrate is disposed into the ocean.

San Diego Full Scale Project-Poseidon Resources (Channelside) LLC (Poseidon) plans to construct and operate an approximately 50 million gallon per day Carlsbad Seawater Desalination Plant to produce potable water through reverse osmosis. Associated facilities include an intake pump station and pipeline, concentrate return pipeline, sewer connection, solids handling building, electrical transmission lines, and product water pipeline. From the Desalination Plant, desalinated water would be distributed along several pipeline routes (some

proposed, some planned and some existing) to the City of Carlsbad and various local water districts as wholesale water purchasers for ultimate use in Northern San Diego County. Source water for the project will come from once-through-flow seawater in the existing cooling water discharge system at the Encina power plant. Concentrate will be conveyed to the power plant cooling water discharge canal, and then the concentrate will be blended with the power plant cooling water prior to discharge of the blended stream into the ocean via the power plant discharge canal.

San Juan Basin Desalter-The San Juan Basin Desalter consists of five wells, a 4 million gallon per day reverse osmosis treatment plant, pretreatment to remove iron and manganese, a pump station, a product water pipeline, and a concentrate disposal pipeline. Brackish water is pumped from the Lower San Juan Basin. Product water is delivered to the Capistrano Valley Water District. Concentrate is conveyed to the ocean through the Chiquita Land Outfall and the Serra Ocean Outfall.

Temescal Basin Desalter-The Temescal Basin Desalter includes wells, reverse osmosis treatment, transmission, product water, and brine disposal pipelines. Brackish water is pumped from the Temescal Subbasin. Product water is delivered to the City of Corona. Brine is discharged to the ocean through the Santa Ana Regional Interceptor.

Tustin Desalter-The Tustin Desalter includes wells, a 2 million gallon per day reverse osmosis desalination plant, and pipeline. Brackish water is pumped from the Orange County Basin. Product water is delivered to the City of Tustin. Brine is conveyed to the County Sanitation Districts of Orange County wastewater treatment facilities via a sewer.

West Basin Desalter-The West Basin Desalter includes a 1.5 million gallon per day reverse osmosis desalination system, yard piping, and brine disposal piping. Treatment facilities consist of threshold inhibitor and acid injection systems, cartridge filters, booster pumps, reverse osmosis membrane units, decarbonation facilities, chlorine disinfection, and an on-site storage reservoir. Brackish water is pumped from the West Coast Basin. Product water is delivered to the California Water Service Company. Brine is disposed and conveyed to the Los Angeles County Sanitation District's Carson Industrial Wastewater Treatment Plant.

West Basin Pilot Project-West Basin Municipal Water District (West Basin MWD) intends to develop a 20 million gallon per day seawater desalination facility within its service area. The project would employ a combination of proven technologies, including microfiltration and reverse osmosis, to reduce salt content levels to at or below that of imported water being delivered to the area. Water would be used by customers of West Basin MWD.

Collectively, over 43,300 acre-feet of desalted water was produced in 2006 in Metropolitan's service area, with financial contributions in 2005 and 2006 by Metropolitan totaling over $16.2 million. To create Extraordinary Conservation Intentionally Created Surplus (EC ICS) as a result of desalting, Metropolitan would reduce its use of Colorado River water in an amount up to the amount of water desalted in its service area.

Verification: On a contractual basis, a participating agency is required to meter and invoice Metropolitan for the amount of desalted water produced and used each month. At the end of each fiscal year, Metropolitan verifies the amount of desalted water production through an annual reconciliation process in which Metropolitan reviews the metered production records and compares it to monthly invoices submitted during the fiscal year. In addition, Metropolitan periodically conducts an audit of agencies' records pertaining to desalted water production.

Total Amount of ICS Credited Annually: The amount of EC ICS that can be created during any Year is limited to the amount of desalted water produced in Metropolitan's service area, for example, 50,000 acre-feet in 2008, provided that Metropolitan reduces its use of Colorado River water from the amount which would otherwise be approved by Reclamation by an equal amount. The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following, and the California Agreement for the Creation and Delivery of EC ICS dated December 13, 2007:

Limitations on Creation of EC ICS

a) The amount of EC ICS that Metropolitan may create in any Year is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the October 10, 2003 Inadvertent Overrun and Payback Policy.
b) The total amount of annual EC ICS created by this program is limited to the amount of water that could have been delivered for beneficial use from the Colorado River Aqueduct.

In Witness of this Exhibit M to the Forbearance Agreement executed contemporaneously herewith, the Parties affix their official signatures below, acknowledging approval of this document on the 13th day of December, 2007.

Approved as to form:

By: W. Patrick Schiffer
Chief Counsel

THE STATE OF ARIZONA acting through the ARIZONA DEPARTMENT OF WATER RESOURCES

By: Herbert Guenther
Director

Attest:

By: _____
Edward W. Smith
General Manager

PALO VERDE IRRIGATION DISTRICT

By: _____
Charles VanDyke
Chair

Attest and Approved:

By: _____
John Penn Carter
Legal Counsel

IMPERIAL IRRIGATION DISTRICT

By: _____
Stella Altamirano-Mendoza
President

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Robert Hargreaves
City Attorney

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Legal Counsel

COACHELLA VALLEY WATER DISTRICT

By: _____
Steven B. Robbins
General Manager/Chief Engineer

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General Counsel

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General Manager

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Deputy General Counsel

SOUTHERN NEVADA WATER AUTHORITY

By: _____
Patricia Mulroy
General Manager

Approved as to form:

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Jennifer T. Crandell
Deputy Attorney General

COLORADO RIVER COMMISSION OF NEVADA

By: _____
George M. Caan
Executive Director

Appendix B

ICS Plan of Creation Submitted to the U.S. Bureau of Reclamation with Letter of Acceptance

The Metropolitan Water District of Southern California

Plan for the Creation of
Extraordinary Conservation Intentionally Created Surplus
During Calendar Year 2012

Introduction

This plan for the creation of Extraordinary Conservation Intentionally Created Surplus (ICS) has been prepared pursuant to the specifications outlined in Section 3.B.1 on page 40 of the *Record of Decision: Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* signed by the Secretary of the Interior (Secretary) on December 13, 2007.

Three separate activities are described in this plan, each of which are incorporated as an exhibit to the December 13, 2007, *Lower Colorado River Basin Intentionally Created Surplus Forbearance Agreement* among the Arizona Department of Water Resources, the Palo Verde Irrigation District, the Imperial Irrigation District, the City of Needles, the Coachella Valley Water District, the Metropolitan Water District of Southern California (Metropolitan), the Southern Nevada Water Authority, and the Colorado River Commission of Nevada.

The projected yields of these extraordinary conservation activities for calendar year 2012 are as follows:

		acre-feet
Activity 1:	Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program	116,000*
Activity 2:	Metropolitan Funded Imperial Irrigation District Water Conservation Program	105,000**
Activity 3:	Metropolitan Funded Water Supply from Desalination	56,300
	Total	277,300

*Amount may be reduced depending upon Metropolitan's fallowing call for the period beginning August 1, 2012.
**Amount may be reduced depending upon Coachella Valley Water District's use of up to 20,000 acre-feet.

From the yields of these extraordinary conservation activities, Metropolitan plans to create a total of 200,000 acre-feet of Extraordinary Conservation ICS during 2012.

Documentation that the ICS Plan of Creation is in Conformance with any State or Agency Agreements regarding ICS

The amount of Extraordinary Conservation ICS that Metropolitan plans to create is within the limits of Extraordinary Conservation ICS that can be created and accumulated in Lake Mead by Metropolitan under the December 13, 2007, *California Agreement for the Creation and Delivery of Extraordinary Conservation Intentionally Created Surplus*. Absent the creation of

Extraordinary Conservation ICS, this water would otherwise be beneficially used by Metropolitan through diversion into the Colorado River Aqueduct. The amount of Extraordinary Conservation ICS that Metropolitan may create is limited to the amount of Colorado River water that, if added to its consumptive use, would not result in an inadvertent overrun pursuant to the Bureau of Reclamation's (Reclamation) October 10, 2003, Inadvertent Overrun and Payback Policy. Reclamation has previously received a copy of the December 13, 2007, Agreement which documents the terms and conditions for the creation and delivery of Extraordinary Conservation ICS by the California water agencies which are parties to the Agreement.

Activity 1: Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program

Project Description

Under the August 18, 2004, *Forbearance and Fallowing Program Agreement* with the Palo Verde Irrigation District (PVID) and landowner agreements for fallowing in PVID, Metropolitan pays landowners within the Palo Verde Valley to annually fallow a portion of their land, foregoing the planting and irrigation of crops, allowing PVID to forbear use of water on lands that historically were and otherwise would be irrigated, increasing the amount of water available to Metropolitan.

The volume of water that becomes available to Metropolitan is governed by the October 10, 2003, *Quantification Settlement Agreement*[1] (QSA) and the October 10, 2003, *Colorado River Water Delivery Agreement*.[2] Under these agreements:

- Metropolitan must reduce its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2[3] that is greater than 420,000 acre-feet in a calendar year, or
- Metropolitan may increase its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is less than 420,000 acre-feet in a calendar year.

In both cases, each acre-foot of reduced consumptive use by PVID is an additional acre-foot that becomes available to Metropolitan.

Palo Verde Valley landowners voluntarily decided in 2004 whether to participate in the 35-year program, with those participants agreeing to stop irrigating from 9 to 35 percent of their land in any year at Metropolitan's request. Upon one-year notice, Metropolitan has the option to change the percentage of land fallowed, with an increase in the percentage effective for a two-year period. The land taken out of agricultural production is maintained and rotated once every one to five years. The maximum amount of farmland taken out of production at any one time is 25,947 acres; however, fallowing in excess of 23,508 acres is limited to a total of ten years under the 35-year program. The landowner is responsible for payment of taxes, PVID water tolls, vegetation abatement, dust control and all other costs related to the fallowed lands. Parcels to be fallowed must be at least 5 acres. Through June 2011, Metropolitan has paid a total of $172 million in Program costs and anticipates paying another $16.8 million in Program costs in September 2011.

[1] The parties to the Quantification Settlement Agreement are Imperial Irrigation District, Coachella Valley Water District, and Metropolitan.
[2] The parties to the Colorado River Water Delivery Agreement are the United States, Imperial Irrigation District, Coachella Valley Water District, Metropolitan, and the San Diego County Water Authority.
[3] The Yuma Project Reservation Division holds California's Priority 2.

Term of the Activity

The Forbearance and Fallowing Program Agreement with PVID terminates on July 31, 2040. Metropolitan has issued a Fallowing Call for 25,947 acres for the period commencing August 1, 2010 through July 31, 2012. Metropolitan will issue a Fallowing Call for the period commencing August 1, 2012 through July 31, 2014 by August 1, 2011.

Estimate of the Amount of Water that Will be Conserved and Description of How it is Estimated

The volume of projected savings during calendar year 2012 is 116,310 acre-feet based on the amount of water used for irrigation in the Palo Verde Valley in 2010. The monthly tabulation of this projected savings is as follows:

Month	Monthly Irrigation Use Fraction*	Number of Acres to be Fallowed	Reduced Consumptive Use (acre-feet)**
January	-0.217130	25,947	-5,634
February	-0.102996	25,947	-2,672
March	0.386872	25,947	10,038
April	0.473307	25,947	12,281
May	0.692521	25,947	17,969
June	0.787393	25,947	20,430
July	0.940505	25,947	24,403
August	0.782556	25,947***	20,305***
September	0.501939	25,947***	13,024***
October	0.156367	25,947***	4,057***
November	0.095415	25,947***	2,476***
December	-0.014151	25,947***	-367***
Total			116,310***

*Monthly fraction of annual use of 4.482598 acre-feet per acre.
**Volumes rounded to the nearest acre-foot.
***Amount may be reduced depending upon fallowing call.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon designation of fallowed acreage, a Metropolitan representative visits the field on the date when fallowing is to commence and verifies that fallowing conditions have been met. The same procedure is followed when program participants make changes in the area or location of fallowed lands.

In addition to field verification by Metropolitan, Reclamation staff plan to conduct an independent verification during the spring and fall of 2012. Similar to past years' practice, Reclamation staff plans to select 5 percent of the acreage fallowed for inspection. On-site inspection would be made of all selected fields to observe fallowing conditions and take photographs. A report would be prepared that confirms extraordinary conservation implementation, and includes field observations and relevant photographs of fallowing conditions in PVID.

A calendar year 2012 Fallowed Land Verification Report will be prepared jointly by PVID, Metropolitan, and Reclamation. The Report will determine the actual amount of water saved in 2012 by the Program.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to the provisions of the California Environmental Quality Act (CEQA), PVID, certified the "Final Environmental Impact Report for the Proposed Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program" and adopted its Findings of Fact on September 18, 2002. Because no significant impacts would result with Program implementation, as determined by PVID, no statement of overriding considerations and no mitigation monitoring or reporting program were required. Metropolitan certified that it reviewed and considered the information in the certified 2002 Final EIR and adopted PVID's findings on October 22, 2002.

Documentation that the Intentionally Created Surplus Is in Addition to Conservation Implemented to Meet Other Obligations

Metropolitan is the beneficiary of the conserved water through the August 18, 2004, *Forbearance and Fallowing Program Agreement* with PVID and landowner agreements for fallowing in PVID. Metropolitan would not transfer the conserved water to another agency, nor would Metropolitan conserve the water for another agency, nor would Metropolitan pay back an Inadvertent Overrun and Payback Policy obligation in 2012 as Metropolitan does not have existing obligations to do so. Reclamation has previously received a copy of the August 18, 2004 Agreement , including its Exhibit A, the form of the *Landowner Agreement for Fallowing in the Palo Verde Irrigation District*, which documents the terms and conditions of the Program.

Total Volume of Water to be Conserved and/or the Time Period for the Conservation Project

The total volume of water to be conserved by the Program is estimated to range from 1.83 million acre-feet to 3.83 million acre-feet over the period January 1, 2005 to July 31, 2040, the date on which the Agreement terminates.

Capital Investment Required to Implement the Project

Metropolitan invested $73.5 million in sign-up payments paid to Palo Verde landowners, $6 million in funding for community improvement programs paid to the Palo Verde Valley Community Improvement Fund, and expended $3.3 million in Program setup costs.

Annual Operation, Maintenance, and Replacement Costs

Annual payments to landowners, Metropolitan tenants, and for administrative costs to PVID through 2010 have been as follows:

Year	Annual Payments to:	
	Landowners and Metropolitan Tenants (million $)	PVID (million $)
2005	21.0	1.0
2006	8.5	0.5
2007	8.7	0.3
2008	15.6	0.1
2009	16.2	0.2
2010	16.6	0.2

Amount of Water Conserved by the Program to Date and Utilization of the Conserved Water to Date to Meet Specific Conservation Requirements Including ICS Creation

Water saved by the Program has assisted in meeting the 2006 and 2009 benchmarks, and the 2005, 2007, 2008, and 2010 targets specified in Exhibit B of the October 10, 2003, *Colorado River Water Delivery Agreement*[4]. The amount of the water saved by the Program to date and the amount of ICS created have been as follows:

Year	Amount of Water Saved (acre-feet)	Amount of ICS Created (acre-feet)
2005	108,666	
2006	102,039*	50,000
2007	65,310**	2,382
2008	94,303	0
2009	120,247***	55,836
2010	116,310****	100,864

* Excludes 3,000 acre-feet of water saved which was provided to Reclamation for system conservation.
** Excludes 7,000 acre-feet of water saved which was provided to Reclamation for system conservation.
*** Excludes 24,078 acre-feet of water saved by the Emergency Fallowing Program.
**** Excludes 32,304 acre-feet of water saved by the Emergency Fallowing Program.

[4] All consumptive use of priorities 1 through 3 plus 14,500 acre-feet of miscellaneous and Indian reservations present perfected rights' use must be within 25,000 acre-feet of the amount stated in Exhibit B.

Time Remaining for the Program and/or the Volume of Water that Remains to be Conserved

The Program is scheduled to end on July 31, 2040. The volume of water that remains to be conserved ranges from a minimum of 1.10 million acre-feet to a maximum of 3.09 million acre-feet over the period January 1, 2012 to July 31, 2040.

Activity 2: Metropolitan Funded Imperial Irrigation District Water Conservation Program

Project Description

Under the December 22, 1988, *Agreement for the Implementation of a Water Conservation Program and Use of Conserved Water* (1988 Conservation Agreement) as amended and the December 19, 1989, *Approval Agreement* (1989 Approval Agreement) as amended, Metropolitan has funded water efficiency improvements within the Imperial Irrigation District's (IID) service area in return for IID's agreement to not use 105,000 acre-feet of water annually.

The program implemented structural and non-structural measures—extraordinary measures to conserve water—including,

- concrete lining of 13 miles of existing main canals and 200 miles of lateral canals,
- construction of two local reservoirs and three spill-interceptor canals with four reservoirs,
- installation of 14 non-leak gates,
- automation of the distribution system,
- delivery of water to farmers on a 12-hour basis,
- improvements in on-farm water management through the installation of drip irrigation systems, and
- installation of tailwater pumpback systems.

Through June 2011, Metropolitan has paid IID a total of $254.9 million for program costs.

Term of the Activity

The term of the 1988 Conservation Agreement as amended and the 1989 Approval Agreement as amended, extends through at least December 31, 2041, or 270 days beyond the termination of the October 10, 2003, *Quantification Settlement Agreement*, whichever is later, with extensions to this term as specified in the agreements.

Estimate of the Amount of Water that Will be Conserved

As specified in the May 14, 2007, second amendment to the 1988 Conservation Agreement, 105,000 acre-feet of water will be made available by the program during calendar year 2012. Of this volume, pursuant to the 1989 Approval Agreement, Metropolitan would reduce its use of this water by up to 20,000 acre-feet to leave that water available for diversion by the Coachella Valley Water District (CVWD) should CVWD request delivery of this water. Exhibit H to the *Lower Colorado River Basin ICS Forbearance Agreement* provides that:

"The amount of EC ICS that can be created during any Year is limited to the amount of water resulting from the program that Metropolitan does not consumptively use, up to

105,000 acre-feet, plus any reduction in calculated IID conveyance losses as a result of IID conveying less water through its conveyance and distribution system due to the conservation of water from this program. The volume of water conserved annually pursuant to this program to be devoted to the creation of EC ICS credits is further limited to the quantities set forth in the following…:

Limitations on Creation of EC 1CS

…

c) The amount of EC ICS created pursuant to this Exhibit is limited to the IID reduction shown in column 4 of Exhibit B to the October 10, 2003 Colorado River Water Delivery Agreement, less any portion of that reduction that results in delivery of water to Coachella Valley Water District."

Proposed Methodology for Verification of the Amount of Water Conserved

IID's reduction in net diversions at Imperial Dam permits the Secretary to deliver water made available for Metropolitan absent the creation of Extraordinary Conservation ICS.

Through 2006, the Conservation Verification Consultants prepared and presented to the Water Conservation Measurement Committee an annual report on the estimated amount of water conserved by the program and each project thereof. A Systemwide Monitoring Program was developed to identify and explain trends in IID system performance as a function of the operational environment within which the IID/Metropolitan conservation projects operated. The Systemwide Monitoring Program was designed to function over the life of the IID/Metropolitan program to:

- Identify changes in on-farm irrigation practices.
- Identify changes in main and lateral canal operations and zanjero accounting procedures.
- Provide data support for the five-year verification updates.
- Provide a basis for separating water savings associated with IID/Metropolitan-sponsored conservation projects from water savings associated with measures implemented by others. In this case, the Systemwide Monitoring Program provides valuable baseline data for separating the effects of a new program from those attributable to the IID/Metropolitan program.
- Fulfill the requirement for overall verification specified in the 1989 Approval Agreement.

Forty sites were selected and developed to provide data required for systemwide monitoring.

In order to collect and process the flow data needed in support of the water conservation verification activities for the 1988 Conservation Agreement projects, an automated data collection, quality control, processing and retrieval system was developed under the IID/Metropolitan program. The system was designed to include many of the control sites for the

various projects as well as the sites needed for systemwide monitoring. In December 1995, data processing procedures developed by the Conservation Verification Consultants were institutionalized and incorporated into IID's Water Information System.

Beginning January 1, 1996, conservation verification data were processed and stored using Water Information System applications and capabilities. IID data collected prior to January 1, 1996, which were processed by the Conservation Verification Consultants for use in determining annual projected water conservation savings over the life of the program, were also stored in the Water Information System. The Water Information System management system was developed to generate daily, monthly, calendar year, and water year tables, summary tables and bar charts that have been presented in an annual Processed Flow Data document and an annual Projected Water Conservation Savings report.

The last published Projected Water Conservation Savings report will be made available to Reclamation upon its request.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Metropolitan's Board of Directors certified on December 22, 1988, that it reviewed and considered the environmental information contained in the final program Environmental Impact Report prepared by IID entitled "Proposed Water Conservation Program and Initial Water Transfer". Reclamation complied with the National Environmental Policy Act through execution of Categorical Exclusion No. LC-89-2 on January 6, 1989, for the "Water Conservation Program, Imperial Irrigation District, Imperial County, California".

Project specific documents completed by IID pursuant to the California Environmental Quality Act are described in the table on the following page.

Project Name	California Environmental Quality Act Documentation
Trifolium Reservoir Project	Negative Declaration filed on August 20, 1986
South Alamo Canal Lining Phase I Project	Categorical Exemption filed on September 11, 1987
South Alamo Canal Lining Phase II Project	Categorical Exemption filed on September 6, 1989
"Z" Reservoir	Initial Environmental Study published in May 1989; Negative Declaration published on September 6, 1989; Addendum to the Negative Declaration filed on November 22, 1989
Lateral Concrete Lining Project, 265 Miles	Environmental Assessment and Initial Study published in January 1990; Categorical Exemption filed on January 26, 1990
Rositas Supply Canal Concrete Lining Project	Environmental Assessment and Initial Study published in June 1990; Categorical Exemption filed on August 15, 1990
Vail Supply Canal Lining Project	Categorical Exemption filed on August 15, 1990
Lateral Interceptor Pilot Project	Initial Environmental Study published in April 1990; Negative Declaration published on May 23, 1990; and an Addendum to the Negative Declaration filed on August 15, 1990
Westside Main Canal Concrete Lining Project	Initial Environmental Study published in June 1990; Negative Declaration filed on October 5, 1990
System Automation Project	Categorical Exemption published in July 1990; Categorical Exemption filed on September 11, 1990
Westside Main Canal Concrete Lining Project	Initial Environmental Study published in June 1990; Negative Declaration filed on October 5, 1990
Non-Leak Gates Project	Categorical Exemption published in August 1990 and filed on September 6, 1990
12-Hour Delivery Project	Categorical Exemption filed on December 21, 1990
Irrigation Water Management Project	IID determined Project to be exempt from the California Environmental Quality Act on August 23, 1991
Modified East Lowline and Trifolium Interceptors, and Completion Projects	Final Environmental Impact Report published in May 1994; on June 8, 1994, IID certified the Final Environmental Impact Report, made a Statement of Findings and adopted a Statement of Overriding Considerations

Documentation that the Intentionally Created Surplus Is in Addition to Conservation Implemented to Meet Other Obligations

Metropolitan is the beneficiary of the water being conserved through the 1988 Conservation Agreement and the 1989 Approval Agreement. While Metropolitan would not transfer the conserved water to another agency, nor would Metropolitan pay back an Inadvertent Overrun and Payback Policy obligation in 2012 as Metropolitan does not have existing obligations to do so, Metropolitan may be requested to reduce its use of the conserved water by up to 20,000 acre-feet in 2012 by CVWD. Reclamation has previously received a copy of the 1988 Conservation Agreement, 1989 Approval Agreement and amendments, which document the terms and conditions of the Program.

Total Volume of Water to be Conserved and/or the Time Period for the Conservation Project

The total volume of water to be conserved by the Program is estimated to range from 5.08 million acre-feet over the period January 1, 1990 to December 31, 2041 to 8.94 million acre-feet over the period January 1, 1990 to September 27, 2078—which would be 270 days after the termination of the QSA, provided that the QSA does not terminate until December 31, 2077. The agreement could extend beyond September 27, 2078 pursuant to Section 3.5 of the 1988 Conservation Agreement, and would continue thereafter until terminated as specified in Section 7.2 or in Article V of the 1988 Conservation Agreement.

Capital Investment Required to Implement the Project

Metropolitan invested $112.5 million in capital and $23 million in indirect payments paid to IID.

Annual Operation, Maintenance, and Replacement Costs

Annual direct payments to IID through June 2011 have been as follows:

Year	(million $)
1990	0.6
1991	1.1
1992	2.3
1993	2.8
1994	1.9
1995	2.8
1996	1.8
1997	6.5
1998	4.8
1999	5.5
2000	5.5
2001	4.4
2002	5.8
2003	6.8
2004	7.9
2005	8.1
2006	8.8
2007	9.0
2008	9.8
2009	8.7
2010	10.1
2011 through June	4.3

Amount of Water Conserved by the Program to Date and Utilization of the Conserved Water to Date to Meet Specific Conservation Requirements Including ICS Creation

Water saved by the Program has assisted in meeting the 2003, 2006 and 2009 benchmarks, and the 2004, 2005, 2007, 2008, and 2010 targets specified in Exhibit B of the October 10, 2003, *Colorado River Water Delivery Agreement*[1]. The amount of the water saved by the Program to date and the amount of ICS created have been as follows:

Year	Amount of Water Conserved (acre-feet)	Amount of ICS Created (acre-feet)
1990	6,110	
1991	26,700	
1992	33,929	
1993	54,830	
1994	72,870	
1995	74,570	
1996	90,880	
1997	97,740	
1998	107,160	
1999	108,500	
2000	109,460	
2001	106,880	
2002	104,940	
2003	105,130	
2004	101,900	
2005	101,940	
2006	101,160	
2007	105,000	0
2008	105,000	0
2009	105,000	0
2010	105,000	0

Time Remaining for the Program and/or the Volume of Water that Remains to be Conserved

The total volume of water to be conserved by the Program is estimated to range from 3.15 million acre-feet over the period January 1, 2012 to December 31, 2041 to 7.01 million acre-feet over the period January 1, 2012 to September 27, 2078—which would be 270 days after the termination of the QSA, provided that the QSA does not terminate until December 31, 2077. The agreement could extend beyond September 27, 2078 pursuant to Section 3.5 of the 1988 Conservation Agreement, and would continue thereafter until terminated as specified in Section 7.2 or in Article V of the 1988 Conservation Agreement.

[1] All consumptive use of priorities 1 through 3 plus 14,500 acre-feet of miscellaneous and Indian reservations present perfected rights' use must be within 25,000 acre-feet of the amount stated in Exhibit B.

Activity 3: Metropolitan Funded Water Supply from Desalination

Metropolitan provides financial support to its member agencies to implement groundwater desalination projects in its service area that are described below.

Metropolitan enters into agreements to pay for water produced by each individual project for multi-year terms. Metropolitan contributions are based on a sliding scale up to $250 per acre-foot. To receive a contribution, project unit costs must exceed a unit rate established by Metropolitan, which is $817 per acre-foot for calendar year 2012. When the project unit cost is less than or equal to this rate, the Metropolitan contribution is zero.

In order to determine the appropriate Metropolitan contribution, agencies are required to submit to Metropolitan annual project costs and production data at the conclusion of each fiscal year of operation. Metropolitan verifies the amount of desalted water production and associated project unit cost through an annual reconciliation process. In addition, Metropolitan periodically conducts an audit of agencies' records pertaining to desalted water production and costs.

The projected yield of these groundwater desalination projects for calendar year 2012 are as follows:

Project	Projected 2012 Yield (acre-feet)
Beverly Hills Desalter	1,300
Capistrano Beach Desalter	600
Chino Basin Desalination Program	24,600
Irvine Desalter	4,300
Lower Sweetwater Desalter	3,200
Madrona Desalination Facility	1,500
Menifee Desalter	2,800
Oceanside Desalter (Mission Basin Expansion)	2,900
San Juan Basin Desalter	2,400
Temescal Basin Desalter	10,000
Tustin Desalter	2,000
West Basin Desalter	700
Total	56,300

Term of the Activity

The 20-year agreement between Metropolitan, Municipal Water District of Orange County and the South Coast Water District will terminate on June 30, 2026.

Estimate of the Amount of Water that Will be Conserved

The Capistrano Beach Desalter is projected to produce 600 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the Capistrano Beach Desalter.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, South Coast Water District approved a Program EIR for the San Juan Capistrano Property and the Project in December 2002. An additional Mitigated Negative Declaration for the project was adopted in 2003.

Chino Basin Desalination Program

Project Description

The Chino Basin Desalter No. 1 treats groundwater containing high concentrations of total dissolved solids and nitrates, and conveys product water to the cities of Chino, Chino Hills, and Norco and Jurupa Community Services District. Groundwater is pumped from 14 wells throughout the Chino Basin area to the Desalter, where reverse osmosis is utilized. The project includes a pipeline and structures connecting existing Jurupa and City of Ontario water systems, a three-million gallon reservoir, and two booster pumping stations. Brine is transported by a regional brine line and subsequently discharged to the ocean. The Chino Basin Desalter No. 1 has been expanded to 14.2 million gallons per day by including an ion exchange treatment system and product water is conveyed to the City of Ontario as well.

The Chino Basin Desalter No. 2 serves water to Jurupa, Ontario, Norco and the Santa Ana River Water Company. Groundwater from eight wells in the Mira Loma area is treated by reverse osmosis (six million gallons per day) and ion exchange (four million gallons per day) treatment systems. The project includes pipelines to convey degraded water to the desalting facilities, pipelines to convey treated water to the existing potable systems, a three-million gallon clearwell, a five-million gallon storage reservoir, and three booster pumping stations.

Term of the Activity

For the Chino Basin Desalter No. 1, the 20-year agreement among Metropolitan, Inland Empire Utilities Agency, and Western Municipal Water District terminates at the end of September 2020.

For the Chino Basin Desalter No. 2, the 25-year agreement among Metropolitan, Inland Empire Utilities Agency, Chino Desalter Authority, and Western Municipal Water District terminates at the end of July 2032.

Estimate of the Amount of Water that Will be Conserved

The Chino Basin Desalination Program is projected to produce 24,600 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for Chino Basin Desalter No. 1 and Chino Basin Desalter No. 2.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, the Santa Ana Watershed Project Authority (SAWPA) prepared three Negative Declarations for the Chino Basin Desalter No. 1. SAWPA signed Notices of Determination for the project on September 16, 1991 (Chino Basin Desalter No. 1), December 30, 1991 (Chino West Desalter), and June 12, 1992 (Chino Basin Desalination System). Mitigation measures were adopted by SAWPA. Metropolitan's Board of Directors certified that it reviewed and considered the Negative Declarations for the project on May 10, 1994.

Metropolitan's Board of Directors determined that the proposed actions, including authorizing the General Manager to execute the Chino Basin Desalter No. 2 agreement, were exempt from CEQA pursuant to Sections 15306 and 15378(b)(4) of the State CEQA Guidelines on June 12, 2007.

Irvine Desalter

Project Description

The Irvine Desalter includes a seven million gallon per day reverse osmosis desalination system, nine wells, yard piping, and brine disposal piping. Treatment facilities consist of threshold inhibitor and acid injection systems, cartridge filters, booster pumps, reverse osmosis membrane units, decarbonation facilities, chlorine disinfection, and an on-site storage reservoir. Brackish

water is pumped from the Orange County Basin. Product water is delivered to the Irvine Ranch Water District's service area. Brine is discharged at the County Sanitation Districts of Orange County (CSDOC) facility in Fountain Valley.

Term of the Activity

The 20-year agreement between Metropolitan, Municipal Water District of Orange County, Orange County Water District (OCWD) and the Irvine Ranch Water District will terminate at the end of August 2027.

Estimate of the Amount of Water that Will be Conserved

The Irvine Desalter is projected to produce 4,300 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the Irvine Desalter.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, OCWD filed a Notice of Preparation of an Environmental Impact Report (EIR) on October 27, 1989. The final EIR was adopted in 1990.

Lower Sweetwater Desalter

Project Description

The Lower Sweetwater Desalter includes wells, replenishment facilities, a treatment plant, neutralization plant, brine disposal, and pipelines. The treatment plant employs reverse osmosis and blending to desalt brackish water. Product water is pumped to the Sweetwater Authority's distribution system for use by National City and South Bay Irrigation District. Concentrate is discharged to San Diego Bay through the Upper Paradise Creek flood control channel.

Term of the Activity

The 20-year agreement between Metropolitan and the San Diego County Water Authority terminates at the end of January 2020.

Estimate of the Amount of Water that Will be Conserved

The Lower Sweetwater Desalter is projected to produce 3,200 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the Lower Sweetwater Desalter.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, the Sweetwater Authority prepared and certified an EIR for the Lower Sweetwater Desalter. Mitigation measures were made a condition of approval of the project by the Sweetwater Authority. A Notice of Determination for the project was filed on May 23, 1996. Metropolitan's Board of Directors certified that it reviewed and considered the EIR for the project on July 9, 1996.

Madrona Desalination Facility

Project Description

The Madrona Desalination Facility includes two wells and treatment of water from the West Coast Basin by reverse osmosis. Product water is conveyed to the City of Torrance's distribution system by booster pump. Concentrate is discharged to the ocean.

Term of the Activity

The 20-year agreement between Metropolitan and the City of Torrance terminates at the end of June 2022.

Estimate of the Amount of Water that Will be Conserved

The Madrona Desalination Facility is projected to produce 1,500 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the Madrona Desalination Facility.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, the Water Replenishment District of Southern California (WRD) prepared and approved a Mitigated Negative Declaration for the Madrona Desalination Facility. Metropolitan's Board of Directors certified that it reviewed and considered the Initial Findings

and Mitigated Negative Declaration for the project and adopted the WRD finding related to the project on October 13, 1998.

Menifee Desalter

Project Description

The Menifee Desalter treats brackish water from five wells in the Perris and Menifee Subbasins through reverse osmosis. Product water is pumped into Eastern Municipal Water District's potable distribution system. Concentrate is disposed through the Temescal Valley and Santa Ana regional interceptors to the ocean.

Term of the Activity

The 20-year agreement between Metropolitan and Eastern Municipal Water District terminates at the end of November 2022.

Estimate of the Amount of Water that Will be Conserved

The Menifee Desalter is projected to produce 2,800 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the Menifee Desalter.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, the Eastern Municipal Water District prepared an EIR for the Menifee Desalter. On February 9, 1993, Metropolitan's Board of Directors certified that it considered the environmental effects of the Menifee Basin Desalter as shown in the EIR prior to making a decision on the project and found that the mitigation measures for the project were within the responsibility and jurisdiction of other public agencies and have been or can and should be adopted by those agencies.

Oceanside Desalter (Mission Basin Expansion)

Project Description

The Oceanside Desalter (Mission Basin Expansion) includes three wells, a cartridge filtration facility, and water conveyance facilities. Brackish water is pumped from the Mission Basin. Product water is delivered to the City of Oceanside. Concentrate is disposed into the ocean.

Term of the Activity

The 20-year agreement between Metropolitan and the San Diego County Water Authority terminates at the end of July 2023.

Estimate of the Amount of Water that Will be Conserved

The Oceanside Desalter (Mission Basin Expansion) is projected to produce 2,900 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the Oceanside Desalter (Mission Basin Expansion).

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, the City of Oceanside, prepared and approved a Negative Declaration and Notice of Exemption for the Oceanside Desalter (Mission Basin Expansion). Mitigation measures were made a condition of approval of the project by Oceanside. A Notice of Exemption for the project was filed on February 11, 1998 and a Notice of Determination for the project was filed on July 22, 1998. Metropolitan's Board of Directors certified that it reviewed and considered the Negative Declaration and Notice of Exemption for the project and adopted Oceanside's finding related to the project on August 18, 1998.

San Juan Basin Desalter

Project Description

The San Juan Basin Desalter consists of five wells, a four million gallon per day reverse osmosis treatment plant, pretreatment to remove iron and manganese, a pump station, a product water pipeline, and a concentrate disposal pipeline. Brackish water is pumped from the Lower San Juan Basin. Product water is delivered to the Capistrano Valley Water District. Concentrate is conveyed to the ocean through the Chiquita Land Outfall and the Serra Ocean Outfall.

Term of the Activity

The 20-year agreement between Metropolitan and the Municipal Water District of Orange County terminates at the end of December 2024.

Estimate of the Amount of Water that Will be Conserved

The San Juan Basin Desalter is projected to produce 2,400 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the San Juan Basin Desalter.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, the San Juan Basin Authority prepared and approved a Mitigated Negative Declaration for the San Juan Basin Groundwater Management and Facility Plan that addressed the San Juan Basin Desalter. Metropolitan's Board of Directors certified that it reviewed and considered the information provided in the Mitigated Negative Declaration for the Plan prior to reaching a decision on the project and adopted the San Juan Basin Authority's findings related to the project on August 18, 1998.

Temescal Basin Desalter

Project Description

The Temescal Basin Desalter includes wells, reverse osmosis treatment, transmission, product water, and brine disposal pipelines. Brackish water is pumped from the Temescal Subbasin. Product water is delivered to the City of Corona. Brine is discharged to the ocean through the Santa Ana Regional Interceptor.

Term of the Activity

The 20-year agreement between Metropolitan and Western Municipal Water District terminates at the end of July 2021.

Estimate of the Amount of Water that Will be Conserved

The Temescal Basin Desalter is projected to produce 10,000 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the Temescal Basin Desalter.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, Corona prepared and approved a Mitigated Negative Declaration for the Temescal Basin Desalter. Mitigation measures were made a condition of approval of the project. Metropolitan's Board of Directors certified that it reviewed and considered the information provided in the Mitigated Negative Declaration for the Temescal Basin Desalter and adopted Corona's findings related to the project on February 9, 1999.

Tustin Desalter

Project Description

The Tustin Desalter includes wells, a two million gallon per day reverse osmosis desalination plant, and pipeline. Brackish water is pumped from the Orange County Basin. Product water is delivered to the City of Tustin. Brine is conveyed to the County Sanitation Districts of Orange County wastewater treatment facilities via a sewer.

Term of the Activity

The 20-year agreement between Metropolitan and the Municipal Water District of Orange County terminates at the end of August 2016.

Estimate of the Amount of Water that Will be Conserved

The Tustin Desalter is projected to produce 2,000 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the Tustin Desalter.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, Orange County Water District prepared an Initial Study and Negative Declaration for the Tustin Desalter. Mitigation measures were made a condition of approval of the project. A Notice of Determination for the project was filed on July 18, 1991. Metropolitan's Board of Directors certified that it reviewed and considered the information contained in the Initial Study and Negative Declaration and found that any changes and alterations were within the responsibility of another agency on December 10, 1991.

West Basin Desalter

Project Description

The West Basin Desalter includes a 1.5 million gallon per day reverse osmosis desalination system, yard piping, and brine disposal piping. Treatment facilities consist of threshold inhibitor and acid injection systems, cartridge filters, booster pumps, reverse osmosis membrane units, decarbonation facilities, chlorine disinfection, and an on-site storage reservoir. Brackish water is pumped from the West Coast Basin. Product water is delivered to the California Water Service Company. Brine is disposed and conveyed to the Los Angeles County Sanitation District's Carson Industrial Wastewater Treatment Plant.

Term of the Activity

The 20-year agreement between Metropolitan and West Basin Municipal Water District terminates at the end of May 2013.

Estimate of the Amount of Water that Will be Conserved

The West Basin Desalter is projected to produce 700 acre-feet of water during calendar year 2012.

Proposed Methodology for Verification of the Amount of Water Conserved

Upon request, Metropolitan will make available to Reclamation for inspection Metropolitan's verification file for the West Basin Desalter.

Documentation Regarding State or Federal Permits or Other Regulatory Approvals

Pursuant to CEQA, West Basin MWD prepared an Initial Study and Negative Declaration for the West Basin Desalter. Mitigation measures were made a condition of approval of the project. A Notice of Determination for the project was filed on December 12, 1991. Metropolitan's Board of Directors considered the Initial Study and Negative Declaration and found that any mitigation changes and alterations were within the responsibility of another agency on February 11, 1992.

Documentation that the Intentionally Created Surplus Is in Addition to Conservation Implemented to Meet Other Obligations

Metropolitan is the beneficiary of the water being desalted through each of the 12 projects. Metropolitan would not transfer the desalted water to another agency, nor would Metropolitan desalt the water for another agency, nor would Metropolitan pay back an Inadvertent Overrun and Payback Policy obligation in 2012 as Metropolitan does not have existing obligations to do

so. A copy of the agreements which Metropolitan has executed to provide financial support to implement the desalination projects is available upon Reclamation's request.

Total Volume of Water to be Conserved and/or the Time Period for the Conservation Project

The total volume of water to be conserved and the time period for each desalting project is as follows:

Project	Time Period for Metropolitan Financial Support	Total Volume of Water to be Conserved (acre-feet)
Beverly Hills Desalter	2003-2023	35,000
Capistrano Beach Desalter	2007-2027	19,000
Chino Basin Desalination Program	2000-2031	670,000
Irvine Desalter	2007-2027	104,000
Lower Sweetwater Desalter	2000-2020	62,000
Madrona Desalination Facility	2002-2022	35,000
Menifee Desalter	2002-2022	49,000
Oceanside Desalter (Mission Basin Expansion)	1994-2023	100,000
San Juan Basin Desalter	2004-2024	66,000
Temescal Basin Desalter	2001-2021	194,000
Tustin Desalter	1996-2016	44,000
West Basin Desalter	1993-2013	15,000
Total		1,393,000

Capital Investment Required to Implement the Project and Annual Operation, Maintenance, and Replacement Costs

Metropolitan's payments for water desalted by each of the projects and the amount of desalted water for which payment has been made is as follows:

Project	Total Payments through Fiscal Year 2010-11 (million $)
Beverly Hills Desalter	2.5
Capistrano Beach Desalter	0.6
Chino Basin Desalination Program	32.2
Irvine Desalter	3.6
Lower Sweetwater Desalter	6.9
Madrona Desalination Facility	3.5
Menifee Desalter	4.3
Oceanside Desalter (Mission Basin Expansion)	6.6
San Juan Basin Desalter	4.0
Temescal Basin Desalter	9.5
Tustin Desalter	3.2
West Basin Desalter	2.5
Total	79.4

Amount of Water Conserved by the Program to Date and Utilization of the Conserved Water to Date to Meet Specific Conservation Requirements Including ICS Creation

The amount of desalted water for which Metropolitan payments have been made and the amount of ICS created have been as follows:

Project	Amount of Water for Which Payments Have Been Made (acre-feet)	Amount of ICS Created (acre-feet)
Beverly Hills Desalter	9,939	
Capistrano Beach Desalter	2,447	
Chino Basin Desalination Program	128,843	
Irvine Desalter	14,304	
Lower Sweetwater Desalter	34,381	
Madrona Desalination Facility	14,129	
Menifee Desalter	17,768	
Oceanside Desalter (Mission Basin Expansion)	38,725	
San Juan Basin Desalter	15,890	
Temescal Basin Desalter	94,544	
Tustin Desalter	31,494	
West Basin Desalter	10,084	
Total	412,548	0

Time Remaining for the Program and/or the Volume of Water that Remains to be Conserved

The amount of time remaining for each desalting project and the volume of water for which Metropolitan financial support is anticipated are:

Project	Remaining Time Period for Metropolitan Financial Support	Estimate of Total Volume of Water to be Conserved (acre-feet)
Beverly Hills Desalter	2011-2023	25,100
Capistrano Beach Desalter	2011-2027	16,600
Chino Basin Desalination Program	2011-2031	541,200
Irvine Desalter	2011-2027	89,700
Lower Sweetwater Desalter	2011-2020	27,600
Madrona Desalination Facility	2011-2022	20,900
Menifee Desalter	2011-2022	31,200
Oceanside Desalter (Mission Basin Expansion)	2011-2023	61,300
San Juan Basin Desalter	2011-2024	50,100
Temescal Basin Desalter	2011-2021	99,500
Tustin Desalter	2011-2016	12,500
West Basin Desalter	2011-2013	4,900
Total		980,600

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CERTIFIED - RETURN RECEIPT REQUESTED

Mr. Roger K. Patterson
Assistant General Manager
Metropolitan Water District
of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Subject: Approval of the Metropolitan Water District of Southern California's (MWD) 2012 Plan for the Creation of Extraordinary Conservation Intentionally Created Surplus (ICS)

Dear Mr. Patterson:

MWD submitted its 2012 Plan for the Creation of Extraordinary Conservation ICS (ICS Plan) by letter dated July 25, 2011. MWD's ICS Plan describes three separate activities from which MWD intends to create Extraordinary Conservation ICS, including the Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, the Metropolitan Funded Imperial Irrigation District Water Conservation Program, and the Metropolitan Funded Water Supply from Desalination. From the yields of these extraordinary conservation activities, MWD plans to create up to 200,000 acre-feet (af) of ICS during calendar year 2012.

The Bureau of Reclamation has reviewed MWD's ICS Plan and confirms that it contains all necessary information required by Section 3.B of the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (Interim Guidelines). Reclamation has also verified that the amount of ICS MWD plans to create during 2012 is within the limits established in the California Agreement for the Creation and Delivery of Extraordinary Conservation ICS. Pursuant to Section 7.B.5 of the Interim Guidelines, Reclamation has consulted with the Basin States regarding MWD's ICS Plan.

Based upon Reclamation's review of MWD's ICS Plan and the completion of the consultation process, I approve MWD's 2012 ICS Plan for the creation of up to 200,000 af of Extraordinary Conservation ICS as provided in the table below.

Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program	up to 116,000 af
Metropolitan Funded Imperial Irrigation District Water Conservation Program	up to 105,000 af
Metropolitan Funded Water Supply from Desalination	up to 56,300 af
Total Extraordinary Conservation ICS for Calendar Year 2012	Not to exceed 200,000 af

Section 3.B.1 of the Interim Guidelines provides that, subject to approval by Reclamation, a contractor may modify its approved ICS plan during the year of creation. Section 3.D.1 of the Interim Guidelines requires a contractor to submit a Certification Report containing appropriate information to demonstrate the amount of ICS created and that the method of creation was consistent with the approved ICS plan, a Forbearance Agreement, and a Delivery Agreement.

In accordance with Section 3.D.2 of the Interim Guidelines and Section VII of the Delivery Agreement between the United States and MWD (Delivery Agreement), Reclamation will verify the information in MWD's Certification Report and provide a final written decision to MWD regarding the amount of ICS created. If Reclamation determines that the information provided in MWD's Certification Report is insufficient to verify the amount of ICS created, or to verify that the creation was consistent with the Delivery Agreement and the corresponding exhibit to the Forbearance Agreement, Reclamation will request additional information from MWD. Such information may include, but is not limited to, records demonstrating MWD's financial contribution to its member agencies or other agencies performing the extraordinary conservation activities approved in this ICS Plan and records demonstrating the amount of water conserved by each activity and/or by each project thereof.

If you have questions, please contact Mr. Paul Matuska, Water Accounting and Verification Group Manager, at 702-293-8164.

Sincerely,

/s/

Michael R. Gabaldon
Acting Regional Director

cc: Mr. Christopher Harris
Acting Executive Director
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Continued on next page.

cc: Continued from previous page.

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State Engineer
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Appendix C

CALENDAR YEAR 2012
FALLOWED LAND VERIFICATION REPORT

PVID/MWD Forbearance and Fallowing Program

Palo Verde Irrigation District,
The Metropolitan Water District of Southern California, and
U.S. Bureau of Reclamation

Final Report
May 23, 2013

CALENDAR YEAR 2012
FALLOWED LAND VERIFICATION REPORT

PVID/MWD Forbearance and Fallowing Program

Palo Verde Irrigation District,
The Metropolitan Water District of Southern California, and
U.S. Bureau of Reclamation

Final Report
May 23, 2013

CALENDAR YEAR 2012
FALLOWED LAND VERIFICATION REPORT

Executive Summary

On January 1, 2005, the Palo Verde Irrigation District (PVID) and The Metropolitan Water District of Southern California (MWD) initiated a 35-year "Forbearance and Fallowing Program" (Program) with landowners within PVID. A total of 25,947 acres were enrolled and fallowing commenced on January 1, 2005 and would extend through July 31, 2040. The water that would have been used to grow crops on the fallowed land is made available to MWD.

Metropolitan's fallowing call for August 1, 2012 was for the minimum acreage of 6,497 acres (increased from 6,487 acres due to rounding off each contract to the nearest acre). However, to accommodate 3 contracts, the final total fallowed acreage for Contract Year 2012/13 was 6,493 water toll acres. Conversely, a number of Program participants requested an opportunity to reduce their fallowed acreage during Contract Year 2011/12 (August 1, 2011 through July 31, 2012) to take advantage of record high crop prices, mainly cotton and alfalfa. Metropolitan allowed all Program participants this opportunity to reduce their fallowed acreage by any amount during Contract Year 2011/12. Twelve participants opted to reduce their fallowed acreage by a total of 5,526 acres during Contract Year 2011/12, of which 4,250 acres were returned to crop production early during calendar year 2012.

Although it is evident that water is saved through fallowing, it is not possible to measure the exact amount because the types and acreage of crops that would have been grown on the fallowed lands absent the Program are unknown. Water savings were estimated using two methods. Under the first method (Historical Use Method), three periods of past years deemed representative of conditions in PVID were selected and irrigation water use rates during each period were calculated and used to estimate water savings from the fallowed lands for calendar year 2012. Under the second method (Actual Use Method), irrigation water use rates on irrigated lands during calendar year 2012 were calculated and used to estimate water savings from the fallowed fields. The resulting estimates of saved water by each method are shown in Table E-1.

Table E-1: Estimates of Saved Water by Method – Calendar Year 2012

Method	Saved Water (acre-feet)
12-Year Average (1988-2002)*	68,747
5-Year Average (1998-2002)	71,380
3-Year Average (2000-2002)	76,119
Actual Use Method - CY 2012	73,662

*1992, 1993 and 1994 data were not included in the analysis due to the 1992-94 PVID-MWD Test Fallowing Program.

Estimates of water saved by the Program in calendar year 2012 ranged from 68,747 acre-feet to 76,119 acre-feet. The Actual Use Method is deemed the method most reflective of the agronomic, weather, and market conditions prevailing in the Palo Verde Valley during calendar year 2012. As such, the best estimate of the amount of water saved during calendar year 2012 is 73,662 acre-feet.

CALENDAR YEAR 2012
FALLOWED LAND VERIFICATION REPORT
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CALENDAR YEAR 2012
FALLOWED LAND VERIFICATION REPORT

1.0 Program Description

On January 1, 2005, the Palo Verde Irrigation District (PVID) and The Metropolitan Water District of Southern California (MWD) initiated a 35-year "Forbearance and Fallowing Program" (Program) with landowners within PVID that would extend through July 31, 2040. Participation in the Program was voluntary but required participating landowners to sign a 35-year participation contract. A total of 25,947 acres were enrolled in the Program. MWD paid participating landowners a one-time signup payment for enrolling their lands in the Program and fallowing lands in response to MWD's annual fallowing calls. In addition, MWD compensates participating landowners with annual payments for fallowing land within PVID that is served with Priority 1 Colorado River water delivered by PVID. In return for the payments, the water that would have been used to grow crops on the fallowed lands is made available to MWD.

Metropolitan's fallowing call for August 1, 2012 was for the minimum acreage of 6,497 acres (increased from 6,487 acres due to rounding off each contract to the nearest acre). However, to accommodate 3 contracts, the final total fallowed acreage for Contract Year 2012/13 (August 1, 2012 through July 31, 2013) was 6,493 water toll acres. A number of Program participants requested an opportunity to reduce their fallowed acreage during Contract Year 2011/12 (August 1, 2011 through July 31, 2012) to take advantage of record high crop prices, mainly cotton and alfalfa. Metropolitan allowed all Program participants this opportunity to reduce their fallowed acreage by any amount during Contract Year 2011/12. Twelve participants opted to reduce their fallowed acreage by a total of 5,526 acres during Contract Year 2011/12 of which 4,250 acres were returned to crop production early during calendar year 2012.

2.0 Palo Verde Irrigation District

The Palo Verde Irrigation District Act was passed by the California Legislature in 1923. PVID was then organized and began functioning in 1925. Governance is provided by a 7-member Board of Trustees. Administration is provided through a General Manager and a staff of currently 68, not counting Board members. Currently, PVID covers about 189 square miles in Riverside and Imperial Counties of California. The principal city in PVID's service area is Blythe that, with its urban fringe, has a population of about 21,800 people. Currently, PVID contains approximately 131,285 acres with 104,485 acres located in the Palo Verde Valley (Valley) portion of PVID and 26,800 acres located on the adjacent Palo Verde Mesa (Mesa). PVID diverts water from the Colorado River, which is regulated by the U.S. Bureau of Reclamation (Reclamation).

The Valley with its long, hot growing season is ideal for agriculture. Crops include vegetables, forage, grains and fibers. Mild winters, with a minimum of frost, permit the growing and harvesting of crops throughout the year.

Climatic data for temperature, precipitation and evapotranspiration (ETo) in the Valley for the period 1988-2012 are shown in Table 1. The highest maximum annual average

Table 1: Climatic Data, Palo Verde Valley, California – 1988 - 2012

Year	Maximum Annual Average Temperature[1]	Minimum Annual Average Temperature[1]	Annual Rainfall[2]	ETo Palo Verde[3]	ETo Blythe NE[4]	ETo Ripley[5]
	(°F)	(°F)	(inches)	(inches)	(inches)	(inches)
1988	88.50	57.10	3.53	72.30		
1989	90.10	54.90	1.26	68.99		
1990	88.20	56.30	1.66	73.04		
1991	86.50	55.80	4.32	68.75		
1992	87.50	58.60	6.21	70.47		
1993	88.70	57.20	5.05	77.15		
1994	88.50	57.40	3.40	79.32		
1995	89.20	58.30	2.53	73.55		
1996	90.10	59.60	2.34	73.53		
1997	88.40	58.30	5.79	68.20	69.03	
1998	86.50	56.80	6.49	68.42	66.71	
1999	88.50	56.30	3.20	70.58	72.52	69.67
2000	89.40	58.60	0.72	68.81	69.13	67.22
2001	89.50	56.10	4.78	69.11	67.50	68.81
2002	89.20	57.20	0.76	71.09	72.41	69.34
2003	93.03	60.32	2.68	67.26	68.46	67.15
2004	91.90	59.55	2.57	66.78	66.64	67.69
2005	87.11	55.77	6.39	65.66	67.11	65.13
2006	90.50	57.90	1.57	69.60	75.50	67.90
2007	88.57	59.89	1.93	69.85	73.38	68.27
2008	89.65	57.48	2.41	71.47	73.69	68.18
2009	85.39	52.83	1.31	68.05	70.77	71.42
2010	84.58	54.08	2.56	64.72	72.42	67.02
2011	84.70	52.81	2.41	72.69	68.41	69.51
2012	86.39	54.11	3.36	66.70	67.60	65.05
Average	**88.42**	**56.93**	**3.17**	**70.24**	**70.08**	**68.03**

[1] National Oceanic and Atmospheric Administration (NOAA) data from Blythe Station except for October 1997; August, September, and November 1999; January and December 2000; December 2001; and October 2006 when NOAA values from Blythe Airport Station were used because of missing data. Starting 2009, data are averages of the three California Irrigation Management Information System (CIMIS) stations at Palo Verde, Blythe, and Ripley.

[2] Data through 2008 from NOAA Blythe Station, and starting 2009, data is averaged from the three CIMIS stations at Palo Verde, Blythe, and Ripley.

[3] Data from Palo Verde CIMIS station #72 for 1988-2000; and from Palo Verde II CIMIS station #175 for 2001 onward.

[4] Data from Blythe Northeast CIMIS station #135.

[5] Data from Ripley CIMIS station #151.

temperature was 93.03° Fahrenheit (F) in 2003; and the lowest minimum annual average temperature was 52.81° F in 2011. Annual rainfall ranged between a low of 0.72 inches in 2000 to a high of 6.49 inches in 1998. Annual ETo varied between a low of 65.05 inches in 2012 at Ripley to a high of 79.32 inches in 1994 at Palo Verde.

3.0 The Metropolitan Water District of Southern California

MWD was incorporated in 1928 and currently has 26 member agencies. Governance is provided by a 37-member Board of Directors with each member agency entitled to be represented by one director with representation by additional directors being based on assessed valuation. Administration is provided through a General Manager and a staff of currently 1,780 employees.

MWD provides supplemental water supplies to its service area from two sources: 1) MWD's Colorado River Aqueduct; and 2) the Department of Water Resources' State Water Project/California Aqueduct. Water is provided to approximately 18 million people located in a service area of approximately 5,200 square miles in portions of Los Angeles, Orange, San Diego, Riverside, San Bernardino, and Ventura counties of California. MWD has increased its ability to supply water, particularly in dry years, through the implementation of storage, conservation, and transfer programs.

On October 10, 2003, the United States, Imperial Irrigation District, Coachella Valley Water District, MWD, and San Diego County Water Authority executed the "Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement for purposes of Section 5(B) of the Interim Surplus Guidelines" (Delivery Agreement). Under the Delivery Agreement, MWD agreed that if consumptive use of Colorado River water in accordance with Priorities 1 and 2 of the contracts for delivery of Colorado River water in California, together with the use of Colorado River water on PVID Mesa lands in accordance with Priority 3(b), exceeds 420,000 acre-feet in a calendar year, the Secretary of the Interior (Secretary) will reduce the amount of water otherwise available to MWD, by the amount that such use exceeds 420,000 acre-feet. To the extent that the amount of water used in accordance with Priorities 1, 2, and 3(b) is less than 420,000 acre-feet in a year, the Secretary will deliver to MWD the difference. For the purposes of the Delivery Agreement, consumptive use means diversions from the Colorado River less such measured and unmeasured return flow thereto as is available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation.

4.0 Program Implementation

Under the Program, MWD issues a yearly fallowing call to participating landowners a year in advance of the fallowing start date of August 1. Each fallowing call is for a two-year period and once issued, may not be rescinded or diminished. The fallowing call for the period August 1, 2010 through July 31, 2012 (Contract Years 2010/11 & 2011/12) was for 100% of the landowners' maximum fallowing commitments. The fallowing call for the period August 1, 2012 through July 31, 2014 (Contract Years 2012/13 & 2013/14) was for 25% of the landowners' maximum fallowing commitments. However, a number of Program participants requested an opportunity to reduce their fallowed acreage during Contract Year 2011/12 to take advantage of record high crop prices, mainly cotton and alfalfa. Metropolitan allowed all Program participants this opportunity to reduce their fallowed acreage by any amount during Contract Year 2011/12. Twelve participants opted to reduce their fallowed acreage by a total of 5,526 acres during Contract Year 2011/12 of which 4,250 acres were returned into crop production early in calendar year 2012. Table 2 shows the fallowed acreage per month. Attachment 1 shows the fallowed fields on January 1, 2012 and Attachment 2 shows the fallowed fields on August 1, 2012.

All fallowed acres designated by the participants were qualified by PVID for fallowing eligibility, i.e. entitled to receive Priority 1 water and had been irrigated and a crop harvested at least once during the past five years. Following the designation of fallowed acreage, a MWD representative visited the field before the date fallowing was to commence and verified that fallowing conditions had been met and took photographs as needed to document the fallow status of fields. The same procedure was followed when participants would make changes in the area and/or location of fallowed lands at various points in time during the year thus ensuring that only qualified land is being fallowed. In addition, Reclamation staff conducted two field inspections, one in April and one in October 2012, to verify the fallow status of fallowed fields under the Program. In each field inspection, about five percent of the total fallowed acreage was randomly selected and inspected and the fallow status documented. Copies of the verification reports are available upon request from Reclamation staff in Boulder City, Nevada.

Table 2: Fallowed Valley Lands – Calendar Year 2012

Month	Fallowed Lands at Start of Month (water toll acres)	Fallowed Lands Average for Month (water toll acres)
Jan	24,671	23,488
Feb	22,304	21,703
Mar	21,102	20,762
Apr	20,421	20,421
May	20,421	20,421
Jun	20,421	20,421
Jul	20,421	13,457
Aug	6,493	6,493
Sep	6,493	6,493
Oct	6,493	6,493
Nov	6,493	6,493
Dec	6,493	6,493
Yearly Average	15,186	14,428

5.0 Saved Water

The purpose of the Program is to save water that would have been otherwise used for agricultural production in PVID. In order to estimate the amount of water saved, it is necessary to estimate the amount of water that would have been consumed on the fallowed lands had crops been produced. Although it is evident that water is saved, it is not possible to estimate the exact amount because the types and acreage of crops that would have been grown on the fallowed lands absent the Program are unknown. Therefore, it is necessary to develop acceptable procedures to estimate the amount of saved water to the degree of accuracy allowed by available data.

Two methods were used to estimate the amount of saved water for calendar year 2012. Under the first method (Historical Use Method), three periods of past years deemed representative of conditions in PVID were selected and estimated irrigation water use rates during each period were calculated and used to estimate water savings from the fallowed lands during calendar year 2012. Under the second method (Actual Use Method), estimated irrigation water use rates on irrigated

lands during calendar year 2012 were calculated and used to estimate water savings from the fallowed fields during calendar year 2012.

6.0 Historical Use Method

Three historical periods were selected that were deemed representative of typical conditions in PVID when cropping practices were not influenced by outside factors such as an impending fallowing program or a return to irrigation following a fallowing program. Three periods were selected: 12 years, 5 years, and 3 years; and three separate analyses were conducted.

6.1 12-Year Average: 1988 – 2002 (Excluding 1992-94)

The first period extended from 1988 through 2002, but excluded 1992, 1993, and 1994 because the August 1992-July 1994 PVID-MWD Test Fallowing Program affected water use and the amount of cropped acreage during those three years. This adjustment left 12 years of data for the analysis. Diversions at the Palo Verde Diversion Dam were tabulated by month for each year in the analysis. The 12 data points for each month were averaged, and the resulting averages for each month were summed to determine the average annual diversion.

Similarly, water deliveries to the PVID Mesa were tabulated by month. Diversions at the Palo Verde Diversion Dam were then reduced by measured returns, unmeasured returns, and deliveries to the Mesa and were used to estimate the amount of irrigation water used by the Valley lands of PVID. Since water diverted by PVID is delivered to farmland only for irrigation purposes, it is assumed that the estimated amount of irrigation water used by the Valley lands is a good estimate of the amount of water used by crops on the Valley lands. Diversions and cropped acreage for lands upstream of the Palo Verde Diversion Dam were not included in the analysis. Table 3 shows the tabulation for each month, which when summed, results in an estimated average annual crop water use of 400,512 acre-feet.

Over the same 12-year period of data, the irrigated acreage on Valley lands averaged 88,053 water toll acres (Table 4). Dividing the estimated average annual irrigation water use of 400,512 acre-feet by 88,053 water toll acres resulted in an estimated average annual irrigation water use of 4.55 acre-feet per water toll acre. The next step is to extrapolate the irrigation water use per acre estimate to the fallowed lands in calendar year 2012.

The estimated values of monthly irrigation water use on Valley lands shown in Table 3 were converted to percentages of the yearly total as shown in Table 5. Applying the resulting monthly percentages to the average annual irrigation use estimate of 4.55 acre-feet per water toll acre resulted in an estimate of the monthly irrigation water use factors on Valley lands. These estimated monthly irrigation water use factors on Valley lands were used to provide a reasonable estimate of saved water by fallowed fields in PVID during calendar year 2012.

Table 3: Estimated Irrigation Water Use on Valley Lands – 1988 – 2002[1]

Month	Diversions	Measured & Unmeasured Return Flows	Deliveries to Mesa	Estimated Irrigation Water Use on Valley Lands
	(acre-feet)			
Jan	31,460	30,191	210	1,059
Feb	52,419	32,927	403	19,089
Mar	71,357	38,837	639	31,881
Apr	87,610	41,522	948	45,140
May	102,507	46,644	1,169	54,694
Jun	109,957	48,197	1,273	60,487
Jul	116,762	50,094	1,371	65,297
Aug	108,093	52,536	1,385	54,172
Sep	79,391	48,362	987	30,042
Oct	65,820	45,938	787	19,095
Nov	49,483	40,725	528	8,230
Dec	51,782	39,908	548	11,326
Annual	926,641	515,881	10,248	400,512

[1] 1992, 1993 and 1994 data were not included due to the 1992 – 94 PVID-MWD Test Fallowing Program. This reduced the data series to 12 years.
Source of Gross Diversions, Measured and Unmeasured Return Flows data is Reclamation Records. Source of Deliveries to Mesa data is PVID Records.

Table 4: Farmed Acreage in Valley Portion of PVID – 1988 - 1991 and 1995 - 2002[1]

Year	Cropped Land (water toll acres)	Year	Cropped Land (water toll acres)	Year	Cropped Land (water toll acres)
1988	87,086	1995	88,243	1999	88,910
1989	86,701	1996	88,721	2000	88,709
1990	86,561	1997	88,645	2001	88,901
1991	86,601	1998	88,921	2002	88,633
				Average	88,053

[1] 1992, 1993, and 1994 farmed acreages are not included due to the 1992-94 PVID-MWD Test Fallowing Program; 2003 farmed acreage is not included due to the Coachella Valley Water District Fallowing Program; and 2004 - 2008 farmed acreages are not included due to the current PVID-MWD Fallowing Program. Source: PVID records.

Table 5: Estimated Irrigation Water Use Factors on Valley Lands – 1988-2002[1]

Month	Estimated Irrigation Water Use on Valley Lands (acre-feet)	Percent of Yearly Total (%)	Estimated Irrigation Water Use Factors on Valley Lands (acre-feet/acre)
Jan	1,059	0.264412	0.012031
Feb	19,089	4.766149	0.216860
Mar	31,881	7.960061	0.362183
Apr	45,140	11.270574	0.512811
May	54,694	13.656020	0.621349
Jun	60,487	15.102419	0.687160
Jul	65,297	16.303382	0.741804
Aug	54,172	13.525687	0.615419
Sep	30,042	7.500899	0.341291
Oct	19,095	4.767647	0.216928
Nov	8,230	2.054870	0.093497
Dec	11,326	2.827880	0.128669
Total	400,512	100	4.55

[1] Data for 1992, 1993 and 1994 were not included due to the PVID-MWD Test Fallowing Program. This reduced the data series to 12 years.

Landowners provided PVID/MWD with the location of the fields that they were going to fallow and the date when fallowing would begin. PVID/MWD recorded the information from each landowner into a database, located the fallowed land on maps, and inspected the land to verify that the land was fallowed on the date indicated by the landowner. Through this procedure, it was possible to determine and verify the number of fallowed acres.

The number of fallowed acres during each month in calendar year 2012 was determined from the database, resulting in 12 separate time periods during the year (Table 6). The monthly factors, as discussed above, were multiplied by the number of average monthly fallowed acres during the corresponding time period to estimate the corresponding amount of saved water.

For example, for the month of January, the average of 23,488 water toll acres were verified to be fallowed under the Program. Based on the 12 years of historical data, 0.264412% of the total annual irrigation water use on Valley lands occurred in January. Multiplying 0.264412% by 4.55 acre-feet/acre resulted in 0.012031 acre-feet/acre, the average quantity of irrigation water used by each water toll acre during January. Multiplying the average quantity of irrigation water used by each water toll acre in January by the 23,488 water toll acres of fallowed land in January resulted in an estimated water savings for January of 283 acre-feet. This same procedure was applied to the fallowed acreage for all 12 months during calendar year 2012 and resulted in an estimated 68,747 acre-feet of saved water.

Table 6: Estimated Saved Water Using the 12-Year Average Method – Calendar Year 2012

Month	Estimated Irrigation Water Use Factors on Valley Lands (acre-feet/acre)	Monthly Average of Fallowed Lands (water toll acres)	Saved Water (acre-feet)
Jan	0.012031	23,488	283
Feb	0.216860	21,703	4,707
Mar	0.362183	20,762	7,519
Apr	0.512811	20,421	10,472
May	0.621349	20,421	12,689
Jun	0.687160	20,421	14,032
Jul	0.741804	13,457	9,982
Aug	0.615419	6,493	3,996
Sep	0.341291	6,493	2,216
Oct	0.216928	6,493	1,409
Nov	0.093497	6,493	607
Dec	0.128669	6,493	835
Average		14,428	
Total for Year	4.55		68,747

6.2 5-Year Average: 1998 - 2002

The 5-year historical use was based on PVID data for the period 1998 through 2002. The procedure used to calculate the estimated water saved from fallowing Valley lands during calendar year 2012 was the same as that applied in computing the 12-year historical use estimates. The 5-year historical use method yielded an estimated irrigation water use of 4.75 acre-feet/acre and 71,380 acre-feet of saved water during calendar year 2012.

6.3.1 3-Year Average: 2000 - 2002

The 3-year historical use method was based on PVID data for the period 2000 through 2002. Following the same procedure as used for the other historical use methods, computations based on the 3-year historical use resulted in an estimated irrigation water use of 5.03 acre-feet/acre and 76,119 acre-feet of saved water during calendar year 2012.

7.0 Actual Use Method – calendar year 2012

Under the actual use method, irrigation water use and acreage data from PVID and Reclamation records for calendar year 2012 were used to estimate the amount of saved water. Diversions at the Palo Verde Diversion Dam were reduced by measured returns, unmeasured returns, and deliveries to the Mesa and were used to estimate the amount of irrigation water used by the Valley lands. The PVID 2012 Crop Report shows a total of 89,886 water toll acres in the Valley portion of PVID that could have received water. Estimated monthly irrigation water use on Valley lands were divided by the average number of water toll acres in production for each month and summed

for the 12 months, resulting in an estimated annual irrigation use of 4.66 acre-feet per acre (Table 7).

Table 7: Estimated Irrigation Water Use Factors on Valley Lands – Calendar Year 2012

Month	Diversions Less Measured and Unmeasured Returns (acre-feet)	Deliveries to Mesa (acre-feet)	Estimated Irrigation Water Use on Valley Lands (acre-feet)	Irrigated Valley Lands (water toll acres)	Estimated Irrigation Water Use Factors on Valley Lands (acre-feet/acre)
Jan	1,396	827	569	66,399	0.008569
Feb	22,646	925	21,721	68,183	0.318569
Mar	33,727	1,379	32,348	69,125	0.467967
Apr	33,156	1,277	31,879	69,465	0.458922
May	54,177	1,503	52,674	69,465	0.758281
Jun	56,779	1,590	55,189	69,465	0.794486
Jul	42,939	1,986	40,953	76,429	0.535831
Aug	49,197	1,978	47,219	83,393	0.566223
Sep	39,142	1,852	37,290	83,393	0.447160
Oct	23,008	1,636	21,372	83,393	0.256281
Nov	7,045	1,230	5,815	83,393	0.069730
Dec	-989	1,025	-2,014	83,393	-0.024151
Total	362,223	17,208	345,015		
Average				75,458	4.657868

Source: PVID and Reclamation records.

The same procedure used in Table 6 was followed to develop Table 8. Estimated monthly irrigation water use factors were multiplied by the fallowed acres for each month to estimate the monthly water savings resulting in a total of 73,662 acre-feet of water saved during calendar year 2012.

Table 8: Estimated Saved Water Using the Actual Use Method – Calendar Year 2012

	Estimated Irrigation Water Use Factors on Valley Lands (acre-feet/acre)	Monthly Average of Fallowed Lands (water toll acres)	Monthly Saved Water (acre-feet)
Jan	0.008569	23,488	201
Feb	0.318569	21,703	6,914
Mar	0.467967	20,762	9,716
Apr	0.458922	20,421	9,372
May	0.758281	20,421	15,485
Jun	0.794486	20,421	16,224
Jul	0.535831	13,457	7,211
Aug	0.566223	6,493	3,676
Sep	0.447160	6,493	2,903
Oct	0.256281	6,493	1,664
Nov	0.069730	6,493	453
Dec	-0.024151	6,493	-157
Average		14,428	
Total for Year	4.657868		73,662

8.0 Conclusions

Two methods were used to estimate the amount of saved water during calendar year 2012: a historical use method and an actual use method. Three historical periods were used covering 12-year, 5-year and 3-year periods. The 12-year historical use method estimated a yearly irrigation water use of 4.55 acre-feet/acre, the 5-year historical use method estimated a yearly irrigation water use of 4.75 acre-feet/acre, and the 3-year historical use method estimated a yearly irrigation water use of 5.03 acre-feet/acre. Compilation of crop and irrigation water use data for calendar year 2012 in PVID resulted in an estimated irrigation use of 4.66 acre-feet/acre. Estimates of saved water for calendar year 2012 are shown in Table 9 and ranged from 68,747 acre-feet to 76,119 acre-feet.

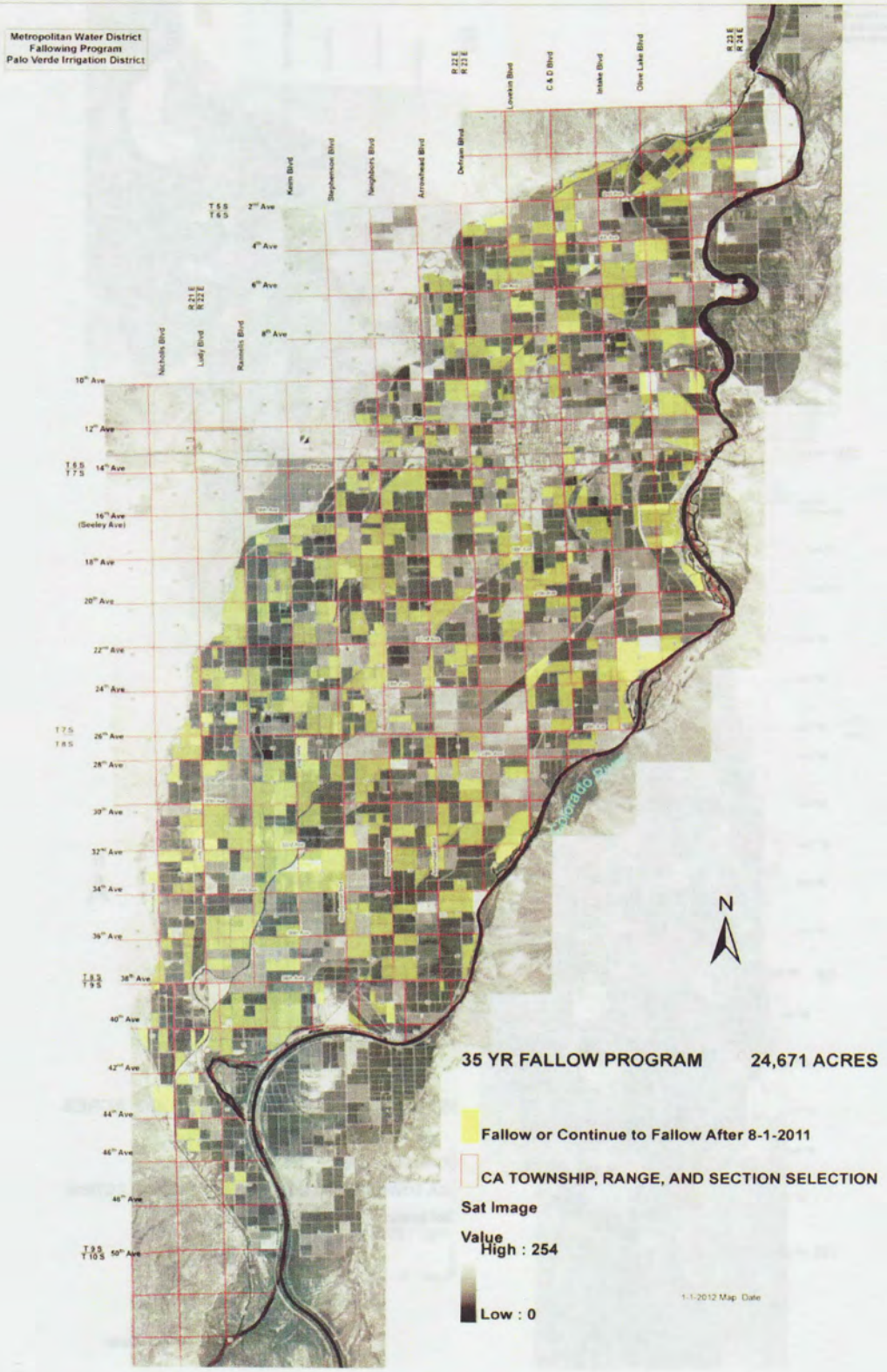
Table 9: Estimates of Saved Water by Method – Calendar Year 2012

Method	Saved Water (acre-feet)
12-Year Average (1988-2002)*	68,747
5-Year Average (1998-2002)	71,380
3-Year Average (2000-2002)	76,119
Actual Use Method CY 2012	73,662

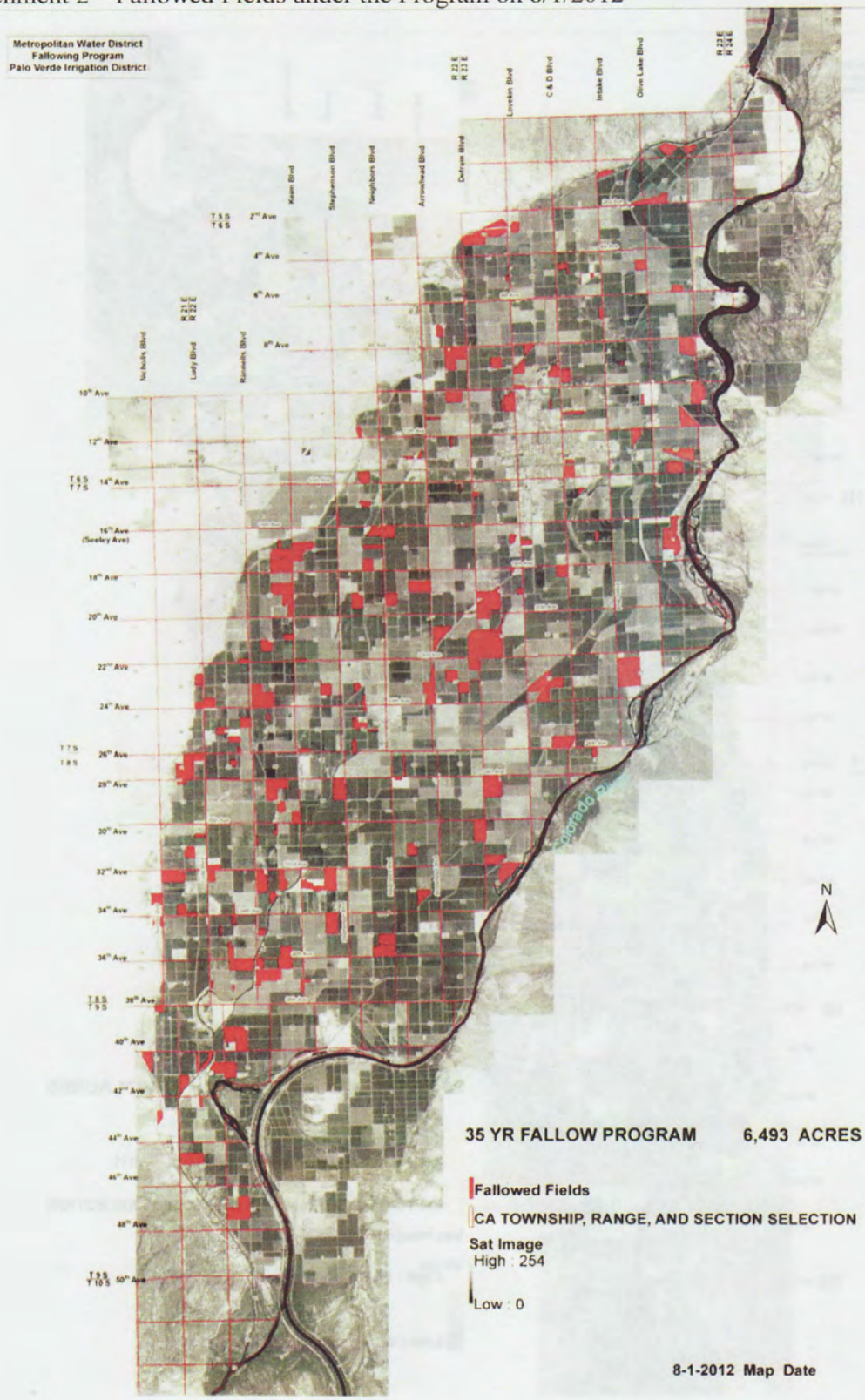
*1992, 1993 and 1994 data not included in analysis due to the 1992-94 PVID-MWD Test Fallowing Program.

The Actual Use Method is deemed the method most reflective of the agronomic, weather, and market conditions prevailing in the Palo Verde Valley during calendar year 2012. As such, the best estimate of the amount of water saved during calendar year 2012 by the Program is 73,662 acre-feet.

Attachment 1 – Fallowed Fields under the Program on 1/1/2012



Attachment 2 – Fallowed Fields under the Program on 8/1/2012



Appendix D

Metropolitan's February and September 2012 Verification Inspection Reports and U.S. Bureau of Reclamation's Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program, Verification Reports, Spring and Fall 2012

MWD *METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA*

Date: February 17, 2012

To: Kevin Donhoff, Imported Supply Unit and Resource Implementation Section Manager

From: Michael Yu, Imported Supply Unit Associate Engineer

Subject: Palo Verde Irrigation District Fallowing Program Field Inspection on February 8, 2012

In accordance with a Water Resource Management memorandum back in August 2010 regarding field verification procedures, Metropolitan staff will conduct independent on-site verification of fallowed fields.

The following report is the field inspection that was conducted on February 08, 2012. Eleven fields were randomly selected from the program; totaling 870 fallowed acres were inspected. The fields are:

Field Number	**Contract Name**
63945-037	Stroschein Family Trust
63940-225	Fisher
63953-007	Chaffin Holding, Inc.
63940-022	Fisher
63898-027	Lakota
63898-030	Lakota
65354-006	Kenworthy
63903-015	Enterprise Swanco
63903-008	Enterprise Swanco
63907-242	Verbena
MET-201	Metropolitan

All the inspected fields were in compliance with the program.

Attached is the field inspection report documenting the results of the inspection.

PVID Field Inspection, Feb. 2012

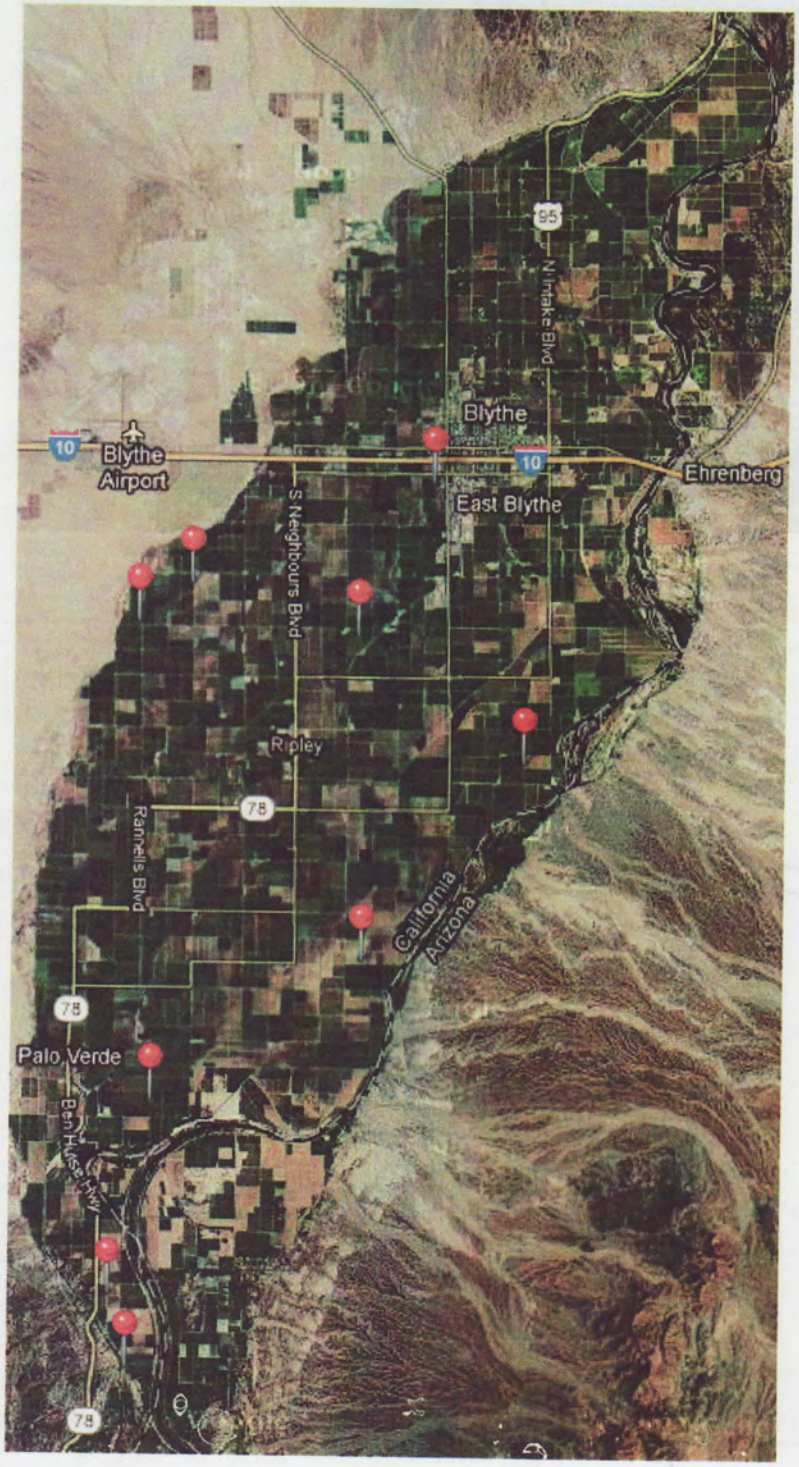
Stats:

Inspection date: February 8, 2012
11 fields were inspected.
870 fallowed acres were inspected.

Results:

All inspected fields were in compliance with the program.

Location Overview



Program Field # 63945-037
Acres 37
Comments

Program Field # 63940-225
Acres 76
Comments

63940-225
76 acres

Program Field # 63953-007
Acres 159
Comments

Program Field # 63940-022
Acres 40
Comments

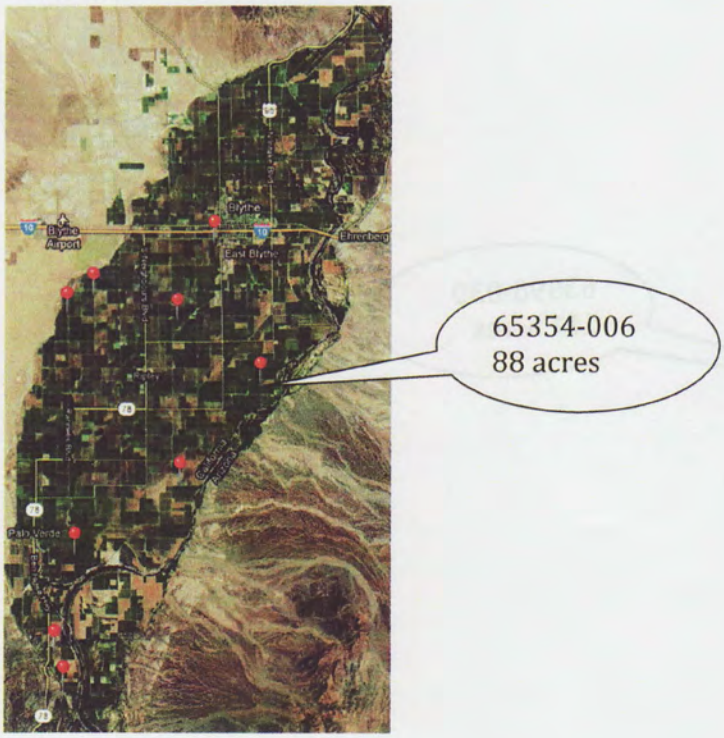
Program Field # 63898-027
Acres 78
Comments

63898-027
78 acres

Program Field # 63898-030
Acres 111
Comments

63898-030
111 acres

Program Field # 65354-006
Acres 88
Comments



Program Field # 63945-037
Acres 140
Comments

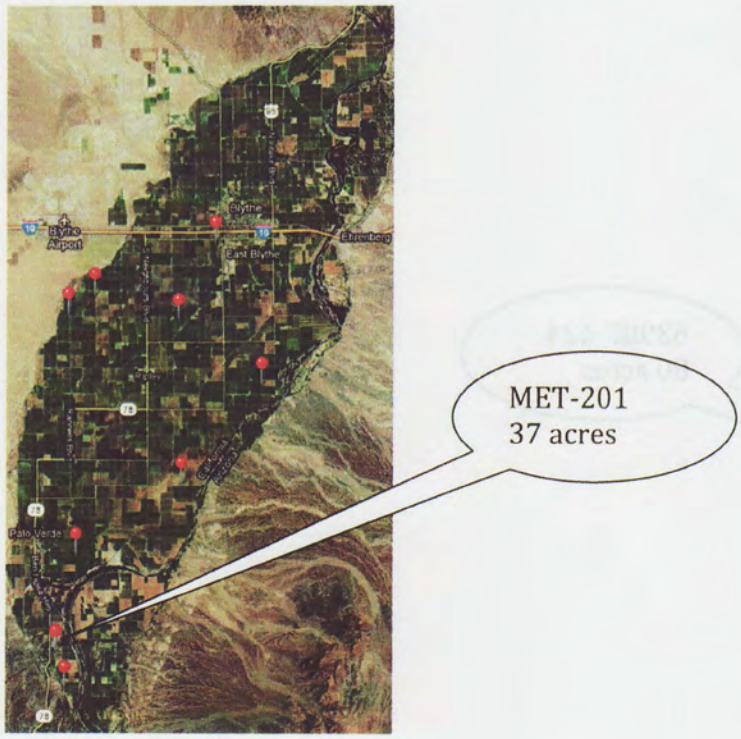
Program Field # 63903-008
Acres 24
Comments

63903-008
24 acres

Program Field # 63907-424
Acres 80
Comments

63907-424
80 acres

Program Field # MET-201
Acres 37
Comments



MWD METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Date: October 3, 2012

To: Kevin Donhoff, Imported Supply Unit and Resource Implementation Section Manager

From: Michael Yu, Imported Supply Unit Associate Engineer

Subject: Palo Verde Irrigation District Fallowing Program Field Inspection on September 20, 2012

In accordance with a Water Resource Management memorandum dated August 2010 regarding field verification procedures, Metropolitan staff will conduct independent on-site verification of fallowed fields with the goal to conduct them on a quarterly basis.

The following report is a field inspection that was conducted on September 20, 2012. Ten fields were randomly selected from the program; totaling 112 fallowed acres were inspected. During this inspection, the program is at minimum fallowing call. The fields are:

Field Number	Contract Name
63946-989	Charles Van Dyke Group
65034-011	Jongsma
65034-013	Jongsma
65029-040	Cal Van Farms
65029-041	Cal VanFarms
65365-005	Lindley-Delano
65358-001	LHS Riverside Farms
63907-210	Farmland Reserve
63907-228	Farmland Reserve
63947-019	Hull Farms

All the inspected fields were in compliance with the program.

Attached is the field inspection report documenting the results of the inspection.

PVID Field Inspection, September 2012

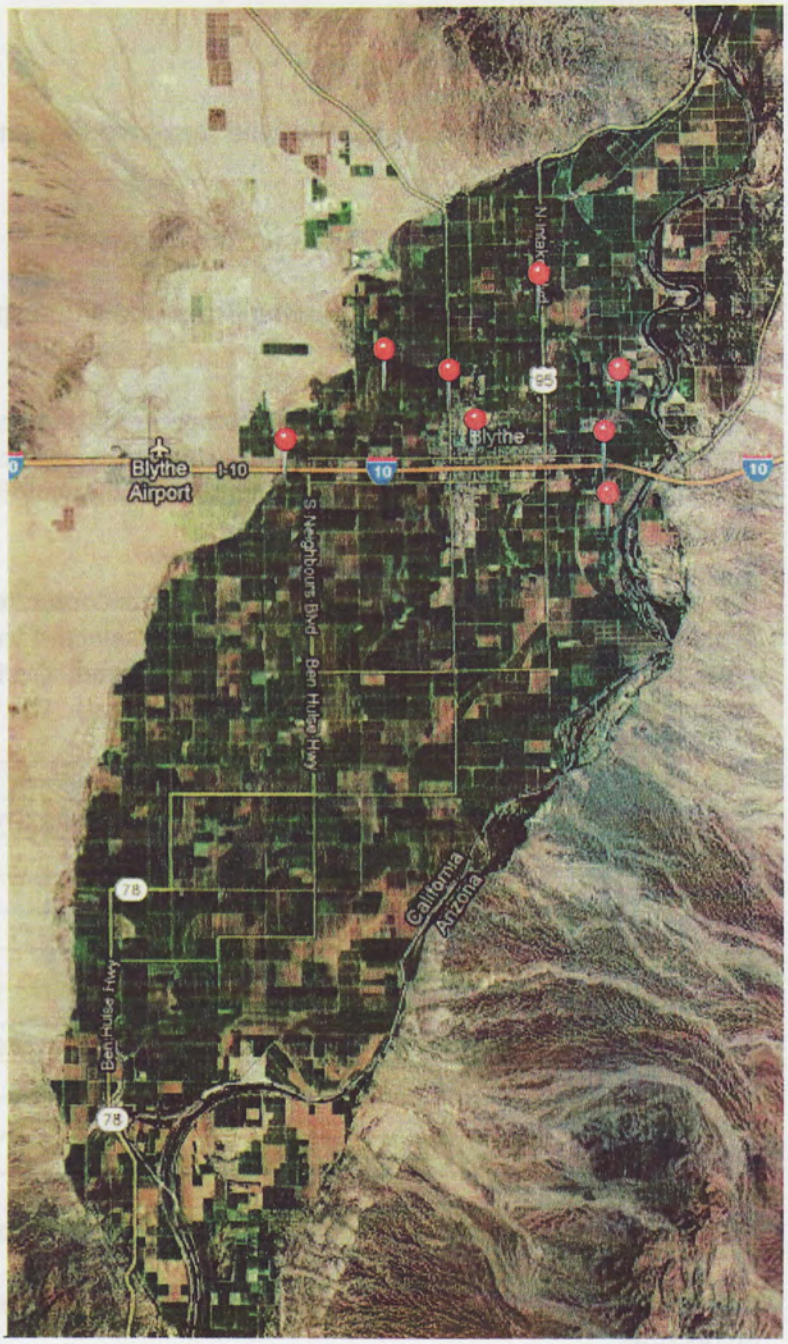
Stats:

Inspection date: September 20, 2012
Ten fields were inspected.
112 fallowed acres were inspected.

Results:

All inspected fields were in compliance with the program.

Location Overview



Program Field #	63946-989
Acres	14
Comments	The growth seen in the photo is a result of a recent monsoon several weeks ago. Landowner will follow-up with an application of Roundup.

Program Field # 65034-011
Acres 7
Comments

65034-011
7 acres

Program Field #	66034-013
Acres	8
Comments	The field is adjacent to previous field inspected (65034-011)

66034-013
8 acres

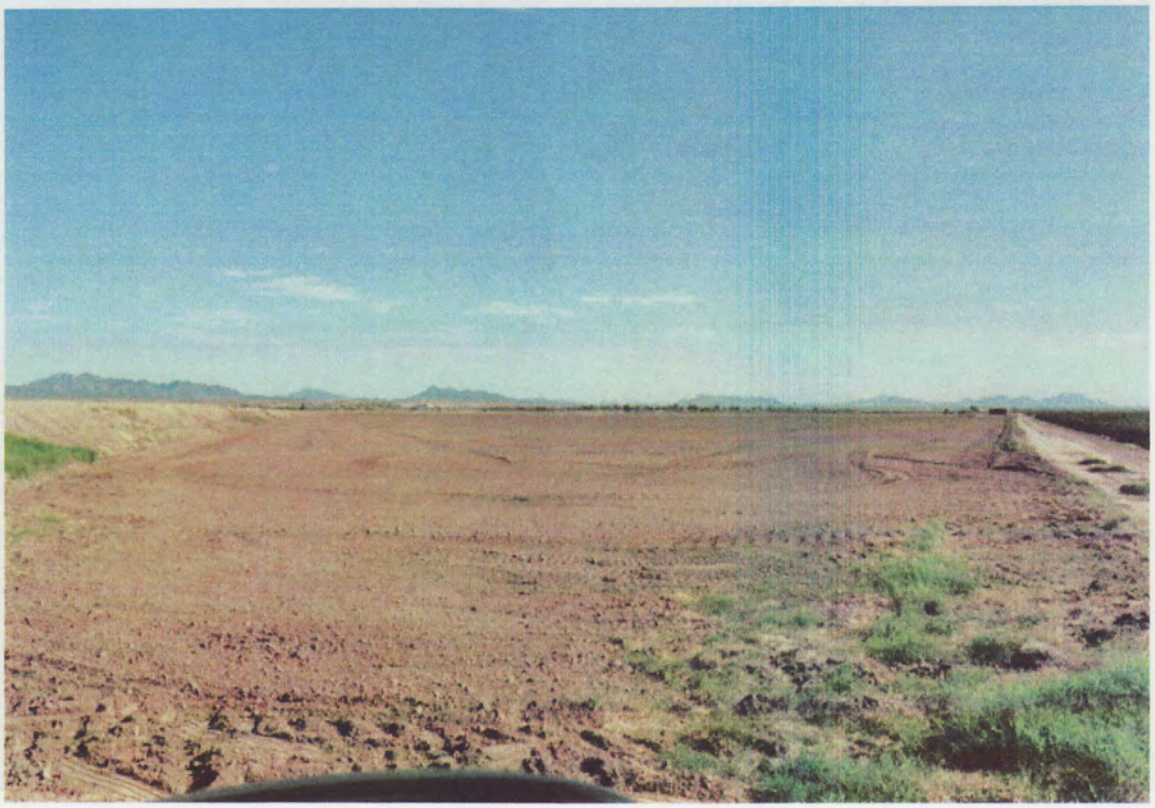
Program Field # 65029-040
Acres 7
Comments

Program Field # 65029-041
Acres 9
Comments

Program Field # 65385-005
Acres 10
Comments

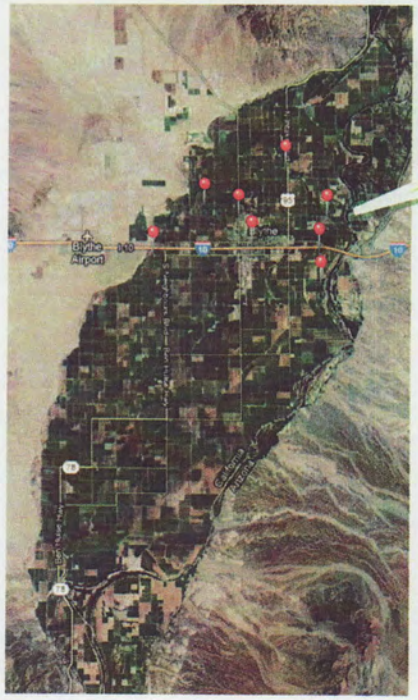
Program Field # 65358-001
Acres 23
Comments

65358-001
23 acres



Program Field # 63907-210
Acres 17
Comments

Program Field # 63907-228
Acres 12
Comments



Program Field # 63947-019
Acres 5
Comments

63947-019
5 acres

Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program

Spring 2012 Verification Report

In accordance with its approved plan for the creation of Extraordinary Conservation Intentionally Created Surplus (ICS), the Metropolitan Water District of Southern California (MWD) is funding a Forbearance and Fallowing Program (Program) with the Palo Verde Irrigation District (PVID) to create Extraordinary Conservation ICS during calendar year 2012. In accordance with MWD's approved ICS Plan, and to ensure the Program is being implemented, the Bureau of Reclamation (BOR) conducts semi-annual verification inspections on randomly selected fields accounting for five percent of the total acreage enrolled in the Program. The first of these inspections occurred on April 19, 2012; the findings are documented in this verification report.

A: Forbearance and Fallowing Program Verification

Five percent of the 20,421 acres in the PVID Program was checked during the field verification inspection. Twenty-two fields totaling 1,021 acres were inspected (see Attachment #1).

Observation: Green growth was viewed on some fields, which was attributed to localized rainfall (thunderstorms). PVID staff indicated that Program participants, in accordance with environmental mitigation requirements for potential air quality impacts, were required to implement dust control Best Management Practices (BMPs) when necessary. These BMPs include (but are not limited to) leaving vegetation residue on the field or seeding a cover crop prior to the fallowing start date.

Fallowing Program Field No. 63907-205. S2-T7S-R22E. PVID Parcel No. 802010 (BOR Field No. 4870).
Acres: 68.0.
Canal & Gate No. C05-3-4N.

Comments: Photo No. 1, April 19, 2012. Fallow (disked, clean, level). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records.
Date Fallowing Commenced: August 1, 2011.

Fallowing Program Field No. 65034-008. S35-T6S-R22E. PVID Parcel No. 435012 (BOR Field No. 4779).
Acres: 19.0.
Canal & Gate No. C03-28W.

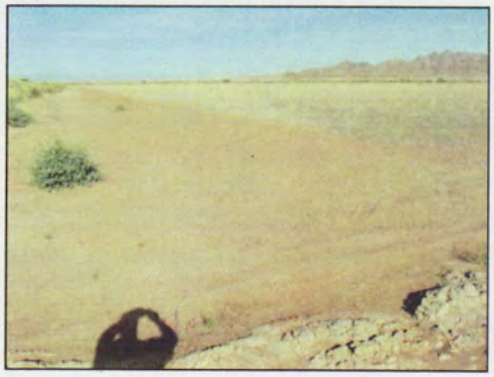
Comments: Photo No. 2, April 19, 2012. Fallow with alfalfa volunteers. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: October 2, 2010.

Fallowing Program Field No. 65033-001. S19-T6S-R23E. PVID Parcel No. 519002 (BOR Field No. 4552).
Acres: 38.0.
Canal & Gate No. C-19W.

Comments: Photo No. 3, April 19, 2012. Fallow with senescent alfalfa. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: October 9, 2010.

Fallowing Program Field No. 63954-006. S10-T6S-R23E. PVID Parcel No. 510011 (BOR Field No. 4278).
Acres: 37.0.
Canal & Gate No. D04-2E.

Comments: Photo No. 4, April 19, 2012. Fallow with green and senescent weeds. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: December 10, 2010.



Fallowing Program Field No. 63941-004. S36-T5S-R23E. PVID Parcel No. 733007 (BOR Field No. 4098).
Acres: 78.0.
Canal & Gate No. K-7W.

Comments: Photo No. 5, April 19, 2012. Fallow with senescent weeds. Soils: Sandy. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2009.

Fallowing Program Field No. 63907-237. S23-T6S-R23E. PVID Parcel No. 523016 (BOR Field No. 4463).
Acres: 50.0.
Canal & Gate No. D29-29W.

Comments: Photo No. 6, April 19, 2012. Fallow with senescent weeds. Soils: Sandy. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2010.

Fallowing Program Field No. 65382-018. S5-T7S-R23E. PVID Parcel No. 605015 (BOR No. 4935).
Acres: 38.0.
Canal & Gate No. D15-0S.

Comments: Photo No. 7, April 19, 2012. Fallow with cotton residue. Soils: Sandy loam. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: November 17, 2011.

Fallowing Program Field No. 63917-007. S10-T7S-R23E. PVID Parcel No. 610017 (BOR Field No. 5046).
Acres: 32.0.
Canal & Gate No. D10-41W.

Comments: Photo No. 8, April 19, 2012. Fallow with cotton residue and green weeds. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: February 15, 2012.

Fallowing Program Field No. 63898-025. S27-T7S-R23E. PVID Parcel No. 627001 (BOR Field No. 5472).
Acres: 65.0.
Canal & Gate No. D10-11-2-25E.

Comments: Photo No. 9, April 19, 2012. Fallow with senescent wheat stubble. Soils: Sandy. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2011.

Fallowing Program Field No. 63898-035. S34-T7S-R23E. PVID Parcel No. 634003 (BOR Field No. 5639).
Acres: 64.0.
Canal & Gate No. D10-11-43E.

Comments: Photo No. 10, April 19, 2012. Fallow with senescent wheat stubble. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records.
Date Fallowing Commenced: August 1, 2008.

Fallowing Program Field No. 63900-035. S25-T8S-R22E. PVID Parcel No. 025002 (BOR Field No. 6019).
Acres: 76.0.
Canal & Gate No. D23-1-30E.

Comments: Photo No. 11, April 19, 2012. Fallow (disked, clean, level). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records.
Date Fallowing Commenced: August 1, 2008.

Fallowing Program Field No. 65382-998. S4-T9S-R22E. PVID Parcel No. 316016 (BOR Field No. 6243).
Acres: 12.0.
Canal & Gate No. D23-1-72E.

Comments: Photo No. 12, April 19, 2012. Fallow with senescent wheat residue. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records.
Date Fallowing Commenced: September 14, 2008.

Fallowing Program Field No. 63907-158. S34-T8S-R22E. PVID Parcel No. 034012 (BOR Field No. 6134).
Acres: 39.0.
Canal & Gate No. C25-2N.

Comments: Photo No. 13, April 19, 2012. Fallow (disked, clean, level). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records.
Date Fallowing Commenced: August 1, 2010.

Fallowing Program Field No. 63907-243. S6-T9S-R22E. PVID Parcel No. 318016 (BOR Field No. 6223). Acres: 40.0.
Canal & Gate No. C28-18W.

Comments: Photo No. 14, April 19, 2012. Fallow (disked, clean, level). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2011.

Fallowing Program Field No. 63907a-262. S12-T9S-R21E. PVID Parcel No. 306010 (BOR No. 6316). Acres: 57.0. Canal & Gate No. C28-38S. Date Fallowing Commenced: August 1, 2009. Comments: Photo No. 15, April 19, 2012. Fallow (disked). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records.

Fallowing Program Field No. 63940-146. S21-T8S-R22E. PVID Parcel No. 021007 (BOR Field No. 5961). Acres: 41.0.
Canal & Gate No. C18-12E.

Comments: Photo No. 16, April 19, 2012. Fallow (disked). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: February 19, 2011.

Fallowing Program Field No. 63907-188. S10-T8S-R22E. PVID Parcel No. 010020 (BOR Field No. 5765). Acres: 62.0.
Canal & Gate No. C16-15N.

Comments: Photo No. 17, April 19, 2012. Fallow (disked, clean, level). Soils: Loamy clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2011.

Fallowing Program Field No. 63945-016. S4-T8S-R22E. PVID Parcel No. 004009 (BOR Field No. 5720).
Acres: 40.0.
Canal & Gate No. C03-100E.

Comments: Photo No. 18, April 19, 2012. Fallow (disked). Soils: Clay loam. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2010.

Fallowing Program Field No. 63945-033. S33-T7S-R22E. PVID Parcel No. 833010 (BOR Field No. 5629).
Acres: 39.0.
Canal & Gate No. C03-23-0S, C03-23-0E.

Comments: Photo No. 19, April 19, 2012. Fallow (disked). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2010.

Fallowing Program Field No. 65385-001. S28-T7S-R22E. PVID Parcel No. 828015 (BOR Field No. 5458).
Acres: 40.0.
Canal & Gate No. C03-25-6W.

Comments: Photo No. 20, April 19, 2012. Fallow (disked, clean, level) with <1% alfalfa volunteers. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2009.

Fallowing Program Field No. 63953-025. S22-T7S-R22E. PVID Parcel No. 822003 (BOR Field No. 6683).
Acres: 47.0.
Canal & Gate No. WC-4-6W.

Comments: Photo No. 21, April 19, 2012. Fallow (disked) with <1% alfalfa volunteers. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2008.

Fallowing Program Field No. 63940-038. S14-T7S-R22E. PVID Parcel No. 814005 (BOR Field No. 5198).
Acres: 39.0.
Canal & Gate No. WC-12N.

Comments: Photo No. 22, April 19, 2012. Fallow with cotton residue. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: March 9, 2012.

Based on the information collected during the field verification inspection and documented in this report, it is determined that extraordinary conservation implementation for this period is:

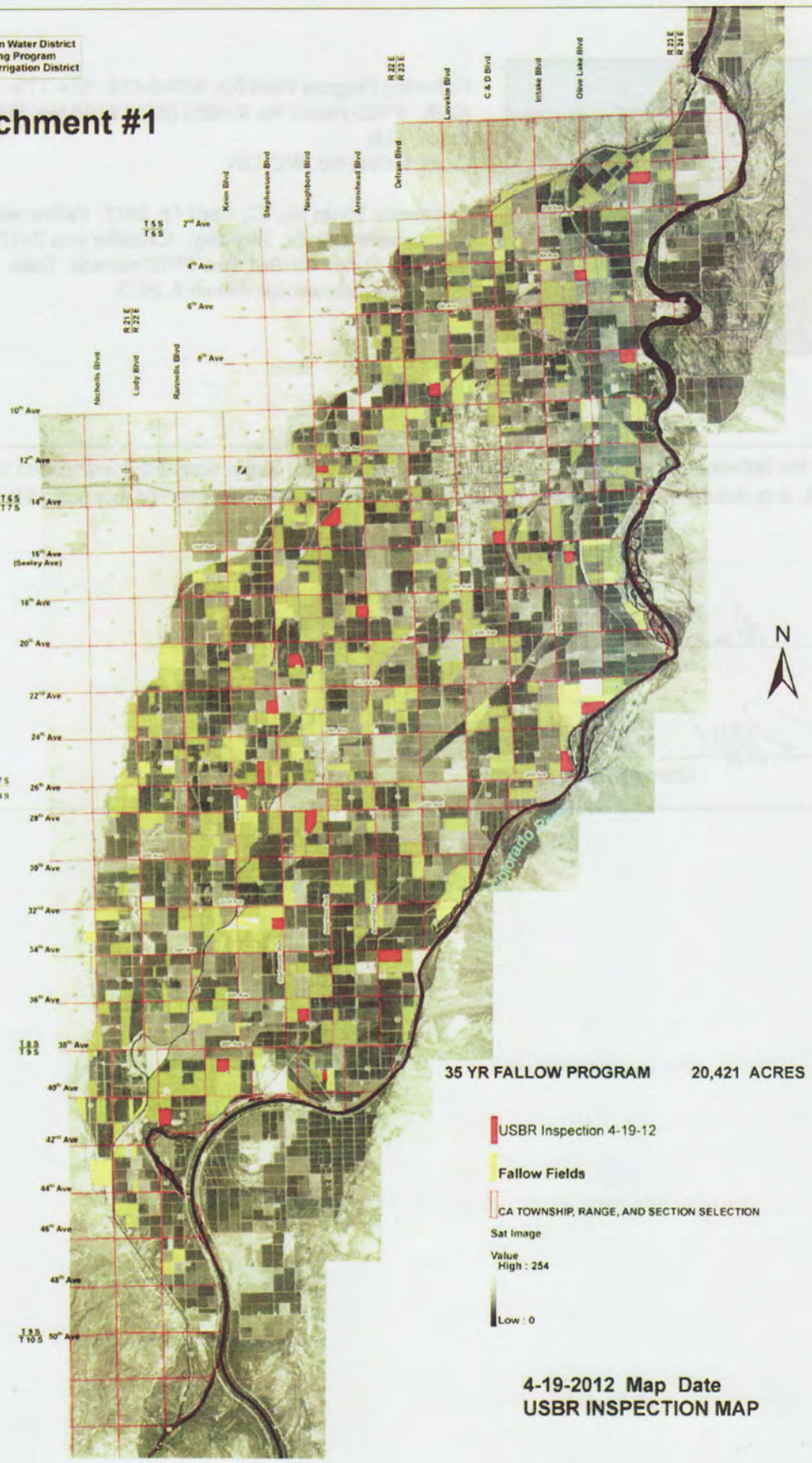
X confirmed ____ unconfirmed

David B. Chell — 05/15/12
Inspector — Date

Paul Matthews — 5/15/2012
Group Manager — Date

Metropolitan Water District
Fallowing Program
Palo Verde Irrigation District

Attachment #1



4-19-2012 Map Date
USBR INSPECTION MAP

Metropolitan Funded Palo Verde Irrigation District Forbearance and Fallowing Program

Fall 2012 Verification Report

In accordance with its approved plan for the creation of Extraordinary Conservation Intentionally Created Surplus (ICS), the Metropolitan Water District of Southern California (MWD) is funding a Forbearance and Fallowing Program (Program) with the Palo Verde Irrigation District (PVID) to create Extraordinary Conservation ICS during calendar year 2012. In accordance with MWD's approved ICS Plan, and to ensure the Program is being implemented, the Bureau of Reclamation (BOR) conducts semi-annual verification inspections on randomly selected fields accounting for five percent of the total acreage enrolled in the Program. The second of these inspections occurred on October 18, 2012; the findings are documented in this verification report.

A: Forbearance and Fallowing Program Verification

Five percent of the 6,493 acres in the PVID Program was checked during the field verification inspection. Nine fields totaling 325 acres were inspected (see Attachment #1).

Observation: Trace vegetation was viewed on some fields, which was attributed to localized rainfall (thunderstorms). PVID staff indicated that Program participants, in accordance with environmental mitigation requirements for potential air quality impacts, were required to implement dust control Best Management Practices (BMPs) when necessary. These BMPs include (but are not limited to) leaving vegetation residue on the field or seeding a cover crop prior to the fallowing start date.

Fallowing Program Field No. 65029-006. S6-T6S-R23E. PVID Parcel No. 506002 (Reclamation Field No. 4217). Acres: 37.0.
Canal & Gate No. A-14N.

Comments: Photo No. 1, October 18, 2012. Fallow with < 5% weeds and alfalfa volunteers. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2011.

Fallowing Program Field No. 65033-006. S20-T6S-R23E. PVID Parcel No. 520012 (Reclamation Field No. 4483). Acres: 38.0.
Canal & Gate No. C-14W.

Comments: Photo No. 2, October 18, 2012. Senescent alfalfa. Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: October 1, 2012.

Fallowing Program Field No. 63895-003. S10-T7S-R22E. PVID Parcel No. 810011(Reclamation Field No. 5036). Acres: 40.0.
Canal & Gate No. C05-3-12W.

Comments: Photo No. 3, October 18, 2012. Fallow (disked, clean, level). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: January 1, 2011.

Fallowing Program Field No. 63900-002. S11-T7S-R23E. PVID Parcel No. 611002 (Reclamation Field No. 5085). Acres: 18.0.
Canal & Gate No. D10-13-47E.

Comments: Photo No. 4, October 18, 2012. Fallow with senescent wheat stubble. Soils: Silty sand. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2010.

Fallowing Program Field No. 63953-052. S26-T7S-R22E. PVID Parcel No. 826021 (Reclamation Field No. 5482). Acres: 21.0.
Canal & Gate No. C13-12E.

Comments: Photo No. 5, October 18, 2012. Fallow (disked, clean, level). Soils: Silty, clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: July 1, 2009.

Fallowing Program Field No. 65370-009. S1-T8S-R21E. PVID Parcel No. 901002 (Reclamation Field No. 5731). Acres: 50.0.
Canal & Gate No. C03-17-12N.

Comments: Photo No. 6, October 18, 2012. Fallow (disked, clean, level). Soils: Silty, clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2011.

Fallowing Program Field No. 63940-192. S28-T8S-R22E. PVID Parcel No. 028017 (Reclamation Field No. 6028). Acres: 73.0.
Canal & Gate No. C23-10S.

Comments: Photo No. 7, October 18, 2012. Fallow with <1% alfalfa volunteers. Soils: Silty, clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2012.

Fallowing Program Field No. 63907-249. S1-T9S-R21E. PVID Parcel No. 301018 (Reclamation Field No. 6277). Acres: 9.0.
Canal & Gate No. C28-3-4W.

Comments: Photo No. 8, October 18, 2012. Fallow (disked, clean, level). Soils: Silty clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2011.

Fallowing Program Field No. MET-205. S25-T9S-R21E. PVID Parcel No. 312012 (Reclamation Field No. 6533). Acres: 39.0.
Canal & Gate No. C28-74W.

Comments: Photo No. 9, October 18, 2012. Fallow, ripped. Soils: Heavy clay. Calendar year 2012 water use to date verified from PVID records. Date Fallowing Commenced: August 1, 2012.

Based on the information collected during the field verification inspection and documented in this report, it is determined that extraordinary conservation implementation for this period is:

X confirmed ____ unconfirmed

David B. Crull — 11-01-2012
Inspector — Date

Paul Mattile — 11-01-12
Group Manager — Date

Appendix E

Metropolitan Reconciliation Summaries
Groundwater Desalination Projects

Reconciliation Summary
Beverly Hills Desalter Project

Reconciliation Summary - FY 2011-12
Local Resources Program
Beverly Hills Desalter Project

The purpose of this reconciliation is to calculate: (1) Final LRP Contribution and (2) LRP Payments Adjustment.

Recycled Water Production Data (a)

Ultimate Yield =	2,600.0	AF
Invoiced Yield =	943.6	AF
Allowable Yield =	943.6	AF
Recovered Water =	943.6	AF (b)

Calculating the Annualized Capital Component

Capital Costs	This Year	Prior Years	Total	
Final Design and Construction Management Services	$0	$5,714,621	$5,714,621	(c)
Construction and Start-up	$0	$607,232	$607,232	(d)
Agency Admin.(not to exceed 3% of eligible construction costs)				
Test Well Construction		$908,186	$908,186	
Contributions and Grants (negative value) =	$0	$0	$0	
Total	$0	$7,230,039	$7,230,039	(e)

Annualized Capital Cost

Source	First Year	Last Year	Interest	Term	Amount	*Annual Cost*	
Cash	2003	2023	3.96%	20	$7,230,039	$530,116	(f)

Annualized Capital Cost = $530,116

80% of Project Capacity = 2,080.0 AF

Annualized Capital Component = Annualized Capital Cost / Recovered Water (80% or > than Ultimate Yield)

Recovered Water Component = 2,080 /AF

Annualized Capital Component = $255 /AF (g)

Calculating the O&M Component (h)

Operation and Maintenance Costs

Labor ($250,000 X (CPI current / CPI July 1996)	$374,010	(i)
Chemicals and Supplies	$296,156	(j)
Net Electrical (Metered)	$135,073	(k)
Water Quality Sampling	$14,896	(l)
Concentrate Waste Disposal Fee	$78,127	
Replacement Parts less than $100,000*(9961/6694) =	$59,209	
Adjustment for grants (negative value) =	$0	
Project Audit Fees	$0	
Total Annual O&M Cost	$957,471	

O&M Component = Annual cost of O&M / Recovered Water

O&M Component = $1,015 /AF (m)

Calculating the Annualized Replacement Component

Replacement Costs

Replacement costs over $100,000 =	$175,000
Salvage Value (negative value) =	$0
Adjustments for grants (negative value) =	$0
Total	$175,000

Annualized Replacement Cost (n)

Source	First Year	Last Year	Interest	Term	Amount	*Annual Cost*
	2006	2026	4.21%	20	$149,096	$11,176
	2010	2030	4.00%	20	$153,408	$11,288
	2011	2031	4.00%	20	$175,000	$12,877

Annualized Replacement Cost = $35,341

Annualized Replacement Component = Annualized Replacement Cost / Recovered Water

Recovered Water Component = 2,080 /AF

Annualized Replacement Component = $17 /AF (n)

Reconciliation Summary - FY 2011-12
Local Resources Program
Beverly Hills Desalter Project

Calculating the Project Unit Cost (o)

Project Unit Cost = Annualized Capital Component + O&M Component + Annualized Replacement component

Annualized Capital Component =	$255
O&M Component =	$1,015
Annualized Replacement Component =	$17
Project Unit Cost =	**$1,287 /AF**

Project Deferred Costs from Prior Fiscal Year (p)

Deferred Cost = AYP x (PUCP - RateP - ANDC - $250) / Recovered Water

	7/1/10 - 12/31/10	1/1/11 - 6/30/11
Allowable Yield in Prior FY (AYP)	559.0 AF	260.0 AF
Project Unit Cost in Prior FY (PUP)	$1,283 /AF	$1,283 /AF
MWD Treated Water Rate in Prior FY (RateP)	$724 /AF	$767 /AF
Avoided New Demand Charge in Prior FY (ANDC)	$0 /AF	$0 /AF
Total Costs = AYP x (PUCP - RateP - ANDC - $250	$172,731	$69,160
Recovered Water =		943.6 AF
		$183 /AF

Total Deferred Costs from Prior Year = $183

1) Calculating the LRP Final Contribution: (q)

Final LRP Contribution = Project Unit Cost + Project Deferred Cost - MWD Water Rate - Avoided New Demand Charge

	7/1/11 - 12/31/11	1/1/12 - 6/30/12
Project Unit Cost =	$1,287 /AF	$1,287 /AF
Project Deferred Cost =	$183 /AF	$183 /AF
MWD LRP Effective Rate =	$724 /AF (r)	$767 /AF (r)
MWD Avoided New Demand Charge =	$0 /AF	$0 /AF
	$746 /AF	$703 /AF
Groundwater Production =	559.0 AF	262.0 AF
	$417,045	$184,200

Final LRP Contribution is the lesser of $637 and $250/AF

Final LRP Contribution = $250 /AF

2) Calculating the LRP Payments Adjustment

LRP Payments Adjustment = Calculated Total Final LRP Payments - Total Advance LRP Payments to agency

Calculated Final LRP Contribution =	$250 /AF
Calculated Final LRP Payments based on Allowable Yield =	$235,900
Estimated LRP Contribution = (Adjust value in cell H85)	$250 /AF
Advance LRP Payments to Agency based on Invoiced Yield =	$235,900
LRP Payment Adjustment due to this Reconciliation =	**$0**
No adjustment is needed	**$0**

Reconciliation Summary - FY 2011-12
Local Resources Program
Beverly Hills Desalter Project

Notes:

(a) Fiscal Year 2011-12, Allowable Yield equals 819 acre-feet as determined after completion of the annual production assessment.
(b) Recovered Water equals Allowable Yield; no other type of water was delivered using project facilities.
(c) Capital Costs include eligible capital improvements built for the Project and limited to the Project Description referenced in Beverly Hills Desalter Project, Agreement No. 4975 (Agreement), Exhibit A and includes eligible Capital Costs specified in Agreement, Exhibit B. No new Capital Costs reported by Beverly Hills in 09/10.
(d) No grant funding was reported by Beverly Hills to Metropolitan during fiscal year 2011-12.
(e) Total Capital Costs of $7,230,039 verified by audit conducted by KPMG and completed 3/30/2004.
(f) Financing sources and terms provided from accounting records by Beverly Hills. Capital Costs financed internally, Capital Costs calculated in accordance to Exhibit B, 3d. Metropolitan's weighted cost of long-term debt on June 30, 2003 = 3.96%.
(g) Annualized Capital Component calculated in accordance with terms of the Agreement; recovered groundwater shall not be less than 80% of project capacity for calculating Annualized Capital Component, Exhibit B, and Paragraph 4.
(h) Eligible Operations and Maintenance Costs include costs incurred by Beverly Hills as specified in Agreement, Exhibit C.
(i) Fixed Labor Costs and Fringe Benefits equal $250,000 x (235.776/157.6) = $374,010, Exhibit C, 1a.
(j) Chemicals and supplies allocated to recycled water calculated per Agreement, Exhibit C, 1c.
(k) Net electrical energy costs calculated per Agreement Exhibit C, 1d.
(l) Monitoring required by permits for water quality sampling and analysis of recycled water calculated per Agreement, Exhibit C.3.
(m) Operations and Maintenance Component calculated per Agreement, Exhibit C, 3.
(n) Annualized Replacement Component calculated per Agreement, recovered groundwater shall not be less than 80% of project capacity, Exhibit D. $175,000 is greater than $100,000 * (9962/6694).
(o) Project Unit Cost is calculated per Agreement, Section 1, Paragraph 1.10.
(p) Deferred Cost calculated per Agreement Exhibit E.
(q) Final GRP Contribution calculated per Agreement, Section 1, Paragraph 1.6.
(r) Metropolitan's Noninterruptible Treated Water Rate FY 2010-11 = $767/AF, FY 2011-12 = $817/AF.
(s) Estimated GRP Contribution for FY 2013-14 is $250.00 per acre-feet.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

March 13, 2013

Ms. Betty Burnett
Interim General Manager
South Coast Water District
P. O. Box 30205
Laguna Niguel, CA 92607-0205

Dear Ms. Burnett:

Fiscal Year 2011/12 Production Assessment
and Financial Reconciliation for the Capistrano Beach Desalter

The Metropolitan Water District of Southern California (Metropolitan) has completed the fiscal year 2011/12 annual reconciliation of production incentive payments for the subject project. Metropolitan reviewed project costs, groundwater production, and delivery records provided by South Coast Water District (SCWD) and determined that the agreement terms are being met.

Production records indicate that 932.7 acre-feet (AF) of recovered groundwater were delivered to end-users and are eligible to receive the GRP contribution. Based on project cost information provided by SCWD and completion of the financial reconciliation, the GRP contribution for the fiscal year is $250/AF. Metropolitan's total contribution for the fiscal year was $233,175 ($250/AF x 932.7 AF). Enclosed for your records is a copy of the reconciliation summary.

Using projected Project production and cost provided to Metropolitan and in coordination with your staff, the Estimated GRP Contribution for fiscal year 2013/14 is $250/AF. The actual financial contribution will be determined upon conclusion of the reconciliation for that year.

Metropolitan would like to thank Ms. Carolyn Rathbone of your staff for her assistance in completing the production assessment and reconciliation. If you have any questions, please contact me at (213) 217-6548 or via e-mail at: jvergara@mwdh2o.com.

Very truly yours,

Jose F. Vergara
Engineer, Regional Supply Unit

JFV:tt

Enclosures (2)

cc: Mr. Karl Seckel
Interim General Manager
Municipal Water District of Orange County
P.O. Box 20895
Fountain Valley, CA 927288

Mr. Keith Lyon
Principal Analyst
Municipal Water District of Orange County

CAPISTRANO BEACH DESALTER

(SCWD Groundwater Recovery Facility)

Production Assessment

Fiscal Year 2011/12

South Coast Water District

Month/Year	Allowable Yield (AF)	Paid by MWD (AF)	Difference (AF)
Jul-11	82.9	82.9	0.0
Aug-11	81.6	81.6	0.0
Sep-11	77.7	77.7	0.0
Oct-11	85.1	85.1	0.0
Nov-11	72.8	72.8	0.0
Dec-11	77.9	77.9	0.0
Jan-12	78.0	78.0	0.0
Feb-12	72.6	72.6	0.0
Mar-12	69.7	69.7	0.0
Apr-12	74.8	74.8	0.0
May-12	80.2	80.2	0.0
Jun-12	79.4	79.4	0.0
Total	**932.7**	**932.7**	**0**

Reconciliation Summary - FY 2011/12
GROUNDWATER RECOVERY PROGRAM
Capistrano Beach Desalter (SCWD Groundwater Recovery Facility)

6-Mar-13

Project Data

Project Capacity:	1,300.0	AF
Maximum Allowable Yield (a)	1,560.0	AF
Recovered Water: (b)	932.7	AF
Allowable Yield:	932.7	AF
Allowable Yield (July 1- Dec. 31/11):	478.0	AF
Allowable Yield (Jan. 1- Jun. 30/12):	454.7	AF

Capital Costs (c)

	Prior to 1-Jul-11	FY 2011/12	Total
Demineralization Plant	$ 9,261,431		$ 9,261,431.00
Stonehill Access - San Juan Creek	$ 2,567,972		$ 2,567,972.00
GW Offsite Grading - Utilities	$ 2,757,994		$ 2,757,994.00
I&M System Modification Project	$ 232,845	$ -	$ 232,845.00
Mechanical Mixer Installation		$ 27,120	$ 27,120.00
On-line Ammonia Analyzer		$ 8,345	$ 8,345.00
Less Grant:	$ -	$ -	$ -
Capital	**$ 14,820,242**	**$ 35,465**	**$ 14,855,707**

Financing (d)

	First Year	Financing Source	Interest	Term	Last Year	Cost	Annual Cost
1998 Water COP	1998	Bonds	0.050	30	2027	$ 7,129,313	$ 462,187
SCWD's Own Funding (e)	2000	Cash	0.041	20	2020	$ 6,332,436	$ 471,331
1998 Wastewater COP	1998	Cash	0.050	20	2017	$ 1,125,648	$ 90,325
SCWD's Own Funding (e)	2009	Cash	0.040	10	2019	$ 232,845	$ 28,651
SCWD's Own Funding (e)	2011	Cash	0.040	30	2041	$ 35,465	$ 2,051
						$ 14,855,707	$ 1,054,545

Annualized Capital Component (f): ***(ACCost)xD / (365Q)***

ACCost = $ 1,054,545

D = 365 days

Q = 1,040.0 AF (It cannot be less than (0.8)(1300) = 1,040)

Annualized Capital Component:

$$\frac{\$1{,}054{,}545}{365 \times 1{,}040} \times 365\ d = \mathbf{1{,}014.00}\ (\$/AF)$$

Reconciliation Summary - FY 2011/12
GROUNDWATER RECOVERY PROGRAM
Capistrano Beach Desalter (SCWD Groundwater Recovery Facility)

6-Mar-13

Operation and Maintenance Costs:

Professional consulting services for Project operation, maintenance and audits		$	-	
Labor: $70,000*(CPI-2012)/CPI-1998) =	$70,000 x (236.025/162	$	101,860.36	(g)
RO Membrane Replacement		$	64,400.00	
Chemical and Supplies		$	139,281.28	
Electrical energy		$	161,060.40	
Water Quality Sampling		$	14,479.75	
Total O&M		$	**481,081.79**	
Minus:				
Grants received by SCWD:		0.00		
Net Operation and Maintenance Cost		$	**481,081.79**	

O&M Component (h) : $ 481,081.79 / 932.7 = **$ 516.00 /AF** (h)

Annualized Replacement Component : ($12,285.07 / 932.7) **$13.17 /AF** (o)
RO Membrane Replacement: ($64,400 / Life: 6 years, paid by SCWD cash)

PROJECT UNIT COST: ($ 1,014.00 + $ 516.00 + $13.17) = $ 1,543.00 ($/AF)

Reconciliation Summary - FY 2011/12
GROUNDWATER RECOVERY PROGRAM
Capistrano Beach Desalter (SCWD Groundwater Recovery Facility)

6-Mar-13

GRP Contribution

The difference between:

1) Project Unit Cost plus		$ 1,543		
Deferred Cost from FY 2010-11	($ 421,780.93 /932.7 AF)	$ 452	(i)	$ 473,895.38
		$ 1,995	/AF	

and

2a) Treated Noninterruptible Water Rate (Jul 1/11-Dec.31/11),	$ 767	/AF	(j)
Plus NDC factor (z)	$ -	/AF	
	$ **767**	/AF	
Excess Unit Cost over Metropolitan's Water Rate:($ 1,995.00 - $ 767.00) =	$ 1,228		
Maximum Metropolitan GRP Contribution (Jul 1/2011 -- Dec 31/2011):	$ **250**	(k)	
(Metropolitan contribution is the lesser of (1) **$ 1,228.00** or (2) $250/AF)			

2c) Treated Noninterruptible Water Rate (Jan 1/12-Jun 30/12) (y),	$ 817	/AF	(j)
Plus NDC factor (z)	$ -	/AF	
	$ **817**	/AF	
Excess Unit Cost over Metropolitan's Water Rate:($ 1,995.00 - $ 817.00) =	$ 1,178		
Maximum Metropolitan GRP Contribution (Jan 1/2012 --Jun.30/2012):	$ **250**	(k)	
(Metropolitan contribution is the lesser of (1) **$ 1,178.00** or (2) $250/AF)			

Excess Project Cost for FY 2011/12: (l)

478.0	x(	1995	-	452	-	(	767	+	250))	=	$	251,428
454.7	x(	1995	-	452	-	(	817	+	250))	=	$	216,437
											$	**467,865**

Reconciliation

Estimated LPP Contribution (m)	$	250
GRP Contribution (Jul.1/10-Jun 30/11)	$	250
Adjustment	$	-

Total Contribution: $ 233,175

Reconciliation Summary - FY 2011/12
GROUNDWATER RECOVERY PROGRAM
Capistrano Beach Desalter (SCWD Groundwater Recovery Facility)

6-Mar-13

(a) Section 2.1 and 5.1 of 2003 Capistrano Beach Desalter Project GRP Agreement
Metropolitan shall pay the GRP contribution up to 120 percent of the project capacity

(b) Section 2.10

(c) Exhibit "B" - Capital costs include eligible capital improvement built for the Project, as provided by the Project Description.

(d) Exhibit "B" - Paragraph 3. Capital shall be financed at its actual financing.

(e) Metropolitan most recent weighted cost of long-term debt on June 30/09 was 3.96%, while the FY average of the 25-bond Revenue Bond Index was 5.68%.

(f) Exhibit "B" - (4). Annualized Capital Component (ACCom) is calculated with the formula:
ACCom = (ACCost) / Recovered Groundwater
Recovered Groundwater may not be less than: (0.8 x Project Capacity)

(g) Exhibit C - 1(b) CPI for FY11/12 in June 2012: 236.025; CPI for June 1998: 162.200

(h) Exhibit C (3)

(i) Deferred Cost from FY2010/11 is: $ 421,780.9

(j) Metropolitan's LRP/GRP Rate for calendar year 2011 (Jul1-Dec 31) was $767.
Metropolitan's LRP/GRP Rate for calendar year 2012 (Jan1-Jun30) was $817.

(k) Maximum Metropolitan contribution is $250/AF
The GRP calculated contribution is the lesser of $250/AF or $ 1,228.00 from Jul 1/11-Dec31/11.
The GRP calculated contribution is the lesser of $250/AF or $ 1,178.00 from Jan 1/12-Jun 30/12.
However, the maximum GRP contribution allowed by Metropolitan is $250/AF

(l) Excess Project Cost (EPC) incurred in FY 2011/2012, calculated using the formula on Exhibit "E"
This amount ($ 467,865.00) shall be used to calculate Deferred Cost in the FY 2012/13 Reconciliation.

(m) The Estimated GRP Contribution paid on a monthly basis was : $250/AF

(n) There is no need to adjust the contribution provided

(o) Membrane replacement per Exhibit D of the Agreement is financed at Metropolitan's default interest at the FY of replacement (FY2010/11) (4%) for the life of the previous membranes: 6 years. FY11/12 is year 2 of 6.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

May 9, 2013

Mr. P. Joseph Grindstaff
General Manager
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Mr. John V. Rossi
General Manager
Western Municipal Water District
450 Alessandro Boulevard
Riverside, CA 92517-5286

Dear Messrs. Grindstaff and Rossi:

Fiscal Year 2011/12 Production Assessment
for the Chino Basin Desalination Program (LRP Agreement 122434)

The Metropolitan Water District of Southern California (Metropolitan) has completed the annual production assessment for the subject project. Metropolitan reviewed production records provided by your staff and confirmed that Metropolitan owes Inland Empire Utilities Agency (IEUA) and Western Municipal Water District (WMWD) a total of $12,037.40.

Production and delivery records indicate that 13,425.8 acre-feet (AF) of recovered groundwater were delivered to end-users during Fiscal Year 2011/12 and are eligible to receive the Local Resource Program (LRP) contribution. However, IEUA and WMWD only invoiced Metropolitan for 13,339.20 AF, which is 86.6 AF (13,425.8 AF – 13,339.20) less. Thus, Metropolitan owes IEUA and WMWD a total of $12,037.4 ($139/AF x 86.6 AF) or $6,018.70 each. This amount will be included as a credit in the next water service invoice to IEUA and WMWD. Including this adjustment, Metropolitan's total contribution for the year was $1,866,186.20. A summary of fiscal year production assessment is shown on attached Table 1.

Metropolitan would like to thank Mr. Ryan Shaw for his assistance during this assessment. If you have any questions, please contact me at (213) 217-6548 or via e-mail at jvergara@mwdh2o.com.

Very truly yours,

Jose Vergara, P.E.
Water Resource Management

JV:vsm
o:\a\s\c\2013\JV_Chino_Basin_Desalination_Program_2011-12.doc

Enclosure

cc: Ryan E. Shaw
Planning & Environmental Compliance Dept.
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Mr. Jack Safely
Water Resources Manager
Western Municipal Water District
450 Alessandro Boulevard
Riverside, CA 92508

Table 1

Allowable Yield Calculation

Month	Allowable Yield		Yield Paid by Metropolitan		Yield Difference	
	WMWD	IEUA	WMWD	IEUA	WMWD	IEUA
	(AF)	(AF)	(AF)	(AF)	(AF)	(AF)
Jul-11			0	0	0	0
Aug-11			0	0	0	0
Sep-11			0	0	0	0
Oct-11			0	0	0	0
Nov-11			0	0	0	0
Dec-11			0	0	0	0
Jan-12			0	0	0	0
Feb-12			0	0	0	0
Mar-12	43.3	43.3	0	0	43.3	43.3
Apr-12	871.5	871.5	871.5	871.5	0	0
May-12	3,339.7	3,339.7	3,339.7	3,339.7	0	0
Jun-12	2,458.4	2,458.4	2,458.4	2,458.4	0	0
Total	**6712.9**	**6712.9**	**6,669.6**	**6,669.6**	**43.3**	**43.3**

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

April 16, 2013

Mr. Paul Cook
General Manager
Irvine Ranch Water District
P.O. Box 57000
Irvine, CA 92619-7000

Dear Mr. Cook:

Fiscal Year 2011/12 Production Assessment and
Financial Reconciliation for the Irvine Desalter (Agreement #A04305)

The Metropolitan Water District of Southern California (Metropolitan) has completed the fiscal year 2010/11 production assessment and cost reconciliation for the subject project. Metropolitan reviewed production and cost records provided by your staff and determined that the provisions of the agreement are being met.

Project and delivery records for FY 2011/12 indicate that 2,017.5 acre-feet (AF) of recovered groundwater were delivered to end-users and are eligible for GRP contribution. Based on the project cost information and completion of cost reconciliation, the GRP contribution for the year was $250/AF. Thus, the total contribution for the year was $504,375 ($250/AF x 2,017.5 AF). Attached for your records is a copy of a Reconciliation Summary for the year.

Pursuant to Section 1.8 of the Agreement, Metropolitan calculated the Estimated GRP Contribution for fiscal year 2013/14 to be $250 per acre-foot. The actual financial contribution will be determined upon conclusion of the reconciliation for that year.

Metropolitan would like to thank Mr. Christopher Smithson, and Ms. Denise To-Nguyen of your staff for their assistance during this reconciliation. If you have any questions, please contact me at (213) 217-6548 or via e-mail at: jvergara@mwdh2o.com.

Very truly yours,

Jose F. Vergara, P.E.
Regional Supply Unit

JFV:vsm
o:\a\s\c\2013\JV_IrvineDesalterReconciliation2011-12.doc

Enclosures

cc: Mr. Karl Seckel
Interim General Manager
Municipal Water District of Orange County
18700 Ward Street
P.O. Box 20895
Fountain Valley, CA 92728

Mr. Keith Lyon
Principal Analyst
Municipal Water District of Orange County

Mr. Christopher Smithson
Assistant Controller
Irvine Ranch Water District
P.O. Box 57000
Irvine, CA 92619-7000

Ms. Denise To-Nguyen
Irvine Ranch Water District

Table 1

Irvine Desalter Production Assessment Fiscal Year 2011/2012 Irvine Ranch Water District			
Month/Year	Allowable Yield	Yield Paid by MWD	Difference
	(AF)	(AF)	(AF)
Jul-11	11.1	11.1	0.0
Aug-11	124.6	124.6	0.0
Sep-11	220.4	220.4	0.0
Oct-11	205.7	205.7	0.0
Nov-11	235.4	235.4	0.0
Dec-11	185.5	185.5	0.0
Jan-12	161.6	161.6	0.0
Feb-12	138.1	138.1	0.0
Mar-12	135.9	135.9	0.0
Apr-12	186.8	186.8	0.0
May-12	177.8	177.8	0.0
Jun-12	234.6	234.6	0.0
Total	**2,017.5**	**2,017.5**	**0.0**

Reconciliation Summary - FY 2011/2012
GROUNDWATER RECOVERY PROGRAM
Irvine Desalter

26-Mar-13

Project Data

Project Capacity:	6,700.0	AF
Maximum Allowable Yield (a)	6,700.0	AF
Recovered Water: (b)	2,017.5	AF
Allowable Yield: (c)	2,017.5	AF
Allowable Yield (July 1- Dec. 31/10):	982.7	AF
Allowable Yield (Jan. 1- Jun. 30/11):	1,034.8	AF

Capital Costs (d)

	Prior to 1-Jul-11	Capital in FY2011-12	Total
Desalter Cost (Consultant, Construction and Construction Management)	$ 40,604,664	$ -	$ 40,604,664
Land R-of-W and Permits	$ 848,484		$ 848,484
Start-up	$ 761,945		$ 761,945
Subtotal	$ 42,215,093	$ -	$ 42,215,093
Minus:			
Shared Costs (e)			
E.J. Mejer	$ (4,009,888)		$ (4,009,888)
Margate	$ (1,181,673)		$ (1,181,673)
Artukovich	$ (472,866)		$ (472,866)
	$ (5,664,427)		$ (5,664,427)
Grants (f)			
SWRCB	$ (1,875,500)		$ (1,875,500)
DWR	$ (300,000)		$ (300,000)
USBR	$ (2,100,000)		$ (2,100,000)
	$ (4,275,500)	$ -	$ (4,275,500)
Environmental Planing	$ (44,656)		$ (44,656)
Eligible Capital	$ 32,230,510	$ -	$ 32,230,510

Financing (g)

	First Year	Financing Source	Interest	Term	Last Year	Cost	Annual Cost
IRWD own funding	2008	Cash	0.0334	20	2027	$ 29,942,115	$ 2,076,375
IRWD own funding	2009	Cash	0.0334	20	2028	$ 2,196,505	$ 152,319
IRWD own funding	2010	Cash	0.0334	20	2029	$ 166,890	$ 11,573
IRWD own funding	2011	Cash	0.0334	20	2030	$ (75,000)	$ (5,201)
						$ 32,230,510	$ 2,235,066

Annualized Capital Component: ***(ACCost)xD / (365Q)***

ACCost = $ 2,235,066

D = 365 days

Q = 5,360.0 AF (It cannot be less than (0.8)(6,700) = 5,360)

Annualized Capital Component:

$$\frac{\$2,235,066}{365 \times 5,360} \times 365\ d = \frac{}{AF\text{-}d}$$

417 ($/AF) (h)

Reconciliation Summary - FY 2011/2012
GROUNDWATER RECOVERY PROGRAM
Irvine Desalter Project

26-Mar-13

Operation and Maintenance Costs: (i)

Description			
Consultant Services - O&M		$59,535.00	
Labor	$	194,152.00	
Chemical & Supplies	$	74,105.00	
Electrical Energy	$	356,730.00	
O&M-Repair Contractor	$	424,813.00	
WQ Sampling - Lab	$	1,571.00	
OCWD Replenishment Assessment	$	728,574.00	
Brine Disposal User Fee	$	-	
Subtotal	**$**	**1,839,480.00**	
Total O&M			**$ 1,839,480.00**

Minus:
Grants received by for O&M of this Project: 0.00
Net Operation and Maintenance Cost **$ 1,839,480.00**

O&M Component: ($ 1,839,480.00 / 2,017.5) **$ 912 /AF**

Annualized Replacement Component **$0.00**

PROJECT UNIT COST: ($ 417 + $ 912 + $0) = $ 1,329 ($/AF)

Reconciliation Summary - FY 2011/2012
GROUNDWATER RECOVERY PROGRAM
Irvine Desalter Project

26-Mar-13

GRP Contribution

The difference between:

1) Project Unit Cost plus
Deferred Cost from FY 20(($ 818,410 / 2017.5 AF) $1,329.00
$405.66
$1,734.66 /AF

and

2a) Treated Noninterruptible Water Rate (Jul 1/11-Dec 31/11), $ 767.00 /AF (j)
Plus NDC factor $0.00 /AF
$ 767.00 /AF

Excess Unit Cost over Metropolitan's Water Rate:($ 1,734.66 - $ 767.00) = $ 967.66
Maximum Metropolitan GRP Contribution (Jul 1/2011 -- Dec 31/2011): **$ 250.00**
(Metropolitan contribution is the lesser of (1) **$ 967.66** or (2) $250/AF)

2b) Treated Noninterruptible Water Rate (Jan 1/12-Jun 30/12), $ 817.00 /AF (j)
Plus NDC factor $0.00 /AF
$ 817.00 /AF

Excess Unit Cost over Metropolitan's Water Rate:($ 1,734.66 - $ 817.00) = $ 917.66
Maximum Metropolitan GRP Contribution (Jan 1/2012 --Jun.30/2012): **$ 250.00**
(Metropolitan contribution is the lesser of (1) **$ 917.66** or (2) $250/AF)

Excess Project Cost for FY 2011/12: (k)

982.7	x(	$ 1,734.66	-	$405.66	-	(	$ 767.00	+	$ 250.00))	=	$ 306,602.40
1034.8	x(	$ 1,734.66	-	$405.66	-	(	$ 817.00	+	$ 250.00))	=	$ 271,117.60
											$ 577,720.00

Adjustment: (l)

There is no difference between the Estimated Agreement Purchase Price and the Project Unit Cost.

Reconciliation Summary - FY 2011/2012
GROUNDWATER RECOVERY PROGRAM
Irvine Desalter Project

26-Mar-13

Legends

(a) 1993 GRP Agreement, Section 1.15
(b) 1993 GRP Agreement, Section 1.17
(c) 1993 GRP Agreement, Section 1.1
(d) 1993 GRP Agreement, Exhibit B
(e) Common facilities shared with cleanup project paid for by the US Navy
(f) 1993 GRP Agreement, Exhibit B, 1(h)
(g) 2003 First Amendment, Section 12 - Financing at a rate equal to IRWD cost of money.
(h) 1993 GRP Agreement, Exhibit B, section 4
(i) 1993 GRP Agreement, Exhibit B - Data provided by IRWD
(j) Metropolitan's applicable water rate was: $767 for 2011 and $817 for 2012
(k) 1993 GRP Agreement, Exhibit E - Deferred Cost/Excess Project cost is calculated to be carried over for one year only, that is FY 2012-13: $ 577,720.00
This amount will be used in the reconciliation for FY 2012/13.
(l) No adjustment is needed

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

March 13, 2013

Mr. Robb Whitaker
General Manager
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712

Dear Mr. Whitaker:

Fiscal Year 2011/12 Reconciliation for the
Goldsworthy (Madrona) Desalter (Agreement No. 4979)

The Metropolitan Water District of Southern California (Metropolitan) has completed the fiscal year (FY) 2011/12 annual reconciliation of production and incentive payments for the Goldsworthy Desalter Project. Metropolitan reviewed production records, recovered groundwater deliveries, and related costs provided by the Water Replenishment District (WRD), and confirmed that WRD owes Metropolitan $110,380.

Records indicate that WRD delivered 1,837.5 acre-feet (AF) to end-users and is eligible to receive the Groundwater Recovery Program (GRP) Contribution. The cost reconciliation concluded that GRP Contribution is $216/AF for July through December 2011 and $166/AF for January through June 2012. However, Metropolitan paid $250/AF to WRD during the FY 2011/12. Thus, Metropolitan overpaid WRD a total of $110,380 [($250/AF-$216/AF) x 879.4 AF + ($250/AF-$166/AF) x 958.1 AF]. This amount will be included as a debit in the next water service invoice to Torrance. Including this adjustment, Metropolitan's total contribution for the year was $348,995. Enclosed is a copy of the reconciliation for the fiscal year.

Pursuant to Section 4.2 of the Agreement and in consultation with WRD staff, Metropolitan has established the Estimated GRP Contribution to be $150 per AF of production for FY 2013/14. The reconciliation process for FY 2013/14 will determine the actual financial contribution.

Metropolitan would like to thank Mr. Paul Fu of your staff for his assistance during this reconciliation. If you have any questions regarding this analysis, please contact me at (213) 217-6548 or e-mail at jvergara@mwdh2o.com

Very truly yours,

Jose Vergara, P.E.
Regional Supply Unit

JFV:tt

Enclosures (2)

cc: Mr. Chuck Schaich
Administrative Analyst
City of Torrance
3031 Torrance Boulevard
Torrance, CA 90503-5059

Mr. Paul L. K. Fu
Senior Engineer
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712

GOLDSWORTHY DESALTER
(Former Madrona Desalination Facility Project)
Fiscal Year 2011/12
Production Summary
Water Replenishment District

Month-Year	Allowable Yield	Certified Yield	Difference
	AF	AF	AF
Jul-11	185.5	185.5	-
Aug-11	155.5	155.5	-
Sep-11	103.4	103.4	-
Oct-11	97.5	97.5	-
Nov-11	171.5	171.5	-
Dec-11	166.0	166.0	-
Jan-12	166.2	166.2	-
Feb-12	118.2	118.2	-
Mar-12	160.8	160.8	-
Apr-12	174.3	174.3	-
May-12	173.8	173.8	-
Jun-12	164.8	164.8	-
Total	**1,837.5**	**1,837.5**	**0.0**

Reconciliation Summary - FY 2011/12
Groundwater Recovery Program
Goldsworthy Desalter (Madrona Desalination Facility Project)

19-Feb-13

Project Data

Project Capacity:	2,400.0	AF	(a)
Maximum Allowable Yield:	2,880.0	AF	(b)
Recovered Water:	1,837.5	AF	
Water Sold:	**1,837.5**	AF	
Allowable Yield under Agreement:	**879.4**	AF	(7/1/2011-12/31/2011)
Allowable Yield under Agreement:	**958.1**	AF	(1/1/2012-6/30/2012)

Capital Cost

	Prior to 1-Jul-2011	FY 2011/12	Total	Annualized Cost
Capital Cost (Per MWD Nov. 16, 2001 Audit):	$10,657,436			
Madrona Well Packer Installation (Oct. 2002):	$24,441			
Capital Cost (Updated Nov. 2002):	$10,681,877		$ 10,681,877	
Annualized Capital Cost (i=5.6% - 20 yrs):				$901,282.90

Annualized Capital Component: $901,283 / 1,920.0 = **$469.42** ($/AF) (d)

Operations and Maintenance Costs

	Acct Code	FY 2011/12 (Eligible)	
a. Professional Consultanting Services (SPI)	5,631	$28,282.48	
b. Labor ($240,000xCPI-2011/CPI-1996 = $240,000x231.303/157):	5631-34	$344,148.73	(e)
c. Chemicals & Supplies, maintenance & repairs	5681-5680	$173,248.99	
d. Energy for supply well, lighting & building, booster pumping, and finished water pumping	5622	$191,273.12	
e. Lease, maintenance and all repairs of existing brine disposal pipeline from CWS	5670	$0.00	
f. Water Quality Laboratory Fees (MWH Labs)	5632	$1,678.00	
e* Concentrate waste disposal fee approved by Metropolitan	5160	$131,599.40	(s)
Total Operation and Maintenance cost		$870,230.72	

O&M Component ($/AF): $870,230.72 / **1,837.5** = **$473.59 /AF** (h)

Annualized Replacement Component: $21,294.32 **$11.59** (i)

Membrane replacement ($172,716) $ 172,716.00

PROJECT UNIT COST: ($469.42 + $473.59 + $11.59) = **$954.60** ($/AF) (j)

Reconciliation Summary - FY 2011/12
Groundwater Recovery Program
Goldsworthy Desalter (Madrona Desalination Facility Project)

GRP Contribution

The difference between:

1) Project Unit Cost plus		$954.60	/AF
Deferred Cost from FY 2010/11	($51,741.60 / 1,837.5 AF)	**$28.00**	/AF (k)
		$983.00	/AF

and

2a) (Jul.1-Dec.31/2011) LRP Water Rate:		$767.00	/AF (l)
Plus NDC		$0.00	/AF (m)
		$767.00	/AF

Excess Unit Cost over MWD's Water Rate:	($983.00	-	$767.00	) =	$216.00
Maximum Metropolitan GRP Contribution:					$250.00 (n)

and

2b) (Jan 1- Jun 30/2012) LRP Water Rate:		$817.00	/AF (l)
Plus NDC		$0.00	/AF (m)
		$817.00	/AF

Excess Unit Cost over MWD's Water Rate:	($983.00	-	$817.00	) =	$166.00
Maximum Metropolitan GRP Contribution:					$250.00 (n)

Deferred Cost for FY 2011/12:

879.4	x (	$983.00	-	$28.00	- (	$767.00 +	$250.00)) =	-$54,523	
958.1	x (	$983.00	-	$28.00	- (	$817.00 +	$250.00)) =	-$107,307	
								-$161,830 (o)	

Reconciliation

July 1-December 31/11:

Estimated GRP Contribution:	$250.00 (p)	
GRP Contribution:	$216.00 (q)	
Adjustment:	**$34.00** (r)	**$29,900** (r)

January 1- June 30/12

Estimated GRP Contribution:	$250.00 (p)	
GRP Contribution:	$166.00 (q)	
Adjustment:	**$84.00** (r)	**$80,480** (r)
TOTAL ADJUSTMENT (WRD owes Metropolitan):		**$110,380** (r)

Total Contribution after Adjustment: **$348,995** (t)

Reconciliation Summary - FY 2011/12
Groundwater Recovery Program
Goldsworthy Desalter (Madrona Desalination Facility Project)

19-Feb-13

(a) GRP Agreement Section 1.8
(b) GRP Agreement Section 4.1
(c) Per MWD Audit of November 16, 2001.
(d) GRP Agreement, Exhibit B (4)
(e) GRP Agreement, Exhibit C (1b) CPI -July 2011: 231.303
(f) Deleted
(g) Deleted
(h) GRP Agreement, Exhibit C, (3)
(i) Membrane sytem was replaced for $172,716. Life of membranes was 10 years.
For the twelve months ending, June 30, 2012, the weighted average cost of MWD Debt: 4.00%, and the average 25 Bond-RBI Index: 4.95%. The lower of the two was used to calculate the Annualized Replacement Component (ARCom).
(j) GRP Agreement, Section 1.9
(k) Deleted
(l) MWD's LRP Rate was $767/AF from Jul.1/11 through Dec. 31/11, and $817/AF from Jan. 1/12 through June 30/12.
(m) NDC is the avoided New Demand Charge factor. Metropolitan has suspended collection of NDC. Therefore, this term is 0.
(n) GRP Agreement, Section 1.5
(o) Deferred Cost incurred in FY 2011/12 is calculated using the formula in Exhibit E of the GRP Agreement. This amount shall be used to calculate Deferred Cost in FY 2012/13 reconciliation. If Deferred Cost results in a negative number, it will be consider zero.
(p) As estimated by MWD's staff in consultation with WRD's staff
(q) GRP Agreement Section 5.2
(r) WRD owes Metropolitan: $ 110,380 . This amount will be debited to WRD in the next invoice to Torrance.
(s) Metropolitan approved this cost: WRD did not take over the existing CWS pipeline because the additional outfall pipeline was never built. Instead, WRD paid a brine disposal fee to the LACSD.
(t) For information only

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

May 1, 2013

Mr. Paul D. Jones, III
General Manager
Eastern Municipal Water District
P.O. Box 8300
Perris, CA 92570

Dear Mr. Jones:

Fiscal Year 2011/12 Reconciliation of the
Menifee Basin Desalter Project, Agreement No. 4922

The Metropolitan Water District of Southern California (Metropolitan) has completed the fiscal year (FY) 2011/12 annual cost reconciliation and production assessment for the subject Project under provisions of our Groundwater Recovery Program Agreement. Metropolitan reviewed production records provided by Eastern Municipal Water District (Eastern) and determined that Eastern owes Metropolitan $34,750.

Metropolitan reviewed project water deliveries for FY 2011/12 and concluded that 2,939 acre-feet (AF) is eligible to receive Metropolitan financial incentives under the Agreement. However, Eastern invoiced Metropolitan for 3,035.2 AF, hence 96.2 AF will be deducted. This information is detailed in the enclosed Table 1.

Based on the attached cost reconciliation for FY 2011/12, Metropolitan paid Eastern $607,040 ($200/AF X 3,035.2 AF). Eastern should have received $572,290 ($220/AF X 1,453.2 AF from July to December 2011 + $170/AF X 1,485.8 AF from January to June 2012). Hence, Metropolitan overpaid Eastern $34,750 ($607,040 - $572,290). This amount will be shown as a debit on the next water service invoice to Eastern. The enclosed Reconciliation Summary for Fiscal Year 2011/12 details cost data and supporting calculations.

Since the project unit cost is projected to be less than Metropolitan's prevailing water rate, Metropolitan will not provide any financial incentives for the project in FY 2013/14. The actual financial contribution will be determined upon conclusion of the reconciliation for that year.

We appreciate the assistance of Mr. Charles Turner and Ms. Marie Beam of your staff in completing the reconciliation. If you have any questions regarding this analysis, please contact me at (213) 217-6616, or via e-mail at dcotton@mwdh2o.com.

Very truly yours,

Deneice Cotton

Deneice Cotton
Regional Supply Unit

DC:vsm
o:\a\s\c\2013\DC_2011-12 Menifee Recon ltr.docx

Enclosures (2)

cc: Mr. Charles Turner
Financial Manager
Eastern Municipal Water District
P.O. Box 8300
Perris, CA 92572-8300

Ms. Marie Beam
Senior Management Analyst
Eastern Municipal Water District

Table 1			
Menifee Desalter Project FY 2011/12 Production Summary			
Month/Year	Allowable Yield (acre-feet)	Metropolitan Paid* (acre-feet)	Difference (acre-feet)
Jul-11	298.0	298.0	0.0
Aug-11	292.9	292.9	0.0
Sep-11	201.4	201.4	0.0
Oct-11	206.8	206.8	0.0
Nov-11	213.1	213.1	0.0
Dec-11	241.0	241.0	0.0
Jan-12	215.1	215.1	0.0
Feb-12	254.3	254.3	0.0
Mar-12	264.5	264.5	0.0
Apr-12	279.7	279.7	0.0
May-12	192.2	277.6	-85.4
Jun-12	280.1	290.8	-10.7
Total	2,939.0	3,035.2	-96.2

Project produced 2,939 AF. However Eastern invoiced Metropolitan for 3,035.2 AF, hence an adjustment will be made for Metropolitan's overpayment to Eastern for 96.2 AF.

Menifee Basin Desalter
GRP Agreement A04922 w/ Eastern MWD
- Annualized Capital Component -

Reconciliation Summary - FY 2011/12

Project Data

Project Capacity: (a)	3,360.0	AF
Maximum Annual Allowable Yield: (b)	4,032.0	AF
Recovered Groundwater July thru Dec 2011: (c)	1,485.8	AF
Recovered Groundwater Jan. thru June 2012 (c):	1,453.2	AF
Allowable Yield:	2,939.0	AF
Non-Eligilbe Yield:	0.0	AF

Capital Costs (d)

	Prior Capital Costs as of 6/30/2011 (e)	Capital costs (f) thru 6/30/2012	Total Capital Costs ending 6/30/12
Wells			
Extraction Well #1	$ 482,123		$ 482,123
Extraction Well #2	$ 491,245		$ 491,245
Extraction Well #3	$ 582,488		$ 582,488
Extraction Well #4	$ 501,668		$ 501,668
Test Well #1	$ 541,051		$ 541,051
Salt Creek Well	$ 1,082,921		$ 1,082,921
McLaughlin Well	$ 461,708		$ 461,708
Ethanac Well	$ 1,429,737		$ 1,429,737
Iron & Maganese	$ 954,501		$ 954,501
			$ 6,527,442
Pipelines			
S. Perris	$ 2,540,085		$ 2,540,085
Salt Cr. Well Transmission	$ 1,281,069		$ 1,281,069
McLaughlin Well Transmission	$ 1,084,281		$ 1,084,281
McLaughlin Well Site Piping	$ 673,460		$ 673,460
Brine Line (g)	$ 865,882		$ 865,882
		$ -	$ 6,444,777
Desalter Plant	$ 5,732,506		$ 5,732,506
Easements			
Easement	$ 92,279		$ 92,279
Environmental (h)			
McLaughlin Easement	$ 40,903		$ 40,903
			$ 133,182
Total Construction Capital	$ 18,837,907	$ -	$18,837,907
Other Costs			
SARI Capacity (i)	$ 1,121,747		$ 1,121,747
TVRI Capacity (j)	$ 2,240,578		$ 2,240,578
CSDOC (k)	$ 2,888,608		$ 2,888,608
Total Other	$ 6,250,933	$ -	$ 6,250,933
Total Capital Cost	$ 25,088,840	$ -	**$ 25,088,840**

Financing

Financing Source	Project Loan Amount (l)	First Year	Last Year	Term	Interest Rate	Annualized Cost
Ag Drainage Loan Program (m)	$ 8,246,208	1992	2012	20	0.031	$559,412
SAWPA - SARI (n)	$ 1,121,747	1992	2012	20	0.06	$97,799
1993A COP (o-1)	$ 865,882	1993	2023	30	0.0552	$59,709
SAWPA - TVRI (p)	$ 2,240,578	1998	2018	20	0.031	$151,998
2001 B COP/Refunded (o-2)	$ 11,659,924	2008	2035	28	0.031	$629,017
Cash (q)	$ 954,501	2011	2030	25	0.04	$61,099
	$ 25,088,840					$1,559,034

Annualized Capital Component

$1,559,034 x 365 days **$ 530.46** /AF (r)

365 x 2,939 AF- days

Menifee Basin Desalter
GRP Agreement A04922 w/ Eastern MWD
Project Unit Cost

Reconciliation Summary - FY 2011/12

Operation and Maintenance Costs:

Labor (s)		
Labor	$	282,919
Administration	$	18,331
Subtotal	**$**	**301,250**
Maintenance		
Materials	$	47,685
Chemicals	$	74,869
SAWPA/SARI (t)	$	494,303
Outside Services	$	125,651
Equipment Rental-Outside		924
Equipment Rental-Inside (u)		0
Maintence Services	$	1,295
Other	$	14
Subtotal	**$**	**744,741**
Energy		
Electric/Utilities (v)	**$**	**295,689**
Total O&M	**$**	**1,341,680**
Minus:		
Grants received for this Project (w):		0
Net Operation and Maintenance Cost	**$**	**1,341,680**

O&M Component (x): $1,341,680 / 2,939.0 = **$ 456.51 /AF**

Annualized Replacement Component (y): **$0.00 /AF**

Project Unit Cost (z): **$ 530.46** (Capital) + **$ 456.51** (O+M) + **$0.00** (Replacement) = **$ 986.97 /AF** (Total)

Menifee Basin Desalter
GRP Agreement A04922 w/ Eastern MWD
Reconciliation Notes

Reconciliation Summary - FY 2011/12

(a) Subsection 1.15 - Project Capacity shall mean 3,360 AFY

(b) Subsection 10.1(b) - Metropolitan agrees to purchase...up to 4,032 AFY (120% of Project Capacity)

(c) Subsection 1.17 - Recovered Groundwater shall mean all Brackish Groundwater recovered for beneficial use by the Project. Production reported is for each six month period of the fiscal year.

(d) Exhibit B - Capital costs may include design, construction of facilities described in Exhibit A, Capacity Use Rights for brine disposal, permits, right-of-way, and contributions received by Eastern that offset eligible capital costs.

(e) Allowed costs from previous FY reconciliation.

(f) Continuing capital expenditures.

(g) Exhibit A refers to a Non-Reclaimable Water Pipeline (NRWP). This is the brine line that connects to TVRI (see j). 11% of its cost is allocated to the Project.

(h) Exhibit B, Subsection 2(b) - Environmental costs are excluded.

(i) SARI capacity - Santa Ana Regional Interceptor. EMWD purchased a 2 mgd Capacity Use Right (CUR). Project eligible portion = 25.13% [(SARI 2.0 + TVRI 2.378 = 4.378) 1.1* / 4.378 = 0.2513]

(j) TVRI capacity - Temescal Valley Regional Interceptor. EMWD purchased 2.378 mgd Capacity Use Right. Project eligible portion = 25.13% [(SARI 2.0 + TVRI 2.378 = 4.378) 1.1* / 4.378 = 0.2513]

(k) CSDOC - County Sanitation Districts of Orange County.
EMWD purchased a 1.2 mgd Treatment and Disposal Right (TDR) in these facilities
* Project capacity need = 1.1 mgd; Project eligible charge = [1.1] / [1.2] = 0.917 (91.7%)
1.2 mgd TDR cost = $3,151,209. Project eligible cost $3,151,209 x 91.7% = $2,888,608

(l) Eligible Project costs apportioned to each financial instrument as provided by EMWD

(m) "Agricultural Drainage Water Management Loan, Eastern Municipal Water District, in the amount of $11,600,000, Contract No. 1-818-550-0" issued by the State Water Resources Control Board. El;igible project costs are $8,246,208 used to construct wells, South Perris pipeline, easements, and a portion of the TVRI CUR.

(n) SAWPA - SARI:Santa Ana Watershed Project Authority loan in the amount of $7,300,000. Noted in EMWD financial statement under "Advances for Construction, Notes and Assessments Payable" Used to purchase 2mgd SARI CUR. Eligible project costs are $1,121,747.

(o-1) 1993A COP - "Eastern Municipal Water District Water and Sewer Revenue Certificates of Participation Series 1993A" in the amount of $46,340,000 used to partially fund construction of the brine line. Eligible project costs are $865,882.

(o-2) 2001B COP - "Eastern Municipal Water District Water and Sewer Revenue Certificates of Participation Series 2001B" in the amount of $51,370,000, funded construction of the desalter, 3 well transmission pipelines and CSDOC TDR of which $11,659,924 are eligible project costs. 2001B Certificates were refunded in 2008 with a lower rate of 3.10%.

(p) SAWPA - TVRI: Noted in EMWD financial statement under "Advances for Construction, Notes and Assessments Payable" in the amount of $8,917,500 used to purchase 2.378 mgd CUR in TVRI, and by extension, SARI CUR. Eligible project costs are $2,240,575.

(q) Cash expense of $954,501 for Iron and Manganese Removal Facility based on cost allocation of 3 MGD for Menifee (total expended for FY 10/11 was $2,545,337 for 8 MGD capacity) was amortized using the lesser of Metropolitan's cost of debt which is 4.0% vs. the average cost of the 25-RBI of 5.17%. Total projected

Reconciliation Summary - FY 2011/12

cost of $21,118,100 has not been expended and grant funds of $10,000,000 have not yet been received for the project.

(r) Exhibit B Section 4 - The Annualized Capital Component is calculated as ACCom=(ACCost)(# days in FY)/365Q where Q is Recovered Groundwater ACCom computed on Recovered Groudwater this is 2,939 AF for FY 11/12.

(s) EMWD staff performs labor for theDesalter in lieu of haing O&M services performed by a contractor. See Exhibit C, Section 1(g) and EMWD letter dated December 2, 2005.

(t) SAWPA/SARI O&M charges provided by EMWD in Desalter General Ledger Detail for FY 2010/11 are eligible per Exhibit C Subsection 1(c).

(u) Equipment Rental-Inside are charges for use of EMWD's vehicles is ineligible as an O&M expense.

(v) Electrical costs reported for the Menifee Desalter during the fiscal year is based on a proportionate use of metered SCE kWh electricity allocated by EMWD. See EMWD Menifee Desalter Electricity Historical localed in G-11 file.

(w) No grants were reported having been received by EMWD for the Project.

(x) Exhibit C Section 3 calculation for O&MC = Actual Annual O&M Cost ($) / Recovered Groundwater (AF)

(y) Exhibit D: No Replacement Costs were reported

(z) Project Unit Cost is the summation of the Annualized Capital Compontent, Opertion and Maintenance Component and the Annualized Replacement Component.

(aa) The Agreement Purchase Price is the lesser of the sum of the Project Unit Cost plus Deferred Cost or the sum of the Treated Noninterruptible Water Rate plus Metropolitan's Maximum Financial Inentive Rate. See Section 1.2 of Agreement.

(bb) Exhibit E: Deferred cost = [Excess Project Costs from FY 2010/11 / [Recovered GW]. The Excess Project Cost (EPC) for FY 10/11 is $0 divided by Recovered Groundwater for FY 11/12, hence no Deferred Cost.

(cc) Metropolitan's Noninterruptable Treated Water Rate in FY 2011/12 was $767 from 7/1/11 - 12/31/11 and $817 from 1/1/12 - 6/30/12.

(dd) Subsection 1.11: Metropolitan's Maximum Financial Incentive Rate shall be $250 per acre-foot.

(ee) Exhibit E: Excess Project Cost = Allowable Yield x [(Project Unit Cost)-(Treated Noninterruptable Water Rate+Met's Maximum Financial Incentive Rate)]

(ff) Total Excess Project Cost value to be used in calculation of Deferred Cost to be carried forward for calculating Agreement Purchase Price in the next FY.

(gg) The annual reconciliation determines the difference between the Agreement Purchase Price and the Estimated Agreement Purchase Price for over or under payment of Allowable Yield. See Section 10.1 (c) of Agreement.

(hh) Metropolitan's prevailing rates for the fiscal year. See Metropolitan's letter dated June 2, 2011.

(ii) Overpayment made by Metropolitan as a result of the difference of the Estimated Agreement Purchase Price and the final Agreement Purchase Price, therefore Eastern owes Metropolitan $34,750.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

April 11, 2013

Mr. Keith Van Der Maaten
Utilities Director
City of San Juan Capistrano
32400 Paseo Adelanto
San Juan Capistrano, CA 92675

Dear Mr. Van Der Maaten:

San Juan Basin Desalter Fiscal Year 2011/12 Reconciliation and Estimated GRP Contribution

The Metropolitan Water District of Southern California (Metropolitan) has completed the fiscal year (FY) 2011/12 production assessment and cost reconciliation for the subject project. Metropolitan reviewed production and cost records provided by your staff and determined that the provisions of the agreement are being met.

Project and delivery records indicate that 3,666.6 acre-feet (AF) of recovered groundwater were delivered to end-users and are eligible for GRP contribution. Based on the project cost information and completion of cost reconciliation, the GRP contribution for the year was $250/AF. Thus, the total contribution for the year was $916,650 ($250/AF x 3,666.6 AF). Attached for your records is a copy of a Reconciliation Summary for the year.

Pursuant to Section 1.4 of the Agreement and in consultation with your staff, Metropolitan has estimated the Estimated GRP Contribution to be $250/AF of production for fiscal year 2013/14. The actual financial contribution will be determined upon conclusion of the reconciliation for fiscal year 2013/14.

700 N. Alameda Street, Los Angeles, California 90012 • Mailing Address: Box 54153, Los Angeles, California 90054-0153 • Telephone (213) 217-6000

Metropolitan would like to thank Ms. Cindy Russell for her assistance during this reconciliation. If you have any questions, please contact me at (213) 217-6548 or via e-mail at: jvergara@mwdh2o.com.

Very truly yours,

Jose Vergara, P.E.
Regional Supply Unit

JFV:vsm
o:\a\s\c\2013\JV_SanJuanBasinDesalterReconciliation2011-12.doc

Enclosure

cc: Mr. Karl Seckel
Interim General Manager
Municipal Water District of Orange County
18700 Ward Street
Fountain Valley, CA 92708

Mr. Keith Lyon
Principal Analyst
Municipal Water District of Orange County

Table 1

San Juan Basin Desalter Fiscal Year 2011-12 Reconciliation			
Production Assessment			
San Juan Basin Authority			
City of San Juan Capistrano			
Month-Year	Allowable Yield	Yield Paid by Metropolitan	Difference
	AF	AF	AF
Jul-11	253.2	256.4	(3.2)
Aug-11	347.6	347.6	0.0
Sep-11	340.3	339.9	0.4
Oct-11	377.5	377.5	0.0
Nov-11	344.6	344.0	0.6
Dec-11	338.2	338.3	(0.1)
Jan-12	330.8	330.9	(0.1)
Feb-12	302.1	302.2	(0.1)
Mar-12	210.8	210.8	0.0
Apr-12	201.0	201.0	0.0
May-12	302.2	302.0	0.2
Jun-12	315.7	316.0	(0.3)
Total	**3664.0**	**3666.6**	**(2.6)**

Slight differences in monthly actual yield and monthly certified yield are reflected as noted and are usually the result of rounding. These differences (when less than 5 AF) are waived per Metropolitan's Administrative Code §4507, (m)(6).

Reconciliation Summary - FY 2011-12
Groundwater Recovery Program
San Juan Basin Desalter

Project Data

Project Capacity:	4,800.00 AF	
Maximum Allowable Yield:	5,760.00 AF	
Recovered Water:	3,664.00 AF	
Water Sold:	**3,664.00** AF	
Allowable Yield under Agreement:	2,001.40 AF	(9/1/2010-12/31/2011)
Allowable Yield under Agreement:	1,662.60 AF	(1/1/2011-6/30/2012)

Capital Cost

	Prior to 1-Jul-2010
(1a) SJBA Final Design and Const. Management Service	$578,089 (a)
(1b) DBO Fixed Purchase price	$25,030,067 (b)
(1c) SJBA Admin Fee (not to exceed 3% ob (b))	$261,369 (c)
(1d) Permits	$60,078 (d)
(1e) Lands, ROW, Easements	$421,183 (e)
(1f) Concentrate Waste Disposal Connection fee	Incl. in fixed price (f)
Total Capital	**$26,350,786**

Financing - Fixed Interest Rate/Non-Uniform Payment

Total Capital Cost	$26,350,786
True Interest Costs	5.413838% (g)
Term of Finaning (Yrs)	20 (h)
Economically Equivalent Uniform Annualized Capital Component	$2,076,843 (i)
Monthly Cost	$173,070

Annualized Capital Component: (j) $\frac{\$2,076,843}{3,840.00}$ = **$540.84** ($/AF)

West Basin Desalter Project
2011-12 Reconciliation Summary

ESTIMATED AGREEMENT PURCHASE PRICE (Section 1.7) IS LESSER OF THE FOLLOWING:

(1) Estimated Project Unit Cost		$1,235.36/ AF
(2) Treated Noninterruptible Water rate + Max. MWD Contribution (Jul-Dec 2011)		$1,017.00/ AF
(3) Treated Noninterruptible Water rate + Max. MWD Contribution (Jan-Jun 2012)		$1,067.00/ AF
GRP Contribution		$250.00/ AF
CALCULATED FINANCIAL CONTRIBUTION FOR FY 2011-12	**$238,800.00**	(955.2 af x $250/af)
ACTUAL FINANCIAL CONTRIBUTION FOR FY 2011-12		
July - December 2011	$127,200.00	(508.80 af x $250/af)
January - June 2012	$111,600.00	(446.4 af x $250/af)
	$238,800.00	
FINANCIAL CONTRIBUTION OWED THE DISTRICT FROM MWD	$0.00	

West Basin Desalter Project
2011-12 Reconciliation Summary

CALCULATING DEFERRED COST TO APPLY TO FISCAL YEAR 2011-2012

Excess Project Costs (EPC) from Prior FY (July-December 2010)	
AYP = Allowable Yield in Prior FY =	387.70 AF
PUCP = Project Unit Cost in Prior Fiscal Year =	$1,051.67/ AF
RateP = Treated Noninterruptible Water Rate in Prior Fiscal Year =	$724.00/ AF
MWD Rate = MET's maximum Financial Incentive Rate =	$250.00/ AF
Recovered Water in Current FY (7/11-12/11)	508.80 AF
Excess Project Cost (7/10 - 12/10) = AYP x [PUC-(RateP + MWD Rate)] =	$30,112.66
Excess Project Costs (EPC) from Prior FY (Jan-Jun 2011)	
AYP = Allowable Yield in Prior FY =	493.90 AF
PUCP = Project Unit Cost in Prior Fiscal Year =	$1,051.67/ AF
RateP = Treated Noninterruptible Water Rate in Prior Fiscal Year =	$767.00/ AF
MWD Rate = MET's maximum Financial Incentive Rate =	$250.00/ AF
Recovered Water in Current FY (1/12- 6/12)	446.40 AF
Excess Project Cost (1/10 - 6/10) = AYP x [PUC-(RateP + MWD Rate)] =	$17,123.51
Excess Project Cost per Acre Foot from Prior Fiscal year (07/10 - 12/10):	**$30,112.66**
Excess Project Cost per Acre Foot from Prior Fiscal year (01/11 - 06/11):	**$17,123.51**
	$47,236.17

Deferred Cost = Excess Project Cost / Recovered Groundwater

DEFERRED COST TO APPLY TO CURRENT FISCAL YEAR 2011-12	**$47,236.17** / **955.20 AF**	=	**$49.45/ AF**

AGREEMENT PURCHASE PRICE (Section 1.2) IS LESSER OF THE FOLLOWING:

(1) Estimated Project Unit Cost **plus**	$1,185.91/ AF
Deferred Cost for Current FY	$49.45/ AF
	$1,235.36/ AF

and

(2) **July - December 2011**	
Treated Noninterruptible Water Rate	$767.00/ AF
Maximum Metropolitan Contribution	$250.00/ AF
Calculation for GRP Contribution	$1,017.00/ AF
January - June 2012	
Treated Noninterruptible Water Rate	$817.00/ AF
Maximum Metropolitan Contribution	$250.00/ AF
Calculation for GRP Contribution	$1,067.00/ AF

West Basin Desalter Project
2011-12 Reconciliation Summary

PROJECT DATA (in acre-feet)

Maximum Contractual Yield	1,524 AF	1,220 AF
Recovered Water - July 1, 2011 - December 31, 2011	508.80 AF	
Recovered Water - January 1, 2012 - June 30, 2012	446.40 AF	
Recovered Water - Total for FY 2011-2012	955.20 AF	

CAPITAL COSTS (A)

	Total Construction	thru FY 2005-2011	FY 2011-2012
Construction	$2,429,057.27	$2,429,057.27	$0.00
Consultant \ Design Services	$410,350.42	$410,350.42	$0.00
Supervision of Design & Construction	$220,991.60	$220,991.60	$0.00
Permits	$151,755.00	$151,755.00	$0.00
LACSD Connection Fee	$736,701.87	$736,701.87	$0.00
Total Capital Cost	$3,948,856.16	$3,948,856.16	$0.00

Funding Source	First Yr	Interest	Term	Last Yr	Principal Amount	Amortized Cost
Annualized Cash Pmt	1995	0.07	25	2020	$1,320,690.35	$113,329.12
Connection Fee	1995	0.055	20	2015	$695,818.00	$58,225.58
Connection Fee	1998	0.0537	20	2018	$40,883.87	$3,384.33
Cash Payment	2004	0.0537	20	2024	$70,556.65	$5,840.62
Cash Payment	2005	0.0537	20	2025	$506,303.74	$41,911.38
Cash Payment	2006	0.0537	20	2026	$526,143.99	$43,553.73
Cash Payment	2007	0.0537	20	2027	$140,774.26	$11,653.17
Cash Payment	2009	0.0537	20	2029	$80,015.84	$6,623.64
Cash Payment	2010	0.0537	20	2030	$356,107.05	$29,478.23
Cash Payment	2011	0.0537	20	2031	$211,562.41	$17,512.95
Cash Payment	2012	0.0537	20	2032	$0.00	$0.00
Total Capital Cost					**$3,948,856.16**	$331,512.75

Annualized Capital Component (ACC)	$331,512.75	=	**$271.73 AF**
(Recovered GW limited to 1,220 AF to calculate ACC)	1,220.00		

OPERATIONS AND MAINTENANCE COSTS

(A) LACSD	$96,926.88
(B) Replenishment Assessment	$358,621.10
(C) Engineering Services	$3,084.00
(D) WBMWD Labor (Direct and Indirect)	$2,295.50
(E) WBMWD Administrative Cost - Limited to 65% of Direct Labor	$1,492.08
(F) AQMD Permit	$1,253.10
(G) Lab Samples	$2,176.15
	$465,848.81
CWSC- O&M Costs	
(H) Operation Labor	$251,837.84
(I) Rent	$12,000.00
(J) Chemicals	$31,975.11
(K) Energy	$111,559.61
(L) Equipment Maintenance	$0.00
Total DWC O&M Costs	$407,372.56
Total O&M Costs	$873,221.37

Annualized O&M Component	$873,221.37	=	**$914.18/ AF**
Actual production	$955.20 AF		
Replacement Costs			**$0.00**
ESTIMATED PROJECT UNIT COST			**$1,185.91/ AF**
PROJECT UNIT COST			**$1,185.91/ AF**

West Basin Desalter Project FY 2011/12 Production Summary			
Month/Year	Allowable Yield (acre-feet)	Paid by Metropolitan (acre-feet)	Difference (acre-feet)
July 2011	80.9	80.9	0.0
Aug	87.8	87.8	0.0
Sep	84.6	84.6	0.0
Oct	88.1	88.1	0.0
Nov	88.4	88.4	0.0
Dec	79.0	79.0	0.0
Jan 2012	88.3	88.3	0.0
Feb	14.7	14.7	0.0
Mar	91.6	91.6	0.0
Apr	91.5	91.5	0.0
May	89.3	89.3	0.0
Jun	71.0	71.0	0.0
Total	955.2	955.2	0.0

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

January 16, 2013

Mr. Richard Nagel
General Manager
West Basin Municipal Water District
17140 South Avalon Boulevard, Suite 210
Carson, CA 90746-1218

Dear Mr. Nagel:

Fiscal Year 2011/12 Production Assessment
and Financial Reconciliation for the West Basin Desalter Project

The Metropolitan Water District of Southern California (Metropolitan) has completed the fiscal year 2011/12 production assessment and cost reconciliation for the subject project. Metropolitan reviewed records provided by West Basin Municipal Water District (West Basin) and confirmed that provisions of the Agreement are being met.

Production records indicate that 955.2 acre-feet are eligible to receive Metropolitan's incentive (See Enclosed Table). Metropolitan's total contribution for the year is $238,800 (955.2 AF x $250/AF). Enclosed is a copy of the Reconciliation Summary.

Using projected project production and costs provided to Metropolitan and in coordination with your staff; the Estimated LRP Contribution for FY 2013/14 is $250/AF. The actual financial contribution will be determined upon conclusion of the reconciliation for that year.

We would like to thank Mr. Xavier Sage for his assistance in completing the reconciliation. If you have any questions, please contact me at (213) 217-6594 or via e-mail at jdeleon@mwdh2o.com.

Very truly yours,

Carlos de León, P.E.
Resource Specialist, Regional Supply Unit

JCD:tt

Enclosure

cc: Mr. Xavier Sage
Accountant II
West Basin Municipal Water District
17140 South Avalon Boulevard, Suite 216
Carson, CA 90746

Reconciliation Summary - FY 2011-12
Groundwater Recovery Program
San Juan Basin Desalter

Operations & Maintenance Costs

		Acct #
(a) Operations & Maintenance	$0.00 (k)	52-622XX-4461
(a) Professional Consulting for project	$0.00	62-94xxx-62409
(b) Labor	$242,239.86	62-94xxx-61xxx
(c) Chemicals	$807,563.68	62-9475x-63302
(c) Supplies	$131,820.61	62-94755-63705
(c) Maintenance & Repair -Equipment & Building	$326,412.33	62-9475x-64203
(d) Energy	$726,845.25 (l)	62-947xx-62801
(e) Water Quality & Sampling	$270,897.07	62-94752-66217
(f) Concentrate Waste Disposal Costs	$0.00	62-94752-66217
Total Operations & Maintenance Cost	$2,505,778.80	

O&M Component ($/AF): $2,505,779 /3,664 = **$683.89 /AF**

Annualized Replacement Component: $112,967.00 **$30.81 /AF (m)**
RO Membrane Replacement: ($502,909 / Life: 5 years, paid by SC cash)

	CAPITAL		O&M		REPLACEMENT		
PROJECT UNIT COST:	$540.84	+	$683.89	+	$30.81	=	**$1,255.54** ($/AF)

Reconciliation Summary - FY 2011-12
Groundwater Recovery Program
San Juan Basin Desalter

GRP Contribution

The difference between:

1) Project Unit Cost plus			$1,255.54 /AF
Deferred Cost from FY 2010/11	($939,717.07 /	3664 AF)	$256.47 /AF
			$1,512.01 /AF

and

2a) (Jul. 1/10- Dec 31/11) LRP Water Rate:	**$767.00** /AF (o)
Plus NDC	$0.00 /AF
	$767.00 /AF

Excess Unit Cost over MWD's Water Rate:	($1,512.01 - $767.00) =	$745.01
Maximum Metropolitan GRP Contribution:		$250.00
Maximum Metropolitan GRP Contribution (The lesser of $758.29 or $250):		**$250.00**

2b) (Jan 1/12- Jun 30/12) LRP Water Rate:	**$817.00** /AF (o)
Plus NDC	$0.00 /AF
	$817.00 /AF

Excess Unit Cost over MWD's Water Rate:	($1,512.01 - $817.00) =	$695.01
Maximum Metropolitan GRP Contribution:		$250.00
Maximum Metropolitan GRP Contribution (The lesser of $708.29 or $250):		**$250.00**

Deferred Cost for FY 2011/12

2001.4	x ($1,512.01 - $256.47 - ($767.00 + $250.00)) =			$477,413.96
1662.6	x ($1,512.01 - $256.47 - ($817.00 + $250.00)) =			$313,466.60

Deferred Cost to be Used in the FY 2012-13 Reconciliation (If negative, then Zero) **$790,880.56** (p)

Reconciliation

Estimated GRP Contribution:	$250.00
GRP Contribution:	$250.00
Adjustment:	**$0.00** (q)

Total Monthly Credits Paid to the City of San Juan Capistrano:	**$**	**916,650.00** (r)
Eligible Contribution:	**$**	**916,000.00** (s)

Adjustment (Negligible) $650.00

Reconciliation Summary - FY 2011-12
Groundwater Recovery Program
San Juan Basin Desalter

(a) GRP Agreement Section 1(a) - Includes Construction Management services

(b) First amendment - Exhibit B - Paragraph 5 and Exhibit B of original Agreement. Because ECO only operated four out of the 12 months and the city of SJC took over the project, the eligible labor costs have been prorated using both, the original and the first amendmended agreement.

(c) Exhibit B -1c and First amendment - Exhibit B- Paragraph 5 - Subject to audit

(d) Exhibit B -1c and First amendment - Exhibit B- Paragraph 5 - Subject to audit

(e) Exhibit B -1c and First amendment - Exhibit B- Paragraph 5 - Subject to audit

(f) This cost is included in the DBO vendor proposal

(g) Exhibit B -1c and First amendment - Exhibit B- Paragraph 5 - Subject to audit
Interest not to exceed 5.7 percent.

(h) Exhibit B -1c and First amendment - Exhibit B- Paragraph 5 - Subject to audit

(i) Exhibit B - Paragraph 3

(j) Exhibit B - Paragraph 5

(k) First amendment - Exhibit C, Paragraph 4 - The service fee includes a fixed payment for O&M , which includes a fixed labor and an O&M subcomponents. This applies when DBO was in charge of the project. Since FY2008/09 DBO no longer operate the project. The City of SJC owns and operates the project.
However, this amount could not exceed:

$611,400 adjusted by 90% of CPI(Jul.08)/CPI(Jul./03) =

FY03-04 adjustment:	(0.9x193.4/186.3) =	3.43%	$632,370.72
FY04-05 adjustment:	(0.9x201.4/193.4) =	3.72%	$655,912.96
FY05-06 adjustment:	(0.9x211.4/201.4) =	4.47%	$685,223.87
FY06-07 adjustment:	(0.9x217.454/211.4) =	2.58%	$702,884.76
FY07-08 adjustment:	(0.9x229.89/217.45) =	5.15%	$739,074.67
FY08-09 adjustment:	(0.9x224.01/229.89) =	-2.30%	$722,075.96
FY09-10 adjustment:	Service Fee No Longer Paid to an Ouside Vendor:		$0

Because the City of SJC took over the project, the O&M (as defined in the original agreement) cost incurred by the City is eligible. All other costs are not considered in the calculation.
Exhibit B (1b) maximum labor cost fixed allowed per formula: $205,075x($35.5*1.0275/ $30.88)
Where $35.5 is the average hourly salary of an utility supervisor, and $30.oo was the maximum hourly rate for a utility supervisor in 1998.

(l) First amendment - Exhibit C, Paragraph 4 - Energy costs is avariable that will be paid directly by the City of SJC.

(m) Exhbit D - No replacement costs were justified in the submitted data.
Only when incurred, replacement costs as defined in the agreement are eligible.

(n) Deleted

(o) Metropolitan's LRP/GRP Rate for calendar year 2010 (Jul.-Dec31) was $767.
Metropolitan's LRP/GRP Rate for calendar year 2011 (Jan1-Jun30) was $817.

(p) This amount will be used in the reconcilation for FY 2011/12

(q) No adjustment is necessary.

(r) Total payment made to San Juan Capistrano based on estimated production data submitted on a monthly basis

(s) Total contribution for FY 2010/11

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

November 28, 2012

Mr. Jonathan Daly
General Manager
City of Corona
Department of Water and Power
755 Corporation Yard Way
Corona, CA 92880

Dear Mr. Daly:

Local Projects Program Production Assessment for the
Temescal Basin Desalting Facility Fiscal Year 2011/12 (Agreement No. 23293)

The Metropolitan Water District of Southern California (Metropolitan) has completed the annual production assessment for the Temescal Basin Desalting Facility. Metropolitan reviewed production records provided by your staff and concluded that 7,941.5 acre-feet of recovered groundwater certified by City of Corona (Corona) accurately reflects the amount of production eligible to receive Metropolitan's incentives under the agreement. Corona received a credit for $794,150 ($100/AF x 7,941.5 AF). A summary of fiscal year production is shown on Table 1 (enclosed).

Metropolitan would like to thank Ms. Stacy Joyce for her assistance in completing this assessment. If you have any questions, please contact me at (213) 217-6489 or via e-mail at kalonzo@mwdh2o.com.

Very truly yours,

Kira Z. Alonzo, P.E.
Regional Supply Unit

KZA:jc
o:\a\s\c\2012\KZA_2010-11 Temescal assessment.docx

Enclosure

cc: Mr. Tom Moody
Operation Manager
City of Corona
Department of Water and Power

Mr. Justin Amon
Chief Water Operator
City of Corona
Department of Water and Power

Ms. Stacy Joyce
Regulatory Analyst
City of Corona

Mr. John V. Rossi
General Manager
Western Municipal Water District
450 Alessandro Boulevard
Riverside, CA 92508

Table 1
Temescal Basin Desalting Facility
Fiscal Year 2011/12 Production Assessment

Month	Metropolitan Paid (AF)	Allowable Yield (AF)	Difference*
Jul. 11	0.0	0.0	0.0
Aug. 11	0.0	0.0	0.0
Sept. 11	0.0	0.0	0.0
Oct. 11	0.0	0.0	0.0
Nov. 11	0.0	0.0	0.0
Dec. 11	0.0	0.0	0.0
Jan. 12	851.8	851.9	0.1
Feb. 12	928.8	928.8	0.0
Mar. 12	792.7	792.7	0.0
Apr. 12	886.2	886.2	0.0
May 12	983.9	983.9	0.0
Jun. 12	3,498.1	3,498.1	0.0
Total	7,941.5	7,941.6	0.1

Note: A total of 17,441.6 AF were produced. The first 9,500 AF are not eligible per section 15.1 of Agreement No. 23293.

*No adjustment necessary

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

May 2, 2013

Mr. Art Valenzuela
Water Treatment Supervisor
City of Tustin
92780 Centennial Way
Tustin, CA 92780

Dear Mr. Valenzuela:

Fiscal Year 2011/12 Reconciliation of the
City of Tustin's 17th Street Desalter Project, Agreement No. 3907

The Metropolitan Water District of Southern California (Metropolitan) has completed the fiscal year 2011/12 annual reconciliation of production and incentive payments for the City of Tustin's (Tustin) 17th Street Desalter Project under provisions of our Groundwater Recovery Program Agreement. This review concluded that Metropolitan owes Tustin $73,087.50 for project water delivered during the fiscal year. The enclosed Reconciliation Summary details the basic cost data and supporting calculations.

During the fiscal year, Metropolitan paid Tustin an Estimated GRP Contribution of $125/AF for 609.3 AF of invoiced deliveries totaling $76,162.50. However, the cost reconciliation concluded that the Final GRP Contribution should be $250/AF for 597 AF of Allowable Yield totaling $149,250. Hence, Metropolitan owes Tustin $73,087.50. This amount will be shown as a debit on the next water service invoice to Municipal Water District of Orange County.

Based on projected costs and production, rate of inflation, and Metropolitan's water rates, the Estimated Agreement Purchase Price for fiscal year 2013/14 shall be $250 per AF. The actual financial contribution will be determined upon conclusion of the reconciliation for that year.

Metropolitan appreciates your assistance in completing the reconciliation. If there are any questions, please contact me at (213) 217-6616, or via e-mail at dcotton@mwdh2o.com.

Very truly yours,

Deneice Cotton

Deneice Cotton
Regional Supply Unit

DC:vsm
o:\a\s\c\2013\DC_2011-12 Tustin ReconLtr.docx

Enclosure

cc: Mr. Keith Lyon
Principal Analyst
Municipal Water District of Orange County
18700 Ward Street
Fountain Valley, CA 92708

Mr. Michael R. Markus, P.E.
General Manager
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708

Ms. Lisa Ohlund
General Manager
East Orange County Water District
185 North McPherson Road
Orange, CA 92869

Table 1

Tustin's 17th Street Desalter Project
FY 2011-12 Production Summary

Month/Year	Allowable Yield (acre-feet)	Metropolitan Paid (acre-feet)	Difference (acre-feet)
Jul-11	0.0	0.0	0.0
Aug-11	0.0	0.0	0.0
Sep-11	0.0	0.0	0.0
Oct-11	0.0	0.0	0.0
Nov-11	42.2	54.5	-12.3
Dec-11	39.7	39.7	0.0
Jan-12	0.0	0.0	0.0
Feb-12	96.8	96.8	0.0
Mar-12	106.6	106.6	0.0
Apr-12	78.8	78.8	0.0
May-12	117.3	117.3	0.0
Jun-12	115.6	115.6	0.0
Total*	597.0	609.3	-12.3

RECONCILIATION SUMMARY - FY 2011/12
GROUNDWATER RECOVERY PROGRAM
TUSTIN DESALTER PROJECT
AGREEMENT NO. 3907

4/30/2013

PROJECT DATA

Project Capacity:	3,200 AF
Recovered Groundwater:	597.0 AF (d)
July 1 thru December 31, 2011	81.9 AF
January 1 thru June 30, 2012	515.1 AF
FY 2011/12 Allowable Yield:	597.0 AF (e)

CAPITAL COSTS (a)

Facilities Design:	$837,405.00
Facilities Construction:	4,240,288.00
Engineering Services During Construction:	230,882.00
Land Aquisition:	118,869.00
Sewer Connection Cost:	1,247,535.00
Other Costs	84,583.00
Subtotal:	$6,759,562.00 *

Project Startup Costs (b) *(7/96 thru 9/96)* **:**

Electricity	$11,995.71
Labor	1,085.18
Miscellaneous materials	257.87
Operating expense	165.15
Permits/Fees	2,167.90
Startup subtotal:	$15,671.81
Total Capital Cost	**$6,775,233.81**

**This capital exenditure was originally financed by a $4,794,271 State Loan and a $1,965,291 OCWD Loan. The remaining balance on each loan was refinanced in 2004 with variable rate bonds in the amounts of $3,865,000 and $1,050,000 respectively.*

Capital Cost:	Source	First Year	Last Year	Interest	Term	Principal Amount	Amortized Cost
Refinanced State Loan	Bond	2004	2023	Variable	20	$3,865,000.00	$307,647.50
Refinanced OCWD Loan	Bond	2004	2023	Variable	20	$1,050,000.00	$85,120.00
Cash Payment (c)	Cash	1997	2016	0.08	20	$15,671.81	$1,596.21
Total Capital Cost						$4,930,671.81	

Annualized Capital Cost = **$394,363.71**

Annualized Capital Component: $394,363.71 / 2,560 AF (d) = **$154 /AF**

RECONCILIATION SUMMARY - FY 2011/12
GROUNDWATER RECOVERY PROGRAM
TUSTIN DESALTER PROJECT
AGREEMENT NO. 3907

4/30/2013

OPERATION AND MAINTENANCE COSTS (f)

Chemicals	$23,937.42
Electricity (g)	143,080.92
Supplies, services:	
Service contracts	0.00
Telephone	728.03
Supplies	0.00
Safety equipment	0.00
Maintenance:	
Building landscape	1,858.11
Equipment	80,795.25
Meter	1,401.52
Basin replenishment	178,968.40
Nitrate monitoring supplies	0.00
Laboratory tests	2,600.00
Waste discharge	148,566.89
State Health Dept. fees	3,278.00
Water quality testing	0.00
Labor:	
Salaries	110,247.06
Benefits	55,901.43
Total Operation and Maintenance Cost	**$751,363.03**

O&M Component: $751,363.03 / 597.0 = **$1,259 /AF**

REPLACEMENT COSTS (h):

Description	Source	First Year	Last Year	Interest	Term	Incurred Cost
Membrane replacement	Cash	2005	2025	0.08	20	$134,832.00

Annualized Replacement Cost: $134,832 x 0.10185 = $13,732.64

Annualized Replacement Component: $13,732.64 / 2,560 AF (d) = **$5 /AF**

Annualized Capital Component:	**$154 /AF**
O&M Component:	**$1,259 /AF**
Annualized Replacement Component:	**$5 /AF**
PROJECT UNIT COST =	**$1,418 /AF**

FINAL GRP CONTRIBUTION (i)

The lesser of:

1) Project Unit Cost plus	$1,418.00 /AF		
Deferred Cost from FY 2010/11 (j)	$0.00 /AF		
	$1,418.00 /AF		
		July - Dec. 2011	Jan. - June 2012
2) Treated Noninterruptible Water (k) *plus*		$767.00 /AF	$817.00 /AF
Metropolitan's Maximum Financial Incentive Rate		$250.00 /AF	$250.00 /AF
		$1,017.00 /AF*	$1,067.00 /AF*

Final GRP Contribution cannot exceed Treated Noninterruptible Water Rate plus Metropolitan's Maximum Financial Incnetive Rate

RECONCILIATION SUMMARY - FY 2011/12
GROUNDWATER RECOVERY PROGRAM
TUSTIN DESALTER PROJECT
AGREEMENT NO. 3907

4/30/2013

FINAL GRP CONTRIBUTION = $250 /AF

DEFERRED COST for FY 2011/12 (l)

Project Unit Cost less (Treated Noninterruptible Water Rate plus Maximum Financial Incentive)

$1,418 - ($767 + $250) *July thru December 2011*	=	**$401.00 /AF**
$1,418 - ($817 + $250) *January thru June 2012*	=	**$351.00 /AF**

EXCESS PROJECT COST for FY 2011/12 (m)

Deferred Cost X Allowable Yield

$401 X 81.9 AF *July thru December 2011*	=	**$32,841.90 /AF**
$351 X 515.1 *January thru June 2012*	=	**$180,800.10 /AF**
Total Excess Project Cost	=	**$213,642.00 /AF**

FY 2011/12 ESTIMATED GRP CONTRIBUTION (n)

July - December 2011	**$125.00 /AF**
January - June 2012	**$125.00 /AF**
Metropolitan paid Tustin ($125 X 609.3 AF)	

RECONCILIATION (o)

Final GRP Contribution ($250 X 597 AF)	**$149,250.00**	
Estimated GRP Contribution ($125 X 609.3 AF)	**$76,162.50**	
Underpayment by Metropolitan	**$73,087.50**	(p)

Explanation of annual costs and calculations:

(a) Eligible capital expenditures for the Project totaling $6,759,562 were orgininally financed by an OCWD loan and a State loan. Both loans were refinanced in FY 03/04 with bonds in the amount of $3,865,000 and $1,050,000, which includes financing for the cost of well No. 4 in the amout of $950,128.05 (no payments were previously made for this capital expenditure). The coupon rate for each bond varies annually. The fiscal year payments, due April 1, 2011, for both bonds, has a coupon rate of 4.0% for a payment of $307,647.50 and $85,120.00 respectively for the fiscal year. The term is 20 years. Pursuant to Section 9.1(a) of the Agreement, financing changes that lower the annual cost of capital may be included in the calculation of the Annualized Capital Component.

(b) Eligible operation and maintenance costs incurred prior to Project production of Allowable Yield are included as capital expenditures (startup costs) per Agreement terms. See Exhibit "B", 1(e) of Agreement. Project operation commenced October 1, 1996.

(c) The City of Tustin's startup costs were paid in cash. Pursuant to Agreement terms, capital costs not covered by a specific financing agreement are amortized at a rate of 8% over 20 years. See Exhibit "B", pg. 3 of Agreement.

(d) Recovered Groundwater is water rendered potable by the Project and cannot be less than 80% of Project Capacity (2,860 AF) which is used to calculate the Capital and Replacement comppnent.

(e) Allowable Yield based on annual assessment for FY 2011/12.

(f) Includes eligible operation and maintenance costs incurred by the Project per Agreement terms.

(g) Independent analysis shows energy usage for the Project to be in compliance with the applicable limit of 360 kilo-watt hours per acre-foot per Exhibit "C", item 1d, iii of Agreement.

(h) Replacement costs for major parts or membranes incurred by the Project after Project initiation. Replacement of membranes at a cost of $134,842 is amortized over 20 years at a capital recovery factor (CRF) of .10185. See Exhibit "D" of Agreement.

RECONCILIATION SUMMARY - FY 2011/12
GROUNDWATER RECOVERY PROGRAM
TUSTIN DESALTER PROJECT
AGREEMENT NO. 3907

4/30/2013

(i) Calculation of Agreement Purchase Price is provided in Section 1.2, pg. 5 of Agreement.

(j) Project Cost from the prior Fiscal Year that exceeded Metropolitan's applicable Treated Noninterruptible Water Rate plus the Maximum Financial Incentive. See Section 1.6, pg. 6 of Agreement. There is no Deferred Cost carryover from FY 2010/11.

(k) Metropolitan's Treated Noninterruptible Water Rate for FY 2010/11 is $767 for July 1 through December 31, 2011 and $817 from January 1 through June 30, 2012.

(l) Project costs exceeding the applicable Water Rate plus the Maximum Financial Incentive become a Deferred Cost that is carried over to the next Fiscal Year. The Deferred Cost for FY 11/12 is as shown. See Section 1.6, pg. 6 of Agreement.

(m) The Deferred Cost for FY 2011/12 is multiplied by Fiscal Year Allowable Yield to determine the Excess Project Cost. This becomes the Deferred Cost for the next Fiscal Year which is divided by the Allowable Yield produced in that Fiscal Year. The Excess Project Cost for FY 2011/12 is $213,642. See Section 1.6, pg. 6 of Agreement.

(n) The Estimated GRP Contribution established for Fiscal Year 2011/12 is $842 for July thru December 2011 and $942 for January thru June 2012 based on the water rates.

(o) Annual Reconciliation of the difference between the Final GRP Contribution and the Estimated GRP Contribution pursuant to Section 10.1 (c), pg. 16 of Agreement.

(p) Metropolitan's underpayment of FY 2011/12 Allowable Yield based on Tustin's eligible production of 597 AF. See pg. 16, Section 10.1 (c) of Agreement.