Chino Basin Watermaster
Status Report No. 8

(Covering June 2003 through August 2003)

September 2003

OPTIMUM BASIN MANAGEMENT PROGRAM

In its Order of September 28, 2000, extending the term of the nine-member Watermaster Board, the Court ordered Watermaster to provide semiannual reports regarding the progress of OBMP implementation. In Status Report Number 4, filed with the Court on September 30, 2002, Watermaster notified the Court that Watermaster intended to accelerate voluntarily the reporting schedule because of the rapid pace of OBMP implementation. By a subsequent Order of October 17, 2002, the Court added additional reporting items to the quarterly report.

This Status Report Number 8 is filed pursuant to this schedule and reports on the period from June 1, 2002 to August 31, 2003.

PROGRAM ELEMENT 1 – DEVELOP AND IMPLEMENT COMPREHENSIVE MONITORING PROGRAM

Groundwater-Level Monitoring

BACK-GROUND

Watermaster has three active groundwater-level monitoring programs operating in the Chino Basin – a semiannual Basinwide program, a monthly program associated with the Chino-I and Chino-II desalter well fields, and an intensive groundwater-level monitoring program associated with land-surface monitoring (see Land-Surface Monitoring below) in Management Zone 1.

ON-GOING

Semiannual Groundwater Level Monitoring Program. Watermaster initiated the semiannual Basinwide groundwater-level monitoring program in 1999. The Spring-Summer 2003 round of testing began in April and was completed in July 2003.

Chino I and Chino II Desalter Well Field Monitoring Programs. Watermaster staff continued to collect groundwater-level data at about 250 wells once a month in and around the Chino-I and Chino-II desalter well fields during this reporting period.

THIS PERIOD

Watermaster staff began the process of analyzing hydrogeology, well construction, and groundwater-level data in the vicinity of the Chino-I Desalter well field in an effort to develop a key well groundwater-level monitoring network. This key well network will be reviewed and finalized during the next reporting period, and will likely reduce the number of monitoring wells in the Chino-I program by two-thirds. This key well network will be used for the piezometric monitoring element of the Hydraulic Control Monitoring Program (see below).

ON-GOING

Management Zone 1 Interim Monitoring Program. Watermaster consultants have initiated a groundwater-level monitoring program to collect data at about 40 wells in the southern portion of Management Zone 1 (City of Chino area). Data are being collected manually at all wells at least once a month and by automated pressure transducers at these same wells at least once every 15 minutes.

Groundwater-Quality Monitoring

BACK-GROUND

Prioritizing Wells to Serve Multiple Purposes. The wells chosen for the 2002-03 monitoring program are located primarily between the Chino I Desalter well field and the Santa Ana River. Wells were prioritized for 2002-03 to aid in the development of a monitoring program to demonstrate hydraulic control in the southern portion of Chino Basin. (See the Cooperative Effort to Determine State of Hydraulic Control discussion in Program Elements 6 and 7.)

THIS PERIOD

Three-Year Sampling Program of All Accessible Private Wells. During this quarter, Watermaster completed the first year of a three-year sampling program in which all accessible private wells in the southern portion of the Chino Basin are sampled (about 150 to 200 wells each year). Through the end of August 2003, 153 wells have been sampled. Watermaster is continuing the cooperative monitoring program described in the Implementation Plan. Watermaster obtains data every six months from the Department of Health Services for the municipal water agencies and from the Department of Toxics Substances Control and the Regional Board for most of the other wells in the Basin. Watermaster is in the process of obtaining updated water quality data directly from all Appropriative Pool members. This will greatly enhance the quality and integrity of Watermaster's database.

ON-GOING

Extensive Range of Substances Being Tested

- All groundwater samples are analyzed for general mineral and general physical parameters.
- Wells not previously sampled and analyzed for constituents added to the evolving groundwater-quality monitoring program (e.g., hexavalent chromium, silica, barium, etc.) in 1999-2001 are now being sampled for those constituents.
- Wells within or near the two Volatile Organic Compound (VOC) plumes are being analyzed for VOCs, in addition to the usual parameters.
- All wells are being analyzed for perchlorate because of its widespread presence in the 1999-2001 sampling program.
- Analysis for 1, 2, 3-trichloropropane (1, 2, 3-TCP) has been added to the monitoring program for all wells. This chemical was detected in several wells above 50 parts per trillion (old detection limit). In the 2002-03 monitoring program, a new analytical methodology for 1, 2, 3-TCP is being used to achieve a detection limit of 5 parts per trillion, which is its California Action Level.

Groundwater-Production Monitoring

ON-GOING

Installation of Production Monitoring Wells Completed. Primary production monitoring involved the installation of meters on wells operated by members of the Agricultural Pool. Initially, Watermaster counted about 516 active agricultural wells and equipped 378 of these wells with operating meters. The other 138 wells have or will become inactive within 18-24 months because of development in the south Chino area.

All Producing Wells Are Monitored Quarterly. Watermaster staff reads the newly installed and/or rehabilitated meters on the agricultural wells quarterly. A method appropriate to the Chino Basin area continues to be used to estimate production at agricultural wells that do not have meters.

TO COME

Need For Water Use Disposal Form To Be Reviewed. The OBMP Implementation Plan includes a provision that requires the producers to submit a water use and disposal form describing the sources of water used by each producer and how that water is disposed of after each use. Filling out the water use and disposal form and reporting the results have not been implemented, because much of the information is being collected already as elements of other monitoring activities and analyses. In the later half of fiscal 2003-2004, Watermaster anticipates discussions regarding the need for this form.

Surface-Water Monitoring

BACK-GROUND

Measure Water Quality and Water Levels In Recharge Basins. Watermaster conducts a surface-water monitoring program to measure the water quality of water in recharge basins and the water levels in some of these basins. The purpose of this program is to estimate the volume and quality of recharge. This information will be used in subsequent years to estimate the safe yield of the Basin and for other management purposes.

THIS PERIOD

During this reporting period, Watermaster staff collected nuisance water quality samples at Grove Basin on July 9 and August 14, 2003. Normal storm water flows were sampled in the Grove Basin on eight occasions during the fiscal 2002-2003 storm season for comparison purposes.

THIS PERIOD

Surface-Water Monitoring for Santa Ana River Began In June 2003. One of the goals of the OBMP is to maximize Chino Basin yield. A key component in maximizing yield is to minimize groundwater discharge into the Santa Ana River and, in some reaches of the River, to increase recharge from the Santa Ana River into the Chino Basin. Watermaster developed a surface-water monitoring program for the Santa Ana River that, in conjunction with Watermaster groundwater-monitoring programs, will be used to characterize those reaches of the River that are gaining water from the Basin, and to determine if significant discharge of Chino Basin groundwater to the Santa Ana River is occurring. A conceptual monitoring plan involving Inland Empire Utilities Agency, Orange County Water District, the Regional Water Quality Control Board, and Watermaster was finalized. These agencies determined that the conceptual monitoring plan was adequate and developed a detailed work plan to implement a surface-water and groundwater-monitoring program. The work plan was completed in June 2003.

THIS PERIOD

Watermaster consultants met with the staff of the U.S. Geological Survey, which conducted stream gauge measurements at 4 ad hoc stations in the Santa Ana River between MWD Crossing and Prado Dam: SAR at Van Buren, SAR at Etiwanda, SAR at Hamner, and SAR at River Road. Another ad hoc station measured discharge from Hole Lake near the Santa Ana River.

Watermaster collected water quality samples at these ad hoc stations, plus another 7 locations on tributaries, on a biweekly basis from July through mid-September 2003. In addition, Watermaster obtained discharge data for permanent USGS and OCWD stream gauge locations on the Santa Ana River and its tributaries. Discharges from POTWs were also quantified.

Land-Surface Monitoring

BACK-GROUND

Multifaceted Approach. Watermaster staff developed a multifaceted land-surface monitoring program to develop data for a long-term management plan for land subsidence in Management Zone 1. The monitoring program consists of three main elements:

1. An aquifer-system monitoring facility located in the southern portion of Management Zone 1 – an area that has experienced concentrated and differential land subsidence and ground fissuring. One major component of the aquifer system monitoring facility is a cluster of multiple-depth piezometers that measure water level and pressure changes at 11 different depths. Another major component is a dual borehole extensometer that measures deformation within the aquifer system at deep and shallow levels.

   THIS PERIOD

   Installation of the extensometer was completed in July 2003. Together, the two components will correlate the hydraulic and mechanical responses of the aquifer system to different aquifer stresses, such as pumping at wells.

2. Synthetic aperture radar interferometry (InSAR) that will measure land surface deformation across the entire Chino Basin.

3. Benchmark surveys along selected profiles of the Chino Basin. The benchmark surveys (1) establish a datum from which to measure future land surface deformation, (2) "ground-truth" the InSAR data, (3) allow determination of historical subsidence at any historical benchmarks that can be recovered, and (4) evaluate the effectiveness of the long-term management plan.

THIIS PERIOD

Progress During This Reporting Period. The Ayala Park Extensometer drilling/pipe installation contract was completed in mid-May 2003. A deep extensometer borehole was drilled to a depth of 1,410 feet, and the shallow extensometer borehole was drilled to 540 feet. Construction of the extensometer instrument platform and building was completed on June 27, 2003. Extensometer wellhead construction and instrumentation were completed on July 7, 2003, at which time data collection commenced.

The arrangement of extensometer anchors, along with the piezometer data will enable distinction between compaction within the shallow aquifer system (0-300 ft-bgs), the upper, fine-grained portions of the deep aquifer system (300-440 ft-bgs), and the lower, fine-grained portions of the deep aquifer system (600-1375 ft-bgs).

Depth-Specific Data. Permanent transducers and data logging equipment are recording depth-specific groundwater-level data at the Ayala Park piezometers. Transducers also are recording groundwater-level data at wells owned by the cities of Chino and Chino Hills, and are recording groundwater-level data and "on/off" pumping cycles at active production wells. The State of California (CIM) and Watermaster have signed an access agreement that allows groundwater level and production monitoring at CIM wells. On July 15, 2003 six monitoring wells on CIM property were instrumented with transducers and are collecting groundwater-level data. Six production wells were inspected and transducers have been ordered and received. Installation of transducers at these production wells will occur around August 29, 2003, thereby completing the transducer installation effort at wells surrounding Ayala Park.

Observations From Water Level Data. Permanent transducers and data loggers were installed at the piezometers at Ayala Park and are continually collecting water-level data. The following observations can be made from analysis of all water-level data from the piezometers and from the surrounding wells:

- The two shallowest piezometers (PA-10 and PA-11) have a separate and distinct water level response to nearby pumping, as compared to the deeper piezometers, confirming the existence of distinct shallow and deep aquifer systems.

- Pumping at surrounding wells, screened in both the shallow and deep aquifer-systems, has lowered water levels in all piezometers – particularly in piezometers PA-7 (438-448 ft-bgs) and PB-6 (502-522 ft-bgs). These two piezometers are exhibiting a typical response to pumping within a confined aquifer system.

THIS PERIOD

Aquifer Stress Tests. During the April-June 2003 period, Watermaster, with the assistance of the cities of Chino Hills and Chino, conducted aquifer stress tests (pumping tests) while monitoring water levels and groundwater production at nearby monitoring wells, production wells, and the Ayala Park piezometers. Data from these aquifer stress tests are currently being analyzed.

TO COME

InSAR. Watermaster staff has initiated contact with potential sub-consultants to conduct the Insar element of the Interim Monitoring Program. An initial meeting is scheduled for September 4, 2003.

THIS PERIOD

Benchmark Monument Network. Associated Engineers (AE) completed monument installation and the initial survey during the last reporting period (April 2003). The survey data as a hard copy deliverable were provided to the MZ-1 Technical Committee at the July 23, 2003 meeting (see attached MZ-1 Progress Report dated July 23, 2003. This initial survey is the baseline to which all future surveys will be compared. From this point forward, the deep extensometer, anchored in solid bedrock, will be the starting benchmark for all survey loops. The next planned survey is April 2004.

ON-GOING

AE performed ground-level surveys for the City of Chino from 1987 to 2001 at some of the same benchmarks used in the April 2003 survey. The starting benchmark for these historical surveys was not found and was presumed destroyed, but a nearby benchmark was used instead. This allowed for differential vertical movement to be estimated at the benchmarks used in both survey efforts. The data indicate that modest subsidence has

continued in MZ-1 during the period October 2001 to April 2003, even though elastic rebound of the land surface because of seasonal water-level recovery was expected during the Fall to Spring measurement interval. Maximum subsidence measured at an individual monument during this period was 0.136 feet at the intersection of Pipeline Avenue and Walnut Street.

Well Construction, Abandonment, and Destruction Monitoring

BACK-GROUND

Watermaster staff monitors the condition of wells on a regular basis. Wells that may be improperly abandoned/destroyed are reported to Riverside and San Bernardino Counties as they are discovered.

Watermaster staff inspected 150 suspect wells during a 2002-03 field inspection and determined that 113 of these wells were properly abandoned and 37 wells would require some modification to meet the standard for a properly abandoned well. A well repair/abandonment program was prepared and approved by Watermaster. Watermaster is continuing to develop a wellhead protection program and will make recommendations on closure of abandoned wells.

TO COME

Field repair will begin in September 2003, with completion in six months. Riverside and San Bernardino Counties will be advised of the results. Ongoing land development will require continued well abandonment activity by Watermaster.

PROGRAM ELEMENT 2 – DEVELOP AND IMPLEMENT COMPREHENSIVE RECHARGE PROGRAM

A centerpiece of the OBMP is enhancement of the Basin recharge capacity, so that high quality storm water and available recycled water can be retained in the Basin.

Recharge Facilities Improvement Project (Seven Construction Packages)

THIS PERIOD

Bid Package No. 1--Construction Underway

Bid Package No. 1, which includes improvements at Banana, College Heights, Lower Day, RP-3, and Turner Basins, was awarded to LTE Excavating on March 24, 2003. Work is scheduled for completion by November 15, 2003. Earthwork for Cells 1, 3, and 4 at RP-3 is nearly complete. Construction of a trapezoidal channel to divert flow from Declez channel and distribute flow to the RP3 basin complex is approximately 50 percent complete. The contractor is laying a gravity pipeline to convey storm water flow from the trapezoidal channel to Cell 1 and to convey recycled and imported water that will be delivered to Cell 1 via the Jurupa Force Main to Cells 3 and 4. The area for Cell 2 has been used to stockpile dirt removed from the other cells. The dirt will eventually be hauled offsite by a dirt broker at no cost, and Cell 2 will be developed into a mitigation site in compliance with the Regional Water Quality Board 401 Certification. The excavation of the new College Heights SW Basin is approximately 90 percent complete. Dirt is being hauled across temporary “railroad flat car” bridges and deposited in an engineered fill at the College Heights NW Basin. The Contractor has substantially completed the earthwork at Turner No. 2, 3 & 4 Basins. Additional fill material will be excavated from Turner No. 1

Basin, hauled across Deer Creek Channel over "railroad flat car" bridges (after the bridges are relocated from the College Heights Basin) and deposited in an engineered fill at Turner Nos. 2, 3, & 4 Basins. The Contractor began excavating and placing fill at Lower Day Basin and cutting side slopes at Lower Day Basin in late July.

THIS PERIOD

Bid Package No. 2 – Construction Underway

Bid Package No. 2 consists of construction of the drop inlet structures for Brooks Street Basin, Turner Basin; and Victoria Basin; rubber dams for College Heights/Upland Basins, Turner No. 1 Basin, Lower Day Basin, and RP-3 Basin; and various improvements at Declez Basin, Ely Basin, and 8th Street Basin. This package was originally bid in June 2003. Due to a protest, the package was rebid. The winning bid from Banshee Construction was for $6.9 million. Work began in August 2003. The contract requires that work in storm channels be completed by October 15, 2003 and that the rubber dams be operational by December 31, 2003. All work for this contract must be completed by March 2004.

THIS PERIOD

Bid Package No. 3 – Construction Expected By End of 2003

Bid Package No. 3 involves construction of approximately 11,000 linear feet of 36-inch CML&C force main between Jurupa Basin and RP-3 Basin. The force main will be used to convey storm water, imported water, and recycled water between the pump station at Jurupa Basin and the RP-3 Basin. The Engineer's estimate was $3 million-$3.5 million. IEUA received eight bids, including the winning bid of $2.9 million by W.A. Rasic Construction Company. The contract was formally awarded on August 6, 2003. The Contractor anticipates a construction period of 6 1/2 months beginning with the delivery of pipe at the construction site in December 2003.

TO COME

Bid Package No. 4 – Construction Expected By November 2003

Bid Package No. 4 consists of construction of the Jurupa Basin Pump Station. The design is on hold at the 90 percent stage pending resolution of comments.

TO COME

Bid Package No. 5 – Construction Expected By December 2003

This bid package includes the SCADA system and electrical improvements at all the basins. The 90 percent design submittal is currently under review. Comments will be received on the design submittal through the middle of August. It is expected that the 100 percent submittal will be available for review by the first week of September. Bidding of the SCADA system and electrical improvements could begin as early as September 15. The Contractor is expected to be selected and begin work by November 1, 2003.

TO COME

Bid Package No. 6 – Construction Contract Expect To Award In December 2003

This bid package covers the construction of three MWD turnouts: 11TB and 15T on the Rialto Pipeline, and new turnout on the Etiwanda Pipeline near San Sevaine Channel. An informational meeting was held with MWD staff in May 2003 to determine the design approach and requirements. MWD has provided various drawings, specifications, and other information needed to complete the three designs. The 90 percent design submittal is anticipated before September 1, 2003. The contract is expected to be awarded by the December 15, 2003.

TO COME

Bid Package No. 7 – Priority, Funding and Scope of Misc. Projects Being Evaluated

This bid package will complete miscellaneous projects not included in the previous bid packages. Among the projects being considered for this bid package are:

- Mitigation Area at RP-3
- Pre-Treatment Areas at Jurisdictional Basins
- Upland Basin Completion
- Completion of Victoria Basin Improvements
- Hickory Pump Station and Force Main
- Etiwanda Conservation Ponds
- Miscellaneous Projects

The various projects will be prioritized and those that offer the greatest benefits to groundwater recharge will be included in the bid package depending on available funding after construction of the other 6 bid packages. The scope of work is currently under development. Bid Package No. 7 is expected to be awarded by second quarter 2004.

THIS PERIOD

Groundwater Recharge Coordinating Committee

The GRCC met bi-monthly to monitor and coordinate the Recharge Facilities Improvement Project, focusing on defining additional operations and maintenance costs. Watermaster's draft 2003-2004 budget provides about $440,000 for the operation and maintenance activities.

In addition to design review, the GRCC has initiated work on an operations and maintenance plan for all the recharge basins, as well as obtaining regulatory agency approvals and permits.

Santa Ana River Fully Appropriated Stream (FAS) Petition and Application

BACK-GROUND

Watermaster's Santa Ana River Application to Appropriate, which was filed by Watermaster in trust for the Parties to the Judgment, is reported under Program Element 2. This is because the water referenced under Watermaster's Application is seasonal storm flow that has been and will be recharged pursuant to this Program Element.

THIS PERIOD

On May 20, 2003, the SWRCB provided formal notice to all the participants in the Santa Ana River process of protests that have been filed to the various applications. A 30-day period was provided for responses to the protests.

The U.S. Forest Service, California Fish and Wildlife Service, Eastern Valley Water District, and the Cucamonga County Water District have protested Watermaster's Application. As previously reported, the Forest Service has informally agreed to withdraw its protest. FWS has general concerns about the impacts of various diversion schemes on the fish and wildlife in the Santa Ana River. Eastern Valley has questioned whether there is water available in the Santa Ana River for appropriation, while Cucamonga Water requests recognition of its pre-1914 water rights.

PROGRAM ELEMENT 3 – DEVELOP AND IMPLEMENT WATER SUPPLY PLAN FOR THE IMPAIRED AREAS OF THE BASIN; AND

PROGRAM ELEMENT 5 – DEVELOP AND IMPLEMENT REGIONAL SUPPLEMENTAL WATER PROGRAM

These program elements focus on the shift of production in the southern end of the Basin away from agricultural uses and toward urban uses. Without the OBMP, this land use conversion would result in a decrease in production in the southern end of the Basin, ultimately leading to rising water levels. If groundwater levels in the southern end of the Basin rise too high, then water may "spill" out of the Basin into the Santa Ana River. Such uncontrolled spillage could reduce the overall Safe Yield of the Basin. The Basin will be managed to avoid this possibility.

Directly tied to the threat of rising water levels in the southern area is the diminished desire of producers in the southern end of the Basin to pump water because of water quality concerns. The ability to compensate for the loss of agricultural production with increased appropriative production is inhibited because of water quality concerns in this part of the Basin. Appropriative production in this area therefore requires water treatment, an issue addressed through the construction of desalter facilities.

The Chino I Desalter Expansion Project.

BACK-GROUND

Chino I Expansion Underway. This expansion includes construction of 4.9 million gallons per day (mgd) of expanded treatment capacity (nitrate removal) in parallel with the existing treatment facilities, as well as associated raw water and product water delivery facilities. The Chino I Desalter was originally constructed by SAWPA to provide a total of 9,200 acre-feet per year of product water deliveries. The product water will have TDS and nitrate concentrations less than 350 mg/L and 25 mg/L, respectively. The Chino Desalter Authority (CDA) authorized the well drilling and awarded a contract for the Chino I Desalter Expansion wells.

THIS PERIOD

Final Plans For Chino Hills Pump Station Nearly Complete. CDA successfully constructed three wells (Wells 13, 14, and 15) and conducted step draw down and constant rate pump tests in March 2003. As a result of this testing, the hydrogeologist revised the recommended flow rates to 2,200 gallons per minute (gpm) for Well 13, 2,000 gpm for Well 14, and 2,000 gpm for Well 15. With these three wells, the CDA achieved adequate capacity for expansion needs, and construction of Well No. 12 was cancelled. CDA is currently designing ancillary equipment for the three new wells. In addition, final plans and specifications for the Chino Hills pump station and the raw water pipelines are almost complete.

THIS PERIOD

Revised Bids For Ion Exchange Under Review. May Redesign. CDA received bids for the Ion Exchange Treatment System for both Chino I and Chino II Desalters in April 2003. Because of discrepancies in the low bid, all bids were rejected and the projects were rebid. The rebids were received on August 19, 2003 and are currently under review. The design of additional onsite facilities was completed in July 2003 and advertised for bidding in August 2003. However, CDA staff is currently considering redesign of onsite facilities to cut the cost of delivering treated water to its member agencies.

TO COME

The Chino II Desalter Project.

This project includes 10 mgd of reverse osmosis/ion exchange treatment capacity, as well as raw water and product water delivery facilities. The final design of the Chino II Desalter has been completed and advertised for bid with a due date of September 2, 2003.

Site Acquisition For Chino II Wells Underway. The sites for nine Chino II raw water supply wells have been identified and CDA staff is negotiating their acquisition with property owners. CDA staff is coordinating with the City of Ontario for two of the sites, which are located in a proposed development.

PROGRAM ELEMENT 4 – DEVELOP AND IMPLEMENT COMPREHENSIVE GROUNDWATER MANAGEMENT PLAN FOR MANAGEMENT ZONE 1

Program Element 4 details the steps undertaken by Watermaster to reduce or abate subsidence and fissuring in Management Zone 1.

THIS PERIOD

The MZ1 Technical Committee met on July 23, 2003. Committee representatives were informed of the status of the various efforts to implement the monitoring program (see Land-Surface Monitoring section of Program Element 1), and then toured the newly constructed Ayala Park Extensometer Facility. The next meeting is tentatively scheduled for September 24, 2003, and will focus on a more detailed examination of a possible deep well injection test, and a review of the comprehensive pumping tests to be initiated in October, 2003.

Voluntary Forbearance. The City of Chino and the City of Chino Hills submitted certifications documenting their respective voluntary participation in forbearance of groundwater production. Through the end of July 2003, both parties have met their forbearance goals of 1,500 acre-feet per year. Their totals through July are detailed below:

Agency	Forbearance through July 2003	Forbearance Goal 03/04
City Of Chino	1,500 acre-feet	1,500 acre-feet
City Of Chino Hills	1,500 acre-feet	1,500 acre-feet

TO COME

Pending Legal Actions Regarding Subsidence. In its October 17, 2002 Order, the Court ordered Watermaster to keep the Court apprised of any legal actions that could question the Court's jurisdiction over subsidence. Watermaster is not aware at this time of any such actions.

PROGRAM ELEMENT 6 – DEVELOP AND IMPLEMENT COOPERATIVE PROGRAMS WITH THE REGIONAL WATER QUALITY CONTROL BOARD, SANTA ANA REGION (REGIONAL BOARD) AND OTHER AGENCIES TO IMPROVE BASIN MANAGEMENT; AND

PROGRAM ELEMENT 7 – DEVELOP AND IMPLEMENT SALT MANAGEMENT PROGRAM

Cooperative Programs with Regional Board and Other Entities. *The "water quality committee" as envisioned in the OBMP Implementation Plan has been formally constituted. Since the development of the OBMP, Watermaster has worked closely with the Regional Water Quality Control Board, the Department of Toxic Substances Control, and others to define water quality challenges and to refine the water quality management criteria in the Chino Basin. Watermaster continues to review water quality conditions in the Basin and to consider future water quality management activities beyond the Chino Basin desalting program. The ad hoc water quality committee (WQC) has been formed.*

THIS PERIOD

The WQC met on July 21, 2003, and decided to look at the perchlorate and other groundwater contamination issues from two perspectives:

- ***Source Determination:*** *The WQC will develop a list of tasks to help define potential source areas and/or PRPs. Steps would include: review of land use surveys, records searches, and title searches.*

- ***Assessment of Treatment Alternatives:*** *The WQC decided that both source determination and treatment alternatives should be pursued in parallel. Meeting notes from this meeting are available at Watermaster's offices and will be furnished upon request. The next WQC meeting will be September 24, 2003.*

BACK-GROUND

Water Quality Management. In response to the results of Regional Board and Watermaster's groundwater-quality monitoring programs (Program Element 1) Watermaster has refined its water-quality monitoring to focus on the following key areas:

- Watermaster is identifying and characterizing water-quality anomalies, such as the VOC anomaly north of the Chino I Desalter well field. A scope of work is being developed by Watermaster and will be presented to the Water Quality Committee.
- Watermaster staff continues to participate in the process to develop TMDLs for Reach 3 of the Santa Ana River and other water bodies in the lower Chino Basin. No progress has been made during the last quarter because of the State budget crisis and the staffing issues at the RWQCB.
- Watermaster staff is coordinating with the RWQCB with regard to surface water quality and the DTSC with regard to developing a monitoring program to track perchlorate in groundwater in the Fontana area.

Watermaster and Regional Board Propose TDS and Nitrogen Objectives to Promote Maximum Benefit of Waters Available to the Chino Basin

ON-GOING

Watermaster staff has been working with the Nitrogen/Total Dissolved Solids Task Force to revise the subbasin boundaries, and the N and TDS objectives for the Chino Basin to promote maximum beneficial use of waters in the Basin (as opposed to the Regional Board's current, more rigid antidegradation-based objectives). The maximum beneficial use approach will increase water supplies and lower costs over time while meeting water quality requirements. In December 2002, Watermaster proposed specific subbasin boundaries, and N and TDS objectives for the Chino Basin to the RWQCB at a workshop regarding the Basin Plan update. The NTDS Task Force and the RWQCB have reacted favorably to the Watermaster proposal and have modified it slightly. Watermaster believes that the modified Watermaster proposal will be included in the Basin Plan update that will occur in fiscal year 2003-2004.

ON-GOING

Cooperative Effort to Determine State of Hydraulic Control. One outstanding issue regarding the Basin Plan changes is to develop a monitoring plan to evaluate the state of hydraulic control in the southern end of the Basin. Hydraulic control is one tool that can be used to maximize the safe yield of the Basin. Watermaster staff developed a monitoring program for OBMP purposes and described this effort in the Initial State of the Basin report (October 2002). The execution of this monitoring program is included in Program Element 1. Watermaster is collaborating with OCWD and IEUA in an investigation to select existing wells and to site new multi-piezometer wells that will be used to monitor and assess the state of hydraulic control. This collaboration is unprecedented. Hydraulic control will become a commitment of Watermaster if the proposed subbasin boundaries, and N and TDS objectives for the Chino Basin, are adopted. Watermaster, OCWD, and RWQCB staffs are working to develop a monitoring program to assess the state of hydraulic control and to provide information to Watermaster to manage future production and recharge. The initial phase of the monitoring program began in June 2003. This program will change or adapt over time as new information is developed and will last for several years. The coordination and review of the hydraulic control monitoring data and the development of management programs to maintain hydraulic control have been added to Program Elements 6 and 7.

Watermaster and IEUA have committed to the construction of a total of 10 new multi-piezometer wells during fiscal years 2003-04 and 2004-05. Watermaster filed an application for $250,000 from the Local Groundwater Assistance Fund, sponsored by the California Department of Water Resources (DWR). Watermaster received notice during this period that the DWR will award the full $250,000 to Watermaster. This funding will support construction of piezometric monitoring wells that, in addition to some existing wells, would be used for monitoring and assessing the state of hydraulic control. In addition to the DWR funding, IEUA and Watermaster have secured $270,000 from the U.S. Bureau of Reclamation for new monitoring wells for the hydraulic control monitoring program.

Watermaster staff prepared a detailed draft work plan for hydraulic control monitoring and assessment during this period. The OCWD and RWQCB are reviewing the draft work plan.

Salt Budget Tool Was Used To Establish TDS Objectives

BACK-GROUND

Watermaster has developed a salt budget tool to estimate the current and future salt loads to the Basin and the salt benefits of the OBMP. This tool was used to establish TDS objectives for the northern part of the Basin based on maximum beneficial use of water available to the region. These projections were based on the water supply plan in the Implementation Plan and include alternative recycled water and State Project water recharge scenarios.

TO COME

Watermaster consultants are currently preparing a letter report describing the salt budget. Originally, this letter was to be submitted to Watermaster in December 2003 but has been deferred pending discussions with the RWQCB regarding methods and the ongoing Basin Plan update. A report to Watermaster will likely be made in the next quarter.

ON-GOING

PROGRAM ELEMENT 8 – DEVELOP AND IMPLEMENT GROUNDWATER STORAGE MANAGEMENT PROGRAM; AND

PROGRAM ELEMENT 9 – DEVELOP AND IMPLEMENT STORAGE AND RECOVERY PROGRAM

This section summarizes the work accomplished to date and the work planned over the next few months for the Chino Basin Dry Year Yield (DYY) and Storage and Recover Programs. The DYY Program is a conjunctive use program between the Metropolitan Water District of Southern California (Metropolitan) and several Basin appropriators, which would develop a maximum of 100,000 acre-feet of storage. These Programs also explore the potential for using up to 500,000 acre-feet of storage capacity.

ON-GOING

Completed Preliminary Design Report. The first draft of the DYY Preliminary Design Report was completed in July 2003 and submitted to Watermaster. It is currently under review by all of the participating agencies. The DYY Program documentation is organized into four volumes: Volumes I and II, prepared by Black & Veatch, comprise the Preliminary Design Report (PDR). Volume I describes the background information and design objectives of the Program, while Volume II describes the facilities to be designed to help the agencies meet their shift obligation. Volume III presents the groundwater modeling report developed by Wildermuth Environmental, Inc., and Volume IV contains the CEQA Findings of Consistency environmental documentation prepared by Tom Dodson and Associates.

DYY Shift Obligation. Participants in the DYY Program will be required to reduce (shift) their imported water usage by a predetermined amount during a dry year. Each participating agency will have a specific shift obligation that, when added together, will provide Metropolitan with 33,000 acre-feet of dry-year yield. The shift obligations were determined through meetings and correspondence among IEUA, Watermaster, Black & Veatch, and representatives from each participating agency.

The nine participating agencies are as follows:

• City of Chino	• Monte Vista Water District (MVWD)
• City of Chino Hills	• City of Ontario
• Cucamonga County Water District (CCWD)	• City of Pomona
• Fontana Water Company (FWC)	• City of Upland
• Jurupa Community Services District (JCSD)	

Facility Requirements and Site Selection. A preliminary screening of potential sites identified the most feasible locations for the DYY Program facilities. The information was presented to the agencies and a final selection was made. The Program facilities consist of five new ion exchange (IX) facilities, expansion of two existing IX facilities, construction of seven new non-water quality impaired wells, and two new perchlorate wellhead treatment facilities. The new wellhead IX facilities would contribute approximately 18,000

acre-feet of dry-year yield, while the new well facilities would contribute approximately 15,000 acre-feet of additional yield. The total capital cost for the facilities is estimated to be $38 million. Metropolitan will contribute approximately $27.0 million. The Groundwater Storage Program Funding Agreement between Metropolitan, IEUA, Three Valleys Municipal Water District (TVMWD), and Watermaster was signed in July 2003.

Final Design of PDR Facilities. The designs for the facilities outlined in the PDR are either under way, completed, or will commence shortly. All design documents are scheduled to be completed by September 2004.

THIS PERIOD

Groundwater Modeling. The new Chino Basin groundwater model was completed during this period. The modeling report was submitted to Watermaster in July 2003. In addition to evaluating the effects of the DYY program on the Basin, the model was used to:

- Develop draft future replenishment and wet-water recharge criteria based on requirements described in the Section 7.1b of the Watermaster Rules and Regulations regarding the balance of recharge and discharge.
- Evaluate the cumulative effects of transfers among the Parties as described in Section 9.3 of the Watermaster Rules and Regulations;
- Describe pumping patterns in Management Zone 1 that will not reduce piezometric levels below current conditions.

These management criteria were incorporated into the DYY program. The results of this work were presented to the Pool Committees, Advisory Committee, and the Watermaster Board in June and August 2003.

BACK-GROUND

Engineering Review and Determination of the Operational Storage Requirement and Safe Storage. The Operational Storage Requirement was defined in the Peace Agreement as part of the storage in the Chino Basin "necessary to maintain the safe yield" of the Basin (Peace Agreement, Exhibit B – Implementation Plan, page 37). Safe storage is the maximum storage in the Basin that can occur without significant water quality and high groundwater related problems.

THIS PERIOD

The draft results of this work were presented to the Pool Committees, Advisory Committee, and the Watermaster Board in August 2003. A technical memorandum will be provided in the next reporting period.

ON-GOING

Other Uses of the Groundwater Model in the OBMP Implementation. The groundwater model is also being used to assess the balance between recharge and discharge throughout the Basin, operational storage requirements and safe storage, and the cumulative physical impacts of transfers. Draft results from this work have been submitted to Pool Committees, Advisory Committee, and the Watermaster Board, starting in April 2003. A technical memorandum will be finalized in the next reporting period.

ADMINISTRATIVE UPDATE

THIS PERIOD

Engineering Positions Filled. In January 2003, the Watermaster Board approved a restructuring plan. Two engineering positions were recruited.

Gordon Treweek, PE, joined Chino Basin Watermaster on July 21, 2003 as a Project Engineer. With more than 20-years experience in water quality, wastewater reclamation and reuse, and hazardous waste management, he will focus his efforts on project management functions on projects such as groundwater recharge, remediation of existing contaminant plumes, and reuse of recycled water.

Danielle (Danni) D. Maurizio, PE, joined the Chino Basin Watermaster in August 2003 as a Senior Engineer. Before joining Chino Basin Watermaster, Danni worked in both the Planning and Environmental Compliance Departments at Inland Empire Utilities Agency and in the Process Development Section at Metropolitan Water District of Southern California. Danni will work on tasks such as subsidence issues within Management Zone 1, well production monitoring, and groundwater level and quality monitoring.

Relocate Offices. Regarding physical facilities, Watermaster will relocate to the former Cucamonga County Water District facilities at 9641 San Bernardino Road in Rancho Cucamonga on September 12, 2003.

CONCLUSION

THIS PERIOD

This has been an especially active reporting period for Watermaster, with major activities on a number of issues:

- A Groundwater Storage Agreement was signed for 100,000 acre-feet of storage.
- The Chino Basin Dry-Year Yield Program engineering reports were completed.
- The Recharge Facilities Improvement Project construction was begun.
- The Surface-Water Monitoring for the Santa Ana River was begun.
- The Ayala Park Extensometer became operational and began recording data on ground subsidence.