

RECLAMATION

Managing Water in the West

Yuma Desalting Plant Pilot Run

Project Monthly Report #16, February 2011



Photograph: Raptor nesting in the YDP during the Pilot Run

U.S. Department of the Interior
Bureau of Reclamation
Yuma Area Office

1.0 Background – Project Information

For the Pilot Run the Yuma Desalting Plant (YDP) is planned to be operated at up to one-third capacity for 365 days within a 12 to 18 month period. The run was developed to assist in considering potential long term, sustained operation of the plant as a means to extend water supplies on the Colorado River in the midst of an unprecedented drought. Such consideration requires: 1) collecting performance and cost data; 2) identifying any remaining equipment improvements that are needed; and 3) testing changes that have already been made to the plant. Over the course of the Pilot Run, approximately 29,000 acre-feet of water (recovered bypass flow) may be discharged into the River and included in water deliveries to Mexico conserving a like amount of water in system storage for use by the Metropolitan Water District of Southern California, Central Arizona Water Conservation District, and Southern Nevada Water Authority (Municipal Utilities). The estimated \$23 million cost is being shared by Reclamation and the Municipal Utilities.

This report has been developed for the Funding Committee Representatives of the Municipal Utilities in accordance with the Pilot Run funding agreement (Agreement No. 09-XX-30-W0541) and as a means to regularly provide the Municipal Utilities with information concerning the status of the run. Reclamation will use the report as a means to request capital contributions through the Funding Committee Representatives. In accordance with the agreement, Reclamation requests that the Funding Committee Representatives utilize the monthly status report and conference call discussion forum as a means to notify Reclamation for any reason that future funding will not be provided. The Municipal Utilities have designated the following Representatives to Reclamation for the Funding Committee:

- Mr. Bill Hasencamp for the Metropolitan Water District of Southern California (MWD)
- Mr. Chuck Cullom for the Central Arizona Water Conservation District (CAWCD)
- Ms. Colby Pellegrino for the Southern Nevada Water Authority (SNWA)

2.0 Project Status Snapshot

Start date of final preparation phase	12/1/09
Days elapsed in final preparation phase	152
Days remaining in final preparation phase <i>Preparation concluded 5/2/10</i>	0
Start date for Pilot Run	5/3/10
Days elapsed in the Pilot Run	302
Days remaining in 18 month max duration <i>Run must conclude by 11/3/11</i>	248
Total water conserved to date (acre-feet)	27,255
Balance remaining to est. target (acre-feet)	1,745

The final preparation phase for the YDP Pilot Run began on December 1, 2009 and concluded as scheduled on May 2, 2010. The Pilot Run commenced as scheduled on May 3, 2010 and during February the run conserved 2,295 acre-feet of water. Water conserved to date through February 28th by the run totals 27,255 acre-feet.

February plant operations went smoothly. 324 acre-feet of untreated bypass flow was diverted into the River at the MODE 1 diversion facility during February. Total water recovered (YDP product water plus MODE diversions) remains on target for the run.

Project risks and concerns remain unchanged. Based on the results of the three month demonstration run of the YDP in 2007 and the current condition of plant equipment, we anticipate a successful Pilot Run. Two plant components however, create small but actual risk that the run might be stopped prior to 365 operating days within an 18 month period.

Piping: Risk mitigation measures for the plant's aluminum bronze piping were developed and implemented prior to commencing the Pilot Run. As was the case during the demonstration run of 2007, piping leaks will occur during the Pilot Run. This did not prevent successful completion of the demonstration run; the same outcome is expected for the Pilot Run. If leaks become major and costly to repair, this could require consideration of the costs and benefits associated with making major repairs and continuing with the Pilot Run. To date during the Pilot Run the YDP's high pressure aluminum bronze piping has performed acceptably.

Membranes: The reverse osmosis membranes being used for the Pilot Run are unused and have been in cold storage for nearly 20 years. Periodically some membranes are removed from storage and are performance tested. They continue to perform near original specifications.

We expect the membranes to perform adequately throughout the duration of the Pilot Run. Nevertheless, using 20 year old membranes does present some risk and it is possible (but unlikely) these membranes may stop performing. Acquiring new membranes, which are custom made, would require several million dollars and up to 24 months.

3.0 Financial – Budgeted vs. Expended

The Pilot Run of the YDP is divided into two phases, preparation for the Pilot Run and conducting the run. Reclamation began incurring costs associated with preparing for a potential Pilot Run in fiscal year 2008. To date, total expenditures associated with the Pilot Run are \$13,984,606 (values in blue font). All values indicated below are as of February 28, 2011.

Activity	Total Budget ¹	Feb-11	Total-to-Date Expended ²	Undelivered Orders ³	Balance ⁴	Percent Expended ⁵
Plant Preparation						
Reclamation						
One Time Construction Projects	2,605,000	-	2,477,035	-	127,965	95%
Reclamation Labor	2,751,853	-	2,011,434	-	740,419	73%
Reclamation Other ⁶	-	-	104,293	-	(104,293)	
Reclamation Total	\$ 5,356,853	\$ -	\$ 4,592,763	\$ -	\$ 764,090	86%
Municipal Utilities						
Contract Labor & Services ⁷	1,144,584	-	1,048,131	-	96,453	92%
Environmental		-	334,610	-		
Membrane Transportation		-	35,368	-		
Operation & Maintenance		-	522,288	-		
Technical Support		-	138,829	-		
Other		-	17,036	-		
Materials/Supplies	130,500	-	102,987	-	27,513	79%
Municipal Utilities Total	\$ 1,275,084	\$ -	\$ 1,151,119	\$ -	\$ 123,965	90%
MWD Total	866,067	-	766,895	-	99,172	89%
CAWCD Total	204,508	-	192,112	-	12,397	94%
SNWA Total	204,508	-	192,112	-	12,397	94%
Total Plant Preparation	\$ 6,631,937	\$ -	\$ 5,743,882	\$ -	\$ 888,055	87%
Conducting Pilot Run						
Reclamation						
Reclamation Labor	3,411,492	94,939	1,272,731	-	2,138,761	37%
Management Reserve (contingency) ⁸	414,500	-	404,496	-	10,004	98%
Reclamation Other ⁶	-	-	232	-	(232)	
Reclamation Total	\$ 3,825,992	\$ 94,939	\$ 1,677,459	\$ -	\$ 2,148,533	44%
Municipal Utilities						
Contract Labor & Services	2,662,752	58,543	1,592,008	532,168	538,577	60%
Environmental		34,538	85,681	48,843		
Membrane Transportation		-	-	3,930		
Operation & Maintenance		15,049	1,197,062	300,765		
Technical Support		6,336	261,610	175,620		
Other		2,620	47,654	3,010		
Power	3,304,516	130,465	1,056,205	406,274	1,842,037	32%
Chemicals	6,415,610	166,080	3,485,202	191,471	2,758,937	54%
Materials/Supplies	349,200	6,745	449,852	38,709	(139,361)	129%
Municipal Utilities Total	\$12,732,078	\$ 361,832	\$ 6,563,266	\$ 1,168,622	\$ 5,000,190	52%
MWD	10,185,662	289,466	5,250,613	934,897	4,000,152	52%
CAWCD	1,273,208	36,183	656,327	116,862	500,019	52%
SNWA	1,273,208	36,183	656,327	116,862	500,019	52%
Total Conducting Pilot Run	\$16,558,070	\$ 456,771	\$ 8,240,724	\$ 1,168,622	\$ 7,148,724	50%
Reclamation Total	9,182,845	94,939	6,270,221	-	2,912,624	68%
MU Total	14,007,162	361,832	7,714,385	1,168,622	5,124,155	55%
Grand Total	\$23,190,007	\$ 456,771	\$13,984,606	\$ 1,168,622	\$ 8,036,779	60%

Notes

¹Total Budget represents the Estimated Cost for the Plant Preparation and the Operation, Maintenance, Repair & Replacement (OMR&R) as outlined in Exhibit A of the Agreement.

²Total-to-Date Expended represents total expenditures from Fiscal Year 2008 to present. Total-to-Date Expended for the Preparation Phase includes \$330,000 payment associated with the Environmental Compliance Funding Agreement.

³Undelivered Orders represent the order for goods/services which have not been delivered or performed.

⁴Balance is the difference between Total Budget and Total-to-Date Expended and Undelivered Orders.

⁵Percent Expended is the Total-to-Date Expended divided by Total Budget. Percent Expended for the Preparation Phase includes \$330,000 payment associated with the Environmental Compliance Funding Agreement.

⁶Costs incurred by Reclamation not identified in Exhibit A. Include miscellaneous expenses such as travel, transportation, IBWC payment.

⁷Includes \$330,000 payments associated with the Environmental Compliance Funding Agreement. This payment was provided in equal \$110,000 increments. The budget in the Preparation Phase for Contract Labor & Services per Exhibit A is \$814,584.

⁸The contingency was fully expended during the preparation phase of the Pilot Run. This was primarily the result of environmental compliance activities which required more effort and resources than originally anticipated and planned. This also includes costs for materials associated with YDP equipment preparation (not one time projects) incurred prior to receipt of funding from the Municipal Utilities.

The preparation phase for the Pilot Run was completed on May 2, 2010. Final preparation phase costs total \$5,743,882. Reclamation expenditures were \$4,592,763 and Municipal Utilities were \$1,151,119.

Total project expenditures for the Pilot Run incurred for the month of February 2011 were \$456,771. Reclamation expenditures of \$94,939 were primarily for Reclamation labor for the run. Municipal Utilities expenditures of \$361,832 during February were primarily for contract labor and services, power, and chemicals for the run.

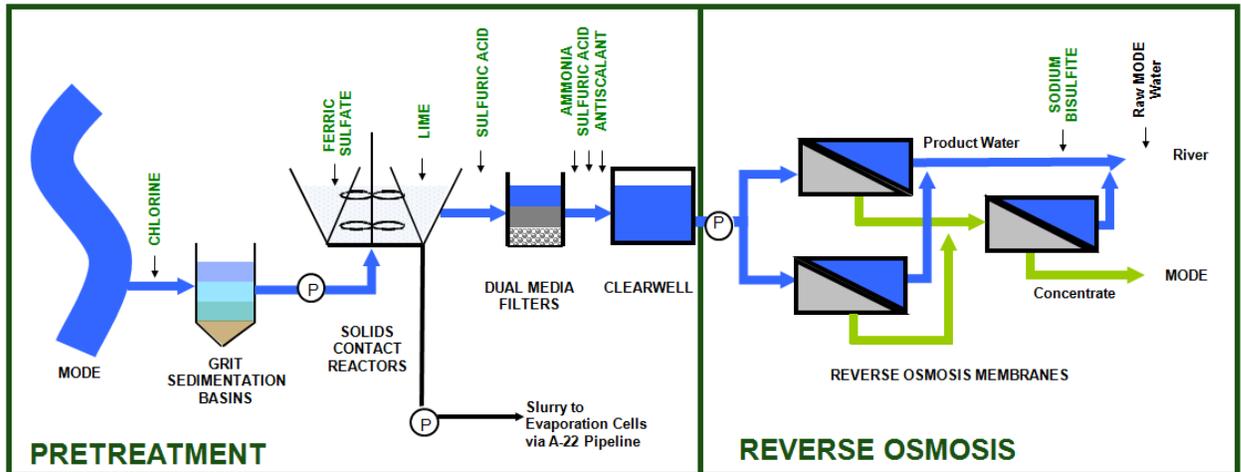
The cost of operating and maintaining the YDP through February 28, 2011 was \$302 per acre foot ($\$8,240,724 \div 27,255$ acre feet of water) though this value will change, increasing or decreasing on a monthly basis as the Pilot Run continues and this value should not be considered representative of the potential cost to operate and maintain the YDP on a sustained basis since that estimated cost would need to consider desired capacity of operations, additional one-time

expenditures (e.g., replacement of high pressure piping), new membranes, prevailing power and chemical costs at the time, and other factors.

As of February 28, 2011 capital contributions received from the Municipal Utilities are \$10,824,142. Expenditures for the Municipal Utilities to date total \$7,714,385 and Undelivered Orders total \$1,168,622 leaving a balance in advance funding of \$1,941,135.

4.0 Plant Performance

The following is a summary level schematic of the water treatment processes of the YDP based on how the plant is configured and being operated during the Pilot Run.



The following is YDP plant performance information as of the end of February, 2011. This is summary level information and more detailed performance information is prepared and distributed monthly in a separate report.

4.1 Overall Water Production

Total water conserved represents the sum of net YDP product water discharged to the River plus untreated bypass flow diverted to the River at the MODE 1 diversion facility.

Overall Production (acre-feet)	Total YDP product water produced	In plant product water use ¹	Net YDP product water to River	Untreated MODE flow to River	Total water conserved
May	1,659	42	1,617	758	2,375
Jun	1,973	44	1,929	1,260	3,189
Jul	2,225	58	2,167	1,244	3,411
Aug	2,319	78	2,241	966	3,207
Sep	2,233	64	2,169	0	2,169
Oct	2,317	48	2,269	0	2,269
Nov	2,190	39	2,151	0	2,151
Dec	2,212	45	2,167	0	2,167
Jan	2,184	51	2,133	1,889	4,022
Feb	2,050	79	1,971	324	2,295
Total Run	21,362	548	20,814	6,441	27,255

During the period February 1 through 28, 2011 a total of 2,295 acre-feet of water were recovered by the Pilot Run and included in water deliveries to Mexico. This includes 1,971 acre-feet of YDP product water and 324 acre-feet of untreated bypass flow. Intentionally Created Surplus (ICS) credits are accounted for and administered by the Lower Colorado Region Water Accounting and Conservation Group.

For calendar year 2010 the Decree Accounting report will reflect 20,938 total acre feet of water recovered by the Pilot Run. That total will result in ICS for the Municipal Utilities in proportion to their capital contributions to the Pilot Run (80% MWD, 10% CAWCD, 10% SNWA). The decree accounting report is due out in mid-May of each year and decree accounting related values are not final until then.

¹ Uses include chlorine injection, ammonia injection, and lime slaking.

4.2 On-Stream Factors

The on-stream factor is the ratio of actual operating hours over a given period of time to a hypothetical maximum. For example, if a plant operated for 10 months over a 12 month period of time that plant's on-stream factor would be 83% (7,297 hours ÷ 8,760 hours).

On-stream Factors (%)	Pretreatment	Reverse Osmosis
May	100%	100%
Jun	100%	100%
Jul	100%	100%
Aug	100%	100%
Sep	100%	100%
Oct	100%	100%
Nov	100%	100%
Dec	100%	100%
Jan	100%	100%
Feb	100%	100%
Total Run	100%	100%

During February and for the Pilot Run to date both pretreatment and the reverse osmosis have operated continuously.

4.3 Key Pretreatment Parameters

Turbidity is a measurement of the amount of suspended particulate in water. The Silt Density Index (SDI) is a measurement of the fouling potential to membranes of suspended particulate in water.

Key Pretreatment Parameters	MODE water at intake (Nephelometric turbidity units)	RO feed water (silt density index units)
May	7.0	2.2
Jun	8.3	4.3
Jul	8.0	2.3
Aug	10.8	3.2
Sep	13.9	2.3
Oct	9.8	2.6
Nov	6.6	2.8
Dec	6.9	2.3
Jan	5.7	1.6
Feb	10.1	1.4
Total Run	8.7	2.5

At the YDP water pretreatment equipment (grit sedimentation basins, solids contact reactors, dual media gravity filters) is designed to significantly reduce the level of suspended particulate in water in order to reduce potential fouling for the RO membranes. Pretreated, but saline water is stored in the clearwell and pumped to the reverse osmosis membranes for desalination.

For February turbidity of bypass flow water at intake averaged 10.1 NTU and SDI averaged 1.4. Elevated turbidity during February was primarily the result of wind storms during the month.

4.4 Key RO Parameters

Pretreatment at the YDP is designed to make the water reaching the RO membranes as particulate free as possible. Pretreatment however, has relatively little impact on salinity of bypass flow water.

Key RO Parameters	Intake water at the MODE (ppm ²)	Clearwell and RO feed water (ppm ²)	Product Water (ppm ^{2,3})	Recovery (%)	Salt Rejection (%)
May	2,808	2,404	203	69.7	94.9
Jun	2,922	2,508	202	70.3	95.2
Jul	2,515	2,147	172	70.1	95.2
Aug	2,516	2,152	191	70.2	94.7
Sep	2,555	2,150	209	70.1	94.2
Oct	2,475	2,089	217	69.9	93.7
Nov	2,522	2,115	269	69.9	92.9
Dec	2,580	2,173	260	69.4	92.7
Jan	2,787	2,390	305	70.1	92.3
Feb	2,344	1,983	264	70.2	92.0
Total Run	2,602	2,210	229	70.0	93.8

During February the bypass flow water at intake averaged 2,344 ppm. Pretreatment removed an average of 361 ppm resulting in water at the clearwell to feed the RO pumps of 1,983 ppm. Product water from RO and discharged to the River averaged 264 ppm in February.

From February 11th through 18th Wellton-Mohawk suspended groundwater pumping in order to perform routine maintenance of their wells. During that period groundwater from the Yuma Mesa Conduit was the source of feed water for the YDP. We also utilized this opportunity to put the reconstructed gate on the MODE at station 0+00 back in to service. Reconstruction of the

² Values are total dissolved solids in parts per million (ppm) based on Sum of Constituents methodology and represent average (mean) values.

³ Approximately 58% of the increase in product water salinity in November (over previous run-to-date average salinity) is the result of declining salt rejection of the Fluid System membranes. Approximately 42% of the increase in product water salinity in November is the result of utilizing Hydranautics membranes on November 8th and 9th. Hydranautics membranes were used during the demonstration run of the YDP in 2007.

gate and associated structures was an American Recovery and Reinvestment Act project and mentioned previously in the July 2010 Pilot Run monthly update.

Salt rejection of the RO membranes averaged 92.0% for the month. As the table above indicates the salt rejection of the membranes has declined slightly during the Pilot Run (from 95.2% to 92.0%) and the salinity of product water has been as high as 305 ppm. When the salt rejection data is adjusted for variations in temperature and pressure the decline is about one-half of that indicated in the unadjusted values in the table above. The trend in salt rejection is consistent with our expectations based on the age of the membranes, test results prior to the Run, and anticipated performance of the membranes.

4.5 Other Effluent Data

For January, 2011 bypass flow volume at the SIB totaled an estimated 5,902 acre-feet with an average salinity of 3,561 ppm. February data will be available for the March Pilot Run report.

Other Effluent Data	Bypass Drain volume at SIB (acre-feet ⁴)	Bypass Drain salinity at SIB (ppm ⁵)	Concentrate volume (acre-feet)	Concentrate salinity (ppm ⁶)	Slurry to A22 (tons ⁷)
Prep	11,619	2,667	-	-	1,226
May	9,316	3,159	728	7,227	2,646
Jun	6,825	3,676	835	7,647	4,103
Jul	4,885	3,461	949	6,452	4,284
Aug	3,862	3,735	982	6,488	4,147
Sep	10,342	2,929	951	6,325	4,845
Oct	13,801	2,883	990	6,100	4,028
Nov	12,694	2,928	922	6,092	4,280
Dec	11,806	2,711	959	6,125	4,306
Jan	5,902	3,561	932	6,777	4,717
Feb			871	5,479	3,555
Total Run ⁸			9,119	6,469	40,911

During February a total of 3,555 tons of calcium carbonate slurry were transported via pipeline to A22 evaporative and disposal cells.

⁴ This is a provisional value. Final data for the volume of the bypass flow is provided by the IBWC.

⁵ Estimated value based on Sum of Constituents (SOC) methodology. Actual values were based on Corrected Residual on Evaporation (ROE) methodology (3,379 ppm for January, 2011) and converted to SOC based historic average difference between SOC and Corrected ROE (+182 ppm) for bypass flow water at the Southerly International Boundary. The historic average difference of 182 ppm is for the 14 year period, 1995 through 2008. (3,379 ppm + 182 ppm = 3,561 ppm).

⁶ Values based on Sum of Constituents methodology and represent average (mean) values.

⁷ Values are tons of solids, exclusive of water. Values indicated include slurry trucked to the A22 site during pipeline outages. Estimated volumes trucked are: 176 tons (156,000 gallons) in May and 348 tons (409,400 gallons) in June.

⁸ Totals does not include Pilot Run preparation ("Prep") in March and April, 2010

4.6 Power Consumption

During February the YDP's power consumption was 3,170 MWh. The average price of power during February was \$31.67 per MWh.

Power Consumption	Power (MWh)	Cost (\$/MWh)
Prep	438.14	32.63
May	3,117.97	31.86
Jun	3,446.37	31.76
Jul	3,503.61	39.83
Aug	3,517.36	37.80
Sep	3,392.54	33.30
Oct	3,539.33	31.93
Nov	3,423.14	31.72
Dec	3,613.65	32.80
Jan	3,599.32	31.27
Feb	3,169.95	31.67
Total Run⁹	34,323.24	\$33.43

Values through December, 2010 reflect final bills from WAPA. January and February, 2011 reflect preliminary information from WAPA.

⁹ Total does not include power used during run preparation ("Prep") in March and April, 2010

4.7 Chemical Consumption

Chemical consumption during February and for the run to date is as reflected in the table below.

Chemical Consumption (tons)	Ammonia	Antiscalant ¹⁰	Chlorine	Ferric Sulfate	Lime	Sodium Bisulfite	Sulfuric Acid
Prep	2.2	0	9.9	81.2	1,545.0	0	47.2
May	12.1	11.9	22.0	85.7	1,253.0	19.5	206.0
Jun	11.0	5.3	39.7	97.0	1,100.3	15.4	175.8
Jul	12.1	5.7	31.9	105.0	1,149.0	15.4	182.0
Aug	11.6	6.1	39.5	110.0	1,241.0	19.6	208.0
Sep	13.3	6.4	33.7	120.1	1,208.0	21.6	201.9
Oct	13.0	6.1	36.1	132.0	1,158.1	23.8	209.7
Nov	13.0	6.4	23.2	113.9	1,140.2	19.4	215.8
Dec	12.9	5.5	24.4	111.5	1,002.3	19.4	214.0
Jan	12.1	2.2	21.2	121.4	984.5	19.5	246.6
Feb	10.6	3.9	23.0	102.3	605.3	18.0	218.2
Total Run¹¹	121.7	59.5	294.7	1,098.9	10,841.7	191.6	2,078.0

Decreased lime consumption in February was the result of processing Yuma Mesa Conduit water in lieu of Wellton-Mohawk water during Wellton's pumping outage for well maintenance and an atypically short month.

¹⁰ For the Pilot Run sodium hexametaphosphate was used as the antiscalant and the table above reflects consumption of that chemical. January consumption is atypically low because antiscalant remaining from the YDP demonstration run (Flocon 260 and Hypersperse MDC220) was used during that month.

¹¹ Totals do not include chemicals used during run preparation ("Prep") in March and April, 2010

5.0 Joint Cooperative Actions

In accordance with the Joint Report of the Principal Engineers¹², Reclamation began moving arranged water to the Bypass Drain in late October, 2009. The Joint Report states, “The United States, Mexico, and a partnership of non-governmental organizations (NGO) intend to each arrange for 10,000 acre-feet (12.3 mcm) of water, for a total of 30,000 acre-feet (37 mcm), in connection with the reduction in flow to the Santa Clara Wetland and the increase in salinity that would occur during the proposed YDP Pilot Run in the absence of the Joint Cooperative Actions identified in this agreement. The volumes shall be conveyed during the YDP Pilot Run period, however each party may initiate conveyance of their respective volumes starting on the date a decision is made by the appropriate U.S. agency to proceed with the proposed YDP Pilot Run until the conclusion of the proposed YDP Pilot Run.”¹³ Reclamation decided to proceed with the YDP Pilot Run on October 29, 2009 and formally informed the U.S. Section of the International Boundary and Water Commission (IBWC) of that decision on that date. On October 30, 2009 Reclamation initiated the movement of U.S. arranged water to the Santa Clara Wetland.

¹² “Joint Report of the Principal Engineers Concerning U.S.-Mexico Joint Cooperative Actions Related to the Yuma Desalting Plant (YDP) and the Santa Clara Wetland” International Boundary and Water Commission, July 17, 2009

¹³ The “Joint Report of the Principal Engineers Concerning U.S.-Mexico Joint Cooperative Actions Related to the Yuma Desalting Plant (YDP) and the Santa Clara Wetland” is part of Minute 316 to the 1944 Water Treaty. That Minute became effective on April 16, 2010.

The following table describes the status of arranged water as of January 31, 2010. This is the most recent data available from the IBWC.

	United States ¹⁴	Mexico ¹⁵	Non-Governmental Organizations
Oct-09	149	-	-
Nov-09	4,363	-	-
Dec-09	1,785	-	-
Jan-10	1,778	-	-
Feb-10	194	-	-
Mar-10	2,016	-	-
Apr-10	-	1,792	-
May-10	-	857	-
Jun-10	-	5	-
Jul-10	-	318	-
Aug-10	-	87	-
Sep-10	-	-	-
Oct-10	-	1,807	-
Nov-10	-	145	-
Dec-10	-	-	-
Jan-11	-	221	-
Total	10,286 ¹⁶	5,232	0

U.S. Arranged Water: The IBWC has confirmed that Reclamation has successfully conveyed its full 10,000 acre-feet of arranged water to the Cienega. In addition, Mexico has formally accepted the arranged water conveyed by the U.S. from October 30, 2009 to March 31, 2010.

Mexican and NGO Arranged Water: In accordance with the Joint Report, Mexican or NGO water conveyed to the Bypass Drain on the U.S. side of the border will be fulfilled from Mexico's 1.5 million acre-foot annual Treaty allotment. All values for Mexican arranged water remain provisional values.

¹⁴ Values for the U.S. represent final values as reported by the IBWC and as accepted by Mexico

¹⁵ Values for Mexico are provisional; final values not yet available for the IBWC

¹⁶ Additional one acre-foot is the result of rounding

Mexico completed clearing the Santa Clara/Riito Drain in December 2010 and intends to use that water towards Mexico's arranged water commitment. Data regarding the amount of water flowing in that Drain has been requested from Mexico through the IBWC. Mexico intends to use the entire 18 month maximum possible Pilot Run duration for meeting its arranged water commitment.

Mexico reported at the Cienega Monitoring meeting held on October 28, 2010 that an unspecified portion of arranged water already conveyed by Mexico would be reallocated to the NGOs. Reclamation has requested from the IBWC information concerning this and the NGOs' plans associated with meeting their arranged water commitment.

During March Reclamation received a request from Mexico through the IBWC to convey arranged water. The total amount conveyed in March will be provided when it becomes available from the IBWC.

6.0 Major Historical Milestones

Milestone	Date
Publish press release for Public Scoping Meeting	9/25/08
Conduct Public Scoping Meeting	10/8/08
Initiate voluntary Cienega study based on scoping meeting and other comments received	11/1/08
Conduct initial consultation with the IBWC	11/14/08
Conduct second consultation with the IBWC	2/12/09
Submit ADEQ permit applications	3/2/09
Conduct third consultation with the IBWC (re: Cienega Literature Review)	4/22/09
Release draft Environmental Assessment (EA) with Cienega Literature Review attached for 30 day public comment period	5/1/09
Close of public comment period	6/1/09
Sign YDP Environmental Compliance Funding Agreement (<i>Begin finalization of Risk Management Plan</i>)	6/10/09
Pilot Run Agreements complete and circulating for review by Boards: Funding, Delivery, Forbearance, and Monitoring Plan Agreements	8/2/09
Release Final EA with all comments addressed (<i>Dependency – complete agreement with IBWC and Section 8 consultations</i>)	8/26/09
Release draft Finding of No Significant Impact (FONSI) for public review for 30 days	8/26/09
Close of public review period	9/28/09
Release final FONSI	9/30/09
All parties sign YDP Pilot Run Funding Agreement (<i>Dependency – agreement cannot be executed prior to final FONSI</i>)	10/29/09
Notification to IBWC: Reclamation intends to conduct the Pilot Run of the YDP	10/29/09
Reclamation initiates movement of arranged water to the Cienega	10/30/09
Receipt of 1 st installment payments from the Municipal Utilities	12/1/09
Final Preparation phase of the Pilot Run begins	12/1/09
Meeting at annual Colorado River Water Users Association conference – initial planning for celebratory event for Pilot Run and Drop 2	12/9/09
Discharge permit issued for the YDP and WQIC	1/8/10
Receipt of 2 nd installment payments from the Municipal Utilities	4/16/10
Minute 316 to the 1944 Water Treaty Signed	4/16/10

Milestones continued	Date
Reclamation makes \$100,000 payment to Mexico for extraordinary Bypass Drain maintenance	4/16/10
Aquifer protection permit received for the YDP and WQIC	4/28/10
Celebration Event for the YDP Pilot Run and Drop 2 Reservoir	4/28/10
Completion of the final preparation phase of the Pilot Run	5/2/10
Commencement of the Pilot Run (as scheduled)	5/3/10
Coffer Dam removed in MODE 2 and discharge of YDP product water to the River commences	5/5/10
Total water conserved by the Pilot Run reaches 2,375 acre-feet	5/31/10
Total water conserved by the Pilot Run reaches 5,564 acre-feet	6/30/10
Total water conserved by the Pilot Run reaches 8,975 acre-feet	7/31/10
Total water conserved by the Pilot Run reaches 12,182 acre-feet	8/31/10
Total water conserved by the Pilot Run reaches 14,351 acre-feet	9/30/10
Secretary Salazar tours the YDP	10/19/10
Total water conserved by the Pilot Run reaches 16,620 acre-feet	10/31/10
Total water conserved by the Pilot Run reaches 18,771 acre-feet	11/30/10
Total water conserved by the Pilot Run reaches 20,938 acre-feet	12/31/10
Total water conserved by the Pilot Run reaches 24,960 acre-feet	1/31/11
Total water conserved by the Pilot Run reaches 27,255 acre-feet	2/28/11