INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

DUPLICATE ORIGINAL

Ciudad Juarez, Chihuahua
July 11, 2003

JOINT REPORT OF THE PRINCIPAL ENGINEERS TO FACILITATE EMERGENCY DELIVERY OF COLORADO RIVER WATER FOR USE IN TIJUANA, BAJA CALIFORNIA

To the Honorable Commissioners
International Boundary and Water Commission
United States and Mexico
El Paso, Texas and Ciudad Juarez, Chihuahua

Sirs:

Pursuant to your instructions, we respectfully submit this joint report in furtherance of the interest expressed by water authorities in San Diego, California and the City of Tijuana, Baja California (Tijuana) in effecting emergency deliveries, through the aqueduct system in southern California, of a portion of the waters of the Colorado River allotted to Mexico by Article 10(a) of the "United States – Mexico Treaty for Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande," signed February 3, 1944 (1944 Water Treaty). Low water reserves resulting from drought conditions over the Tijuana River watershed and continued growth of the Tijuana, B.C. metropolitan area have resulted in a projected shortage of water to supply the needs of the city in the near future. Unless these emergency water deliveries are made, the municipalities of Tijuana and Rosarito, B.C., which currently have a population of about 1,300,000 inhabitants, will suffer serious shortages of water. Mexican water authorities are developing plans to provide for future water supply, however, construction of needed infrastructure will be costly and will take several years to implement. Part of this planning includes participation in binational feasibility studies with the San Diego County Water Authority (SDCWA) authorized under Minute No. 301 of the International Boundary and Water Commission, United States and Mexico (IBWC), concerning a potential binational aqueduct to increase the water supply to the San Diego/Tijuana region.

We note that three California Agencies have previously cooperated in providing emergency delivery of Colorado River waters to Tijuana prior to the construction of Mexico's Colorado River Aqueduct in Baja California during the 1970's. The deliveries were made through the facilities of the Metropolitan Water District of Southern California (MWD), SDCWA, and Otay Water District (OWD) through an extension of the OWD water transmission system, constructed at a cost to Mexico for the delivery of water to Tijuana at the international boundary at Otay Mesa. These California Agencies have expressed a willingness to do so again, subject to the availability of capacity in their systems, and reimbursement of all costs for conveyance of the water deliveries and construction of improvements to the OWD connection system along with other aspects of environmental protection.

We observe the information of the California Agencies in the sense that the cost for the deliveries would be equivalent to the costs for similar deliveries to United States users in the

area. An advance payment shall be required, which the California Agencies will determine quarterly, equivalent to the cost for three months of emergency deliveries. Due to the fluctuation and uncertainty regarding energy costs in the State of California, actual energy costs may exceed the estimated costs for making the emergency deliveries, which would require the establishment of a reserve fund in an amount ranging from $25,000 to $500,000, United States currency, as determined by the California Agencies each quarter after reviewing the water delivery requests and energy costs.

We also observe that the improvements to the metering and delivery facilities of the OWD system were constructed by the SDCWA during October and November 2001 at a cost to the Tijuana State Public Services Commission (CESPT) estimated at $372,428 United States currency. The financing and construction were supervised by the IBWC. The construction of the improvements to the system consisted of the installation of pipelines, backflow prevention valves to safeguard United States water supplies, and metering equipment to provide accurate measurement of waters delivered to Mexico. The improvements will be owned and operated by OWD for the purposes of effecting water deliveries to Tijuana. Repairs to the said improvements which may be required solely for the purpose of making emergency water delivery to Tijuana will be paid by the government of Mexico.

New equipment installed by OWD to comply with air quality standards has capacity for both domestic requirements and deliveries to Tijuana. The incremental equipment costs associated with deliveries to Tijuana in the estimated amount of $938,000 United States currency will be recovered through quarterly payments made by Mexico for water deliveries at the rate of approximately $43 United States currency per acre-foot ($0.04 United States currency per cubic meter), costs which are already included in the unit cost for water delivered on site. In the event that water deliveries are terminated by Mexico prior to recovery of this investment by OWD, costs that have not been covered at that time would have to be paid by Mexico through the CESPT.

Considering the responsibilities of the IBWC in the application of the 1944 Water Treaty, particularly the provision that the IBWC maintain a record of waters belonging to each country, we note the information of the United States Section that it is feasible to divert, on an emergency basis, a part of the Mexican treaty waters through the facilities at Parker Dam on the Colorado River, located 169 miles (272 kilometers) upstream of the Northerly International Boundary and deliver the waters, less conveyance losses charged to Mexico's treaty waters, to the international boundary at Otay Mesa. The measuring device requested by the California Agencies has been installed at the Otay Mesa connecting facilities and will support the IBWC's water accounting. We observe that the impact, both in volume and quality, of the resultant reduction in treaty waters delivered to Mexico at the Northerly International Boundary would be insignificant.

We reviewed the requirements of the IBWC and of the California Agencies for making the water deliveries, as well as the needs of CESPT to request and receive the waters. We observed that to ensure that these requirements are met, the United States has concluded arrangements with the California Agencies under laws applicable in the United States and that Mexico has concluded arrangements with the State of Baja California under applicable laws in Mexico. The United

States Section will coordinate through SDCWA the actions of the California Agencies and the Mexican Section will coordinate through CESPT the actions of Baja California. Based on these arrangements, we propose the following procedure for making the emergency deliveries:

A. Scheduling Emergency Water Deliveries

1. The Mexican Section, for a 5-year period, beginning in the year in which deliveries are initiated, will present to the United States Section an annual schedule of emergency water deliveries developed by the CESPT for emergency deliveries of water required monthly. The request corresponding to the initial year of water deliveries will be made at least 45 days prior to the delivery start date. For subsequent years, the requests will be made by September 15 of each preceding year. Such water amounts will be subject to the availability of delivery capacity of the California Agencies and should, in any event, not exceed the capacity of the inter-connection facility of approximately 1,200 acre-feet (1.5 million cubic meters)/month.

2. The United States Section will consult with the SDCWA and will respond within 30 days after receipt of the request for delivery concerning the availability of capacity, and limitations if any, for the delivery of the scheduled volumes of water for Tijuana, B.C. for deliveries requested during the initial period. Also, under the referenced agreement, the United States Section will ascertain from the SDCWA whether and to what extent a limitation of deliveries is foreseen during subsequent annual periods.

3. The United States Section, upon receipt of the advance payment in conformance with Part B of this Joint Report, will assure that the deliveries are made within the delivery capacity and limitations mentioned in the previous paragraph unless service interruptions or other emergencies beyond the United States Section's control cause temporary suspension of deliveries. The deliveries to Tijuana at the international boundary will consist of the requested volumes. The volume charged to Mexico's treaty deliveries will consist of the delivered volume plus the conveyance losses in accordance with the attached Table 1, "Charges to Mexico for Emergency Deliveries to Tijuana of a Portion of Mexico's 1944 Colorado River Treaty Water." For this purpose, the local work group (IBWC, SDCWA, MWD, OWD, Comisión Nacional del Agua (CNA), Comisión Estatal del Agua (CEA) and CESPT) will take readings at the meter installed for this purpose at Otay Mesa at the international boundary on the last day of each month that deliveries are made to Mexico.

4. The Mexican Section will assure receipt of these emergency deliveries in a continuous manner consistent with the requested and agreed-to amounts, without causing an interruption in water deliveries at the international boundary.

5. During any year in which water deliveries are made, the Mexican Section may request unanticipated additional or reduced volumes of waters allotted to Mexico under the 1944 Water Treaty, needed by the CESPT for subsequent periods. The U.S. Section, upon consultation with the SDCWA, will advise the Mexican Section as soon as possible, if

capacity is available and if there are any limitations in making the additional deliveries. The CESPT, through the Mexican Section, will provide funds to cover the cost for the additional water deliveries within 15 days after this notification or will schedule compensating reductions in volume for a subsequent period of the same quarter. Except in extraordinary circumstances, the Mexican Section will not submit a request for unanticipated additions or reductions in emergency deliveries for any period for which an additional or reduced volume has been requested.

6. In the event that the California Agencies are not able to make the water deliveries because of capacity limitations, service interruptions, or other emergencies, the United States Section will immediately notify the Mexican Section before any suspension of deliveries is done. In case the water supply is suspended for reasons other than those mentioned above, the United States Section will reimburse funds equivalent to the cost of the suspended deliveries which CESPT may have paid in advance.

B. Funding Emergency Water Deliveries

1. The Mexican Section will assure the payment by the CESPT for the emergency water deliveries to Tijuana in accordance with the following arrangement:

   a. The cost for emergency water deliveries to Tijuana will be based on the volume of water measured at the Otay Mesa metering facility at the international boundary, plus system conveyance losses through the various California conveyance systems from the diversion point near Parker Dam to Otay Mesa at the international boundary, and will be equivalent to costs for similar deliveries to United States users in the said area. For the water deliveries made in the first year of effect of the present agreement, the cost is estimated in accordance with the schedule of charges in attached Table 1. Actual costs will be based on the delivery schedule. Delivery costs for subsequent years will be determined by October 15 each year except for estimated charges associated with the cost of electrical energy, which will be reported quarterly. The United States Section, upon consultation with SDCWA, will advise the Mexican Section 45 days prior to the beginning of each quarterly period whether funds shall be deposited in the electrical energy reserve fund.

   b. Before the beginning of each quarterly delivery period, payments will be made to the United States Section equal to three months of water deliveries, a minimum of 15 days prior to the beginning of the corresponding quarter. Withdrawals will be made monthly as described in Part B.2.

   c. Additionally, before the beginning of each quarter of deliveries, payments will be made to the United States Section, ranging from $25,000 to $500,000, United States currency, as determined by the SDCWA based upon the volume of water requested and future energy costs, only as necessary, based on high fluctuations in energy costs in the State of California.

d. In the event that the proportional investment costs for the new pump equipment acquired by OWD for domestic purposes and this agreement are not fully recovered through the unit cost charged by OWD per cubic meter on site, the Mexican Section will make the necessary arrangements to recover payment from the CESPT and provide it to the United States Section for its liquidation.

e. In the event unanticipated additional deliveries are requested, the Mexican Section will provide funds from CESPT to cover the costs for these water deliveries within 15 days after notification of acceptance by the United States Section.

f. Nonpayment of the advance quarterly payment for the service will be cause for suspension of the water deliveries.

2. The United States Section will administer the funds received from the Mexican Section in the following manner:

a. The United States Section will provide the funds to the SDCWA for deposit into an interest bearing bank account in which the interest income generated will be reinvested in the same account. The interest earned on the account will be based on the average monthly interest rate as reported on the SDCWA's Monthly Treasurer's Report for the SDCWA Operating Fund and will be calculated at the end of each month. The SDCWA will provide to the IBWC through the United States Section a monthly report including a detailed breakout of the costs for each monthly delivery, the total funds withdrawn from Mexico's account, the interest income generated in the account, and the balance remaining in the account. IBWC may request any clarifications to the monthly report from SDCWA within a maximum of 60 days. If no clarifications are requested by IBWC within 60 days, it shall be concluded that IBWC is in agreement with the information contained in the monthly report.

b. Similarly, the United States Section will provide a monthly report detailing the funds set aside for the energy reserve fund, advising of the actual energy costs associated with the monthly water deliveries, and the available funds and an estimate of the costs required for the succeeding quarter.

c. Upon termination of this agreement on emergency deliveries, the United States Section will provide to the Mexican Section a final balance sheet prepared by the SDCWA covering actual costs for the delivered waters. If there are remaining funds plus interest, these will be reimbursed to Mexico through the IBWC. If the Mexican funds are not sufficient to cover the final costs, Mexico will provide additional funds within 15 days of notice from the United States Section.

C. Coordination

The IBWC will form a local work group which will include at least one representative from each agency in the United States and Mexico involved in this matter. Those agencies are defined to

include IBWC (United States and Mexican Sections), SDCWA, MWD, OWD, CNA and CEA and CESPT. The work group will meet at least once a month to receive reports on the operation and the above procedures and the handling of funds received from Mexico and to exchange information, as well as for jointly addressing any unforeseen situation which may arise regarding this matter.

D. Water Deliveries Monitoring

The IBWC will account for the Colorado River waters delivered under this emergency delivery arrangement, including system conveyance losses, and charge them against Mexico's allotment of Colorado River waters provided for in Article 10(a) of the 1944 Water Treaty following the provisions in Article 15B of the said Treaty for quantities delivered at mutually agreed points on the land boundary. During the period of emergency deliveries to Tijuana the salinity differential between Imperial Dam and the Northerly International Boundary, described in Resolution 1a of Minute 242, will be calculated as if the water delivered for use in Tijuana were delivered from Imperial Dam at the Northerly International Boundary.

E. Water Supply Planning for Tijuana, Baja California

With each annual request for emergency deliveries, Mexico, through the CESPT-CEA, will provide an update of programs and projects being implemented to secure an adequate water supply for the Tijuana, B.C. area.

Recommendations

Based on the above, we respectfully recommend:

That the procedures described in this report for providing emergency delivery of a portion of Mexico's Colorado River water for use in the Tijuana, B.C. area be approved.

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TABLE 1

Charges to Mexico for Emergency Deliveries to Tijuana of a Portion of Mexico's 1944 Colorado River Treaty Water

	On basis total water handled including losses at unit charge for total water
1. Water delivered to Mexico at international boundary near Tijuana (acre-feet)	
2. OWD system loss at 3 percent of Line 1 (acre-feet) (a)	
3. OWD total deliveries (Line 1 plus Line 2) (acre-feet)	
4. Unit payment due OWD for delivery charges and other expenses ($/acre-foot)	$ 105.54/acre-foot
5. Total payment to OWD (Line 3 times Line 4) ($) (b)	
6. Water Delivered by Authority for Mexico; same as Line 3 (acre-feet)	
7. Authority system loss at 1 percent of Line 3 (acre-feet) (a)	
8. Authority total deliveries (Line 6 plus Line 7) (acre-feet)	
9. Unit payment due Authority for delivery charges and other expenses ($/acre-foot)	$19.25/acre-foot
10. Total payment to Authority (Line 8 times Line 9) ($) (b)	
11. Water delivered by Metropolitan for Mexico; same as Line 8 (acre-feet)	
12. Metropolitan system loss at 3.6 percent of Line 8 (acre-feet) (a)	
13. Metropolitan total deliveries (Line 11 plus Line 12) (acre-feet)	
14. Unit payment due Metropolitan for use of existing diversion and conveyance works, water treatment, and other expenses ($/acre-foot)	$246.00/acre-foot
15. Unit payment due Metropolitan for electric energy, which equals the average cost of supplemental energy purchased for the month ($/megawatt-hour) that the water was delivered multiplied by 2.38 (includes pumping costs, loss of Metropolitan's share of energy generated at Parker Dam Power Plant, and loss of Southern California Edison Company Benefit Energy)($/acre-foot).	$91.00/acre-foot
16 . Total payment to Metropolitan (Line 13 times Line 14 plus Line 13 times Line 15) ($) (b)	
17. Total charge (Line 5, plus lines 10, and 16) ($)	

(a) Portion of Treaty Water diverted by Metropolitan at Lake Havasu.
(b) Rounding errors could occur.