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THE BELLAGIO DRAFT TREATY AS A TOOL FOR SOLVING BORDER GROUNDWATER ISSUES

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INTRODUCTION

In 1977 University of New Mexico Professor Albert E. Utton¹ and Mexican ambassador Cesar Sepulveda² began examining the issues associated with shared use of the transboundary aquifers along the U.S./Mexico border. Over the next twelve years Utton and Sepulveda engaged numerous experts in a variety of fields to study approaches for joint management of shared water resources. The result of this interdisciplinary effort was the Bellagio Draft Treaty,³ a model agreement governing ground water resources between countries. The Treaty suggests a structure by which two or more parties can cooperatively study and jointly manage a transboundary resource.

As fresh water supplies become increasingly scarce around the world, internationally shared water sources present both a basis for significant disagreement and an opportunity for cooperation among countries. Shared aquifers are a significant resource issue for the U.S. and Mexico because the countries share seventeen ground water basins. In the Paso Del Norte, a region encompassing southern New Mexico, southwestern Texas, and northern Chihuahua, the U.S. and Mexico share the surface waters of the Río Grande/Río Bravo, and the groundwater contained in the Mesilla Bolsón and the Hueco Bolsón aquifer systems. These sources currently provide drinking and irrigation water for Ciudad Juarez, El Paso, Texas, and Las Cruces, New Mexico. However the region continues to grow and is rapidly depleting the Hueco Bolsón. The Paso Del Norte must secure new sources of water.

EMERGING WATER RESOURCE ISSUES IN THE PASO DEL NORTE

Juarez currently draws most of its municipal water from the Hueco Bolsón, a transboundary aquifer shared with El Paso, Texas. The Hueco Bolsón is a finite resource and will not continue to be a viable source of water for the growing city of Juarez, as it may cease to be a source of fresh water by 2005. In addition, aquifer overdraft presents the threat of land subsidence, which threatens the integrity of municipal infrastructure, including buildings, gas lines, and water lines.

On the U.S. side of the border, El Paso has recently augmented its ability to treat Río Grande surface waters for municipal use. In September 2002, the El Paso Water

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3. Robert D. Hayton and Albert E. Utton, *The Bellagio Draft Treaty*, 29 Nat. Resources J. 663 (1989).

Utilities Public Service Board officially opened a water treatment plant expansion, increasing its water treatment capacity from 40 to 60 million gallons per day.⁴ This development will allow El Paso to increase its Río Grande diversions by 25%, and therefore rely less heavily on groundwater to supply the growing region.⁵ Juarez also plans to redistribute its annual allocation of 60,000 acre-feet of water from the Río Bravo, using it for municipal purposes. Juarez is otherwise dependent upon groundwater resources.

Water quality is another important issue that needs to be evaluated and addressed. As the aquifer is mined, water quality degrades. In addition, untreated sewage presents a human health hazard. In 1997, Juarez had an estimated 1.2 million residents and was producing 75 million gallons of raw sewage each day.⁶ Waste was carried to a canal system known as *aguas negras*, or black waters, which drained to an open ditch running parallel to the Río Grande. Some of this water was used for irrigation, and some entered the Río Grande, often causing very high bacteria levels. High bacteria levels and pesticides in the water are also attributable to numerous non-point sources, including runoff from city streets, farms, and dairies.⁷ Human health and safety are directly implicated by the failure to adequately address these issues.

APPLICATION OF THE BELLAGIO DRAFT TREATY

Existing treaties and protocols governing the U.S. and Mexico do not address issues such as impairment, pollution, or subsidence. Even though drought is mentioned its definition is disputed. The Bellagio Draft Treaty provides a model for how countries can initiate a joint study of the resources and cooperatively manage the shared supply. The purposes of the draft treaty include 1) to enable reasonable and equitable development and management of ground water, 2) to provide an effective and objective management tool, 3) to address periods of impairment such as drought, and 4) to assist party countries in developing an integrated approach to managing surface water and ground water in the border region. To accomplish these objectives, the treaty outlines mechanisms for the management of international aquifers by mutual agreement. The alternative to mutual agreement is continued unilateral taking of these waters, which is not a sustainable solution.

The Bellagio Draft Treaty presents a structure through which the United States and Mexico can communicate and problem solve concerning the joint management of the Río Grande / Río Bravo and the shared aquifers. The treaty describes the formation of a bilateral institution through which the United States and Mexico can jointly participate in data collection and the study of the shared water resource. Impairment, such as water quality degradation, drought, and aquifer overdraft, can be observed and quantified. Remedies to impairment of water resources are also

4. NADBank Press Release, *El Paso Celebrates Opening of \$37.82 Million Expansion of the Jonathan W. Rogers Water Treatment Plant Funded by the North American Development Bank*, (Sept. 9, 2002), available at http://www.nadbank.org/Reports/Press_Releases/english/2002/09-09-02%20Jonathan%20Rogers%20Ribbon%20Cutting.pdf.

5. *Id.*

6. CAROLE KEETON STRAYHORN, TEXAS COMPTROLLER OF PUBLIC ACCOUNTS, *BORDERING THE FUTURE* (1998), available at <http://www.window.state.tx.us/border/ch09/ch09.html>.

7. *Id.*

dependent upon the assembly of large amounts of physical data and must be developed on a site-specific basis. An understanding of the physical extent of the groundwater resource, and the impacts of development activities, is an essential foundation to joint agreement and management.

The bilateral institution is described as a joint commission tasked with carefully managing the development of the aquifer and associated surface waters.⁸ The goal of the draft treaty is to obtain optimum utilization and conservation of transboundary ground waters and to protect the underground environment. Optimum utilization and conservation are determined on a reasonable and equitable basis.

One of the most important duties of the commission is to collect, analyze, and store scientific data about the resource. The commission is charged with the creation and maintenance of a comprehensive database to store and present the collected data. The drafters of the treaty saw this provision of the maintenance of a database as one of the most important in affecting water resource management. This is because respect and validation for the commission itself would come from a thorough understanding of the circumstances of each problem. The requirement to maintain a database implies systematic collection of all relevant hydrologic parameters such as aquifer geometry, recharge rates, related surface waters, water quality, and ground water levels. While a significant amount of data on the border region already exists, there are disputes about the accuracy of that data and lack of agreement over the data. The Draft Treaty provides that once the data is collected and agreed upon, the commission must analyze the data to report the effects of development on ground water resources.

The commission is authorized to declare transboundary ground water conservation areas, drought alerts, drought emergencies, and public health emergencies. The current drought in the Río Grande basin is estimated by the United States Department of Agriculture to have begun in 1993.⁹ The Palmer Drought Severity Index shows that the lower Río Grande Valley is currently in extreme drought.¹⁰ All northern Mexican states and the lower Río Grande Valley have been declared drought disaster areas several times within the past nine years.¹¹ In the Bellagio Draft Treaty, drought is defined as a condition of abnormal water scarcity in a specific area resulting from natural conditions.¹² The treaty addresses drought problems by stipulating that within two years of the agreement entering into force between the countries, the commission is required to prepare a drought management plan applicable to the border region.¹³ Therefore, this plan must be created even if no drought is threatened. The foresight of this provision exemplifies the thought that was devoted to this issue and the knowledge of areas where boundary resources are stressed through drought.

8. Hayton & Utton, *supra* note 3, art. II, at 682.

9. TEXAS CENTER FOR POLICY STUDIES, THE DISPUTE OVER SHARED WATERS OF THE RIO GRANDE/RIO BRAVO (2002), available at <http://www.texascenter.org/borderwater/waterdispute.pdf>.

10. The Palmer Index employs a formula using temperature and rainfall information to determine dryness and forecast long term and short term droughts. See <http://www.drought.noaa.gov/palmer.html> (last visited March 31, 2003).

11. TEXAS CENTER FOR POLICY STUDIES, *supra* note 9.

12. Hayton & Utton, *supra* note 3, art. I(8), at 678.

13. *Id.* at art. XII(1), at 706.

The drought management plan may designate and reserve certain transboundary aquifers or well sites for use only in times of drought.¹⁴ It is important for the commission to have the ability to anticipate a drought, to research the consequences, and to develop a plan. The plan that is developed would be subject to approval by the U.S. and Mexican governments. The commission also can declare a drought alert, which is a time in which water conservation measures may be established.¹⁵ It also may declare a drought emergency. During a drought emergency a range of measures may be taken, from conjunctive management of the ground and surface waters to the use of designated drought reserves of ground waters. The plan must define the preconditions for the declaration of alerts and emergencies.

The commission also may declare a ground water conservation area.¹⁶ This can occur when it determines that withdrawals exceed or are likely to exceed recharge so as to endanger yield or water quality. If a ground water conservation area is declared, a management plan must be drafted which may prescribe the prevention, elimination, or mitigation of degradation.¹⁷ The plan may allocate the uses of ground waters, prescribe pumping limitations, arrange programs of aquifer recharge, employ planned depletion regimes, and other measures that must be taken to protect the resource.¹⁸ In making allocations, the commission considers factors such as the hydrogeology, the meteorology, socioeconomic implications, and water conservation practices of the countries. The commission also may approve a plan for the depletion of an aquifer over a calculated period, which would avoid a use race. This type of plan acknowledges that sustained yield may not be realistic if the resource is to be utilized; hence it takes those factors into consideration.

The commission cannot permanently alter the rights and obligations of the parties to prior agreements that currently are in effect. However, there can be temporary alterations such as in times of drought. The agreement also does not impose on the sovereignty of each party. This is evident throughout the agreement and its provisions. If members of the commission have differences of opinion with regard to facts or a proposed action and the issue cannot be resolved, the matter is referred to the governments. If the governments are unable to resolve the issue, it must be taken to mediation or arbitration.¹⁹

It is time to take another look at the provisions of the Bellagio Draft Treaty. The treaty's goal is to use preventive diplomacy and the best facts and science available to create sustainable ground water management plans. With the serious drought affecting the U.S., Mexico, and the border generally, it is clear that only joint management of the resource can lead to a sustainable solution. The countries need to cooperate and use preventive diplomacy to avoid further conflict and provide for shared management of this precious, shared resource.

14. *Id.* at art. XII(3)(a), at 707.

15. *Id.* at art. XII(2)(a), at 707.

16. *Id.* at art. VII, at 692.

17. *Id.* at art. VIII, at 695.

18. *Id.*

19. *Id.* at art. XVI.