Legal Issues Specific to The Middle Rio Grande Water Planning Region

Susan C. Kery, Esq.
John W. Utton, Esq.
Sheehan, Sheehan & Stelzner, P.A.

Peter C. Chestnut, Esq.
Sue E. Umshler, Esq.

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I. Introduction.

The Middle Rio Grande Planning Region (sometimes referred to as "the Region") is partly defined by shared water resources and partly by shared political and economic interests.[1] Within the Region there are specific legal issues which distinguish the Region from other water planning regions. These issues relate to potential new water markets within the Region, and the silvery minnow and water quality as new water "users" on the Rio Grande. These issues are analyzed below.

II. Potential New Water Markets.

As future water use within the Region is explored, it is important to recognize which entities have the potential to supply water. The six Pueblos which reside on the main stem of the Rio Grande within the boundaries of the Middle Rio Grande Conservancy District (MRGCD), as well as the MRGCD, are entities which in the future, after their rights are developed and quantified, could potentially supply water to other users within the Region. Likewise, a regional water bank could also serve this purpose. Finally, reclaimed water could also provide an additional source of water. Each potential "new" source or supply of water is discussed below.

A. Pueblo Water Rights.[2]

The six Pueblos in the Region on the main stem of the Rio Grande within the boundaries of the Middle Rio Grande Conservancy District (MRGCD) include Cochiti, Santo Domingo, San Felipe, Santa Ana, Sandia, and Isleta. These six Pueblos have had their water rights recognized by the U.S. Congress[3] and federal contracts with the Middle Rio Grande Conservancy District (MRGCD). The United States recognizes water rights for at least 20,242.05 acres of irrigation for the six Pueblos, with a least 8847 of those acres having recognized "prior and paramount" priority. The remainder of those recognized water rights arising from irrigation purposes share a priority with the MRGCD. Pueblos have water rights for other purposes, as well. Pueblo water rights are rooted in each Pueblo's aboriginal sovereignty, and are federally protected.[4] Congress also stated that

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[1] The Region largely consists of the area within the boundaries of Sandoval, Bernalillo, and Valencia counties. All or portions of 12 Native American Tribal Lands lie within the boundaries of the Region. These lands consist of the Pueblos of Cochiti, Isleta, Jemez, Laguna, Sandia, San Felipe, Santa Ana, Santa Clara, Santo Domingo, and Zia, and small portions of the Jicarilla and Navajo Reservations. The Region has the largest population of any planning region in New Mexico. Approximately 700,000 people live within the Region. For planning purposes, the Region is divided into three subregions. The subregions are identified as the Rio Jemez subregion, the Rio Puerco subregion, and the Rio Grande Valley subregion.

[2] An extensive discussion of Pueblo Water Rights can be found in Kery, Utton, Chestnut, Umshler: *Overview of Water Law Applicable to the Middle Rio Grande Water Planning Region* (January, 2003).

[3] Act of March 13, 1928 (45 Stat. 312).

[4] State of New Mexico v. Aamodt, 537 F.2d 1102 (10th Cir. 1976) ("Aamodt I"); New Mexico v. Aamodt, 618 F. Supp. 993 (D.N.M. 1985) ("Aamodt II").

Pueblo water rights for irrigation, livestock, and domestic uses are not subject to loss by forfeiture or abandonment.[5]

The leading case determining the nature and extent of Pueblo Indian Water Rights in the Aamodt adjudication.[6] Rulings to date in that ongoing adjudication allow the Pueblos to determine the purpose and place of use, without following state procedures, at least on Pueblo lands.[7]

Since not all of the Pueblo water rights are now being used, some part of them are available for new developments, including possible water marketing. The senior priority for the six Pueblos water rights make them particularly attractive for developments that need maximum reliability for their water supply.

Water planning within the Region must recognize that the large and senior water rights of the Six Pueblos are currently not all being used. These rights are for the future needs of each of the six Pueblos. Accurate calculation of current Pueblo uses are not currently available. However, plans for new development that will rely on water rights junior to the Pueblo rights need to consider the vulnerability to priority administration and unavailability of the resource in times of drought or other shortage situations, since the Pueblos are the most senior water users on the Rio Grande.

One possible use for Pueblo water rights which are not currently being used could be for "offset" purposes connected with pumping effects on stream flows, or "forbearance" in times of shortage, so that junior rights can continue taking water during such times. These, and other possible uses, will require negotiated agreements with one or more individual Pueblos. Payment for short or medium term developments either within or outside Pueblo boundaries will be an essential element of any such agreement. At least one Pueblo has entered into a Forbearance Agreement with a development outside Pueblo lands. That agreement calls for the Pueblo to forego using a portion of its water rights in times of shortage, so that the development can continue using water, in return for payment. Details of that agreement are confidential.

As demands in the Region for water increase, priority administration may become a more important factor in evaluating the value of water right. Development in the Region may see the use of Pueblo water rights to a greater extent in the future through a variety of short or medium term agreements. The quantity of water rights held by the six Pueblos also make them attractive for future development either within Pueblo lands or possibly outside Pueblo boundaries. Of course, the ultimate purpose of all Pueblo water rights is to meet the present and future needs of Pueblo people, including future generations.

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[5] Section 9, Pueblo Lands Act of May 31, 1933 (48 Stat. 108, 73rd Congress, First Session, Chap. 45).

[6] State ex rel. Reynolds v. Aamodt, U.S.D.C.N.M. No. 6639.

[7] Aamodt I., supra.

Many legal issues connected with development of the presently unused portion of Pueblo Indian Water Rights remain. However, the large quantity of congressionally recognized water rights for the six Pueblos, combined with their senior priority, make them important factors in development scenarios for the Region. Market forces will probably encourage creative solutions to the legal issues involving Pueblo water rights.

B. Regional Water Bank.

Water banking generally refers to a means of reallocating or transferring the use of water through some kind of centralized management entity. The primary goal of a regional water bank would be to allow for much quicker reallocation of water than occurs under the current transfer process. In using a regional water bank, rather than trying to find buyers or lessees for a particular water right, water rights holders "deposit" their water right in a "bank," which then leases the water right to a third party. The water rights holder is protected from forfeiture of the water right and benefits from revenues obtained for use of the water by a third party. For example, a farmer could deposit his or her water right in a regional water bank (which could be run by an irrigation or conservancy district, the State Engineer, or some other stated-created entity). Simultaneously, water users in need of additional water rights could apply to the bank to lease water for a specific period of time and use. Using databases and other management tools, the regional water bank would be able to match the amount and location of the farmer's deposits with appropriate users and then set up leases with those users to reallocate the farmer's water rights deposited with the bank. The farmer would then cease irrigating the land appurtenant to those water rights.

In the West, water banking is increasingly used for allocation of scarce water resources. Texas, Arizona, and Idaho, among others, all have state water banking statutes and operational water banks. Many times, water banking serves as a transfer mechanism from agricultural water use (where water is available) to urban water uses (where water is in demand). Alternatively, water banks are used as a management tool to address drought. For example, the state of California has set up the California Drought Water Bank. A great advantage of a water bank is the ease with which water can be withdrawn, especially in times of drought.

Currently, there is no specific water banking law that allows for the creation of a regional water bank. In the 2002 legislative session, the Legislature enacted water banking legislation for the Lower Pecos River[8] and may consider extending the authorization for water banking to the rest of the state during the 2003 legislative session. Pursuant to the Lower Pecos River statute, the State Engineer must establish rules that include: (1) criteria, terms and conditions for deposit of a water right in the bank; (2) terms and conditions for the accrual, pooling, exchange, assignment and conditions of the deposit of a water right; (3) the procedures for recording and annual reporting of all transactions to the interstate stream commission and the state engineer; and (4) procedures for the

[8] NMSA 1978 §§ 72-1-2.3 (2002).

water bank to temporarily transfer deposited water to new purposes and places of use and points of diversion without formal proceedings before the State Engineer.[9]

Under current law, water reallocation is administered by the State Engineer and managed by water distributing entities, such as acéquias and conservancy districts. The State Engineer allows changes in points of diversion, places of use, and purposes of use pursuant to the transfer and leasing statutes.[10] Thus, such transfers and leases will only be allowed if existing water rights are not impaired, and the transfer and lease is not contrary to the conservation of water or detrimental to the public welfare.

One statutory provision that encourages but does not specifically provide for water banking is the statutory exemption that allows certain water rights to go unused without being subject to forfeiture.[11] This statute provides that periods of non-use when water rights are acquired and placed in a State Engineer approved water conservation program by an individual, acéquia or community ditch association, conservancy district, irrigation district, soil and conservation district, or the Interstate Stream Commission, shall not be computed as part of the four-year statutory forfeiture period. This statute, however, does not provide for expedited reallocation procedures. Such procedures are critical to the success of a regional water bank.

In addition, conservancy districts may reallocate water within their boundaries consistent with the Conservancy Act.[12] The Conservancy Act allows conservancy districts to provide water that is not needed for irrigation to other users by contract or other agreement for compensation.[13] The Act provides that "persons, public corporations, or others" who wish to use district water may apply to the Board for permission to lease of purchase water.[14]

At this time, the only existing "water bank" in the Region is the MRGCD Water Bank, described below. The MRGCD Water Bank is limited in that the State Engineer has taken the position that water reallocated by change in point of diversion or to a place of use outside of the MRGCD boundaries is not authorized by the Conservancy Act and requires a State Engineer permit. The State Engineer has also taken the position that the quantity of vested water rights in the MRGCD Water Bank cannot be calculated until the State Engineer determines total beneficial use of MRGCD water.

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9 NMSA 1978 §§ 72-1-2.3(B) (2002).

10 NMSA 1978 §§ 72-5-23 (1907); 72-12-7 (1931); Chapter 72, Art. 6 (1967).

11 NMSA 1978, § 72-5-28 (G) (1907).

12 NMSA 1978, Chapter 73, Articles 14-17(1927).

13 NMSA 1978, § 73-14-47(H) (1927).

14 NMSA 1978, § 73-14-47(1) (1927).

In general, because no rights in the Region are adjudicated, the key issue in developing a regional water bank will be establishing an expedited process for approving deposits into and withdrawals from the water bank. Before delegating any authority to a regional water bank, the State Engineer will insist on a process that protects existing rights and does not reduce New Mexico's deliveries under the Rio Grande Compact.

C. MRGCD Water Bank.

Another potential new supplier of water within the Region is the MRGCD Water Bank. As described below, the MRGCD currently operates a Water Bank to serve landowners within the MRGCD. In the future, this Water Bank could serve as a source of water supply for other users within the Region.

The MRGCD was formed in 1925 to provide flood control, drainage, and irrigation for the Middle Rio Grande Valley.[15] Formation of the MRGCD brought together 71 acéquias into one unified entity to serve existing farmers and reclaim large amounts of previously unirrigable lands. Because of the varied history and make up of the MRGCD, seven categories of legally recognized water rights are found within its boundaries.[16] The permitted water rights of the MRGCD are the most critical when examining the future potential use of the MRGCD Water Bank.

The MRGCD has two surface water permits, numbered 0620 and 1690. On November 15, 1930, the MRGCD filed Application No. 0620 for a permit to change points of diversion from the Rio Grande. The Application sought to change the diversion points of 71 acéquias diverting water from the Rio Grande and located within the MRGCD. The Application proposed abandoning these 71 diversion points, and constructing six new diversion dams to replace the old diversions. The Application also claimed MRGCD's water right as totaling 123,267 acres of land, of which 80,785 acres were considered pre-District irrigated acreage, and 42,482 were described as new acreage to be irrigated.[17] Permit No. 0620 was granted by the State Engineer on January 26, 1931. Further, the State Engineer granted MRGCD the right to store 198,110 acre-feet per annum at El Vado Reservoir pursuant to Permit No. 1690, issued on August 20, 1930. This is not a water right, but a right to use storage space.

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[15] The original Conservancy Act was enacted in 1923. 1923 N.M. Laws, ch. 140. However, this act was repealed and replaced with the 1927 Conservancy Act, *see* Gutierrez v. Middle Rio Grande Conservancy Dist., 34 N.M. 346, 282 P. 1 (1929), and still provides the authority to create and operate conservancy districts, 1927 N.M. Laws, ch. 45 § 101 (codified at NMSA 1978, ch. 73, arts. 14-17 (1927)).

[16] These water rights are described in detail in Kery, Utton, Chestnut, Umshler: *Overview of Water Law Applicable to the Middle Rio Grande Water Planning Region* (January, 2003).

[17] These 42,482 acres represents reclaimed lands developed by the works of the MRGCD. This reclaimed land includes reclaimed land for the six Middle Rio Grande Pueblos located on the main stem of the Rio Grande.

In New Mexico, beneficial use is the measure of a water right.[18] In order to show beneficial use, all water right permit holders have a duty (usually implemented through a permit condition) to file with the State Engineer a "Proof of Beneficial Use" (PBU). The MRGCD also has this duty, but has not yet filed its PBU for Permit Nos. 620 and 1690. The purpose of the PBU is to enable the State Engineer to issue a License to Appropriate Water, which defines the extent and conditions of use under which a water right is granted. It is limited by actual beneficial use, and cannot be extended beyond the limits prescribed in the permit. When issued, MRGCD's license will define its right to divert, use, and store water pursuant to its permits, and its water right will be quantified. As explained below, such quantification will most likely be necessary prerequisite to expanding MRGCD's Water Bank beyond its current scope.

The MRGCD established a Water Bank on November 13, 1995, when the MRGCD Board adopted Rule 23, the Water Bank Rule. The Water Bank is essentially a water management system and a method by which the MRGCD manages the distribution of water within its boundaries by moving water from areas where it is not being used to areas of need. In this way, the MRGCD can maximize the beneficial use of water.

The formation of the MRGCD Water Bank was authorized by the Conservancy Act, which provides a broad grant of authority to engage in flood control and irrigation activities, and allows conservancy districts to make improvements for "public health, safety, convenience, and welfare."[19] Included in these broad powers is the authority of conservancy districts for water management and allocation activities. The Conservancy Act allows conservancy districts to provide water that is not needed for irrigation to other users by contract or other agreement for compensation.[20] The Act provides that "persons, public corporations, or others" who wish to use district water may apply to the Board for permission to lease or purchase water.[21] Thus, the MRGCD's Water Bank is merely an implementation of the powers authorized by the Conservancy Act. The Water Bank provides a methodology to determine how much water is available for leasing, a mechanism through which water can be leased, and an accounting system for these transactions.

Holders of current water rights within the MRGCD who are not using their rights can place the rights in the Water Bank. Deposits in the Water Bank come from vested MRGCD water rights and from individual holders of valid pre-1907 rights. Persons or entities that need water can "borrow" water from the bank. Thus, water use can be maximized by delivering it to where it can continue to be put to beneficial use. The Water Bank serves the further purpose of providing the MRGCD with a mechanism to quantify its water rights and to track the use of water. It also generates revenue, thereby reducing the tax burden on MRGCD constituents.

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[18] N.M. Const. art. XVI, § 3.

[19] NMSA 1978, § 73-14-1 (1927).

[20] NMSA 1978, § 73-14-47 (H) (1927).

[21] NMSA 1978, § 73-14-47 (I) (1927).

To date, water loaned from the MRGCD Water Bank has been used to irrigate lands within the MRGCD that do not have their own water rights. The MRGCD Water Bank cannot currently be used as a water supplier within the entire Region, since the State Engineer has taken the position that the Conservancy Act does not allow reallocation of use outside of MRGCD boundaries. The State Engineer has taken the further position that the quantity of vested rights within the MRGCD Water Bank cannot be calculated until the total beneficial use of MRGCD water is established. In the future water from the Bank may be available for non-agricultural uses from new points of diversion and may be available outside the boundaries of the MRGCD. Before that occurs, the MRGCD and the State Engineer will have to agree on a process for such reallocation. In addition, the total quantity of rights available to be loaned from the Bank will have to be quantified.

D. "Reclaimed" Water.

"Reclaimed" water can arise in several circumstances. Water can be reclaimed both through return flows, and through water reuse methods. Water reuse programs allowing for the use of gray water and treated wastewater could increase available water supplies, particularly for irrigation. Reclaimed water can potentially increase the amount of water available for use within the Region.

1. Return Flows.

A right to divert water provides its user with two types of water: the diversion portion, which equals the total amount withdrawn from the stream system, and the consumptive use portion, which is the portion that is consumed. Any amount left over that returns to the stream system by seepage, discharge, injection, or more efficient water use methods, is a return flow.

A water supplier whose permitted diversions are insufficient to use up the full amount of its consumptive right may seek to increase its diversions by demonstrating that it is returning some of the water to the stream system, thereby obtaining return flow credits. A return flow credit would allow the supplier to offset the effects of increased diversions for use elsewhere in its water system. Such offsets could allow additional pumping from municipal wells. For approval, the State Engineer would require a return flow plan as evidence of the amount of flows returning to the system.

An issue which arises when analyzing return flows is whether return flows to a wastewater treatment plant can be reused without violating a State Engineer permit. If a water supplier wishes to reuse or recycle effluent directly for immediate use, it will result in less water returning to the river system for use by other users and, consequently, raises questions of whether State Engineer approval is necessary and whether other users may oppose the reuse.

A water supplier may wish to go to a reduced or no-discharge system, where treated effluent is reused and consumed for either turf irrigation or manufacturing/industrial purposes. Where the State Engineer has already issued a permit to divert a specified quantity of water with no return flow requirement, the permittee may proceed to reuse treated effluent. Other than the power to prohibit a user from using more water than permitted, the State Engineer's authority is restricted to evaluating

proposed new uses or new points of diversion to determine whether the change would impair other users or be contrary to public welfare or conservation. Accordingly, the State Engineer lacks jurisdiction to regulate the implementation of a reduced discharge system, as long as the system would not result in a use of municipal water in a place, for a purpose, or in an amount not already allowed by permit.

The New Mexico Supreme Court has examined the State Engineer's imposition of a return-flow requirement on a city permit that previously contained no condition.[22] The Court held that the requirement was unlawful, concluding that all of the water appropriated under the permit could be used and consumed by the city, as the water was "artificial" water belonging to the city.[23]

A more complex question concerns a municipality's ability to reuse waters when some or all of its permits contain discharge requirements. A return flow condition will typically require a city to return all measurable return flow to the river, including sewage effluent, or may state a percentage of pumping, such as 30 percent, that must be returned to the river system. Under these circumstances, the municipality may not use more than its consumptive use right. But, it could reuse some or all of its effluent if it reduced its pumping correspondingly, so that the total consumptive use did not increase. In other words, by limiting diversions under a permit to the consumptive right and replacing any consequent shortfall in municipal supply with effluent, the municipality could make use of its return flows within its legal authority. Again, as long as the substitution of effluent did not result in a change in the purpose or place of use of municipal water, no State Engineer approval would be necessary, in most instances. The first use plus the reuse must stay within the total allowed consumptive right.

With respect to challenges by downstream users, the issue is one of title to water once it is released back into a public watercourse. New Mexico law contains an exemption for artificial waters from the general rule that waters returned to the river system are appropriable public waters. The fact that a city has discharged waters in the past does not extinguish the city's right to its use and consumption and, further, does not create a right to the waters in another, and a downstream user could not assert a claim against the city to the use of the discharged effluent, absent agreement by the city.[24] However, if the reduced discharge left less water for a downstream senior, replacement of the reduced discharge could be required in times of shortage.

Like return flows, when examining water saved through conservation measures, an issue arises as to the ownership of the saved water. If a water right holder, through conservation measures, decreases the amount of water being consumed under its permit, the permit holder arguably has the right to use the saved water. Otherwise, the general rule is that any saved water would return to the system as "public water".

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22 Reynolds v. City of Roswell, 99 N.M. 84, 654 P.2d 537 (1982).

23 *Id.* at 87-8, 654 P.2d at 540-1.

24 NMSA 1978, § 72-5-27 (1907).

2. Water Reuse Programs.

Water can be reclaimed through water reuse programs, in which household and industrial gray water and treated wastewater is reused, generally for irrigation. Although water reuse programs may provide additional sources of water, they raise public health and water quality issues which must be addressed. Further, a prevailing issue with water reuse systems is that if widely used, less water is returning to the stream system through return flows.

a. Gray Water[25] Reuse

"Greywater" is defined in New Mexico by regulation as "water carried waste from kitchen (excluding garbage disposal) and bathroom sinks, wet bar sinks, showers, bathtubs and washing machines. Greywater does not include water carried wastes from kitchen sinks equipped with a garbage disposal, utility sink, any hazardous materials, or laundry water from the washing of material soiled with human excreta."[26] Essentially, gray water is any water, other than toilet water, draining from a household. Since gray water is normally thought of as household water, commercial gray water reuse and recycling must be looked at only for those types of commercial entities which (1) produce gray water (for examples, hotels and restaurants) and (2) have a viable use for reclaimed gray water (for example, irrigation).

The current New Mexico Liquid Waste Disposal Regulations would apply to a plumbed gray water reuse system, since by definition, those regulations apply to on-site liquid waste systems that are designed to receive and do receive 2,000 gallons or less of liquid waste per day.[27] The term "liquid waste," by definition, includes "greywater."[28] Therefore, a person using a household gray water reuse and recycling system would have to apply for a liquid waste disposal permit,[29] or petition for a variance from such permitting requirement.[30]

During the 46th Legislature (First Session, 2003), House Bill 114 was introduced. This bill seeks to amend the New Mexico Water Quality Act,[31] to allow for the limited use of gray water

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[25] The terms "greywater" and "gray water" are both used to describe household wastewater, but current literature uses the term "gray water." Therefore, this paper uses the current term, except when citing New Mexico regulations, which use the term "greywater."

[26] 20.7.3.107(AF) NMAC (1997).

[27] 20.7.3.102(A) NMAC (1997).

[28] 20.7.3.107(AO) NMAC (1997).

[29] 20.7.3.201(A) NMAC (1997).

[30] 20.7.3.202(A) NMAC (1997).

[31] NMSA 1978, § 74-6-2 (1967).

without a permit. House Bill 114 defines "gray water" as "untreated household wastewater that has not come in contact with toilet waste and includes wastewater from bathtubs, showers, washbasins, clothes washing machines and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers or laundry water from the washing of material soiled with human excreta, such as diapers."

Under House Bill 114, a permit would not be required for using for gardening or irrigation less than 250 gallons per day of private residential gray water if certain criteria are met to address public health concerns:

(1) a constructed gray water distribution system provides for gray water overflow to go to the sewage or septic system;

(2) the gray water storage tank is covered to restrict access and to eliminate habitat for mosquitos and the like;

(3) the gray water system is sited outside of a floodway;

(4) gray water is vertically separated at least five feet above the ground water table;

(5) gray water pressure piping is clearly identified as a nonpotable water conduit;

(6) gray water is used on the site where it is generated and does not run off the property lines;

(7) ponding is prohibited, and standing gray water does not remain for more than 24 hours;

(8) gray water is not sprayed; and

(9) gray water used within municipalities or counties complies with all applicable municipal or county ordinances.

Since gray water systems would necessitate a plumbing retrofit for existing homes, plumbed gray water systems may be more suited for new construction.

b. Reuse of Treated Wastewater.

Like gray water reuse, any reuse of treated wastewater as a land application (for example, for irrigation use) is regulated. The reuse of treated water must be permitted by the State of New Mexico Environment Department (NMED). Such permitting is done through NMED's Ground Water Quality Bureau, Pollution Prevention Section. By regulation, "no person shall cause or allow effluent or leachate to discharge so that it may move directly of indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary [of NMED]. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit."[32]

In issuing such permits for the use of domestic wastewater effluent for irrigation, NMED currently follows guidelines implemented in 1985.[33] The guidelines generally outline conditions a discharger may expect in a permit. For example, application of wastewater effluent for irrigation must occur at times when public contact is minimal; all domestic wastewater lines used for irrigation must be labeled as non-potable; wastewater systems must have no direct or indirect cross connections with potable water systems; and domestic wastewater, even if disinfected, must not be sprayed within 100 meters of houses, nor can food crops be sprayed. More specifically, wastewater used for surface irrigation of food crops or for the irrigation of freeway and similar landscapes must be disinfected so that the fecal coliform bacteria concentration does not exceed 1000 organisms per $100ml^2$. Wastewater used for the irrigation of parks, playgrounds, school yards, golf courses, cemeteries and similar areas must be disinfected so that the fecal coliform bacteria concentration does not exceed 100 organisms per $100ml^3$.

III. New Water Users on the Rio Grande.

In the Region, both the silvery minnow and meeting water quality standards will impact surface flows. As such, they must be considered "new users" of Rio Grande water.

A. Federally Created Instream Flow Rights.

Western states, including New Mexico, have traditionally recognized the right to put water to beneficial use on land. Such water rights are proprietary in nature and are a form of real property. Even federal and Indian water rights have been tied to lands reserved by the federal government for a specified purpose and are called federal and Indian reserved rights. In contrast, over the last three decades a new federal water right has emerged, based not on land ownership but on the preemptive effect of federal regulatory authority. This right is known as a federal "non-reserved" right or a federal regulatory right.[34]

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[32] 20.6.2.3104 NMAC (2001).

[33] *NMEID Policy for the Use of Domestic Wastewater Effluent for Irrigation*, December, 1985.

[34] *See,* A. Dan Tarlock, *The Endangered Species Act and Western Water Rights*, 20 Land & Water L. Rev. 1, 13-19 (1985).

Three major federal legislative schemes may create federal regulatory rights. These are Section 404 of the Clean Water Act, the Federal Power Act, and, of particular importance to the Region, the Endangered Species Act. The regulatory water rights created by these statutes differ significantly from proprietary rights, whether held by the government or by private entities. All property rights share common characteristics, but it is necessary to emphasize the difference between regulatory and proprietary water rights to understand western fears about integrating these rights with traditional state-created water rights. For example, although federal reserved rights have a priority date, regulatory rights have no priority date and may supercede prior appropriative rights. Furthermore, they are not subject to the beneficial use or reasonableness requirement.[35]

Pursuant to regulatory water rights, minimum stream flows may be required to meet water quality standards, avoid jeopardy to protected species, or satisfy hydroelectric licensing requirements. Similarly, water quality standards may require instream flows,[36] and discharge permits may be conditioned on maintaining flows

B. Overview of Endangered Species Act.

Of the federal laws mentioned above, the effect of the Endangered Species Act (ESA)[37] is especially pronounced. ESA provides a comprehensive program for the conservation of threatened and endangered plant and animal species and the habitats in which they are found.[38] ESA provides for "conservation, protection and propagation of endangered species ...by Federal action and by encouraging the establishment of State endangered species conservation programs."[39] As described by the United States Supreme Court, ESA represents "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[40]

ESA's blueprint for protection and recovery requires identification and listing of endangered species; designations of "critical habitat"-- habitat that is essential to the continued existence of the species; preparation of recovery plans for the species; prohibitions against federal activities that are likely to jeopardize the continued existence of the species or that will adversely modify their critical

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35 *Id*.

36 *See,* United States v. State Water Resources Control Bd., 182 Cal 3d 82, 227 Cal. Rptr. 161 (1986).

37 7 U.S.C. § 136; 16 U.S.C. § 460 *et seq*. (1973).

38 16 U.S.C. §§ 1531-1544 (1994).

39 S. Rep. No.307, 93 Cong., 1st Sess. 1, reprinted in 1973 U.S. Code Cong. & Admin. News 2989-90; *see also,* American Law Institute-American Bar Association Continuing Legal Education ALI-ABA Course of Study, *Land Use Planning, Regulation, Litigation, Eminent Domain, and Compensation*, John J. Delaney et. al., August 13, 1998.

40 Tennessee Valley Authority v. Hill, 437 U.S. 153, 180 (1978).

habitat; and prohibitions against "taking" an endangered species that apply to government and private activities or actions. Each of these steps in the recovery process are briefly described below.

1. Listing.

Section 4 of ESA authorizes the Secretary of the Interior to list species as endangered or threatened through the administrative rule-making process.[41] Endangered species are defined by ESA as those that are in danger of extinction.[42] Threatened species are defined as those which are likely to become endangered within the foreseeable future.[43] ESA requires the U.S. Fish & Wildlife Service (FWS) to base listing decisions on the best scientific and commercial data available, relying solely on the status of the species and ongoing protections provided for by ESA Sections 7 and 9.

2. Critical Habitat Designation.

The second step in the ESA process is Section 4's requirement for the FWS to designate critical habitat. ESA provides that:

> The Secretary shall designate critical habitat, and make revisions thereto, under subsection 9(a)(3) of this section on the basis of the best scientific data available and after taking into consideration the economic impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.[44]

ESA's definition of critical habitat provides guidance as to what habitat must be designated as critical. Critical habitat must comprise "the specific areas within the geographical area occupied by the species, at the time it is listed...on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management consideration or protection."[45] The statute and its implementing regulations require the FWS to use

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41 16 U.S.C. § 1533(a)(1) (1994).

42 16 U.S.C. §1532(6) (1994).

43 16 U.S.C. §1532(20) (1994).

44 16 U.S.C. §1533(b)(2) (1994).

45 16 U.S.C. § 1532(5)(A)(i) (1994).

the "best scientific data available" to identify critical habitat.[46] The FWS must designate critical habitat at the same time that a species is listed to the extent that it is "prudent" and "determinable," but in no case should designation be delayed for more than one year.[47] The FWS must consider the economic impacts of critical habitat designation and may exclude areas from designation if the benefits of exclusion outweigh the benefits of designation.[48]

3. Recovery Plans.

Once a species is listed as endangered or threatened, the FWS must develop a management plan designed to recover the species. An ESA recovery plan must include, to the maximum extent practicable, site-specific management actions, objective criteria to determine whether the species has recovered and should be de-listed, and estimates of how long it will take to implement the plan.[49]

4. Section 7 Consultations.

Section 7 requires federal agencies to assess the impacts of their actions on threatened or endangered species and their habitats and to consult with the FWS to insure that those actions are not likely to jeopardize a species or adversely modify its critical habitat.[50] Section 7 also requires that federal agencies "utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered and threatened species."[51]

Under the Section 7 consultation process, the acting agency first assesses the potential impact of its action by preparing a "biological assessment."[52] If the assessment concludes that a threatened or endangered species or its critical habitat is likely to be adversely affected by the action, the agency must formally consult with the FWS.[53] The FWS and the acting agency must complete the consultation process within 90 days after it is initiated. Based on the agency's biological assessment, the FWS must issue a written "biological opinion" that determines whether the activity will jeopardize a threatened or endangered species or destroy or adversely modify critical habitat. If the biological opinion concludes that the proposed action would jeopardize the species or adversely

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46 16 U.S.C. § 1533(b)(2) (1994); 50 C.F.R. § 424.12.

47 16 U.S.C. § 1533(b)(6)(C)(ii) (1994).

48 16 U.S.C. §1533(b)(2) (1994).

49 16 U.S.C. §§ 1533(4)(f)(1), (4)(f)(1)(B) (1994).

50 16 U.S.C. § 1536(a)(2) (1994).

51 16 U.S.C. §1536(a)(1) (1994).

52 16 U.S.C. §1536(c)(1) (1994).

53 50 C.F.R. §402.14(b).

modify its critical habitat, then the action may not go forward unless the FWS can suggest "reasonable and prudent alternatives" to be implemented by the agency to avoid jeopardy.[54] Finally, under Section 7(d), a consulting agency may not make any "irretrievable commitment of resources" with respect to an action that would foreclose implementing any reasonable and prudent alternatives.[55]

5. Prohibited Takings.

Section 9 makes it unlawful to "take" an endangered species within the United States or territorial area of the United States.[56] The law prohibits an action, administrative or real, that results in a "taking" of a listed species, or adversely affects habitat. Under ESA, "take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."[57]

C. The Rio Grande Silvery Minnow.[58]

In 1994, the FWS "listed" the Rio Grande Silvery Minnow (Minnow) as an endangered species under the ESA.[59] In 1996, thousands of Minnows were killed when the river dried south of San Acacia Diversion Dam. According to the United States Bureau of Reclamation (Bureau), by 1999 over 95 percent of the remaining wild Minnow population was concentrated in the 60-mile reach between San Acacia Diversion Dam and Elephant Butte reservoir.[60]

Since 1999, several lawsuits have been filed regarding the requirements of federal agencies under the ESA to protect the Minnow.[61] The most significant case, first styled as Minnow v.

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[54] 50 C.F.R. §402.14(b).

[55] 16 U.S.C. §1536(d) (1994).

[56] 16 U.S.C. § 1538(a)(1)(B) (1994).

[57] 16 U.S.C. § 1532(19) (1994).

[58] *See, Current ESA Issues in New Mexico*, Martha C. Franks, Esq., formerly of the Field Solicitor's Office, U.S. Department of the Interior, Santa Fe, New Mexico (on file with authors).

[59] Memorandum Opinion and Order, Rio Grande Silvery Minnow et al. v. John W. Keys et al., CV 99-1320 JP/RLP-ACE, at 6, April 19, 2002.

[60] *Id.* at 6-7.

[61] One case successfully challenged FWS' critical habitat designation for the Minnow. *See,* Middle Rio Grande Conservancy District v. Babbitt; State of New Mexico ex rel Office of the State Engineer, v. Babbitt; Forest Guardians v. Babbitt, Consolidated, U.S.D.C.N.M., Civ. Nos. 99-00870, 00872, 01445 M/LFG. In a second case, the City of Albuquerque filed a complaint seeking declaratory judgment that the water it receives under contract pursuant to the San Juan-Chama Project Act is the sole property of the City and that the United States has no

Martinez and then re-styled as Minnow v. Keyes, began in 1999, when six environmental organizations filed a lawsuit against the Bureau and the U.S. Army Corps of Engineers (Corps). The complaint alleged that the federal entities had failed under ESA Section 7(a) to conserve endangered species and to engage in consultation with the FWS; had irretrievably committed resources prior to completing consultation as required by Section 7(d); and had engaged in illegal takings of endangered species in violation of Section 9. In particular, the Plaintiffs challenged the Defendants' Programmatic Biological Assessment, which asserted that the agencies have limited discretion under federal law to modify river operations and water allocations to accommodate the needs of the Minnow.[62] The State of New Mexico, the City of Albuquerque, and the MRGCD intervened in the case as defendants.

In April 2000, with prospect of river drying, the Plaintiffs filed a preliminary injunction motion seeking an order compelling the Federal Defendants to maintain flows in the river. The United States District Court (Judge Parker) ordered the parties into mediation. The mediation produced two Agreed Orders which kept the river flowing to Elephant Butte Reservoir by using San Juan-Chama water leased by Albuquerque to the Bureau and then "exchanged" for native Rio Grande water by agreement with the MRGCD.

In the spring of 2001, the parties briefed the Plaintiffs' ESA consultation claims, which alleged that the Bureau and Corps failed to consult with the FWS over their discretionary authority over the San Juan-Chama Project and operations of the MRGCD. But, before a July 2001 hearing set to address these issues, the Federal Defendants entered into a "Conservation Water Agreement" with the State to provide added water to benefit the Minnow, and the FWS approved the Agreement in a Biological Opinion issued June 29, 2001 ("June 29th BO"). The June 29th BO imposed river flow management and other requirements intended to protect the Minnow from jeopardy through 2003.

The case reached a pivotal juncture when Judge Parker issued two momentous opinions in 2002. The first opinion was issued on April 19, 2002[63] and culminated from the Plaintiffs' Second Amended Complaint, filed the previous summer challenging the June 29th BO. After briefing, the District Court issued its Memorandum Opinion and Order, upholding the BO, finding that the FWS did not violate ESA's "best available science" requirement and that the BO was not arbitrary and capricious. Judge Parker specifically rejected the Plaintiffs' claim that the Corps has more discretion in how it operates Abiquiu and Cochiti Reservoirs. Significantly, however, the Court also ruled that the Bureau has greater discretionary authority over the San Juan-Chama Project and MRGCD operations than asserted by the Bureau.

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discretion to allocate that water for other purposes, but the case was dismissed. *See,* City of Albuquerque v. United States of America ex rel., Babbitt, U.S.D.C.N.M. Civ. No. 99-985RLP.

[62] Rio Grande Silvery Minnow v. Keys, et al., CIV 99-1320-JP/KBM-ACE.

[63] Memorandum Opinion and Order, Rio Grande Silvery Minnow et. al. v. John W. Keys et. al., CV 99-1320 JP/RLP-ACE, April 19, 2002.

In finding that the Bureau has discretion over use and delivery of water, Judge Parker first held that the Bureau's ownership claim and the terms of its 1951 Contract with MRGCD give the Bureau discretion to alter the manner in which native Rio Grande water is stored, released, and subsequently diverted through irrigation facilities. He also held that the Bureau has the discretion and duty to limit MRGCD to diversions only for reasonable beneficial use. Second, Judge Parker held the Bureau has discretion to deliver less than the full amount of San Juan-Chama Project water "in order to meet fish and wildlife needs, including those of the endangered silvery minnow." He ruled that releasing San Juan-Chama Project water from federal storage to aid the Minnow would not violate any interstate compacts, statutes, or contracts. Nonetheless, the Judge did not overturn the June 29th BO, but directed that future consultations address these aspects of the Bureau's discretion.

Given the drought of 2002, it became apparent that the June 29th BO flow targets could not be met for the remainder of 2002, and the Bureau requested reinitiation of consultation with FWS on August 2, 2002. On August 30, 2002, the Bureau proposed drying the Isleta and San Acacia reaches "immediately," and keeping the Albuquerque reach wet only as long as remaining supplies of "Minnow water" permitted. The Bureau projected that by late September, virtually the entire Middle Rio Grande would be dry below the Cochiti reach. The Plaintiffs filed a Motion for Emergency Injunctive Relief on September 4, 2002, alleging the Bureau's plan would "jeopardize" and "take" the Minnow in violation of ESA Sections 7 and 9.

On September 12, 2002, the FWS issued a new BO finding that the Bureau's proposal would "jeopardize the continued existence" of the Minnow, but concluding that releasing water from Heron Reservoir was not "prudent," because that water might be needed in 2003 or future years for "spawning spike" flows for the Minnow. The Plaintiffs asked Judge Parker to order the Federal Defendants to continue meeting the flow requirements of the June 29th BO, using water out of upstream federal storage (particularly Heron Reservoir) if necessary.

Judge Parker's second opinion came on September 23, 2002, after two days of hearings.[64] In his Order and Partial Final Judgment, the Court held that the September 12th BO was arbitrary, capricious, and contrary to the ESA's "best available science" mandate. In addition, the Court partially granted Plaintiffs' emergency injunction motion, directing the Bureau to meet specified flow requirements adopted by the Court from the Bureau's August 2, 2002 proposal during the remainder of calendar 2002. Further, Judge Parker ordered the Bureau and FWS to reinitiate consultation over the Bureau's 2003 operations; and in a single paragraph, ordered that the Bureau in 2003 "must reduce contract deliveries under the San Juan-Chama Project and/or the Middle Rio Grande Project, and/or must restrict diversions by [MRGCD]," but only "if necessary to meet flow requirements" established by the FWS.

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[64] Order and Partial Final Judgment, Rio Grande Silvery Minnow et. al. v. John W. Keys et. al., CV 99-1320 JP/RLP-ACE, September 23, 2002.

After filing notices of appeal from the September 23 decision, rulings, the City and State moved for a stay pending appeal. The Tenth Circuit Court of Appeals granted a stay on October 16, 2002. Based on the Bureau's projections that "supplemental" water would run out by mid-October, resulting in extensive drying of the Middle Rio Grande and Minnow deaths as described in the September 12th BO, the Plaintiffs unsuccessfully sought review of the October 16, 2002 Stay Order from the United States Supreme Court, and reconsideration by the merits panel of the Tenth Circuit Court of Appeals.

The appeal is now fully briefed. On January 14, 2003, the Tenth Circuit Court of Appeals heard lengthy oral argument and is expected to render an opinion in the early spring of 2003. The full scope of the Minnow's federal right to Rio Grande water will not be known until the ruling by the Tenth Circuit Court of Appeals, and perhaps not until the United States Supreme Court ultimately settles the matter.

D. Water Quality.

In the Region, a number of water quality issues could impact water availability. First, implementation of the arsenic standard will entail the use of water for treatment. The change in designation on the Rio Grande to "primary drinking water" due to the San Juan/Chama diversion project could potentially impact the amount of water available as the drinking water supply to Albuquerque. Finally, the use of aquifer storage and recovery depends upon quality of water available for storage.

1. The Arsenic Drinking Water Standard.

The Safe Drinking Water Act Amendments (SDWAA) of 1996 mandated that the U.S. Environmental Protection Agency (EPA) evaluate and promulgate a new National Primary Drinking Water Regulation (NPDWR), including a Maximum Contaminant Level (MCL), for arsenic no later than January 1, 2001.[65] After much controversy, the new MCL was lowered from 50 micrograms per liter (mg/L) or 50 parts per billion (ppb) to 10 ppb.[66] The new NPDWR was effective on February 22, 2002, and full compliance must be achieved by January 23, 2006.[67] Extensions are possible under specific circumstances. However, certain compliance activities must occur prior to the issuance of interim or extended deadlines.

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[65] Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182, § 109(a)(12)(A), 110 Stat. 1613, 1627-28 (1996) (codified as amended at 42 U.S.C. § 300g-1(b) (West Supp. 1998)).

[66] National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring: Final Rule, 66 Fed. Reg. 6976, 7065 (2001) (codified at 40 C.F.R. § 141.62(b)(16)).

[67] National Primary Drinking Water Regulations; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring: Delay of Effective Date, 66 Fed. Reg. 28342, 28350 (2001) (codified at 40 C.F.R. § 141.6(j)).

Arsenic occurs naturally as the twentieth most abundant element in the earth's crust and is a component of more than 245 minerals.[68] Arsenic is mobile in the environment when rock weathering produces arsenic compounds that move in dust and dissolve in rain, rivers, or ground water.[69] The arsenic content in water depends on the amount of mineralization of local soils, with ground water an especially receptive repository in areas where geochemical conditions favor dissolution.[70] Past volcanic deposition events are an indicia of potentially high arsenic concentrations in water supplies. In the Middle Rio Grande Basin several communities experience elevated levels in ground water wells because of this geologic history. The Jemez area experiences particularly high levels of arsenic, as does the west mesa in the Albuquerque area.

a. Applicability of the Standard to Community Water Systems.

All community water systems, including those managed by Tribal or private organizations, are subject to the new arsenic standard and the general provisions of the Safe Drinking Water Act.[71] In addition, "non-transient, non-community water systems" (NTNCWS), are regulated under the SDWAA and consist of systems that serve twenty-five of the same persons for six months or have fifteen service connections.[72] The water supply source can be ground water, surface water, or a combination of supply sources.[73]

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[68] Frederick W. Pontius et al., *Health Implications of Arsenic in Drinking Water*, J.Am. Water Works Ass'n, Sept. 1994, at 52, 52.

[69] *Id.*

[70] *Id.*

[71] 101, 110 Stat. at 1616-17; 42 U.S.C. § 300f(4) (1974); National Primary Drinking Water Regulations, 66 Fed. Reg. at 6976; National Primary Drinking Water Regulations, 66 Fed. Reg. At 28342; 40 C.F.R. §§ 141.2, 141.11, 141.62(b).

[72] 42 U.S.C. § 300(f)(4) (1974); 42 C.F.R.§ 141.62(b).

[73] National Primary Drinking Water Regulations, 66 Fed. Reg. at 28342.

b. Immediate Compliance Activities.

Immediate compliance activities include sampling, monitoring, and reporting arsenic concentrations in water supply sources. All surface water supply systems must complete requisite monitoring activities by December 31, 2006 and all ground water dependent systems must complete sampling actions by December 31, 2007.[74] However, all systems must conform to the new consumer confidence reporting requirements that became effective on February 22, 2002,[75] and this activity may force an earlier compliance date for sampling and monitoring activities.

(i) Sampling Deadlines and Requirements.

The sampling deadlines are as follows:[76]

- January 22, 2004: All new systems and/or sources must collect initial monitoring samples within a period/frequency determined by the State.

- January 1, 2005: If allowed by the State, samples collected after this date can be grandfathered for the 2005-2007 compliance period (but if greater than the new MCL, the system will be considered in violation of the new rule).[77]

- January 23, 2006: All systems must be monitoring on the frequency determined by the State or submit data that meets grandfathered requirements.

- December 31, 2006: Surface water systems must complete initial monitoring or obtain a State approved waiver.

- December 31, 2007: Ground water systems must complete initial monitoring or obtain a State approved waiver.

The State may require more frequent monitoring or additional confirmation samples of positive or neg ative results.[78] The determination of whether or not a system is in compliance will

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[74] 40 C.F.R. § 141.23(c).

[75] National Primary Drinking Water Regulations, 66 Fed. Reg. at 28344, 28350; 40 C.F.R. § 141.6(j).

[76] 40 C.F.R. § 141.23(c); U.S. Environmental Protection Agency, Pub. No. EPA-816-K-02-018, Implementation Guidance for the Arsenic Rule I-39 (2002) (hereinafter EPA Guidance).

[77] *Id.*, EPA Guidance at I-18.

[78] 40 C.F.R. § 141.23(g).

be based upon the "Running Annual Average" at each entry point to the distribution system.[79] If the system is using more than one source of water (multiple wells, or a combination of surface water and ground water), a sample must be taken from each entry point during periods of normal operation conditions.[80]

Sampling may be permitted at a more representative sampling point, if the State has approved an alternative monitoring program for the system.[81] Modified sampling programs can be approved by the State, but only if such proposals are set out in the State's primacy request package which was due in January 2003, unless EPA approved a deadline extension.[82] The EPA minimum criteria for approval of the alternative sampling plan is that the public water supply system must 1) have a running average less than 10 ppb; 2) the State must have approved the program as being more representative of the true arsenic levels to which individuals in the system are exposed; 3) intermittency or seasonal use of the source is considered; 4) samples must be taken from the entry point to the distribution system during periods of normal operating conditions; and 5) the samples taken must be representative of water usually entering the system.[83] The quantity, duration of service and contaminant concentration of a specific source (such as a ground water well) can be considered as factors in meeting the criteria.[84]

A system will be deemed in compliance if it has had no violation after collection of one year of quarterly samples, unless fewer samples would cause the running annual average to be exceeded, i.e. one sample is four times the MCL.[85] If quarterly samples are not required or samples are not collected, then the compliance determination is based upon the running annual average of the samples actually collected.[86]

(ii) Monitoring Frequency.

The monitoring frequency is set by the State and a system is not permitted to monitor more frequently to make the compliance determination unless it has secured an alternative Monitoring

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79 40 C.F.R. § 141.23(a)(3).

80 *Id.*

81 *Id.*, 40 C.F.R. §§ 141.23(h), 142.11(a)(1), 141.29.

82 42 U.S.C. § 300g-2 (1974); EPA Guidance at III-2 to 7.

83 EPA Guidance at II-5 to 7.

84 *Id.* at II-7.

85 *Id.* at II-4.

86 *Id.*

Program or State approved waiver.[87] The State must also seek authority from the EPA to approve alternative monitoring schemes or to grant waivers.[88] The EPA monitoring requirements are as follows:[89]

- First Compliance Cycle (1999 to 2001)
  - Ground water: 1 sample w/o waiver
  - Surface water: 1 sample each year w/o waiver
- Second Compliance Cycle
  - First Compliance Period (2002 to 2004)
    -Ground Water: 1 sample w/o waiver
    -Surface Water: 1 sample each year w/o waiver
  - Second Compliance Period (2005 to 2007)
    -Ground water: 1 sample w/o waiver and 1 sample between 2006 and 2010 w/ waiver
    -Surface water: 1 sample each year w/o waiver and 1 sample between 2006 and 2010 w/ waiver
  - Third Compliance Period (2008 to 2010)
    -as determined by state program plan[90]

States may only issue monitoring waivers in increments of nine year periods.[91] At least one sample must be taken during that nine year period.[92] There are specific eligibility requirements and if these conditions are not met, a system may not apply for a sampling waiver. Surface water systems must have monitored annually for at least three years and ground water systems must have conducted a minimum of three rounds of monitoring with detection limits below 10 ppb.[93] At least

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87 40 C.F.R. § 141.23(h).

88 42 U.S.C. § 300g-2 (1974); EPA Guidance at I-20.

89 EPA Guidance at I-22.

90 40 C.F.R. § 141.23(c)(1).

91 40 C.F.R. § 141.23(c)(5); EPA Guidance at I-20.

92 40 C.F.R. §§ 141.23(c)(3) & (4).

93 40 C.F.R. §§ 141.23(c)(3) & (4); EPA Guidance at I-20.

one sample must have been taken prior to January 1990, using current EPA approved methods.[94] After 2010, all systems must be sampling on a frequence approved by the State or obtain a waiver.

In summary, all systems must have taken at least one sample before January 23, 2006. If the initial result is less than the MCL of 10 ppb, then ground water systems must collect one sample every three years and surface water systems must collect annual samples.[95] If a system had a sampling point result above the MCL, it must collect quarterly samples until the system is reliably and consistently below the MCL.[96] That is interpreted as two consecutive quarters for ground water and four consecutive quarters for surface water without an exceedence of the MCL.[97]

(iii) Reporting.

All public water systems must provide Consumer Confidence Reports (CCR) to their customers by July 1 of each year.[98] The EPA believes that customers who may be exposed to arsenic in their drinking water should be provided with risk information as soon as possible.[99] Therefore, systems that detect arsenic between 25 and 50 ppb were required to include an "education statement" in their CCRs effective February 22, 2002 or commencing with the July 2002 reports.[100] Systems that detect arsenic between 5 and 10 ppb must likewise include an "educational statement" in all CCRs beginning on February 22, 2002 or the July 2002 report.[101] Also, systems that detect arsenic between 10 and 50 ppb must include a "health effects statement" in all CCRs beginning July 1, 2002 through January 22, 2006.[102] All systems in violation of the 10 ppb MCL on January 22, 2006 must include a "health effects statement" in the CCRs after January 23, 2006 until compliance is achieved,

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94 40 C.F.R. §§ 141.23(k)(1); 141.23(c)(3), (4).

95 40 C.F.R. § 141.23(c)(1).

96 40 C.F.R. §§ 141.23(c)(7) & (8).

97 *Id.*

98 40 C.F.R.§ 141.152(b).

99 EPA Guidance at I-11.

100 40 C.F.R. § 141.6(j); 40 C.F.R. § 141.154(b).

101 *Id.*

102 *Id.*

along with an explanation of why the system is in violation of the MCL and what is being done to achieve compliance.[103]

Since these reports are due during the sampling and monitoring cycle prior to the compliance date, the sampling and monitoring deadlines may be pushed forward in order to provide the appropriate level of information in the CCRs by the prescribed reporting deadlines. In other words, a regulated system must know what the arsenic concentration is in its water supply immediately in order to make the correct reporting compliance decisions due each year well in advance of future sampling deadlines. Examples of education and health effects statements with minimum content requirements are set out by the EPA.[104] If no new samples are taken, the CCR must be based upon the last one that was taken, no matter how high or low.[105]

Records must also be retained for long periods of time by both the state and the public water systems.[106] The retention schedule applicable to the water systems for various key items are found in the federal regulations.[107]

The new arsenic rule is in effect today. The EPA recommends that local water systems should immediately begin to make sure the revised MCL can be met by the 2006 compliance date because several years will be required to develop new water sources and install treatment systems, if necessary.[108]

c. Compliance Requirements.

If a system cannot achieve compliance with the new standard by blending its source waters, finding a new supply, or by other means, treatment will be required.[109] The cost for treatment systems is high, both for initial capital expenditure, as well as operation and maintenance.[110] There is and will continue to be competition for the funds, materials and qualified personnel to construct

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103 40 C.F.R. § 141.154(f); EPA Guidance I-11.

104 EPA Guidance at I-11 to 13.

105 *Id.*

106 40 C.F.R. § 142.14.

107 *Id.*

108 EPA Guidance at G-8.

109 *Id*. at I-27.

110 *Id.* at I-29 to 30.

and operate these systems. There will also be a steep learning curve for most systems in New Mexico that have utilized ground water wells, where treatment has been limited to fairly simple disinfection units. Moreover, expected funding assistance under most federal and state programs restricts the use of such monies to capital construction;[111] therefore operation and maintenance funding must be derived from local sources.

Arsenic requires chemical removal, which necessitates handling chemical input materials and waste residuals. Numerous ancillary federal and state laws regulate the complex and costly operations of treatment facilities. The Occupational Safety and Health Act [112] will regulate handling of chemicals and waste products, including operator certification minimums, Material Safety Data Sheets development, protective equipment procurement, and worker training. The Resource Conservation Recovery Act,[113] Clean Water Act,[114] Clean Air Act,[115] and related state statutes and programs will come to bear on the operations of these treatment units, requiring acquisition of numerous permits, and the implementation of sampling, monitoring and compliance programs.

All treatment systems will result in some loss of input water with ranges estimated between five and forty percent.[116] This water must be replaced and will require acquisition of not only wet water to meet the volume requirements, but also the appropriation of water rights to support additional pumping or diversions. If ground water wells are moved or replaced the applicable administrative transfer process of the Office of the State Engineer will be required.[117] One suggested alternative is to form regional water systems, but that too, could involve significant administrative actions by appropriate state agencies. Compensation for loss of water in treatment systems will be required and this could necessitate additional water right acquisition and transfers. Even if new supplies are sought, administrative actions will be required that could add many years to the compliance plan of a water system.

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111 42 U.S.C. § 300J-12.

112 29 U.S.C. §§ 651 *et. seq.* (1970).

113 42 U.S.C. §§ 321 *et seq.* (1976).

114 33 U.S.C. §§ 1251 *et seq.* (1977).

115 42 U.S.C. §§ 7401 *et seq.* (1970).

116 Office Ground Water and Drinking Water, U.S. Environmental Protection Agency, Arsenic in Drinking Water: Treatment Technologies, Removal (1997).

117 NMSA §§ 72-5-23 (1907); 72-12-7 (1931).

d. Exemptions and Variances.

The EPA anticipates that all systems will be in full compliance by the deadline of January 23, 2006.[118] Extensions of up to nine years are possible but conditions are onerous and at the end of the period, the system must be in compliance. These extensions are called exemptions, but this is not an exemption in the traditional sense that the system is excused from compliance. SDWA exemptions require compliance schedules and diligent efforts to meet the new rule requirements at the end of the extended time period. Variances, likewise not an exception to meeting the rule, require compliance schedules, diligence, and installation of prescribed EPA Best Available Technology (BAT), many of which result in ten to forty percent losses of water input.

(i) Purpose.

The purpose of variances and exemptions is to permit a public water system additional time to acquire financial assistance; to develop mechanisms necessary to ensure compliance such as evaluation and selection of appropriate arsenic removal technology; to replace its water supply source; or to regionalize with other systems.[119] The end result will be compliance with the standard, not an excuse or exception for any particular local water system. A system can apply for either a variance or exemption, but not both.[120]

(ii) Variance.

In order to be eligible to apply for a variance, a system must be unable to meet the new MCL with its chosen or existing technology.[121] It must then install a BAT from the EPA approved technology list.[122] The State must make a determination that an alternative source of water is not reasonably available and that the existing water quality will not result in an unreasonable risk to health.[123] A public hearing setting out the details of a new compliance schedule is required.[124] The

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[118] National Primary Drinking Water Regulations, 66 Fed. Reg. At 28343; 40 C.F.R. § 141(j); EPA Guidance at I-31, H-20.

[119] EPA Guidance at I-31, G-8.

[120] 42 U.S.C. §§ 300g-4, 300g-5 (1974); EPA Guidance G-8.

[121] 42 U.S.C. § 300g-4 (1974); 40 C.F.R. § 141.20(a).

[122] 42 U.S.C. § 300g-4 (1974); 40 C.F.R. § 142.62(c); National Primary Drinking Water Regulations, 66 Fed. Reg. At 6981.

[123] 42 U.S.C. §§ 300g-4, 300g-5 (1974).

[124] 40 C.F.R. §§ 142.62(b) & (c).

compliance schedule must be executed with the primary state agency. Since the EPA did not identify any variance technologies, small system variances are not available under the final rule.[125]

(iii) Exemption.

Eligibility criteria for an exemption include the following elements.[126]

First, if due to compelling factors the public water system is unable to achieve compliance by January 23, 2006 through any means, including treatment and development of an alternative water supply source, an exemption can be sought.

Compelling factors can include the inability to design a treatment plan in time; the loss of water or usable supplies by the deadline; or the inability to obtain sufficient funding to execute a compliant program.[127]

Second, in order for an exemption to be granted, the public water system must be in operation by January 23, 2006. A new system could be eligible if there is no reasonable alternative source of drinking water.[128]

Third, approval of the exemption must not result in unreasonable risk to health based on expected lifetime exposures to arsenic. Three to nine years of additional exposure is not considered significant, as supported by the National Resource Council, which found that increased cancers will be statistically insignificant (and unmeasurable) even over a seventy year exposure.[129]

Fourth, the system cannot reasonably make management and restructuring changes that would result in compliance or improve the quality of drinking water. This exemption requirement is met if compliance cannot be achieved by regionalization or cooperative management such as bulk purchase agreements, sharing of management operators, or sharing technical staff and engineers.[130]

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[125] EPA Guidance at H-20.

[126] 42 U.S.C. § 300g-5 (1974); 40 C.F.R. §§ 142.20(b); 40 C.F.R. 142.50; EPA Guidance at G-8 to 22.

[127] EPA Guidance I-32, G-12 to 13.

[128] *Id.* at G-13.

[129] Frederick W. Pontius, *Crafting a New Arsenic Rule*, J.Am. Water Works Ass'n, Sept. 1994 at 6,6; EPA Guidance at G-13 to 16.

[130] 42 U.S.C. § 300g-4 (1974); EPA Guidance at G-16.

(iv) Approval Process.

To obtain a variance or exemption requires that the State must have adopted variance and exemption regulations in its revised primacy package, which is to be submitted to the EPA in 2003, unless extended.[131] The State program will set out the actual application process.[132] New Mexico is currently developing its primacy package. The specific criteria above for a variance or exemption must be set forth in the state regulations.[133] All facilities can qualify for an initial three year extension, which moves the compliance deadline to 2009.[134] This does not relieve the Consumer Confidence Report requirements, so sampling and monitoring must be ongoing during that time period.[135]

If the public water system serves less than 3300 people, it can apply for three additional two year extensions, with a maximum new compliance deadline of 2014.[136] However, each two year extension must be applied for separately and must set out a compliance schedule that will achieve compliance with the MCL as expeditiously as practicable.[137] The State can only grant the amount of time actually needed to achieve compliance and cannot grant the entire nine years in one application or approval process.[138]

During the extended time period the public water system must add a full explanation in its Consumer Confidence Report as to why the exemption was needed, set out a schedule for compliance, and provide public notice of the actions being taken to achieve compliance.[139]

Therefore, the extension process will be an administrative burden in addition to the requirement of developing a plan to achieve compliance by the 2006 or any subsequent deadline.

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131 42 U.S.C. § 300h-1 (1974).

132 *Id.*

133 *Id.*

134 42 U.S.C. § 300g-5 (1974); EPA Guidance at G-10.

135 EPA Guidance at G-17.

136 42 U.S.C. § 300g-5 (1974); 40 C.F.R. § 142.20(b)(2); 40 C.F.R. § 142.56; EPA Guidance at G-10.

137 U.S.C. § 300g-5 (1974); 40 C.F.R. § 142.20(b)(2); 40 C.F.R. § 142.56; EPA Guidance at G-10.

138 EPA Guidance at G-8.

139 *Id.* at G-17.

Diligence will be required and systems will not be permitted to simply wait for funding or new technologies to develop. Actively seeking funding and interacting with new technology development will probably be required as a minimum threshold to justify extensions of the 2006 compliance deadline. There will be no acceptable excuses for failure to meet the immediate sampling, monitoring, and reporting requirements of the new rule.

In conclusion, the EPA recognizes the difficulty for many small systems to comply with the new rule. In its report to Congress the EPA said: "Small systems are being asked - in some cases for the first time - to grapple with a whole new set of public health challenges. This situation poses enormous implementation, timing, resource, technical, and capacity challenges for public water systems across the country."[140] Solving these challenges will require creative, collaborative thinking between water suppliers, local communities, state agencies, federal agencies, and the public.

2. Primary Drinking Water Designation.

The Clean Water Act (CWA) requires that each state establish water quality standards for surface waters within its boundaries.[141] The standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the CWA, which include the objective to restore and maintain the chemical, physical and biological integrity of the waters of the United States.[142] A State has an affirmative duty to revise standards in consideration of the use of the water and the water quality criteria applicable to those designated uses.[143] The standards must also consider the value for public water supplies.[144]

New Mexico has adopted water quality standards, which were last revised in October, 2002.[145] The specific standards applicable to particular designated uses are set out in the Administrative Code.[146] The Middle Rio Grande segments are currently designated for irrigation, limited warmwater fishery, livestock watering, wildlife, and secondary contact.[147] The standards set out for those uses include pH, fecal coliform bacteria, Total Dissolved Solids (TDS), sulfates, and

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[140] U.S. Environmental Protection Agency, Pub. No. EPA 815-R-02-003, Report to Congress: Small Systems Arsenic Implementation Issues 4 (2002).

[141] 33 U.S.C. § 1313 (1977).

[142] 33 U.S.C. § 1251(a) (1977).

[143] 33 U.S.C. § 1313(c)(2)(A) (1977).

[144] *Id*.

[145] 20.6.4 NMAC (2002).

[146] 20.6.4.900 NMAC (2002).

[147] 20.6.4.104, 105 NMAC (2002).

chlorides.[148] The general standards for irrigation include a selenium limit, and those for livestock watering add radium, tritium and gross alpha criteria.[149] General requirements for limited warmwater fisheries include limits for dissolved oxygen and ammonia.[150]

In light of the City of Albuquerque's proposal to install a direct diversion in the river for its water supply, these designated uses will have to be reevaluated and potentially revised based upon a new use for domestic water supply. Such a review and/or revision also requires that the State adopt criteria for all toxic pollutants that might interfere with the designated uses.[151] If the river segment is elevated to a drinking water designation, then further screening and monitoring for excessive pollution loads will be required.[152] The domestic water supply standards add an evaluation for carcinogenic materials, a nitrate constituent, and lowered standards for two forms of radium, strontium and tritium.[153]

It would be anticipated that the New Mexico Environment Department would be required to take action under its Assessment Protocol to determine if the Middle Rio Grande segment water meets the heightened standards required of a domestic water supply.[154] The key segment adjacent to the proposed Albuquerque project is already in exceedence for fecal coliform and subject to an approved Total Maximum Daily Load (TMDL) program.[155]

New Mexico's TMDL requirement stems from its adoption of water quality standards. Under the NPDES water quality based approach, a state must identify waters within its boundaries that do not meet state-imposed water quality standards.[156] These waters are called "water quality

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148 *Id.*

149 20.6.4.900(D), (K) NMAC (2002).

150 20.6.4.900(E) NMAC (2002).

151 33 U.S.C. § 1313(c)(2)(B) (1977).

152 20.6.4.900(B) NMAC (2002).

153 *Id.*

154 New Mexico Environment Department, State of New Mexico Procedures for Assessing Standards Attainment for § 303(d) List and § 305(b) Report (2000); New Mexico Water Quality Control Commission, Water Quality and Water Pollution Control in New Mexico (2002).

155 New Mexico Environment Department, Surface Water Quality Bureau, Middle Rio Grande Total Maximum Daily Load (TMDL) for Fecal Coliform (May 2002); Letter from Sam Becker, Acting Director, Water Quality Protection Division, U.S. Environmental Protection Agency to Dr. James H. Davis, Chief, Surface Water Quality Bureau, New Mexico Environment Department (May 3, 2002).

156 33 U.S.C. §1313(d)(1)(A) (1977).

limited segments" (WQLS). After identifying WQLSs, states must prioritize them based on the severity of the pollution and the uses of the waters.[157] A state must then develop, in accordance with the priority ranking, a TMDL for each pollutant impairing each WQLS.[158] A TMDL specifies the amount of a pollutant that a water body can receive and still meet state water quality standards, and allocates pollutant loadings among point and nonpoint pollutant sources.[159] It includes best estimates of pollution from nonpoint sources and natural background sources, pollution from point sources, and a margin of safety.[160]

By law, the EPA must approve or disapprove WQLS "priority lists" and TMDLs established by states, territories and authorized tribes.[161] If a state, territory or tribe submission is inadequate, EPA must establish the list of the TMDLs.[162] The Middle Rio Grande segment could be subject to additional TMDLs or programs if domestic water supply standards are exceeded over the reach of the Albuquerque drinking water project resulting from the change in designation.

3. Ground Water Recovery and Storage.

Conjunctive management of water in the Region may entail the use of aquifers for storage. The water quality implications of such storage must be considered.

The Ground Water Storage and Recovery Act (Act)[163] provides the legal mechanism for aquifer storage and recovery. The Act specifically recognizes that the "conjunctive use and administration of both surface and ground waters are essential to the effective and efficient use of the state's limited water supplies" and that ground water recharge, storage and recovery have the potential to reduce the rate of aquifer decline, promote conservation, serve public welfare, and lead to more effective use of water resources. Water can be stored pursuant to the Act only by permit

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157 *Id.*

158 33 U.S.C. §1313(d)(1)(C) (1977).

159 Overview of Current Total Maximum Daily Load (TMDL) Program and Regulations; **http://www.epa.gov/owow/tmdl/overviewfs.html.**

160 40 C.F.R. § 130.2(h); see also Sierra Club v. Hankinson, 939 F.Supp. 865, 867 (N.D. Ga. 1996).

161 Overview of Current Total Maximum Daily Load (TMDL) Program and Regulations; **http://www.epa.gov/owow/tmdl/overviewfs.html.**

162 *Id.*

163 NMSA 1978 § 72-5A-2 (1999).

issued by the State Engineer, and a number of criteria must be met before a permit will issue.[164] Water stored pursuant to the Act is exempt for forfeiture by the State for non-use.[165] The State Engineer has adopted Underground Storage and Recovery regulations which govern the application process, the hydrologic, technical and financial capability report requirements, and permit terms and conditions.[166]

Aquifer storage of treated water must also comply with all requirements of New Mexico's Underground Injection Control (UIC) Program, as implemented through the Water Quality Act,[167] and the UIC regulations.[168] The New Mexico Environment Department (NMED) administers the UIC Program, which is a federal groundwater protection program established by the Safe Drinking Water Act (SDWA).[169] Pursuant to these regulations, a groundwater discharge permit must be obtained from NMED prior to the use of a groundwater management injection well. These regulations also control discharges from UIC wells to protect groundwater that has an existing concentration of 10,000 mg/L of total dissolved solids. Groundwater management injection wells used to replenish water in an aquifer are governed by the UIC regulations.

It is assumed that any water injected into aquifers in the Region will be treated to drinking water standards. Drinking water standards are governed through federal regulations promulgated through the SDWA.[170] Thus, any reliance on aquifer storage must necessarily consider the implications water quality treatment has on implementing such storage.

IV. Conclusion.

In conclusion, when considering water planning within the Region, it will be critical to assess all supplies and uses of waters. Potential new supplies may emanate from the MRGCD Water Bank, a regional water bank, or reclaimed water. New uses of water within the Region arise from the Minnow and water quality issues. The legal implications of these supplies and uses must be considered in developing a Water Plan for the Region.

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164 NMSA 1978 § 72-5A-6 (1999).

165 NMSA 1978 § 72-5A-8 (1999).

166 19.25.8 NMAC (2001).

167 NMSA 1978 § 74-6-1 *et seq.* (1967).

168 20.6.2.5000 NMAC (1995).

169 42 U.S.C. § 300f *et seq.*(1974).

170 Water quality standards promulgated under the SDWA can be found generally at 40 C.F.R. Parts 141, 143.