IV. Drops in the Bucket

● Drops in the Bucket

Water is the life blood of the desert. The money goes where the water flows. Don't poison the water. It's hard to talk about water in the arid West without repeating one cliché after another.

Unchecked urban, agricultural and industrial development had long since dried up the rivers and polluted the aquifers in the Phoenix and Tucson areas; the desert cities, thanks in large part to the efforts of Rep. Mo Udall (*A great environmentalist in Alaska*, it was said), had been put on artificial life support in the form of the Central Arizona Project, a canal bringing water hundreds of miles from the Colorado River dammed up in Lake Mead. Now for most of the year in long stretches of the Santa Cruz and Salt Rivers the only water was wastewater effluent discharged from wastewater treatment plants on their banks.

In 1981, Natalie Danforth (then conservation chair for the Huachuca Audubon Society), Jerry Pratt (of the Huachuca Conservation Council), and myself (on behalf of the Sierra Club Grand Canyon Chapter), after talking it over with a number of like-minded people, decided we had to try to save the San Pedro River ecosystem from getting pumped into oblivion by the urban sprawl around the Ft. Huachuca army base and it's burgeoning bedroom community Sierra Vista—threats made imminent by Tenneco Corporation's purchase of thousands of acres of former cotton fields on the banks of the San Pedro and their agricultural (i.e., nearly unlimited) water rights, with plans to develop sprawling subdivisions there.

The last free-flowing river in the state, though nearly ephemeral already, is an oasis that supports an amazingly diverse flora and fauna. It is also of significant archaeological interest, the site of some of mankind's earliest habitation in North America (e.g., Clovis points embedded in fossilized Wooly Mammoth bones), historically the route Coronado took out of what is now Sonora into the desert in search of the City of Gold and one of the routes Fr. Kino took into Pimería Alta to convert the indigenous peoples.

Our first idea was to get the river and its riparian system declared a National Wildlife Refuge. USFWS personnel were sympathetic, but during those oil-crisis days they couldn't find funding to acquire the private lands and water rights along the river. Bureau of Land Management came up as an alternative, the agency being more flush with funds and its Arizona office currently headed by State Director Dean Bibles, who had recently been instrumental in getting the Birds of Prey National Conservation Area designated in the Snake River country of Idaho. Rumor had it that he wanted to add the San Pedro to his resume as a final step on his way to a position in the DC office.

Though it seemed obvious to us in starting the Save the San Pedro campaign that groundwater and river water are interdependent parts of a complex and fragile biosystem, there was as yet no accepted hard scientific proof to back up that intuition, and opponents of our plan (including a highly-vocal contingent opposed on principle to government ownership of any lands—except perhaps military reservations—but chiefly merchants favoring urban growth and real estate developers who wanted to build subdivisions as long as Fort Huachuca would keep supplying home buyers), argued against putting the river and adjacent lands in public domain.

In time we were able to divide the realtors' opposition by getting those who wanted to develop land adjacent ot the riparian area to see that the preserve would make their land go up in value. And many business owners came to see that increased tourism would more than make up for any slowdown in population growth. Local support (and non-opposition), coupled with nationwide support from NGOs and the general public, coupled with Washington and Phoenix politics, land

swaps and agency allocations, with considerable assistance from Gov. Babbitt, led to acquisition by the BLM and eventual designation as the San Pedro Riparian National Conservation Area (SPRNCA)—the first specifically riparian National Conservation Area in the country.

As a member of a committee appointed by the Governor to draft the legislation; on various panels to draft BLM management plans; and on a variety of local committees to hash out among contending parties the future of the watershed under state water law and local pressure. . . . The San Pedro was another multi-year process.

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Western water law has been offered as one of the more tangled legal messes—a mare's nest of obscure, ambiguous, often contradictory statutes, case law and common practice. The San Pedro was a sterling example.

Despite the proverbial Rule One in arid country: *Don't Poison the Water*, it's long been common practice throughout the West to do just that: contaminating surface and groundwaters (as well as bodies of marine and freshwater), so that many are unfit to drink, unfit for fisheries, unsafe to bathe in, unsafe to use on crops, unsafe for wild and domestic animals. Many are simply dried up.

Surface waters received some much needed protection with the *Clean Water Ac*t of 1972, and the state laws and rules in its wake. But the CWA had little to say about groundwater, which was left to the states to legislate in the traditional scramble of interests. In Arizona, again with Gov. Babbitt's crucial insistence, the 1980 *Groundwater Management Act* was passed. One of its principal provisions was for establishment of Active Management Areas (AMAs) to protect groundwater in areas (principally urban) where overpumping was causing or was about to cause critical shortage of groundwater.

As Conservation Chair for the Sierra Club's Grand Canyon Chapter, I was much involved in ultimately unsuccessful efforts to get AMA designation for the San Pedro basin, which would have given it some measure of protection against urban and agricultural overdrafting. Scientific proof of hydraulic connection between groundwater supply and surface water flow was eventually accepted and BLM itself, along with the Audubon Society, the Sierra Club and other conservation organizations, took up on other bureaucratic, juristic and public opinion fronts the struggle to keep water flowing in the San Pedro.

The *Groundwater Act* focused on water supply, not pollution. That didn't get effectively addressed until the *Environmental Quality Act* of 1986, which, like the California law it was modeled on, was one of the strongest groundwater protection laws in the country. It was my privilege to help draft the EQA and its regulations, and to be named as plaintiff in various citizen suits guiding its implementation, working closely with other environmentalists, especially the statute's principal author, David Baron of the Arizona Center for Law in the Public Interest.

Among other things, the EQA mandated the State's first Department of Environmental Quality (ADEQ) and required facilities that discharge or potentially discharge pollutants to go through a permitting process open to the public—including agricultural and mining facilities, the two main users and polluters of water in the state, neither of which had ever known such regulatory oversight, and certainly not for water quality. Shortly after the EQA regulations were adopted, ATI and Border Ecology Project took on the task of getting ADEQ to apply them to the permitting of the mine closure process at the Phelps Dodge Copper Queen mine in Bisbee. Among other results, PD was required to cap its many square miles of tailings to prevent further

contamination of the aquifer from rainwater percolating down through the highly mineralized (i.e., acidic) piles.

Over the next few years, mainly in response to changes in the federal *Clean Water Act* and subsequent changes in Arizona law, ATI became involved (sometimes as a party at the table in development of laws and regulations, sometimes as a plaintiff in legal actions, sometimes as gadfly) in a wide range of water quality and quantity issues from the setting of standards, to legalistic definition of terms like *anti-degradation* and *ephemeral*, to permitting and design of wastewater treatment systems on both sides of the US-Mexico border.

Daughter of our desert tribe
runs in the bed of many streams,

proves by dropping one after one
that stones do not stir the bottom
she sifts between fingers and toes.

She chews the autumn watercress.
She looks to see if no one watches.

Thus was averted the Great War—
the father under a tent of leaves
teaching the son to taste air.

from *Hunger Weather 1959-1975*

Groundwater Contamination (1980)

Michael Gregory, KSUN-FM, Bisbee, Arizona (17 October 1980)

Here in the arid Southwest we are all familiar with the problem of groundwater scarcity; our state government for years has been working on the problem and at the instigation of the federal Department of the Interior has finally come up with a plan for water conservation that may slow the serious loss of our underground reserves.

But Arizona, like the rest of the country, has only recently become aware of another equally serious problem with groundwater—its contamination by industrial chemicals. Severe contamination of our underground water supplies is occurring throughout the country from waste dumps like Love Canal and thousands of other contamination sources, says the Environmental Protection Agency, including contamination from septic tanks, municipal waste water disposal, oil and gas production, radioactive waste disposal sites and mining operations.

Groundwater, that subsurface water which exists in saturated rock or sand deposits called aquifers and is withdrawn from wells and springs, is a major source of the country's domestic water supply. Almost one-half of our drinking water comes from groundwater sources, and about 96% of all rural residents in the US are dependent on drinking water brought up from below ground.

Several factors make groundwater contamination a particularly vexing problem. Most important, contamination of underground waters is essentially irreversible since the pollutants introduced to underground water systems cannot be reached by natural cleansers like air, light, heat and biological agents. Moreover, detection and control of groundwater contamination is both expensive and exceedingly difficult. Decades may pass from the time of contamination to its detection—a detection which often occurs only as residents of polluted areas begin to show symptoms of chronic disease related to the pollutants.

Several government agencies have recently undertaken a massive campaign to locate contaminated groundwater supplies throughout the country. Some 20 federal laws mandate agencies to carry out this search and correct dangerous situations they find. The EPA is the lead agency for most of these activities, and later this month EPA is slated to propose some stringent rules for dealing with the problem. The EPA strategy to be published in the Federal Register soon will call for a national goal for groundwater protection; a management process to set priorities for regulatory action; will define the roles of state, federal and local governments and outline the research needed to cope with the situation. In addition, the EPA will set up a public participation process for citizen input.

The Arizona Department of Health Services is setting in motion a similar set of actions to complement the federal procedure. Sometime within the next year we can expect monitoring of most of the wells in the state that are used for drinking water. The first round of such monitoring has already turned up serious contamination of Arizona waters with pesticides, heavy metals and nitrates, and a number of potentially dangerous contaminations have been identified for further study—including the Pioneer Paint Company waste dump, the old Ina Road dump site, and the Pima and Asarco mine areas of Pima County.

Most of the investigations are of course taking place near the metropolitan areas of Pima and Maricopa Counties where most of the state's hazardous wastes are produced and used, but a joint

study by EPA and the state has also identified a number of potentially bad spots in the outlying areas, including the Apache Powder Plant in Benson which produces a large tonnage of PCB's those plastic-like by-products of electrical production which have been shown to cause cancer and severe metabolic disorders in animals exposed to them.

Over a year ago the state study had shown that over one-half of the hundred or so wells tested in Arizona were contaminated with industrial pollutants in excess of safe drinking standards. More testing since that time has proved that the problem is widespread throughout the state and will require close cooperation among state, federal, and local governments as well as public participation—which seems to be the necessary ingredient to insure that monitoring includes tests for radioactivity and some of the more active agricultural chemicals spread on our lands. If you would like to become better informed about and involved with the groundwater contamination problem, here are three addresses for you to write to:

The Office of Toxic Substances
US-EPA
401 M Street SW
Washington, DC 20460

The Natural Resources Defense Council
1751 I Street NW Suite 600
Washington, DC 20006

The Arizona Bureau of Water Quality Control
1740 West Adams
Phoenix, Arizona 85007

Of Development, Disruption and Dispossession (1984)

Michael Gregory, *Bisbee Review/Sierra Vista Herald* (15 April 1984), p.5A

Everytime I hear the term *development* lately, I cringe a little and get a little sick to the stomach—reactions which are usually displaced resentment and a compassion for all the creatures dispossessed: the animals buried or bulldozed or poisoned, the people whose lives are disrupted by higher densities, higher rents, higher taxes. . . . All in the name of progress, prosperity and profits.

In our panic to accommodate the Southwest's phenomenal population boom, too often we lapse into boosterism and praise of growth for its own sake, thus tending to destroy the veery qualities that people come here for. It is not a Collier-Craft, or a SV Land and Development Co., or a Tenneco Realty Development Corp., or whatever, that bothers me most, but the attitude of people who invite developers to take over our land, communities and other resources. It is more than a little like praising cancer.

Natural life systems sustain themselves by balanced give-and-take among all members of the system. Their strength rests in the health of individuals and in diversity. A natural system endures (always changing but always intact) because it does not, so to speak, put all its eggs in one basket. It wastes nothing. Everything contributes to everything.

Artificial life systems are simpler and more monolithic. They are conceptualized patterns imposed on a more complex world. They tend to be dominated by a single, insatiable, omnivorous entity whose existence depends on exploitation of all other entities in the system. Cancer is one classic example. The glob that the Los Angeles basin is another. Or the one-company towns created in the days of robber barons and industrial feudalism are another.

Unlike natural systems, artificial systems are unstable. They ae vulnerable to attack from outside and constantly at risk of collapse from within as a result of their suicidal consumption of their own support systems.

The monocultural, factory-like fields of modern industrial agriculture, for example, are far more susceptible to pest damage than diversified kitchen gardens or natural grasslands. And cattle, for example, have eaten many of the western grasslands out of existence (and many ranchers out of business).

Once the dominant member of an artificial system has used up its resources, the only way the system can be maintained is by massive transfusions from outside the system. This can be an expensive process as seen, for instance, in the huge subsidies given to cattle, cotton and mining industries by state and federal governments, or in ventures like the Central Arizona Project.

City and county governments don't have much jurisdiction over these industries, so on the local level, the government boost is more likely to be for the benefit of deveklopers. But the game is the same. Land development and urban redevelopment schemes are typical players. Housing developments in Sierra Vista, for instance, are rapidly drying up the valley. Yet the Cochise County Planning and Zoning Commission continues to rubber-stamp development schemes like the 410-acre Summit project of the SV Land and Development Co without even requiring proof of an adequate water supply.

Similarly, Collier-Craft's development projects in Bisbee feed on the old town's art colony

quaintness while simultaneously destroying (with rent and tax increases and feudal arrogance) the ambience of the very community the firm came here to exploit.

It was my misfortune recently to attend a public meeting of the Bisbee Board of Adjustments as it considered Collier-Craft's request for a variance from the city's building-height ordinance. The ordinance limits buildings to 32 feet; Collier-Craft wants their new hotel in the core of the historic district to be half again that high, a total of 48 feet including a penthouse bar on the roof.

As a schoolboy, I was told that small-town meetings were the backbone of American democracy. How appalling to discover that they could also be circuses complete with clowns, emotional outbursts, jingles and disregard for the law.

At the meeting, opponents to the Collier-Craft project read to the Board statute after statute clearly indicating that the hotel does not qualify for a variance. The Bisbee city attorney's written opinion, sent beforehand to the board, agreed.

Proponents of the hotel project (all sitting, incidently, on the opposite side of the aisle from the opponents) replied that laws are meant to be bent or ignored, that the statutes don't mean what they say, that only Bisbee property owners should be allowed to speak, and so on. The Board of Adjustments evidently did not agree with the last sentiment, but it was a foregone conclusion, given the rampant development mentality in Bisbee government, that the Board would go along with the other reasonings.

The Board voted 3-2 to approve the 48-foot hotel. The County Planning and Zoning Commission decision on the Summit project was not as flagrantly impervious to legal directives, but nonetheless chose to ignore the obvious need for ensuring adequate water supplies before permitting another large development project in the San Pedro Valley, an area that is well-overdue for designation as an Active Management Area under the State *Groundwater Act*.

The Summit and Collier-Craft projects also illustrate the piecemeal approach to planning being taken by our local governments. The city of Bisbee has yet to deal with the impact of all of Collier-Craft's projects as a whole. Indeed, the developer admits that they have no general plan, that the various properties they are acquiring are independent of each other. But their cumulative effect is devastating for the existing community. It is painfully clear that the city is failing in its responsibility to plan development, especially in the historic district of old Bisbee. The cumulative effect of overdrafting of water in the San Pedro Valley will also be devastating.

U.S. Geodetic Survey maps clearly indicate a cone of depression in the water table under Sierra Vista, an overdraft that will eventually, as the city spreads, draw down the surface water of the San Pedro River. But the P&Z Commission evidently doesn't think that proof of adequate water should be a requirement for approval of new housing developments. That seems more like promotion than planning.

Pro-development people are fond of saying things like "You can't stop progress" and "Change is inevitable." But all change, of course, is not progress, and change without proper planning tends to be regressive. We have clearly regressed when we hear pro-development arguments like "I've been here 30 years and I know that river hasn't gone dry yet," or "They can always move to another run-down old mining town where it's cheap to live."

Maybe the answer is more public involvement in the decision-making processes. The grassroots Bisbee Renewal Board is a step in the right direction. Hopefully, that board will become at least as prominent a voice in Bisbee's planning as the Industrial Development Authority and Chamber

of Commerce have been.

The county could use a similar public advisory board to address planning and zoning issues so that “little” facts like groundwater depletion are overlooked.

On Tuesday, April 17, the Bisbee City Council will be discussing the Collier-Craft situation. The meeting starts at 7 p.m.. The following Monday, April 23, at 11 a.m., the Cochise County Board of Supervisors will consider rhe Planning and Zoning Commission’s approval of the Summit project.

Both meetings are open to the public and residents with a concern for the future of development in Bisbee and in Cochise County should make it a point to attend.

On the Master Development Plan for the Proposed "Summit" Project near the City of Sierra Vista (1984)

Michael Gregory, for the Sierra Club Grand Canyon Chapter, Chiricahua Group, before the Cochise County Board of Supervisors Public Hearing (23 April 1984)

My name is Michael Gregory and I reside in McNeal. I am making the following statement on behalf of the Chiricahua Group of the Sierra Club.

Most of the Chiricahua Group's members live in the Upper San Pedro basin. As one of the last live rivers in Arizona, the an Pedro is of vital importance—not only to farmers and ranchers, miners and other people who depend on its water, but to the natural communities of plants and animals that inhabit its unique ecosystem. Some wildlife scientists consider the San Pedro corridor to support the richest diversity of mammalian species of any area in North America. More than 150 species of birds have been sighted near St. David, and comparable numbers at other segments of the river.

The San Pedro used to support some pretty big fish too, but unfortunately the water in the San Pedro, as in most of Arizona's rivers, has diminished since the European cultures moved in. The game fish and beaver are gone, along with a lot of the topsoil. The reasons for the dwindling away of the river are complex. Probably the most significant factor has been the denuding and trampling of the watershed by cattle: infiltration lessens, run-off increases, the water table drops, the river sinks into its bed.

Whatever the historical causes (and most of our activities have contributed), it is obvious that the problem is still happening. A serious overdraft of groundwater in the upper San Pedro basin has been reported since at least 1971. The US Geological Survey and Arizona Department of Water Resources have identified a major cone of depression under the City of Sierra Vista created by the overdraft. Occasional recharging of the water table by a good rainy season notwithstanding, that cone seems to grow along with the population of the city. The best available scientific evidence, as reported in the USGS 1982 hydrological analysis of the basin, indicates that the groundwater table in the valley is interconnected with the flow of the San Pedro.

This being the case, it seems clear that the Board should not approve a development plan of this size without assurance from the developer that there is adequate water. As DWR's chief hydrologist recently said in relation to the Tenneco project also being proposed for the basin, "please note that the area is already experiencing such water level declines and any additional pumpage can only increase the decline rate."

I realize that the County, like the State, ordinarily doesn't require a water adequacy statement until the tentative plat stage, but in a large-scale development like the Summit proposal, it would seem more appropriate to require certification during master plan stage. Especially since DWR has stopped issuing certifications of adequacy in the San Pedro at least until the Gila Indian suit is settled. Since we already know that certification will be denied, and we already know that we are overdrafting the basin, then we also know that the Planning and Zoning Commission cannot give approval or conditional approval to the tentative plat (Sect. 407(5), Subdiv. Regs), and the Board cannot approve the final play (Sect. 703).

Thee may be some question as to what the term adequate supply means, but the County and State regulations are clear on this. Section 407(5) of the Subdivision Regulations, for instance, says:

> Before granting approval or conditional approval of a tentative plat, the Commission shall determine. . .that the proposed subdivision development. . .will have available a sufficient supply of potable water without causing an unreasonable depreciation of an existing water supply. . . .

The Zoning Regulations are even more explicit:

> . . . .a development plan and report shall be submitted with the petition for amendment or tentative plat. The development plan and report shall demonstrate the following. . . .(c) The proposed development. . .will not cause an unreasonable burden on the existing water supply. . .and will not have an undue adverse effect on the scenic or natural beauty of the area. . .or rare and irreplaceable natural areas. . . .
>
> (Sect. 2103)

The State's criteria for adequacy are even more to the point:

> In general, a demonstration of adequacy report is comprised of three elements: the determination of current and projected future demands for water; the quantification of supply characteristics; and evaluation of the future impact of the demand upon the source of supply.
>
> (R12-15-302)

> Groundwater supply dependability will be based on the ability of the groundwater source to provide s continuous source of supply to meet the anticipated demands for water of the subdivision, with the further consideration that the lifetime of the supply and the rates of water level decline due to overdraft and the total water level decline during the lifetime are to be within the range of normal practices in Arizona. A lifetime supply of 100 years shall be used as a normal criterion. . . .
>
> (R12-15-404)

It is interesting to note that in a letter to Mr Hugh Holub on 26 March 1984, Mr Byron Howard of the SV Land & Development Co. stated:

> The county representatives still feel we must provide a 100 year adequacy report prior to approval of our land use plan. Obviously, we take exception to this requirement. . . .

It is not obvious to me why Mr Howard should take exception to this lawful and prudent requirement, and I would like the Board to explore this question. I suspect it is because Mr Howard knows he cannot prove adequacy under these criteria, especially not under the criterion for water rights:

> A subdivision water supply which is diverted from surface water either directly, or indirectly trough pumpage of wells connected to and obtaining water from surface waters or the sub-flow of surface waters, will be deemed adequate only if such diversion is the exercise of a valid right to divert appropriable surface waters.
>
> (R12-15-406)

It would seem that if the Summit project, or any other, were to proceed without having met this

requirement, not only the developer but the County, the State, and several other parties could be liable to suits from the Gila Indians and anyone else holding surface water rights to the San Pedro. And Cochise County can do without any more suits for awhile.

The influx of people into the area cannot be denied, Hopefully, it can be controlled, at least to the extent that new housing will conform to basic environmental parameters (such as those cited in Section 2103 of the zoning regulations).

We have all heard some of the fantastic growth figures projected for the Sierra Vista area: 1,000,000 by the year 2000 is one that comes to mind. Growth may be inevitable, but a lot of our current boom is self-induced. The promoters of such predictions, including people at every level of government, are hard at work trying to make their predictions come true. Large-scale developments create a demand for themselves as much or more than they respond to housing needs for the existing residents.

The Summit project if built will provide housing for approximately 4,000 people. If the Summit and Tenneco projects both were carried to completion, the human population of the upper San Pedro basin would increase by a significant percentage. Demands on the basin's resources would increase proportionately. And who knows how many other developments are waiting in the wings? And who knows if the basin has enough water for everybody?

Growth may be inevitable. Uncontrolled, irresponsible growth need not be. One of the problems seems to be that we have been making zoning decisions without benefit of an adequate, comprehensive plan for the county. We need to consider each development proposal in relation not only to present conditions, but within constraints required to satisfy needs well into the future.

We need, for instance, a thorough study of the water situation in the upper San Pedro. We need to examine more closely the cones of depression in the basin's water table; and the relation of the cones to groundwater recharge; and the relation of both to flow levels in the San Pedro. We need to know how water use by one party affects existing and potential use in the rest of the basin.

These are the kinds of studies a developer needs in order to complete a water adequacy report for DWR. Until such a study has been done, and adequacy thereby demonstrated, the Board should deny approval of the Summit plan, and any other large-scale development proposal in the basin.

The costs of such studies should, of course, be borne by the developer; it is a minor cost when compared to the total projected costs of the development. Cochise County is not in the real estate business and should not spend tax money trying to prove up a private party's speculative venture.

In closing, I would like to address one further point. A loophole in the State law evidently allows developers in non-active management areas to build and sell without certification of water adequacy. This loophole should be closed immediately. Since the State has appropriated to itself most aspects of water management, the quickest and surest way to close it is probably for the Board to petition the State to declare the upper San Pedro an active management area. We strongly urge the Board to do so.

The San Pedro: A River Doomed to Go Dry? (1984)

Michael Gregory, *Bisbee Review/Sierra Vista Herald* (30 December 1984), p.6A

The Cochise County Plan

Desertification: The disruption of life cycles, usually in arid-or semi-arid ecosystems, often the result of inappropriate applications of technology and leading to severe reductions in the productive and reproductive capacities of the system.

The feebleness of county government in Arizona is legendary. In a state largely dominated by Phoenix and Tucson, the lack of legislated fortitude is particularly acute among the rural governments of the state.

County officials have complained long and loudly about the inequities of our state hierarchy, and their complaints ar easily justified. It is also true, however, that those same officials sometimes find their hopelessness more than a little convenient, especially if it seems to be the best way to keep outside money pouring into their own bailiwicks.

Cochise County's new Comprehensive Land Use and Zoning Plan offers a case in point. As recently approved by the Board of Supervisors, the new Cochise Plan contains several hundred pages of unusually readable material, developed with tens of thousands of tax dollars over several years.

Unfortunately, all the effort results not in a guiding vision for the future, but rather in an attempt to perpetuate some of the worst parts of the status quo. In Cochise County as elsewhere, that means business as usual, with rampant urban growth destroying the very non-urban qualities most of us live here for: clean air and water, open space, blue skies, quietude and a relaxed pace.

With the excuse that state regulations pre-empt the county's jurisdiction, the new Cochise regulations, even more deliberately than the old ones, avoid dealing with the all four of the county's major environmental threats: air and water pollution from the mining/smelting industry; overgrazed public rangelands; the wasting and poisoning of the groundwater by outmoded agribusiness; and an even more vigorous despoiling of our water, land and air by a stampede of urban immigrants from the snowbelt.

The Realities of Growth

Overpopulation is the most obvious problem in the Upper San Pedro River basin, where housing developments have been multiplying more or less unchecked since the 1960s. The growth of the Sierra Vista/Fort Huachuca complex has begun at an alarming rate. Just two of the currently planned developments, if completed, will more than double the population of the area.

That would evidently be just fine with the Cochise Supervisors, who have consistently voted for urbanization of the county. Far from trying to control overpopulation, or plan for it, the County officials are instead, actively trying to promote growth.

The resulting real estate grab has very heavy impacts upon the county's natural resources. For instance, under the new Cochise Plan, the previous 36-acre rural zoning district has been eliminated. Under the new Plan, the whole county, at least on paper, can now be developed into 10-acre parcels. Many of the county's most environmentally sensitive areas do not have even

that much protection.

For example, private lands near the heart of the Coronado National Memorial south of Sierra Vista are already being broken up into 4-ace residential plots. In order to protect the qualities the Memorial was established for, the Park Service is now faced with spending millions of tax dollars to buy out the development. As the Memorial's recent Draft Land Protection Pla says, Cochise County "land-use regulation does not offer effective land protection for Coronado National Memorial."

In a nod toward responsible land use planning, the new Cochise regulations do require so-called "master development plans" for proposed subdivisions containing 150 or more units, but the regulations amount to little more than a rubber stamp for whatever blueprints the developers hand in. Once the plans have been submitted to the planning and zoning department, the county has no practical mechanism for preventing a development. After the plans have been accepted, developers may expect routine acceptance of any changes they may wish to make. The Cochise Plan completely evades the issue of whether or not developments are desirable in the first p[lace, and serves instead merely to accommodate the builders.

Under the old county subdivision regulations developers were at least required to prove that their developments would have an adequate supply of water; but, in deference to the state's presumption of jurisdiction, those requirements, like the 36-acre zoning districts, have been carefully deleted from the new Plan.

This concession of water rights to the state is, at least in the short un, convenient to pro-development interests who seem intent on building wall-to-wall in the San Pedro basin with the blessings of our city and county leaders.

The state seems to concur, for although the state Department of Water Resources (DWR) has assumed the role of protector of our ground and surface water supply, the state has been lax to the point of negligence in actually protecting the San Pedro.

A Dwindling Resource

By DWR's own estimate, the groundwater under the city of Sierra Vista is already being depleted at a rate of two to ten feet per year. Every year, at an increasing rate, more water is pumped from the basin's table than is put back in. The most recent reports (1980-1982) show that 71,000 acre-feet per year are being pumped out, while only 20,000 go back in to recharge the table. (An acre-foot is the amount of water it takes to cover an acre of land one foot deep with water.)

This overdraft of more than 300% is already affecting the flow of the San Pedro, and it has been estimated that if 1981 pumpage rates were to continue, the surface flow of the river will disappear in 50 to 60 years.

We are already pumping more than we were in 1981, and doubling the population of Sierra Vista does not seem to be the best way to correct the problem.

The DWR is not entirely to blame. Having come into existence with the *Groundwater Act* of 1980, DWR has not been around long enough to handle all the trouble areas, and has had to work under complicated and sometimes contradictory laws. The *Groundwater Act*, though widely acclaimed from political pulpits, and though certainly a step up from the previous free-for-all, is,

nonetheless, like many well-meant laws, a poor compromise at the expense of our common resources and rights of our grandchildren.

On Establishing a San Pedro Riparian National Conservation Area (1986)

Michael Gregory, for the Sierra Club Grand Canyon Chapter, before the Subcommittee on Public Lands, Committee on Interior and Insular Affairs, House of Representatives, Hearings on H.R. 4811, Washington, D.C. (15 July 1986)

Mr. Chairman and members of the Subcommittee, my name is Michael Gregory and I live in Cochise County, Arizona, whose major population center, one of the fastest-growing cities in the country, lies in the Upper San Pedro River Basin.

As representative of the Grand Canyon Chapter of the Sierra Club, I want to thank you for this opportunity to speak in favor of a rapid passage for Mr. Kolbe's bill to establish the San Pedro Riparian National Conservation Area, the first National Conservation Area to be designated specifically for riparian values. The intent of the bill is to finally set aside for rehabilitation and federal protection, after more than a century of heavy use, misuse and abuse, much of what is left of the Upper San Pedro riparian ecosystem. It is an area rich in cultural and biotic resources, and it deserves to be protected and preseved for future generations.

Along with other conservation organizations, the Sierra Club has suggested a few language changes to increase the restorative, protective and enhancement capabilities of the bill, and we are working with the Arizona delegation to offer amendments during mark-up; so instead of talking about specific legislative language today, I'd like to draw your attention instead to some general considerations and, in particular, to two terms: *riparian* and *ecosystem*. The first is a sub-category of the second.

Understanding those two terms is part of understanding the general purpose of the bill, and the terms are especially important to a reading of the sections of the bill dealing with Acquisitions [Sec. 1(a)(3)], Boundaries [Sec. 1(B)], and secondary or peripheral uses of the Conservation Area [Sec. 2(b), 3(b)].

Rivers are very special in the Southwest. And very fragile. Without special care, they dwindle into gullies and dry washes. Those that remain are survivors. In southeast Arizona, the San Pedro is the only one left in a relatively healthy condition of diversity and productivity. Unlike the Pecos River, which has been stripped on 95% of its estimated historic native flora, and the Gila, which has lost 90%, the San Pedro supports one of the longest stretches of riparian habitat in the Southwestern United States and retains some 75% of its native flora (USFWS 1985), a reminder of what our rivers used to be.

But none of our remaining desert rivers has survived without scars. Portions of the San Pedro are still relatively lush and rich with wildlife, but other parts have suffered drastic reduction in biotic diversity and productivity. Although in better shape than most southwest river systems, the San Pedro too has been adversely affected by a "concentration of agricultural, municipal and industrial development in river valleys [that] has reduced or destroyed both terrestrial and aquatic wildlife habitats: (Ohmart 1982). The *agricultural* in that quotation should be understood to mean livestock ranching as well as the farming of vegetable crops.

The San Pedro about a century ago ran full enough to support a lively fishery, including one species of native fish that grew to several feet in length. Today the river is still perennial, but during dry seasons the surface water is sometimes ducks under the riverbed and resurfaces at some distance downstream. Banks that used to be many feet apart are now sometimes separated by only a trickle.

The river is still alive and running, but it is not what it used to be; and if it reminds us of a rich past, it also reminds us of what we have lost, and of our present responsibilities to properly manage what little we have left. The forces that have reduced the size and diversity of the riparian system over the past hundred years are still at work; but besides the very real risks of pollution from agriculture, industry, military and civilian dumping; and the incessant, erosive pressure of livestock grazing; during the past two decades the San Pedro system has also had to endure the effects of a population explosion as more and more people migrate to the sunbelt from the eastern and northern states.
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The Arizona Department of Water Resources reports, for instance, that for several years now excessive pumping has been overdrafting groundwater and contributing to the San Pedro's decline (DWR 1986). Population growth has also brought the threat of subdivisions, as the wooded riversides become more and more valuable in a vigorous real estate market.

Some of these threats are already being dealt with. The subdivision threat, for instance, has largely been averted by putting most of the wet riparian area into public ownership under BLM management. If recent agreements between the U.S. and Mexican governments are kept by both sides, we will also avert some serious threats of air and water pollution from the Smelter Triangle south and east of the Conservation Area. Furthermore, the EPA has recently ordered the Phelps-Dodge mine in Bisbee to stop contaminating tributaries to the San Pedro with toxic metals, and the State of Arizona has recently enacted two of the most progressive water quantity and quality laws in the nation. The Sierra Club and the Audubon Society are working with BLM to guarantee protection of the San Pedro under the new Arizona statutes.

But all these actions are more remedial than rehabilitative; they address specific acute problems rather than implementing a comprehensive plan for protection of the riparian system as a whole. Mr. Kolbe's bill can provide for that kind of comprehensive protection that biologists, anthropologists, conservationists and others have called for repeatedly over the past quarter century.

More than a decade ago. the Fish and Wildlife Service identified the San Pedro as a unique ecosystem suitable for inclusion in the National Wildlife Refuge System, and portions of the San Pedro have ben proposed as Natural Areas to be preserved under the Arizona Natural Heritage Program. Portions have also been proposed as county, state, federal and international parks for the preservation of important historic and prehistoric resources.
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All these proposals indicate the importance of the San Pedro as a biotic resource, supporting one of the greatest diversities of species of any locale in North America; and as a rich cultural resource, containing records of mankind's continuous habitation for more than 10,000 years, and the social interchanges between early peoples who used the San Pedro as a trade corridor between North and Central America. But none of these proposals has come to fruition, and the San Pedro has become increasingly subject to the impacts of population pressure, including the trampling of vegetation, ORV damage to the landscape, harvesting of riparian trees for fuelwood, and vandalizing of cultural and paleontological sites.

The bill now before you is a major step toward a comprehensive management plan that brings together the mutual goals of most previous proposals. The bill offers an opportunity not only to restore the San Pedro to something like its natural conditions of diversity and productivity, but also offers an opportunity to set a strong precedent for protection of other Riparian Conservation Areas to be designated in the future. The San Pedro, as the first, ought to be the model or demonstration area to sow how well we can do the job.

Water is the lifeblood of the Southwest, but when we speak of the San Pedro, we do not mean just the water that flows in the riverbed; we mean the whole riparian system with the river at its center. The water we see on the surface is only part of the San Pedro: some of it flows above the riverbed in the veins of trees and grasses and animals whose lives depend on it; most of it is underground where it helps replenish the water table which is the sole drinking water sourece for the basin.

We should not define the San Pedro too narrowly, and we should be similarly careful in defining the Riparian Conservation Area. Biotic considerations should determine the extent of the Area, not arbitrary dates and yardsticks, As introduced, the bill does not define the Riparian Area broadly enough to fit the biotic situation.

Most of the birds and other animals that make up the wildlife communities of the riparian corridor do not confine themselves to the narrow edge of the river. Many species of birds, for instance, are dependent on the drier brushlands as well as the habitats along the riverbanks (cf. Szaro and Jakle 1985). Mammals that feed and drink at the river's edge also need the upland habitats for food and shelter; some of them, like the deer and wild cats, use the upland terraces to get from the riverbottom to their second homes in the mountains on either side of the San Pedro Valley. The animals are not confined to the narrow corridor of the river, and the Riparian Conservation Area shouldn't be either.

Biotic parameters should determine boundary and acquisition decisions, just as they should determine permitted-use decisions. The legislation should not tie the hands of the agency by precluding its acquisition of lands that are integral components of the riparian life-support system. Conversely, we don't want to saddle the agency with too many options at cross-purposes. Congress should provide specific guidance to the agency on what uses are compatible with the purposes of the San Pedro Riparian Conservation Area.

Just as the agency is directed by law to prohibit destruction of the cultural and paleontological resources, so it should be directed to prohibit activities destructive to the biotic resource—mining and graveling operations, livestock grazing, motorized recreation, taking of listed species, and fuelwood harvesting, to name a few of the more conspicuous ones.

In short, the legislation would best satisfy its intent by directing the managing agency, within budget constraints, to acquire whenever feasible, whatever is needed to restore, maintain and enhance he cultural and biotic resources of the San Pedro; and to prohibit whatever activities or uses are not conducive to those ends.

Thank you for your attention and consideration.

On Arizona Draft Surface Water Quality Standards (October 1990)

Michael Gregory, for the Sierra Club Grand Canyon Chapter, submitted to the Arizona Department of Environmental Quality (October 1990)

Dear Mr. Wiley:

We are extremely disappointed that after more than a year of discussion and quasi-negotiations on these rules; more than a year since the Department was supposed to have completed its triennial review under federal law; and almost a year past the deadline for adopting standards for priority pollutants under the State law, the department not only has not met its legal deadlines, but is now proposing even weaker standards than the weak standards originally proposed last year.

On almost every issue brought up during the tiresome, costly, unprecedented, unnecessary and lopsided-table discussions, the department has capitulated to the demands of polluting governments and industries. Rather than acting as an advocate for the environment, the department has in almost every instance proposed weakening existing and previously proposed standards or exempting extensive waters from the standards-setting process altogether (by changing from "surface" to "navigable", and by direct exclusions for EDWs, canals, impoundments, etc.).

We find these current proposals by the State to be not only illegal under state and federal law, but ethically and professionally reprehensible.

We have commented on many of these proposals orally during the table discussions, and incorporate those comments by reference rather than repeating them all here.

Definitions

2. Rewrite the first sentence as: "Acute toxicity" means toxicity that induces a rapid effect.
6. Delete the cold water language.
7. Delete in its entirety.
8. Delete in its entirety.

10. Rewrite as above for acute toxicity: "means toxicity that induces a delayed or lingering effect. [The Report of the Governor's Hazardous Waste Technical Advisory Committee defined the terms as follows: "Acute health effects are those whose symptoms appear during or immediately after exposure." "Acute effect: An adverse effect on a human or animal body, with symptoms developing rapidly and coming quickly to a crisis." "Chronic toxicity: The property of a substance which produces adverse chronic health effects. . . ." "Chronic health effect: Long-term health effects or those effects that are revealed after a lapse of time, from a one-time or repeated exposure to a substance."

14. But some ephemeral waters *do* support fish.

16. This definition includes non-fish species, but the actual standards do not reflect non-fish consumption.

19. Delete.
20. Delete.

Designated Uses

We continue to object strongly to the department's attempt to sidestep state and federal requirements for protecting and enhancing existing uses. As the department is well aware, there is no scientific or legal justification for assuming that full body contact does not occur in ephemeral and effluent dominated waters (EDW) and canal waters of this desert state, or that fish and wildlife species (including aquatic and semi-aquatic species) are not supported by such waters, or that species supported by such waters ae not consumed by people; the Department should drop this concept of separate designated uss for ephemeral waters, effluent dominated waters and fish consumption waters, since all these must be protected to the same standards in any case.

Similarly, the Incidental Human Contact use should be dropped: there is no scientific justification for differentiating exposure limits for incidental from full body contact, and a water that is subject to incidental contact is just as likely to be subject to full body use.

As required by federal regulations, all surface waters should have full protection unless a Use Attainability Analysis (UAA) has shown that such protection cannot be achieved. If a polluting concern wants a lower standard, it should pay an appropriate fee to the State so the department can conduct a UAA.

Numeric Standards

The department is required by state law to set numeric standards for all 126 priority pollutants, yet the proposed rules fail to do this. As we have repeatedly maintained, if the department cannot find sufficient data to support an allowable level of contamination of a pollutant, it must protect the designated uses—including human health—by setting the standard at zero.

We also continue to object to thr department's reliance on adopting maximum contaminant levels (MCLs) in lieu of protective standards. As was pointed out several times during the discussions of the "salmon draft," MCLs are not health-based standards, but are economically-derived numbers developed by the EPA to permit, rather than prevent, certain levels of contamination; Arizona law, fortunately, is not as permissive as EPA's regulations, and requires the department to set standards based on health, not money.

We also object to the department's continued reliance on obsolete and unscientific risk assessment methodology. A one-in-a-million risk is not acceptable when the department could avoid the risk altogether by requiring pollution prevention rather than allowing unnecessary levels of contamination. And there is certainly no scientific justification for allowing more than zero levels of carcinogens, mutagens, teratogens and other pollutants known to cause other genetic and chronic disease. Similarly, the limit should be zero for substances that are known to be extremely persistent in the environment (e.g., DDT or PCB).

In addition (again, as we have said repeatedly), the department should go beyond the EPA list of 126 priority pollutants and set standards for all pollutants the department knows present risks to human or environmental health.

Among the carcinogenic substances or concern are heavy metals, and the department's proposed standards would not protect designated uses (except, possibly, at the point and moment where calculations are taken), but would encourage polluters to exacerbate the problem by adding other pollutants to the receiving waters in order to adjust pH. Instead of bending over to allow

polluters to continue polluting, the department should set hard standards for the metals, including zero for carcinogens and their ilk, and then enforce the standards.

Antidegradation

The proposed rule is weaker than the existing rule. Rather than selecting the existing language about "propagation of fish," etc., the language should reflect aquatic and wildlife definitions, which call for protection of habitation, growth or propagation.

The reference guidance document should be updated to delete the sections which would allow degradation of pristine (Tier 2) and unique (Tier 3) waters. As the 10/26/90 draft guidance document explains, under the department's proposal, the antidegradation requirement is really meant to permit degradation. Again, the department should be preventing pollution, not permitting it.

We strongly disagree that the director should have discretion to allow degradation of waters that are of higher quality than the minimum standards set by the State. To the contrary, waters of higher quality than the minimum standards should be maintained at their highest levels and possibly be designated as unique waters exactly because they are of high quality. The department's position seems to be, "Oh, these waters are too good: let's pollute them down to the lowest common denominator."

Rather than weakening the standard, the rule should require (as the existing and earlier versions do) that no person shall be allowed to degrade the quality of any water of the state in violation of standards, or cause or contribute to a violation.

Narrative Standards

The department's current proposal is weaker than existing rules. In R18-11-103(A), the term *sludge* should be retained. The language in (D) should be retained, preventing pollution by carcinogens and other genetic toxins. G, H, I and J should be retained : the addition of "objectionable" in the proposed language is not as protective as the existing language about color, and the ecosystem protection in the existing language would be unacceptably dropped in the proposed language. Certainly the term "biotic integrity" in the existing language is no less vague than "objectionable", "off-taste" or "unsightly" in the proposed rules.

The phrase "or otherwise deleterious" should be retained after the word *toxic* in (A).

The word *may* should be inserted before the word *cause* in (A)(2), (A)(4) and in (A)(15).

Unique Waters

R18-11-109 should be revised as follows: "to maintain, and protect <u>and enhance</u> existing water quality. . . ." No degradation of unique waters should be allowed and, as we have previously maintained, the unique waters designation should be applied to all waters in state and federal parks, wildlife management areas of critical environmental concern, wilderness areas, wild and scenic rivers, and whatever other wetland/riparian areas in the state still remain in viable condition or may be restored to viability with the help of unique waters designation. The department should use these rules to carry out the Governor's executive order for preserving and restoring riparian areas in the state.

The earlier language allowed the director to require management plans for unique waters; this should be put back in (but n ot the earlier proposal to allow declassification).

Effluent Dominated Waters

As noted above, the separate designation of EDWs is unwarranted.

Exclusions

We object to the proposed exclusions. Rather than give blanket exemptions, the rules should require UAAs for these special cases. We especially object to the encouragement the proposed rule gives to rerouting of natural waters to accommodate mining activities and their resulting pollution.

Mixing Zones

The proposed rule would weaken existing standards by allowing greater concentrations of pollutants ina greater volume of the receiving water.

The department should require some form of Best Available Control Technology to assure that any mixing zone is as small as possible. Again, the goal should be prevention, not permission.

Site-Specific Standards

Although this provision may be acceptable if the intention it to upgrade the standards, it is more likely to be used to degrade standards. Any lowering of the standards on a site-specific basis should be allowed only if a UAA shows that the standards cannot be met, and since this is already a requirement under designated uses, this special rule is unnecessary.

Waivers

We continue to object strongly to the waiver concept and urge that proposed rules R18-11-114 and R18-11-115 be dropped as being in violation of state and federal law.

Canals

Part (B) of the proposed rules is not protective of designated uses. The *Federal Insecticide Fungicide and Rodenticide Act* (FIFRA) sets no contamination limits. Since the proposed standards set no numeric standards for pesticides, this proposal would allow virtually unlimited contamination of canal waters with herbicides, even though the department is well aware that canals are used for full body contact recreation by children and adults, and are widely used by wildlife. If the department is going to allow an exception for canal maintenance, it should also set limits on the amount of herbicide that can be in the water , and require posting and other warnings so that people and animals are not subject to herbicide exposure.

Enforcement

This section should be deleted. It is, in effect, not an enforcement standard but a non-enforcement standard, indicating how the department would allow pollution to occur and to continue. The department has not just clarified and consolidated, but has considerably weakened the rule. The “practical qualification level” concept is particularly unacceptable in this respect, as is the proposed substitution of “causes. . .or violates” language for the previous “cause or

contribute to."

Although we agree that violations should carry heavy fines, this rule would encumber the possibility of fines with so many variances and exceptions that the potential revenue to the State would be lost in red tape. In effect, the proposed rules would allow non-compliance (at least once every three years for chronic standards, for instance, and probably more continuously since the testing for chronic effects is only done infrequently) and de facto waivers (according to the unacceptably long compliance schedules proposed). Any violation of the acute or chronic standards should constitute an enforceable violation, and the department should eliminate the presumption that "interim" limitations of up to three years are available to polluters who do not wish to stop polluting.

Furthermore, the statute already provides for enforcement, and standard sampling and analysis procedures are already well-established by EPA (and by the proposed R18-11-106): neither needs to be repeated here.

We appreciate the opportunity to comment on these draft rules and urge the department to drastically review them along the lines we have suggested before entering formal proposed rulemaking.

On the Proposed NPDES Permit for Ina Rd. Wastewater Treatment Plant (1991)

Michael Gregory, for Arizona Toxics Information and Sierra Club Grand Canyon Chapter, presented to the U.S. Environmental Protection Agency IX and the Arizona Department of Environmental Quality (30 June 1991)

The following comments presented on behalf of Arizona Toxics Information and the Grand Canyon Chapter of the Sierra Club, and are in addition to those we presented orally at the public hearing held in Tucson on 5 June 1991.

While we continue to commend the agency for proposing some stricter provisions in this permit, in accordance with the Clean Water Act mandate to make all waters of the U.S. "fishable and swimmable," we also continue to find several weaknesses in the draft permit which we urge the agency to strengthen before issuing the final permit--an action we recommend be taken promptly.

In particular, we strongly support permit requirements for 1) biomonitoring, 2) total metals recovery (rather than just the dissolved fraction), 3) requirements for study of the ammonia problem, 4) limits on chlorine and dechlorination requirements, 5) and addition of substances to the monitoring and limits lists. The following comments focus on portions of the permit that need to be strengthened.

Human Health Protection

Besides being rich in aquatic and wildlife species, the Santa Cruz River below the Ina Rd. WWTP discharge is an important recreational area (for both fishing and full body contact) and is a major recharge zone for the sole source aquifer beneath the surface. As was pointed out by Pima Co. presenters at the oral hearing, groundwater downstream of the WWTP are already being contaminated with substances found in the effluent. Rather than continue to allow this incremental loading of the groundwater, the permit should set discharge limits for all parameters to guarantee long-term protection of human health as well as plant and animal species.

In particular, the agency is required by the Clean Water Act and by its own rules to set limits that guarantee compliance with surface water quality standards set by the state, including narrative and numeric standards. While the draft permit generally tracks existing state numeric standards for effluent dominated waters, it does not set limits to guarantee that narrative standards will be met (i.e., "no toxics in toxic amounts" and no discharge that will lead to contamination of groundwater.

Furthermore, as the agency notes in its fact sheet, the state has for more than two years been in the process of developing new state standards, many of which will be stricter than existing standards. The new standards are expected to be in place within the in the next four or five months. Rather than tracking the soon-to-be-obsolete existing standards, the permit should set limits to guarantee compliance with the new standards, except when the new standards are not strict enough, in which cases the agency should set limits to protect to the higher standards.

Similarly, in no case should a limit be less strict than the strictest (human or aquatic/wildlife) chronic toxicity criterion set for the nation in the agency's "Gold Book" or less strict than a national drinking water standard. Consequently, the permit should set stricter limits than proposed in the draft for arsenic; chlorine; mercury; selenium; 2,4-dinitrophenol; 2,4,6-trichlorophenol; tetrachloroethylene; etc.

Monitoring and Limits

We commend the agency for proposing that whole effluent toxicity testing be done monthly and for proposing that the acute toxicity limit be based on zero difference in mortality between controls and effluent. But we object to the agency's failure to propose similar chronic toxicity limits and testing frequency.

We also object to the infrequent monitoring proposed for many of the toxic substances. More frequent monitoring should be required (at least weekly in most cases—for heavy metals and other carcinogens, e.g.; in no case is annual monitoring acceptable) and limits should be set to protect human and health and aquatic and wildlife species, and to guarantee compliance with state standards, for at least the following categories of substances: 1) all pollutants known to be in the discharge (e.g., chloroform, phenols); 2) all pollutants known to be in the transboundary aquifer (e.g., TCA); 3) those on the 304(l) lists; 4) those known to cause cancer, birth defects, mutation, reproductive disease or immune-system disorders; 5) pesticides found on the state's "Groundwater Protection List" or otherwise known to have a high probability of leaching into groundwater (e.g., aldrin, chlordane, DDD, DDE, DDT, dieldrin, endosulfan, endrin, heptachlor, toxaphene); 6) pollutants known to be discharged by industries in violation of pretreatment requirements (nickel, e.g.); and 7) industrial chemicals known to be heavily used in the Tucson basin and with a high probability of showing up in the water (e.g., toluene, trichloroethane, methylene chloride).

The permit is self-contradictory in regard to limits for carcinogens. Although it is acknowledged that any amount of a carcinogen can cause cancer, in setting limits for the carcinogen 2,4,6-trichlorophenol the permit does not propose to require zero discharge or level-of-detection limit, but (contrary to the mandate of the Clean Water Act) opts instead for an indefensible "negligible risk" standard and considers only exposure by fish consumption. Not only are the concepts and methodology of risk assessment highly questionable, and the assumption unwarranted that more direct routes of exposure need not be considered (for 4,6-DNP and 2-methyl-4,6-DNP as well as 2,4,6-TCP); but there is no scientific justification for assuming (as the permit does) that a risk factor of one-in-a-million is "safe". Instead of relying on poor science and political judgments, the permit should require zero discharge or level-of-detection limits for carcinogens and other genetic toxins.

We also recommend that the permit set limits for all standard viral organisms and include at least monthly testing for cholera and hepatitis-E, both of which are being reported upstream in Mexico.

Individual Control Strategies

The interim ICS limits for mercury, tetrachloroethylene and 2,4,6-trichlorophenol are far too lenient. The Clean Water Act does not provide for "interim" limits for 304(l) contaminants, but requires that the state standards be met promptly. A further two year extension is unacceptable.

Best Management Practices/Pollution Prevention

We strongly support the proposed requirement for an "Educational Source Control Program," providing pollution prevention information to the general public as well as commercial/industrial sources. The permittee should be required to provide educational materials and reports of monitoring results not only to state and local governments, but in English and Spanish to all local news media, with a simple explanation so the public can easily understand how the

numbers relate to standards and limits and human health.

The pollution prevention section of the permit is particularly weak. The agency should require the permittees to investigate pollution prevention options for pretreatment sources, and to identify available technology opportunities for removing toxic constituents from the wastewater system. Where such available technologies are feasible, they should be required; when reuse or recycling of the resultant sludges is not possible, they should be properly disposed of in accordance with the hazardous waste disposal requirements of RCRA.

Pretreatment

The enforcement provisions for pretreatment are particularly weak in the draft permit. The permit should require that all users, not just "Significant Industrial Users," be included in the annual reports and that the report include exact monitoring results of all pollutants in violation (rather than merely a notice of violation or "significant noncompliance").

The main problem at this facility is arguably the failure of the county to implement a vigorous pretreatment enforcement program. The permit should require the county to undertake such a program promptly so that, to the extent possible, the burden of clean-up does not fall on the taxpayers (through ill health or public expenditure) but on the industrial users.

The proposed requirement that PCB-containing sludges be incorporated into the soil when applied to land used for producing animal feed is another example of failure to adequately address the handling of carcinogens. There is absolutely no scientific evidence that PCBs in concentrations of 10-50 mg/kg are "safe" whether incorporated into the soil or simply spread on top. PCB-containing sludges should not be applied to the land at all, but should be disposed of properly as the hazardous wastes they are. (There is no justification for the agency to compound the current TSCA exemptions.)

Permit Issuance

In no case should EPA delay the permit again as has been suggested by some commentors. The permits should go forward now with protective requirements to take care of the problem of existing poisons being discharged.

Zero Discharge, Anti-Degradation and Source Reduction: Replacing the Failed Assimilative Capacity Model with Effective Surface Water Quality Standards for the 21st Century and Beyond (1992)

Michael Gregory, presented to the US-EPA Office of Water Third National Meeting, “Water Quality Standards for the 21st Century," Las Vegas, Nevada (31 August-3 September 1992)

The slides you saw a few minutes ago give a pretty good picture of what some of Arizona's ephemeral riparian areas look like, but what the slides don't show are the "DON'T EAT THE FISH" signs put up on the Gila River by the Fish and Wildlife Service and the state Game & Fish Department 50 miles downstream of the Phoenix wastewater treatment plants. And the slides don't show the mostly low-income people fishing next to those signs, or people catching turtles and frogs to eat, or people floating on those waters in inner tubes.

The Effluent Dependent Waters (EDW) problem is interesting in several ways, not least because it's representative of our continuing failure after 20 years to achieve the primary goals of the Clean Water Act. Obviously, if we had been serious about zero discharge, we wouldn't have to be concerned with EDWs now.

The degree of our failure is indicated by the EPA's changing terminology. Where we used to talk about effluent *dominated* waters, we're now supposed to talk, as indicated in Region IX's guidance document, about effluent *dependent* waters. There was some hope of correction in the old term, but "Effluent *Dependent* Waters" indicates that the agency apparently has given up.

A great deal of what we've heard in the past few days indicates that the new Region IX guidance is consistent with the agency's new nationwide policy which, rather than pointing the way toward clean-up and prevention, toward maintenance and enhancement, would institutionalize what many dischargers have come to think of as a right to pollute.

For example, in Arizona, the agency is routinely accepting discharge limits in NPDES permits that are considerably higher than criteria levels. We've heard that 42 states now have their toxic standards approved by EPA, but I wonder how many of those states' standards are under appeal, as Arizona's are, because, among other reasons, the agency has allowed the state to set toxics levels far above levels the agency itself has identified as unprotective.

We obviously make a mockery of the process if we define progress simply as getting the paperwork signed when we do it by lowering our standards.

Instead of pushing the process upstream, forcing clean-up at the source, what we've been hearing for the past few days indicates what seems to be an upper-level decision to *accept* contamination as inevitable and to continue the hopeless business of trying to control pollution at the end of the pipe and then spending millions of dollars assessing the damage.

This approach, by which our agencies spend most of their time doing Risk Assessment and Risk Management, is simply wrongheaded. It begins by asking the wrong questions. Instead of asking, How much can I discharge, How much contamination can I get away with, we should be asking, How much exposure can we prevent?

In general, the public doesn't care if the risk is one in a million or two in a million, especially when we know that risk assessment is essentially a computer game that lets you come up with any figures you want. What the public does want is for EPA to stop trying to figure out how <u>little</u>

of a substance it takes to kill us, and figure out how to prevent exposure, to eliminate unnecessary and avoidable risk.

We can go on forever assessing and prioritizing risks, and while that may be a good way to keep a lot of consultants and lawyers employed, it does *nothing* to help those people like the Native American nations in the Northwest we heard about yesterday. And it does nothing to protect the people or fish and wildlife downstream from Phoenix, Tucson and our other major dischargers.

And it's a notoriously ineffective way to address non-cancer problems. Cancer, in fact, may be the least of our worries. Of far more concern in the long run are transgenerational mutations and potential synergistic effects, and all the millions we are spending on risk assessment don't get close to these issues.

Instead of policies that encourage us to pollute up to the level of our ignorance, which is what quantitative risk assessment does, we should be actively applying what in other parts of the world is called the Precautionary Principle. In the United States we generally translate this as Pollution Prevention, a less satisfactory term since it is typically—especially, it seems, in the Water Office—limited in practice to waste minimization and after-the-fact risk management. But if we understand that what we really mean is source reduction, cutting down on toxics at the front end of the system, banning those substances we really can't control, and substituting benign processes, then it's probably OK to call it Pollution Prevention. That term, at least, has the benefit of already being in our regulatory lexicon—even if it is misused and underemployed.

As we've heard from several speakers during the conference, the preventative approach is already being taken in the Great Lakes, and, as we heard Dr. Foran and others say yesterday, it is the operative principle behind the International Joint Commission's strategy for addressing the otherwise intractable pollution problems there. I strongly recommend that the EPA take a more active role in the IJC proceedings than they have. The IJC model is far superior to the one the agency has been operating under.

If we're serious about clean water, and we should be, then we have to dump the disproved theory of *Assimilative Capacity* and stop relying on end-of-the-pipe remedies. Instead, we need to move into the 21st Century with water quality standards based on *prevention* and the *polluter pays principle*.

The EDW problem in the southwest is a good example of the failure of the Assimilative Capacity model and illustrates our need to push standards upstream to the source.

As you know, Assimilative Capacity is the belief that we can keep dumping our garbage into the environment and the environment will clean it up. But however well that theory might have worked when applied to biological toxins, when it comes to toxics, and especially to persistent and bioaccumulative toxics, the model obviously doesn't work and the policies based on it are obviously bankrupt. As we know from bad examples like the Great Lakes, the New River, the Columbia, Boston Harbor, global warming and the ozone layer (to name a few), allowing a little bit here and a little bit there adds up to a lot, and, in effect, we're nickel-and-diming ourselves to death.

We all live downstream—both in time and in space. As the Earth Summit has made us aware in focusing attention on the global environment, sustainability requires that we respect the rights of future generations to an environment in at least as good a shape as the one we've inherited—and hopefully better. We simply can't afford to continue incremental loading of toxics into our environment—into our streams.

Affordability, of course, is of major concern, but in our focus on site-specific costs, we tend to miss the bigger picture. In fact, one of the biggest problems we have in attaining the goals of the Act is that we have allowed ourselves more and more to let cost rather than environmental health drive the process—not only in setting the permit limits, but (contrary to statute and common sense) in our standards setting process.

By and large the environmental community recognizes that we can't ignore costs, and we're not generally opposed to the Use Attainability process, but if we're going to look at costs they have to be honest costs, and there has to be a full accounting including all costs and all benefits. That's not what we usually see.

In the case of the Phoenix WWTPs, for instance, when we first started talking about toxics standards during the triennial review, we were told that upgrading the plants would cost somewhere around $180-200 million. A few months later, after the public had some chance to examine the figures, the cities' estimates dropped to about $140 million.

A few months later, after a little closer scrutiny, it turned out that most of those costs weren't really for toxics controls, but were for upgrades which had been budgeted long ago to meet conventional pollutant standards that had been in place for years. When we got right down to it, the real problem wasn't toxics at all and the upgrades turned out to cost 40-60% less than the original estimates.

One of the nice things about living in Arizona is that you get pretty good at recognizing scams. As it turns out, the state and EPA were being subjected by the municipalities to a kind of environmental blackmail, which said that if you make us meet these standards then we'll just keep all our water out of the streambed and dry up your precious riparian area. Unfortunately, the state and federal agencies caved in to this outrageous demand.

But in fact, the issue had little to do with toxics or water quality of any kind. The real issue was water quantity and who was the highest bidder for the cities' effluent. As was made clear later when NEB negotiations over proposed wetland creation as an alternative treatment broke down because the cities would not commit to keeping water in the stream, the municipalities were planning to cut off the flow in any case, no matter what the standards, as soon as the price of water got high enough for them to sell it for agriculture or golf courses or whatever.

The ethics and legality of the cities' plan to dry up some of the most important riparian areas in the state is an important issue, but it's not generally speaking a *toxics* issue.

I'm not saying that the municipalities are rich. It's obvious that the new federalism of Reaganomics put incredible burdens with little funding on local communities. But if we're going to get into processes like Region IX's NEB, let's be sure the costs are real.

Honest accounting is especially important in these times when more and more people are being subjected to the jobs vs. environment arguments—another form of the same blackmail. It's not that there isn't any money. There's plenty of money. There's trillions in the Pentagon's peacetime budget and we're spending billions on political saber-rattling in the mideast. We can spend millions on S&L bailouts and the likes of Michael Miliken and Ivan Boesky and my friend Keating from Arizona, we can pay million dollar salaries to ballplayers and entertainers, but we can't afford clean water? Nonsense.

The problem isn't lack of money, but lack of political will, part of the phony accounting games

of trickle-down economics (an especially appropriate term for water politics) that has transferred so much public money into deep private pockets over the past twelve years that the top one or two percent of our population now controls more wealth than the bottom 80% together.

Part of the scam is the mislabeling of some costs, and part is the failure to identify other costs at all. What, for instance, is the cost of drying up a river? What is the cost of continually loading a streambed with toxics?

For example, another interesting point that came up in our discussions of standards in Arizona was that although the incremental loading of *toxics* apparently had not yet caused violation of aquifer standards downstream from major WWTPs, the downstream wells do show elevated levels of toxics. There can be little doubt that if we keep it up, in time those wells will be contaminated beyond standards. And what is the cost of groundwater clean-up? The cost of providing clean drinking water? And what are the savings to be had from really implementing Pollution Prevention?

Again, in figuring the costs of polluting or drying up a stream, we typically think of aquatic organisms and wildlife only as resources for humans to use. Our accounting is unbearably anthropocentric. But animals and ecosystems have rights whether or not they are of use to us. We have to have a biocentric, not just an anthropocentric accounting. And I don't mean just the warm cuddly creatures and the bright green ecosystems. We have to respect the integrity of cold slimy critters too, those that live below the surface of the streams, even when the water isn't running. And we have to recognize the appropriateness of natural ecosystems, which may not display the features urban populations, especially eastern urban populations, tend to value highly. In many western systems year-round lush vegetation and high biotic diversity are simply artificial, what one of my Forest Service supervisors used to call "natural and park-like."

These questions point up one of the major problems with the way we do our accounting. Traditional accounting calls such problems *externalities* and tends to discount them, just as it discounts the future. But we live in a closed biosystem: there are no externalities and we simply cannot continue to discount the future, to put the burden of costs on our grandchildren and their grandchildren.

Instead, if we're going to have standards that really maintain and enhance our waters into the 21st Century and beyond, we have to get serious about the original goals of the Clean Water Act, drop the contradiction of assimilative capacity and incremental loading and insist on zero discharge, anti-degradation and anti-backsliding.

We have to protect groundwater and wildlife and ecosystems and we have to stop making the taxpayer and the environment pay for cleaning up water that should be cleaned up at the source by the polluters. We have to insist that maximum Pollution Prevention and Pretreatment programs are in place before we cave in to environmental blackmail and phony economic arguments in the name of Net Environmental Benefit.

And as we've heard in the past few days, it doesn't matter how good our standards are if they're not implemented. We have to insist on implementation and that means we have to have effective enforcement—at the federal, state and local community levels.

And we have to have funding at all levels to carry out the program.

And while we have to make it clear that zero discharge of pollutants and contaminants is one basic standard, that does *not* mean zero discharge of water. Maintaining minimum flow, keeping

water in the stream, is a water *quality* requirement. Whether we call it physical, chemical, or biological, it's obvious that the quality of a stream is ruined if you take the water out. The requirement to maintain flow is, I think, very clear in the Act, and if it's not, I assure you the environmental community will be working to make it clear during reauthorization.

Zero Discharge, Non-Degradation and Anti-Backsliding: The Essentials of Water Quality Regulation (1994)

Michael Gregory, presented to Arizona Section American Water Resources Association, "Symposium on National and Regional Initiatives: Impacts on Arizona's Water Quality," Tucson, Arizona (28 October 1994)

The fate of the *Clean Water Act* and Superfund last session is a typical result of the current Congress' *modus operandi*. Instead of moving forward to make fairly obvious needed improvements, Congress let itself be sidetracked by reactionary interests into talking reauthorization to death over ideological issues that have little or nothing to do with protection of human health and the environment—issues like Bob Dole's takings amendment and Bennett Johnston's risk assessment amendment and a slew of amendments by Billy Tauzin and others calling for government handouts under the rubric of "unfunded mandates."

Meanwhile, in the real world outside Capitol Hill, while Congress diddled around in its gridlock, new studies were making the public aware (and, to be fair, some members of Congress too) of the continually growing threat from proliferation of toxic substances in our environment. Some of the studies of particular concern to our topic today are:

- The National Academy of Sciences report, *Pesticides in the Diets of Infants and Children*
- EPA's dioxin *Health Assessment Document*
- Studies from the National Cancer Institute and elsewhere on breast cancer research
- Several other studies on worldwide increases in reproductive disease, summarized nicely in the TV documentary, *Assault on the Male*

This new research points to the need for renewed dedication to the goals of the Clean Water Act, restoration and maintenance of the physical, chemical and biological integrity of the nation's waters—especially when seen in the context of increasing cancer rates for those kinds of cancers often associated with toxics (cancer not only of the breast, but of the brain, colon, kidney, liver, testis, bone marrow, bladder, uterus, cervix, leukemia and non-Hodgkin's lymphoma, etc.) (Epstein 1991; NCI 1992), and especially in light of our experience with such surface waters as the Great Lakes, the Columbia and the Gila, and groundwaters like the aquifers under east Phoenix and South Tucson.

Failure to Meet Goals

After nearly 25 years, it's clear that we've failed pretty miserably in meeting the national Clean Water goals. We were supposed to have the nation's waters in fishable, swimmable condition by 1983, and to eliminate toxics discharges by 1985. Instead,

- According to EPA's 1992 Toxic Release Inventory, over 273 million pounds of toxic chemicals were released to waters by manufacturers alone—a 12% increase over 1991. In the same year, over 381 million pounds of toxics went through our POTWs, and these numbers don't include the 2+ billion pounds of toxics released to the air by manufacturers, much of which is deposited in our waters —a major source of pollution in the Great Lakes, for instance

- Again according to EPA reports, as of May 1993, 40% of the nation's major industrial, municipal and federal discharging facilities in the US reported having some kind of

violation of the Clean Water Act, and 21% were in serious or chronic violation (PIRG 1993)

● Over 100 million Americans live next to urban waters that are unfishable or unswimmable, yet many do fish and swim in those waters, and tens of millions drink water that doesn't meet the minimum standards (CWN 1993b)

● At least a third of our rivers, half of our estuaries and more than half of our lakes are not meeting designated uses —and about half of the problem is caused by polluted non-point source runoff from cities, farms, mines and construction sites (CWN 1993a,3)

● The Public Health Service Centers for Disease Control has reported 525 disease outbreaks related to public water systems between 1972-1988, and some researchers say that over 25X that number occurred but weren't reported (CWN 1993a,4)

● Furthermore, as was brought to our attention by the recent US FWS decision to start with Arizona in its effort to get stricter water quality standards nationwide, we haven't been doing a very good job protecting wildlife either.

Arizona is, in fact, one of the major problem states. According to EPA's 3d quarter 1990 non-compliance report, in that year Arizona had one of the highest rates of *Clean Water Act* noncompliance, with 23% of our major facilities in significant noncompliance or not meeting their compliance schedules for final permit limits, including two major industrial facilities and seven municipal wastewater treatment plants. (This situation may have been improved somewhat since 1990 as a result of a consent decree signed in settlement of a suit brought against the Arizona Department of Environmental Quality by the Arizona Center for Law in the Public Interest).

● In addition, more than half of Arizona's 28,141 acres of lakes have been severely damaged by pollution, including more than 12,000 acres by agricultural runoff and nearly 7000 by resource extraction (mostly mining); and

● Over 2000 miles of our 5000 miles of rivers and streams were found not to meet the Act's fishable goals (EPA 1992).

And again, these figures are based only on monitored and reported waters. One of the more serious issues in Arizona is the paucity of monitoring data which, if we had it, might well indicate even more prevalent pollution.

Yet, given all this, what do we find in Congress and the state legislature? Rather than consensus on efforts to protect and restore, we have concerted efforts to weaken the existing laws and allow even more pollution and threats to public and environmental health.

Back to Basics

So, what can be done? To begin with, we have to identify some of the root causes behind the problem. Besides the conditions of natural sloth, ignorance and venality that normally characterize our legislative bodies, I suspect that the main culprit is the disproved theory of Assimilative Capacity, aided and abetted by 18th C economic thinking which, while in some cases may have been appropriate for bio-hazards, is not at all appropriate for dealing with 20th and 21st C toxics. Assimilative capacity, you recall, is the theory (or hope) that mother nature will clean up after us so we can just keep dumping our garbage into the environment. A system

that allows everybody to pollute up to an assimilative capacity standard, and that allows our cost-accounting to squander our natural capital by discounting wastes and the future, is not only just stupid, it's deadly.

The dioxin reassessment and the other recent studies mentioned above, have significant implications for the *Clean Water Act*, *Safe Drinking Water Act* and state aquifer protection law. Among other things, they tell us over and over that we have to begin paying attention to subtle and indirect mechanisms of toxicity and to protect against problems like bioaccumulativity, persistence, small dose effects, multiple source and cumulative effects (e.g., incremental loading), and synergistic effects.

What the International Joint Commission has concluded from its study of Great Lakes pollution applies equally elsewhere:

> It is clear. . .that persistent toxic substances have caused widespread injury to the environment and to human health. As a society we can no longer afford to tolerate their presence in our environment and in our bodies. . . . The *philosophy* of zero discharge thus must become a *reality* as soon as technologically possible. (IJC 1992)

We simply can't afford the little-bit-here, little-bit-there syndrome anymore; we can't afford to keep nickel-and-diming ourselves and our planet to death. And in many or most cases, the technology is already more than possible. Instead of depending on an unworkable assimilative capacity fantasy, we need to focus on enforcing and improving three main areas of the Clean Water Act. These points were stressed by public interests during the reauthorization debates last session, and will be at the heart of the struggle next time around.

- First, we have to get serious about Zero Discharge and Toxics Use Reduction. Especially when the toxic amounts are so small or the pathways of toxicity so complex that you can't hardly measure them, instead of spending endless time and money trying to figure out how little of a substance it takes to kill us or our children, or how much we can get away with, we should err on the side of safety and responsible stewardship and finally admit that "zero discharge" means zero, not just "no toxics in toxic amounts." Again, in the words of the International Joint Commission, we need to aggressively adopt the Precautionary Principle by recognizing

  - "that *all* persistent toxic substances are dangerous to the environment, deleterious to the human condition and can no longer be tolerated in the ecosystem, whether or not unassailable scientific proof of acute or chronic damage is universally accepted" (IJC 1992).

  - Second, we also have to get serious about, and begin enforcing, the non-degradation and anti-backsliding requirements of the law.

  - And third, we have to harmonize the *Clean Water Act* and *Safe Drinking Water Act* with other toxics laws, including the *Emergency Planning and Community Right-to-Know Act*, *Superfund*, the *Toxic Substances Control Act*, the *Endangered Species Act*, and the *Clean Air Act*. Standards and permits have to incorporate a cross-media approach, building on what EPA has already begun to do in their rules on pulp and paper mills.

How do we do that? Here are some specific changes we need in the six key areas of prevention, standards, right-to-know, permits, enforcement and funding.

Prevention

- Ban/phase-out/sunset or, in the few cases where that isn't possible) seriously restrict industrial use of unacceptable chemicals (dioxin-like compounds, etc.)

- Phase-out the use of chlorine in wastewater treatment plants

- Establish incentives (positive and negative) for Toxics Use Reduction instead of focusing on end-of-pipe treatments and reductions

- Eliminate the mixing zone loophole. The solution to pollution is not dilution. Instead, require end-of-pipe compliance with standards

- Require major facilities to prepare and implement Pollution Prevention plans, including enforceable numeric reduction goals

- Strengthen and enforce pretreatment for other facilities

- Help establish pretreatment in Mexico where waters come to US (e.g., Nogales WWTP)

- Include groundwater protection (BACT, effluent guidelines, etc) as runoff and NPDES conditions

Standards

- Expand the list of 126 Priority Pollutants to include at least CERCLA hazardous substances, the EPCRA TRI list and Clean Air Act toxics; industry reports (through CWA, SDWA as well as other EPA programs) over 1100 pollutants discharged to US waters (GAO 1994)

- Require EPA to promptly update criteria to address problems of low dose toxicity, bioaccumulativety, persistence, synergism, multiple source effects, sensitive or high-risk populations, etc.; EPA says they are postponing the writing of criteria while they revise the methodology, but even when they do revise they plan to add only bioaccumulativity (GAO 1994)

- Broaden Biological Criteria (Whole Effluent Toxicity tests, etc.) to assure that biosystem diversity and habitat protection are addressed

- Require EPA to set criteria for the 27 priority pollutants that still don't have them (GAO 1994); including about 17 that don't have human health criteria and 29 or so that don't have aquatic/wildlife criteria

- Increase monitoring for and setting and enforcement of TMDLs for impaired waters (the ADEQ proposal of a year or so ago is inadequate, but EPA hasn't even acted on this)

- Update sludge disposal requirements to address stricter toxicity standards and cross-media concerns. For example, more substances should be added to the sludge monitoring list and PCB limits should be lowered to 10ppm or lower to conform with dioxin

reassessment toxicity findings. (Since 1983, over 100 million pounds of sludges have been spread on Pima Co. farms, with monitoring for only one metal and one chemical (until February of this year, when nine more metals were added), and land treatment of sludges containing up to 50ppm PCBs has been mandated by POTW NPDES permits.)

● Designate and establish criteria for wildlife refuges and game management areas as Outstanding Natural Resource Waters (same status as wilderness areas and national parks)

● Clarify and where need be strengthen physical protection requirements of Act to protect in-stream flows; i.e., in "effluent *dependent*/dominated waters"; clarify that destroying existing aquatic and riparian systems by withholding water is a violation.

Right-to-Know

● Harmonize with other laws, esp. EPCRA, by expanding the list of priority pollutants to match TRI list, and extend TRI reporting requirements (now limited to manufacturers) to major dischargers (including wastewater treatment plants)

● Require posting of health advisories on all impaired waters and at property line of polluting facilities

● Require notice of violations in water company bills

Permits

● Require major industrial dischargers (> 25000 gpd and/or those that use TRI- listed chemicals) to obtain NPDES permits (not just file pretreatment reports)

● Require industrial dischargers to prevent discharge of substances the receiving POTW is not capable of processing adequately

● Establish mandatory, enforceable prevention of polluted runoff. We must get an effective non-point source program in place, not just keep doing studies, and we can't do it by trade-offs like those in the so-called "watershed planning" schemes of some of the bills introduced last session, which would have allowed wetland destruction through weakening of point source requirements in exchange for some weak non-point controls

Enforcement

● Establish minimum mandatory penalties (rather than leaving it discretionary)

● Protect and increase citizen suit capabilities

Funding

● Increase State Revolving Fund to $5 billion over next two years.

● Mandate permit fees high enough to cover the costs of implementing the programs

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On the Nogales, Sonora Water Supply and Distribution, Treatment and Recharge Project (1996)

Michael Gregory and Nicola Zeuner, submitted to the Border Environment Cooperation Commission (9 January 1996)

Arizona Toxics Information believes that providing around-the-clock, dependable water supply for the citizens of Nogales, Sonora is a necessary and useful project. In analyzing the application materials, however, we must conclude that at this point the project does not meet fundamental BECC Criteria. We are certain that, given a little more time, the applicants will be able to adjust the project and comply with the Criteria. We therefore recommend postponing Board consideration of certification until the April Board of Directors Meeting.

We acknowledge and support the efforts by the City of Nogales and by other groups recommending that the BECC put conditions on the project, such as a commitment to not deplete the Santa Cruz River Basin and to not generate additional wastewater flows. However, as we all realize, the BECC's ability to enforce such conditions or, indeed, the Certification Criteria themselves, is very limited once the project is certified and moves on to the NADBank or other funding institutions. Furthermore, as repeatedly stated by a number of NGOs, conditional certification of projects should never occur because there is no mechanism to ensure that criteria will be met after certification. If a project does not meet the Fundamental BECC Criteria, it is simply an indication that it is not ready for certification and needs more time.

Therefore, while we support the substance of the proposed conditions, we hasten to point out again that in the present situation the only leverage that the BECC and the public have to improve a project is the certification process itself and the ability of the BECC to delay or even reject certification. Rather than considering unenforceable conditions or conditional certification, before the April BECC meeting, the project applicants should work with the BECC and the public to ensure that the Criteria and proposed conditions are adequately addressed in a revised application.

While we understand that the applicants, in meetings and talks with members of the NGO community, US government agencies and citizens of Ambos Nogales during the past weeks, have already verbally addressed some of the environmental concerns mentioned, it is necessary that the verbal commitments made in these meetings be put in writing as part of the revised application for BECC certification. Given time until the April Board meeting, SIUE should be able to address these issues working together with the BECC and the public. Again, Arizona Toxics Information considers this project worthy and we will be happy to assist in any way possible.

Generally, the BECC staff should encourage applicants to put more effort into actually addressing the issues in the Criteria Document and providing the information requested. Certainly, while it is the responsibility of the BECC staff to assist applicants in preparing the STEP II application, the primary responsibility rests with the applicant and in no case should the STEP II applications be written by the BECC staff. The STEP II application form was designed to be a useful tool guiding applicants in evaluating the quality of a project and apparently is not yet recognized as such. In this regard, for instance it cannot be considered sufficient in the section of the application concerning the Pollution Prevention Plan to merely state that there will be a plan, as is the case in the Nogales project application; rather the applicants should describe the potential sources for pollution and the exact measures to

be taken to monitor the situation and to prevent the pollution. If the BECC goes on allowing such vague, cursory and pro forma completion of the Step II application, the Criteria for Project Certification will become meaningless.

A major concern with the Nogales project is that the public - only weeks from the public Board Meeting - still has not received a clear description of the proposal. This is due in part to the rapidly changing various informational documents circulating about the project which provide conflicting information about what is actually part of the project submitted for certification at the present stage. For instance, it remains unclear whether or not repair of sewer lines is part of Phase I.

Our specific comments follow, as always, the order of the Criteria Document.

1. General Project Description

In describing the geographical location of the Acuaférico, the applicants fail to address such site-specific environmental issues as the landfill in Los Alisos, and its potential to leach into the aquifer and cause contamination of drinking water, as well as the already-contaminated existing wells in the Arroyo Nogales aquifer .

There is no list of project work tasks in the application, including time lines and budgets for each task as is required by a Fundamental BECC Criterion of this section. Given the scepticism expressed by Nogales groups at the Public Meeting about earlier insufficient and wasteful water projects, full compliance with this criterion should be given extra emphasis.

2. Environment and Human Health

The Fundamental Criteria state: “Every applicant must submit an environmental assessment before the project may be considered for certification” The applicants submitted their Environmental Assessment some time in mid-December, too late for public review. The Environmental Assessment, according to the BECC Criteria “must include a discussion on transboundary effects”. Especially since the applicants do not discuss in depth the transboundary issues in the application itself, and given the transboundary concerns expressed in the recent resolution by the City of Nogales, Arizona, these issues should be addressed in the Environmental Assessment, as required by the BECC Criteria, including potential for depletion of the Santa Cruz River Basin and increased wastewater flows going to the International Wastewater Treatment Plant.

We are sympathetic to the resolution of the City of Nogales, Arizona and the 4 January letter by the ADWR Groundwater Users Advisory Council calling for a firm commitment by the project applicants and relevant authorities to not increase pumping from the Santa Cruz Basin before binational studies have been completed determining the potential impact of increased water withdrawals; to not generate additional wastewater flows without determining binationally how and where they will be treated; and a commitment to the on-going cooperative efforts between government agencies on both sides of the border to achieve comprehensive binational solutions for water supply and wastewater treatment. These commitments should be made explicit in the revised application.

3. Technical Feasibility

From the description of the project in this section a number of basic points remain unclear. For instance, the applicants should clarify, if and how many new hook-ups to water supply

and to sewage system will be provided by the project. Furthermore, the applicants state that 215.000 inhabitants will benefit from the project, yet in the financial analysis the number of costumers is given as 22.212 for both current and proposed rates. This apparent discrepancy should be explained.

In addition, increased water supply, whether to existing or additional recipients, will result in increased wastewater. While we understand that this issue was originally to be addressed in Phase II, the decision to defer Phase II and the current commitment to conduct binational studies does not make the problem disappear. The application should address how and where this water will be treated.

In the section of the application on project specifications, the applicants have failed to provide most of the required information on water supply projects. There is no information about a water conservation program, pollution prevention program, or well-head protection program. Neither does the section mention type and capacity of treatment, construction costs or annual costs, as required.

In the section on technical process, the applicants should clarify if and how the project is going to utilize appropriate technology. The Fundamental BECC Criterion states: ”BECC will only certify projects which use appropriate technology and which are designed to be constructed, operated, and maintained in a cost-effective manner to achieve the project’s purpose.” We are aware that the project proposes to reduce the number of pumps and use gravity to create the pressure in the distribution system, but the applicants also need to discuss alternative energy sources such as solar power as well as the compatibility of the utilized technology with local human and resource capacities.

4. Economic and Financial Feasibility

The Fundamental BECC Criterion for this section states that ”Project revenues must be sufficient to cover debt amortization and operation and maintenance costs with an appropriate safety margin.” The financial analysis annexed to the application is based on the assumption that the major source of income for repayment of the NADBank loan is an increase of water rates by about two-thirds for domestic and commercial users. Nowhere in the application could we find an analysis of the income structure of the population benefitting from the project. It is therefore unclear, and, especially in the light of public comments made at the public meeting, very doubtful, that the citizens of Nogales will be able to pay the increased water rates. The applicants should provide more information supporting the assumption that the projected increased water revenues will actually be available to cover debt amortization.

The annexed financial analysis should be accompanied by a clear prose explanation so that citizens can understand the implications of this document. Otherwise, it will remain unclear, for instance, why maquilas are exempted from the tables dealing with commercial customers, and what type of rates they will have to pay. Similarly, a prose discussion would help explain why differently structured tables are used for the current and proposed rates of domestic users, making it hard to compare the two. Generally, documents like the financial analysis should be readable and understandable to the public, especially when they are dealing with such obvious public interests as future user fees.

The proposed new water rates, as far as we could tell from the financial analysis document, encourage large volume use of water. We recommend the proposed rates be changed to include a scaling of the rates that encourages water conservation and shifts the burden of

loan repayment from the low-income, low-use colonia residents towards large volume users such as the maquiladora industry. The applicants state in additional remarks to the application that they will implement a differential rate system, but the financial analysis indicates the opposite. This apparent discrepancy needs to be explained.

5. Social Issues

In this section, the applicants are required "to assess social issues which may effect the success of a project." The applicants fail to discuss positive and negative impacts of the project on community, economic and social development; instead they simply repeat water supply and treatment data. This section should be completed to include an assessment of the potential economic impact of increased water rates on the affected citizens. For instance, how will small business be affected by a two-thirds increase in water rates, such as those apparently proposed in the financial analysis tables?

6. Community Participation

A meaningful, interactive community participation process is essential for projects submitted to the BECC. In order to guide applicants in conducting public participation, and to ensure public support by the citizens who ultimately will have to pay for the projects, the BECC Criteria contain very specific public participation requirements for applicants. Unfortunately, the project applicants of this project have not paid much attention to these requirements, but decided to conduct the public process in their own much less accountable way, which has caused criticism within the community and made questionable the applicants assertion of public support. For instance, the applicants have failed to hold a public meeting that meets the requirements for BECC approval; they did not give 30 day legal public notice for the 30 November public meeting, and they also failed to include in the notice information about the location of accessible project materials. Even at the meeting itself, information in writing was not available to the public. To this day not only is project information unavailable to the public in Nogales, but also a member of the public was not able to get comprehensive written information on the project even at the SIUE office in Hermosillo.

It is stated in the application that the required local steering committee was formed, but it has not appeared at the public meeting and has not to our knowledge been visible in the public participation process. Also, apparently there are no members in the committee representing environmental, community or academic groups.

The 3 January public meeting in Nogales, Arizona was organized by the City of Nogales, because of the serious binational concerns raised by the water supply project. Knowing about these concerns within the clearly affected sister city, it would have been much more appropriate if the applicants themselves had provided for this meeting.

We acknowledge the efforts made by the applicants to meet with representatives from colonias and Colegios; such smaller, local meetings should be part of any Public Participation Plan. But in the light of concerns raised at the November Public Meeting about the political methods employed by the applicants to acquire colonia acceptance, we urge the applicants to hold another public meeting with correct 30 day public notice, making available all the project information at an accessible location 30 days prior to the meeting date and give all interested members of the public opportunity to submit informed comment pro or con.

The BECC requires the applicants to submit a Post-Certification Participation Plan. This should not consist merely of informing the public (for instance, about the water rates they will have to pay) as described by the applicants, but the affected citizens should be given opportunity for active involvement in the project throughout its life-cycle. This could be achieved through the Citizens Steering Committee, once its membership is expanded to actually represent a cross-section of the community, and once it actually becomes active and visible.

7. Operation and Maintenance

The application's proposed Contingency Plan is incomplete, in that it does not address actions to be taken to assure adequate water supply in case of system failures, such as depletion of the Los Alisos aquifer or contamination of the water due to heavy drawdown.

In addition, the short note in the application on the required Pollution Prevention Plan refers only to potential environmental impacts during the construction phase. Rather, the Pollution Prevention Plan should cover the whole life-cycle of the project and address issues of drinking water quality (for instance in relation to the above mentioned landfill) as well as sewage collection and treatment.

8. Sustainable Development

We recognize the intention of the applicants to raise living standards among the citizens of Nogales and protect natural resources. However, in this section of the criteria the applicants should go beyond a vague endorsement of the concept of Sustainable Development and provide a detailed discussion of specific sustainable development characteristics of the project. For instance, the applicants should address a water conservation plan as well as education programs, discuss why the relatively short project life-cycle of less that twenty years was chosen and explain how the project is going to meet the Fundamental BECC Criterion of human capacity-building.

cc : Ing. Vernon Perez Rubio Artee, SIUE
Alfredo Phillips Olmedo, NADBank
Victor Miramontes, NADBank
Louie Valdez, Mayor of Nogales, Arizona
Abraham Zaied Dabdoud, Mayor of Nogales, Sonora
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