



September 10, 1990

The Honorable Tillman Bishop
The Colorado State Senate
Chairman, Interim Committee on Water
of the Colorado Legislature
and Interim Committee Members
State Capitol Building
Denver, Colorado 80203

Dear Senator Bishop and Committee Members:

On behalf of POWER (People Opposing Water Export Raids), we express our appreciation for the opportunity to testify before the Interim Committee on Water at its meeting on September 12, 1990, about Gunnison River Basin concerns relating to the proposed Union Park Project.

We are submitting for your consideration details of our concerns in the attached written report. We wish to emphasize:

1. the extent of the adverse effects which the Union Park project would impose upon the Gunnison River Basin from its headwaters down to its confluence with the Colorado River in Grand Junction;
2. the speculative nature of the project and its economic and practical unsoundness;
3. the misleading and uninformed statements made by its proponents; and
4. on behalf of many Western Slope citizens, our annoyance at the constant challenge of having to respond to water project proposals such as Union Park which threaten our property and interests.

Respectfully:

Paul T. ...
Ranion Reed
Marsha T. Julio
R. A. Santavalli
Alma May Swanson
Paul T. ...
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**WRITTEN TESTIMONY TO
LEGISLATIVE INTERIM COMMITTEE ON WATER**

**Submitted by
Gunnison Basin POWER, Inc.**

September 12, 1990

We respectfully urge and encourage the members of the Colorado General Assembly to seek ways, through law and/or policy:

1. To better reflect the values of instream waters and their vital role in maintaining Colorado's scenic beauty, fishery, wildlife, and thus, the state's present economic realities, including its growing recreational tourism industry.
2. To encourage broader public involvement and participation in water resources planning and decision-making at all levels, including, first of all, election of water conservation and conservancy board members, as is appropriate since they are funded by property tax levies and assume important public responsibilities.
3. To consider the interests of the people, present and future, of the river basins from which water is exported; such protection to include, if appropriate--but not to be limited to--provisions for compensatory storage.
4. To encourage (or establish, if need be), a process and criteria for evaluating effects of water appropriations and transfers on the general welfare or public interest.
5. To give some priority to "conservation" of our state's water, rather than just project development, in order that maximal efficiency measures of all types are encouraged and implemented, in order to produce "new" water through better management.

In addition, we respectfully urge:

1. Please do not amend law to prohibit the Colorado Water Conservation Board from acting, as it deems necessary, on a case by case basis regarding project proposals which would entail the inundation of state protected minimum instream flow segments. (POWER testified on this matter at CWCB hearings).
2. Please do not act to prohibit the Colorado Water Conservation Board from accepting appropriate contributions of conditional rights for instream flows when warranted, as, for example, in the case of the Chevron/Nature Conservancy donation to help clear the way for the wild and scenic designation of the Gunnison River Gorge segment as supported by the local governments of that region.



September 1990
(2nd. rev.)

POWER / September 1990 (2nd. rev.); page 2

CONCERNS AND PROBLEMS WITH THE PROPOSED UNION PARK RESERVOIR

Introduction

Proponents of the Union Park Reservoir and transmountain diversion project frequently express its "advantages and benefits." These and other aspects of the proposed project are questioned below, particularly as they pertain to the Upper Gunnison Basin. This report was researched and written by members of the POWER Technical Committee and is based on information available to it. Comments, criticisms, and suggestions are appreciated. References are given to enable further study and clarification. It is anticipated that additional concerns will arise as additional information about the Union Park proposal becomes available.

A. Background

1. Proponents claim: "The Upper Gunnison has only one fifth the population of the Upper Colorado, needs economic development, and should welcome the opportunity to exploit their surplus water to provide a lower cost water supply system for Denver that is environmentally sound". (Dave Miller, letter to Governor Roy Romer, 23 March 1987).

* Our response: The proposed Union Park Reservoir project for transmountain diversion would result in very serious environmental and economic impacts. It is not welcomed. This proposal raises critical issues requiring further attention and study.

B. Project Details

1. Proponents claim: Capacity of the Union Park Reservoir could be 1.1 million acre-feet (Union Park Water Supply Concept, 8 July 1988), but is usually given as 900,000 acre-feet [Application for Water Storage Rights, Water Division No. 4, in Case No. 86-CW-226, 31 December 1986].

* Our Response: Clarification is needed; we know Union Park Reservoir is supposed to be very big, but how big?

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2. Proponents claim: An annual average diversion of 60,000 acre-feet is to be taken from the Upper Gunnison drainage for storage and later sent to the Denver metropolitan area (Dave Miller, letter POWER, 21 May 1990). However, by reducing commitments to instream flow maintenance, average annual diversions of 80,000 acre-feet can be achieved (D. B. Raitt and A. W. Watts, Union Park Plan for Optimum Development of Taylor River Water Resources, July 1989; Dave Miller, letter to William Miller et al., 16 February 1987; Arapahoe County, presentation handout, April - May 1988).

* Our Response: There is confusion about the scale of diversions because the water right application for the project states: "Total maximum appropriation for the entire unified and interdependent facility is 900,000 acre-feet per year. All points of diversion are in Gunnison County, Colorado. Reservoir to be filled and refilled so as to achieve this maximum annual amount." [Application for Water Storage Rights, Water Division No. 4, Case No. 86-CW-226, 31 December 1986]. The project's concept is to take all water that can be made available - and from the Gunnison Basin's headwaters. This would be very damaging to almost all present and future water users and uses, and to indirect beneficiaries of water flow from the headwaters on downstream.

3. Proponents claim: Expansion alternatives, or ultimate phase plans, for the Union Park project range up to a project capacity for an annual average 210,000 acre-feet taken out of the Upper Gunnison Basin, principally by pumping water out of Blue Mesa Reservoir (EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 12-3 and chapters 15 - 19).

* Our response: Such plans would be far more detrimental to the Gunnison Basin than the initial proposal discussed and set forth in the application for water storage rights. They would require major changes in Bureau of Reclamation policy and practice, which in turn requires consideration of state policy and interstate implications.

C. Union Park's Drought Protection

1. Proponents Claim: Union Park is supposed to provide drought protection to both the Western and Eastern Slopes. The East Slope is supposed to be willing to pay for drought protection on the Western Slope because the project's concept offers dry year storage for the East Slope - possibly as a by-product (Dave Miller, letter to Hubert Farbes, August 15, 1990; Dave Miller, letter to Colorado River Water Conservation District, 27 April 1990; Dave Miller, Gunnison County's Courageous Water Policy, 4 June 1990; Dave Miller, letter to POWER, 21 May 1990; Dave Miller, letter to Governor Roy Romer, 16 April 1990).

* Our Responses: This seems an optimistic expectation of Eastern Slope municipalities.

* Beneficiaries of such drought insurance could not afford it. At best, the annualized cost of water from Union Park is estimated at about \$305 per acre foot [Dave Miller, letter to Hubert Farbes, 24 July 1990]. Many agricultural water users are unwilling to pay even \$10 per acre foot, when given the value of what they produce.

* After investing in Union Park, would the owners want to release expensive water for drought and environmental protection? At \$305 per acre-foot, a release of 20,000 acre-feet would amount to foregoing use of \$6,100,000 worth of water.

* As a practical matter drought releases from Union Park could reach and benefit only a small proportion of irrigation in the Upper Gunnison Basin. Below the land reached lies the water storage in the Aspinall Unit reservoirs for the benefit and protection of the Western Slope. Union Park would harm, not help, this source of drought protection.

* The Upper Gunnison Basin really does not need the drought protection Union Park is supposed to provide. Already there is Blue Mesa Reservoir and Taylor Reservoir. Some agricultural consumptive water shortages do exist in the Upper Gunnison Basin [HDR Engineering Inc., Upper Gunnison-Uncompahgre Basin Phase 1 Feasibility Study, May 1989]. But, these are dealt with by water sharing and use coordination. It is less expensive and more practical. Given the value of crops produced, it is also very cost effective.

2. Proponents claim: In a dry year such as 1977, the historic release from Taylor Park Reservoir of 81,600 acre-feet could be increased to about 100,000 acre-feet with Union Park Reservoir [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our Response: However, only 20,000 acre-feet appears to be actually set aside for dry year environmental releases into a combination of the Gunnison, South Platte and Arkansas Rivers [Arapahoe County, presentation handout, April - May 1988]. This is only about 28 cfs on a year round basis and does little when spread around the three river systems.

3. Proponents claim: There is a diminishing need for water in the Upper Gunnison Basin. They note economic trends in agriculture; they claim decreasing requirements for water, they decry the consequences of more water lost to downriver states; and finally they perceive water owners looking for ways to realize a higher use and return for their water [Dave Miller, letter to William Miller et al., 16 February 1987].

* Our Response: All this would suggest less need for drought protection. However, water use is not diminishing in the Gunnison Basin. The basin's water resource is being used more and more intensely, in more and more ways, out of the stream and instream. The protection offered in the Union Park proposal is trivial in comparison to the injuries to the Gunnison Basin from headwater diversion of the much greater amounts for the project.

D. Flood Protection

1. Proponents claim: Union Park would offer flood protection to the Upper Gunnison Basin by capturing excess spring runoff and flood waters [Dave Miller, letter to Roger Morris, 29 June 1990]. The Taylor River is said to experience wide fluctuation in flow because of floods and droughts [Union Park Facts, 3 April 1990].

* Our response: This is characteristic of Western Slope streams. Physically and ecologically the streams have adapted to this. However, Taylor Park Reservoir is already present to capture flood flows at the upper end of the drainage. Already there is the 1975 Storage Exchange Agreement to smooth out Upper Taylor flows and the Second Filling of Taylor Park Reservoir application intended to also provide flow stabilization. What more can Union Park provide?

2. Proponents claim: Reported flood damage cost in 1984 was about \$500,000 for an event with a recurrence interval of 30 years and: "Based on this occurrence and more frequent smaller floods and the fact that Taylor Park Reservoir controls only a small proportion of the flow in reaches where damage is most likely to occur, it is evident that flood control benefits, while of great value to those affected on the Taylor, will not have large monetary benefits." [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 12-7 and 12-8].

* Our response: Even Union Park could not cope with "extra ordinary" flood events. For more frequent events appropriate land use planning are a better way of dealing with such threats. For example, the 1984 flood had damage costs of only \$500,000 and a frequent recurrence interval of 30 years. While this flooding was wide spread, locations offered protection by Union Park's capability to control flood flows from the upper part of the Taylor River drainage are small in comparison. At present and because of topography, most development is appropriately outside the danger zone where protection would occur.

3. Proponents claim: Taylor Park Reservoir has a storage capacity of 111,330 acre-feet. Long-term average annual inflow into Taylor Park Reservoir is over 140,000 acre-feet, and during the period from 1977 to 1984 the flow varied from 62,500 acre-feet to 233,700 acre-feet [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our response: Since implementation of the Storage Exchange Agreement in 1975 a large portion of late season irrigation flow for the Uncompahgre Valley has come from Blue Mesa Reservoir. This has smoothed the late season flow from Taylor Park Reservoir and, in turn, benefits instream and out of stream water users.

4. Proponents claim: In a good water year such as 1984, 170,000 acre-feet of the historic release of 224,900 acre-feet from the Taylor Park Reservoir would be pumped into Union Park

Reservoir [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989]. On an average year Union Park would extract less than 10% of the Gunnison River's "wasted flood waters" estimated on the basis of the Gunnison River contributing a loss annually of over 900,000 acre-feet from the Colorado's compact entitlements [Union Park Facts, 3 April 1990].

* Our responses: The extracted amount would be a much greater percentage of the flow at the headwaters location where it was withdrawn - 40% on average to the more than 75% in the 1984 year example given above. This quantity taken from the headwaters river would cause severe harm.

* More recent junior water rights in the Gunnison Basin depend on floods or higher than normal flows for satisfaction. A purpose of the Aspinall Unit and Taylor Reservoir is flood flow storage. The Union Park proposal, especially the possible withdrawals of 100,000 to 900,000 acre-feet per year, would conflict with this. Flood water stored in the Aspinall Unit of the Colorado River Storage Project goes toward meeting interstate compact requirements, as well as Western Slope needs.

* Flooding should not be eliminated - just respected. The regular reliable surges of flood waters are essential for maintenance of ecological and physical systems associated with the river, especially the highly valued and increasingly rare riparian system. In turn these systems support valued economic systems, especially those associated with recreation and the second home industry. Physical and ecological characteristics of western streams are dependent on significant variations of flow from season to season and year to year. With loss of flood water, much of economic and ecologic value would be lost. These systems and their values are not sustained by constant minimum and limited flows released from dams. For example, optimal conditions for a naturally reproducing trout fishery require seasonal changes in flow, temperature, chemistry, turbidity, and other factors required for "triggering" lifecycle changes in the supporting food chain. As they move downstream, flood water provides benefits such as channel maintenance, fertilization, recreation, and aesthetics down through the Black Canyon and on through the Lower Gunnison and the Colorado River systems. A great proportion of these benefits would be lost.

* Withdrawal of flood water and strict stream flow control may well be detrimental to squawfish habitat from Delta to Grand Junction. More importantly it may cause environmental protection calls upon the North Fork of the Gunnison drainage.

5. Proponents claim: To achieve the intended capture of flood water in Union Park Reservoir, the Taylor Park Reservoir would have to be operated with 31,300 acre-feet of this storage capacity transferred into Union Park Reservoir in order to provide vacated capacity exclusive to flood control purposes [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our Response: Storage capacity in Taylor Park Reservoir is 111,300 acre-feet. To transfer this quantity of storage would reduce the reservoir by about one-third to the detriment of recreation. "Bathtub ring" problems in Taylor Park Reservoir would be exacerbated by rapid rises and falls of water level in this reservoir prior to pumping water in it up to the Union Park Reservoir for storage. Also with reduced volume, Taylor Park Reservoir would fluctuate more because of flushing back and forth of water from NECO's proposed Rocky Point pump-storage hydropower project and from the Union Park project when it operates in a pump-storage mode. While Union Park's proponents recognize the problems of fluctuation in Taylor Park Reservoir attributed to the Collegiate Range project operations, they appear to neglect problems their own proposal will cause [Dave Miller, Technical Summary - Union Park vs Collegiate Range, 6 December 1989].

B. Water Yield From Union Park

1. Proponents claim: Union Park Reservoir offers an "unprecedented 2 for 1 safe yield increase" if used as a backup supply for Denver's water system according to a Corps of Engineers study, and this is "unprecedented in water engineering history [Dave Miller, letter to Hubert Farber, 24 July 1990; Dave Miller, letter to POWER, 21 May 1990; see also Dave Miller, letter to William Reilly, 17 May 1989; Dave Miller, letter to William Miller et al., 16 February 1987]. This would reduce the safe yield cost of the project by about half [Abner Watts, letter to the Rocky Mountain News, 19 December 1989].

* Our Response: "However, since the project [Union Park] is envisioned as a dry year source, the time at which this supply would be provided cannot be determined and, hence, the revenue stream becomes too uncertain to satisfy financing requirements. The buyer of the water must therefore contract on the basis of anticipated average supply." [BBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 14-2]. Thus the value of the multiplier is questionable.

* This 2 for 1 safe yield "multiplier" effect of Union Park is its ability to top-up or backup a water supply system. The significance of this depends on water inventory management policy [BBASCO Services Inc. Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 5-3 - 5-4]. A city can choose to spend enough to store enough water for a long series of dry years or choose to spend only for storing just enough water for the average year with conservation programs in place for dry years. Again, the value of the multiplier in the Union Park proposal is questionable.

2. Proponents claim: With the claimed multiplier, the yield from Union Park is expected to be 140,000 acre-feet [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989 and Dave Miller, nomination for Take Pride in America Award, 1989].

* Our response: However, the Corps of Engineer's in the Metropolitan Denver Water Supply EIS, volume VIII, indicated that the safe yield for Union Park varied from 63,000 to 111,000 acre-feet depending on operating assumptions and this yield range would only be achieved if there were no releases from Union Park to any other users except for instream flows in Taylor River and Lottis Creek (HDR Engineering Inc., Upper Gunnison-Uncompahgre Basin Phase 1 Feasibility Study, May 1989, p. 15-28). The lower end of this range assumes a 200 cfs flow below Taylor Dam, May through September, agreed to by NECO as a stipulation of their 1982 water decree for Union Park [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 4-2]. The upper end of this range requires summer flows below Taylor Dam be reduced to 100 cfs, as opposed to the Colorado Water Conservation Board minimum of 150 cfs [Arapahoe County, public handout, April-May 1988]. What are the yields; what are the plans for instream flows? Reduction in minimum instream flows is very significant throughout the Gunnison Basin.

3. Proponents claim: To store water for many years until needed in a dry cycle, the reservoir is sized at 900,000 acre-feet; but in an annual mode of operation wherein the assumed annual diversion of 60,000 acre-feet is transferred out each year for use, the storage volume needed would only be about 270,000 acre-feet [EBASCO Services Inc. Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 5-2 - 5-3].

* Our Responses: While the average annual yield reflects assumptions of stream flow commitments below Taylor Reservoir, the size of Union Park Reservoir reflects the mode of its operation. This difference is significant in many ways for the Upper Gunnison Basin. In the dry-year mode, filling the 900,000 acre-foot reservoir would take 15 years on average but draining it eastward could be at a rate in excess of 300,000 acre-feet per year [Application for Water Storage Rights, Water Division No. 4, Case No. 86-CW-226, 31 December 1986]. Expressed in another way, Union Park could move 1000 acre-feet per day to Denver when required in dry periods without need for any new regulating reservoirs on the Eastern Slope [Colorado's Union Park Water Supply Project, 8 July 1988]. More consistency and predictability in reservoir operation over the years would contribute toward achieving Union Park's claimed recreational and fishery benefits. The reservoir would be slow to fill and quick to empty.

* The 1982 power decree gives Union Park the right to fill and refill the Union Park Reservoir during flood periods to enhance Western Slope power, fish, and recreational flows [Dave Miller, letter to Aurora City Councilmembers, 14 September 1989]. Again, given the filling capabilities of a 1000 cfs pumping system, the fluctuations in both Union Park and Taylor Park Reservoirs would produce severe "bathtub ring" problems.

F. Water Availability and Downstream Commitments

1. Proponents claim: The Gunnison River is the largest "leak" of Colorado's compact entitlements and loses almost a million acre-feet of Colorado's interstate compact water to California on average, but Union Park would put to use about 8% economically for growth in the Denver Metropolitan area [Dave Miller, Gunnison County's Courageous Water Policy, 4 June 1990 and D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989]. Proponents point to Bureau of Reclamation studies in the 1950's showing 450,000 acre-feet could be exported from the Gunnison River Basin without danger to senior water rights or the environment [Union Park Facts, 3 April 1990].

* Our Responses: This may have been possible on paper then - but, there have been subsequent events and actions limiting the availability of water for the Union Park project. These include adjudication of water rights for Blue Mesa, Crystal, and Morrow Point reservoirs of the Aspinall Unit in 1960 and 1961 [Colorado River Water Conservation District, Assignment Of Water Rights, 23 October 1965] and adjudication of the "Taylor Park Pool" rights in 1974 and 1975 [HDR Engineering Inc., Upper Gunnison - Uncompahgre Basin Phase 1 Feasibility Study: Final Report, May 1989, p. 6-5].

* Upper Basin and Colorado Compact deliveries are measured by total flow, not by date of flow. Transmountain diversion is a totally consumptive use of water otherwise available to meet our compact requirements. In 1984 or 1985 the State of Colorado estimated it had 1.2 million acre-feet available for consumptive use from all of the Colorado drainages before compact calls could not be met. At another time the Bureau of Reclamation estimated 500,000 acre-feet and California water authorities estimated less than 200,000 acre-feet. What ever the number is it would appear that now is the time to inventory the resource and prioritize planned investments in it - not after the Union park and Colleague Range projects take out 60,000 or 150,000 or more acre-feet.

* Exportation of water from headwaters, such as from Union Park Reservoir is damaging. Recognition of this gave rise to demands for basin of origin compensation. Water in the Gunnison River is used and reused many times over on its way downstream. Direct users and indirect beneficiaries from the head waters on down the stream will be severely harmed by removal of the quantities of water from the headwaters contemplated in the Union Park proposal.

2. Proponents claim: Colorado's water resource consumption is out of balance because all transmountain diversions for the Eastern Slope come from the Upper Colorado Basin [Union Park Facts, 3 April 1990]. They say the Gunnison has never been tapped with a transmountain diversion project and the Colorado River district should declare a moratorium on all diversions from the Upper Colorado Basin until beneficial uses of the Gunnison's overlooked floodflows are properly evaluated [David Miller,

letter to Colorado River Water Conservation District, 27 April 1990).

* Our Response: In fact the Gunnison Basin has been tapped to a limited extent for transmountain diversions averaging more than 1,300 acre-feet per year into the San Luis Valley and the Arkansas Valley. However, the Gunnison Basin is the major source of storage of water for meeting interstate compact obligations, hence the Aspinall Unit of the Colorado River Storage Project. In addition, the mean annual diversion from the Gunnison River through the Gunnison Tunnel is presently about 336,000 acre-feet per year but may soon increase to between 661,000 and 726,000 acre-feet [Bureau of Reclamation, Uncompahgre Valley Reclamation Project - AB Lateral Hydropower Facility - FEIS, August 1990, pp. S-5 - S-7]. Again, direct users and indirect beneficiaries from the head waters on down the stream will be severely harmed by removal of the quantities of water from the headwaters contemplated in the Union Park proposal.

3. Proponents claim: Colorado is the only western state that has not inventoried its water resources, and developed planning guidelines for them with the result of a water development gridlock damaging the economy and creating the highest water development costs and fees in the west [Dave Miller, letter to Governor Roy Romer, 10 April 1990].

* Our responses: The state of Colorado has approved and/or encouraged storage projects which hold conditional decrees in the Greater Gunnison Basin that predate the Union Park project. All may be adversely affected by Union Park either during the next 35 years before Union Park is built or when they seek financial support. Examples are the Dominguez, Cactus Park, Fruitland Mesa and Cow Creek projects. As a practical matter the lack of dam proposals is not the cause for a planning gridlock in water resource development, nor would the gridlock vanish with the inclusion of the Union Park proposal. Unbuilt water projects need to make sense in today's world, and Union Park does not. Gunnison River water is already committed downstream and used many times over to the benefit of the Gunnison Basin and Colorado.

* Regardless of the strict appropriation method of calculating existing water resources in Colorado, the current status of water as a resource is that various interests have now, by historical practice and social value awareness, allocated all of the state's water resources. No matter what new purposed use of water arises, it causes serious dislocation to a segment of the society which has come to depend on the existing allocated use. Complete consumptive use is, of course, that most difficult to reallocate and when such use occurs at the headwaters of a major river system, the detrimental effects to the "allocated" user are greatly magnified. To introduce now such a consumptive use as Union Park becomes more the allocation of harms and not water.

* Withdrawal of the quantities of water proposed by the Union Park would alter planning for salinity control downstream and all other water quality considerations.

* The Union Park project will have serious implications to endangered species recovery programs. It would effectively cripple use of the Gunnison River in the endangered species recovery program unless more senior rights are condemned downstream.

4. Proponents claim: The Colorado Water Resources and Power Development Authority's Phase 1 Study found a need for supplemental water to meet proposed in-stream flow requirements through the Black Canyon of about 60,000 acre-feet in the dry year of 1977 with about 40% of this amount possibly coming from a total release of 99,700 acre-feet from Taylor Park, if Union Park Reservoir was in place [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our response: Union Park has already interfered with the minimum stream flow claims in the Black Canyon and would obviously place additional non-designed and unintended storage burdens on the power production capabilities of the Aspinall Unit which, in turn, is detrimental to all of the Upper Basin states.

5. Proponents claim: Down river states get Colorado's surplus water at no cost because Colorado has not developed it for its own usage [Union Park Facts, 3 April 1990].

* Our response: However, water originating in the Gunnison Basin does not lose its economic productivity if eventually it flows to California. As noted above, much of the water originating on the Western Slope is obligated to flow downstream; however, first Colorado gets to use and reuse it, in-stream and out of stream, many times before it crosses our state line.

6. Proponents claim: Consumptive water needs on the Western Slope are declining and an outside interest can challenge any water right by technically proving underutilization or wasted water [Dave Miller, Gunnison County's Courageous Water Policy, 4 June 1990].

* Our Response: While some traditional water uses decline in some places, there are increases in non-traditional uses which are much larger - especially those associated with recreation and water quality management. Use and reuse of the water out of stream and in-stream sustains a complex web of economically beneficial relationships. For example, return flows and deep percolation from flood irrigation permit "subbing." One person's use and application practices sustains another's. As a practical matter water is not "wasted" in flood irrigation or lost irretrievably. Withdrawal of water at the headwaters destroys this economically and ecologically productive system of water use relationships.

G. Operational Considerations

1. Proponents claim: The Bureau of Reclamation in 1983 acknowledged benefits of Union Park in regulation and

conservation of Blue Mesa complex water by capturing low value flood waters at high altitude for later release to high value purposes - irrigation and hydropower - and indeed the Bureau may be interested in paying to the developers a share of the costs of the Union Park project (Union Park Facts, 3 April 1990).

* Our response: However, very little water actually spills and it does so very seldom from the Aspinall Unit. Hydrologic modeling of the performance of the Aspinall Unit between 1906 and 1979 shows spills average 6,500 acre-feet per year when they occur, but up to 35 years pass between actual spills [EBASCO Services Inc. Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 3-2 - 3-3]. Besides these releases, water passes through the turbines producing some low value non-peak power at the Aspinall Unit, but that appears to be a function of inventory management policy rather than storage capacity limitations. Union Park is not needed to furnish hydroelectric power.

* The annual average flow at Taylor Dam is about 140,000 acre-feet and the annual average flow at Blue Mesa Dam is 1,081,000 acre-feet [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 3-3 - 3-4]. Water stored in Blue Mesa reservoir has the highest value on the Colorado River system for hydropower production because of the cumulative head between the Blue Mesa Reservoir water level and the power turbines at Havasu Reservoir. The loss of an annual average of 60,000 acre-feet of water to Union Park diversion amounts to an annual loss in excess of \$4,500,000 in power revenues from Blue Mesa through Havasu Reservoirs assuming the value of \$.05 per kilowatt hour. And, this may require compensation [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 5-5 - 5-6; for methodology see T. C. Brown and B. L. Harding, A Preliminary Assessment of Timber and Water Production in Subalpine Forests in Management of Subalpine Forests: Building On 50 Years of Research, GTR RM-149, Rocky Mountain Forest and Range Experiment Station, Fort Collins, 1987, pp. 126-137].

2. Proponents claim: The long-term average annual inflow to Taylor Park Reservoir is over 140,000 acre-feet, during the period from 1977 to 1984 the flow varied from 62,500 acre-feet to 233,700 acre-feet, and in the water short year of 1977 the Uncompahgre Valley Water Users purchased 45,000 acre-feet from the Bureau of Reclamation [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our responses: Management of water originating in the upper basin of the Taylor River is not an issue. As illustrated, the Uncompahgre Valley Water Users Association has the capability of efficiently managing their water inventory utilizing both the Taylor Park and Blue Mesa Reservoirs.

* In terms of average operational conditions the Union Park project is not viable - withdrawal on average of 60,000 acre-feet into Union Park from the average watershed yield of 140,000 acre-feet does not leave sufficient

water to satisfy the Taylor Reservoir storage decree for 111,300 acre-feet.

3. Proponents claim: Evaporation losses from the high altitude Union Park Reservoir would be only one-fourth the amount lost from the low altitude Two Forks concept (Colorado's Union Park Water Supply Project, 8 July 1988). Evaporation from the average 3550 acre surface of Union Park is estimated to be 10 inches per year for an average net loss of 3,000 acre-feet [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 3-4].

* Our response: The critical consideration is the excess of evaporation over precipitation from the reservoir surface. The sagebrush vegetation of the basin for Union Park suggests that during the ice free period evaporation is fairly high and that the estimate of 10 inches per year is too small. Publication of more recent studies done in a comparable South Park area for the Denver Water Board indicates that pan evaporation rates, measurement of the amount of water lost from a free water surface, are 28 to 37 inches from May to October [I. A. Walter, B. G. Siemer and others, Evapotranspiration and Agronomic Responses In Formerly Irrigated Mountain Meadows - South Park, Colorado, vol. 1, Denver Board of Water Commissioners, Denver, Colorado, March 1990, pp. 170-179.]. This recent report suggests evaporation from the Union Park Reservoir would conservatively be about 3 times the amount anticipated earlier, given that the elevation and climate between sites is generally comparable and due consideration is given for increased evaporation caused by wave action in the large reservoir. Consequently Union Park can expect to lose about 9000 acre-feet per year on average to evaporation which is about 15% of its average 60,000 acre-feet of inflow by diversion. Evaporative loss or shrinkage of water inventory could be severe if Union Park is operated in the dry-cycle mode of storing water over many years before release.

4. Proponents claim: Union Park Reservoir would provide massive high-altitude storage of water taken from the headwaters of a sub-basin of the Gunnison River [Dave Miller, letter to POWER, 21 May 1990; D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our Response: As indicated above in Item 2 of this section, high altitude sub-basins are subjected to greater variability in received precipitation than their parent basin as a whole. Dependability of flow to satisfy the Taylor Park Reservoir storage decree is quite high, however, the dependability for Union Park's operation at the quantities contemplated is much less. It has been suggested that the Union Park Reservoir can and will perform a variety of functions. The fact that the intended combination and priority among these functions remains unclear at this time, makes review of the proposal's operating rules and their implications difficult - especially under conditions of increasing climatic variability commonly associated with the Greenhouse Effect [for discussion of

operational rules see Edward Kulper, Water Resources Development: Planning Engineering and Economics, Butterworth and Co., London, 1965, Chapters 6 through 11].

H. Environmental and Recreational Implications

1. Proponents claim: Union Park is to guarantee flows below Taylor Dam substantially higher than the minimum flows established by the Colorado Water Conservation Board [Union Park Facts, 3 April 1990].

* Our Responses: This appears unlikely. There is a commitment to a 200 cfs flow below Taylor Dam during the summer resulting in an average annual yield of 60,000 acre-feet [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 4-2 - 4-3]. However, proponents appear to contemplate reducing this and the Colorado Water Conservation Board's 150 cfs flow decree as well to produce a larger water yield [Arapahoe County, public handout, April-May 1988]. The maintenance, and indeed improvement, of flow conditions, below Taylor Dam are economically very important to the Gunnison Basin. Beginning in 1975 the Upper Gunnison Water Conservancy District has, along with the Uncompahgre Valley Water Users Association and the Bureau of Reclamation, controlled releases of water from Taylor Park Reservoir with an exchange agreement for the purpose of enhancing fisheries, irrigation, flood control, and ice control. The Gunnison District has also filed in water court for the second filling of Taylor Reservoir with purposes of environmental and economic enhancement.

* The monetary significance of flows below Taylor Dam has recently been studied. Indirect valuation studies of the Taylor River below Taylor Dam indicate that increasing the critical winter flow by 10 cfs above the Colorado Water Conservation Board minimum of 50 cfs produces an increase in the fishery and an imputed net value within this flow range to anglers of approximately \$193.00 per cfs or \$1.63 per acre foot released [David Harpman, The Value of Instream Flow Used To Produce A Recreational Fishery, Ph.D. Dissertation, Colorado State University, Fort Collins, Colorado, 1990, pp. 119-121]. This study indicated that summer releases above the present pattern contribute little additional value for the fishery, but reports on the value of increased flows for recreational and other purposes are still in the process of preparation.

2. Proponents claim: The private minimum stream flow water rights on the Taylor River benefit only the property owners along certain stream segments by having water pass by the property on its way out of the state. They say the land is posted with no trespassing signs and that the amount of water in the decreed rights is far in excess of need for rafting, fish and plants, and indeed, that it is more than the same private owners agreed to accept in decrees pertaining to the Union Park hydroelectric power rights [Dave Miller letter to Roger Morris - Editor of the Gunnison Country Times, 29 June 1990].

* Our Response: There are many owners of private instream flows on the Taylor River and in the Taylor River drainage. In 1973 individuals with foresight tried to protect a part of the Gunnison Basin's heritage by obtaining water rights to assure instream flows on the Taylor River and its tributaries. These rights were decreed in 1974 and 1975 for recreation, wildlife protection, fish culture, heritage preservation, and stockwater purposes [HDR Engineering Inc., Upper Gunnison-Uncompahgre Basin Phase 1 Feasibility Study, May 1989, p. 6-5]. Residents, and visitors have shared in the benefits of their effort. In 1990, proponents of Union Park set out, along with proponents of the Collegiate Range project, to quash these valued rights in water court to further their own objectives.

3. Proponents claim: Union Park will enhance Gunnison's water based economy by providing excellent Lake Trout fishery in an off-river sage covered bowl and by stabilizing the current wide fluctuation in Taylor Park Reservoir [Dave Miller, letter to POWER, 21 May 1990; Union Park Facts, 3 April 1990].

* Our Response: Given the frequency and extent of fluctuation, as noted above, that would be expected in both Taylor Park and Union Park Reservoirs as a result of the Union Park proposal, fisheries in both reservoirs would be poor. There is not a need for an additional flat-water recreation resource with large "bathtub rings." The Gunnison Basin already has a sufficiency of flat water recreation opportunities and indeed one of particularly outstanding quality - Taylor Park Reservoir. Withdrawal of water by Union Park will be detrimental to this resource base. Development of a lake trout fishery in Union Park appears questionable and the project's effects in conjunction with the Rocky Point hydroelectric project would adversely impact the existing high quality fishery and other recreational usage in Taylor Park Reservoir and the Taylor River. Can the proponents quantify the value of recreation foregone because of diversions to Union Park?

* Concerns for the adverse implications upon wildlife were voiced at presentations of the Union Park and Rocky Point projects [Laura Anderson - reporter, Crested Butte Chronicle and Pilot, 27 February 1987]. The district wildlife manager for the Division of Wildlife questioned the description of the impacts from the proposed Rocky Point and Union Park projects as being "minor" and brought up concerns for elk migration routes and fawning areas for bighorn sheep. A fisheries biologist for the Division of Wildlife raised the issue of draining and filling of Taylor reservoir making it difficult to keep a major fishery going. Also the impact of powerline corridors was raised at the meeting.

* Union Park will fluctuate greatly and more erratically than most traditional reservoirs, if it is operated in the dry-cycle or topping-up mode. This causes storage in Union Park to fluctuate between about 900,000 acre-feet and 200,000 acre feet over a period of 17 years, with yearly withdrawals of often more than 150,000 acre-feet [Dave Miller, letter to William Miller et al., 16 February 1987]. This is

indeed detrimental to biological conditions above and below the reservoir's water line.

I. Relations With The Gunnison Basin

1. Proponents claim: The Union Park project is to benefit the Gunnison Basin community by building a consensus rather than the traditional nonproductive infighting between historically competitive interests [Dave Miller, nomination for the Take Pride in America National Awards, 1989].

* Our response: However, proponents have undertaken to quash a sufficient quantity of established conditional water rights within the Upper Gunnison Basin to assure a safe yield for their project, saving those conditional rights applied for by the City of Gunnison in 1981 [Agreement between Natural Energy Resources Company and the City of Gunnison, January 1987, p. 6]. This is not neighborly. More recently the proponents joined with proponents of the Collegiate Range project to quash and invalidate decreed private instream flow rights on the Taylor River which were adjudicated in 1974 and 1975.

2. Proponents claim: Participation in the Union Park project is said to provide the City of Gunnison with a value of \$50 million, for a downpayment of \$1000 and total cost of \$200,000, which includes needed storage, water rights, and reduced power fees [Union Park Facts, 3 April 1990].

* However, by resolution in February of 1990, the City of Gunnison acted to formally and expeditiously withdraw from its agreement with NECO and Arapahoe County regarding water storage in the proposed Union Park Reservoir and to vigorously and persistently oppose transmountain diversion of Gunnison Basin water. Water and water storage space is available in Blue Mesa Reservoir five miles away for purchase from the Bureau of Reclamation and this would imply less cost and less commitment to operating expenses [HDR Engineering Inc., Upper Gunnison- Uncompahgre Basin Phase 1 Feasibility Study, May 1989, pp. 10-5 and 10-6; Bureau of Reclamation, Water Service Contracting From Colorado River Storage Project Storage Reservoirs, circa 1985].

* The City of Gunnison does not need peaking power. "The ultimate criterion of a pump-storage project is whether or not its addition to an existing power system will lower the overall cost of the system as compared to the least costly alternative addition to the system [Edward Kuiper, Water Resources Development: Planning Engineering and Economics, Butterworth and Co., London, 1965, p. 310]. Under the agreement between the City of Gunnison and proponents of Union Park, the City must pay the full cost of pumping water up into Union Park Reservoir for later release as peaking power which the City is able to purchase at half the going price. This would not lower the overall cost of the City's system.

J. Alternatives

1. Proponents claim: Union Park is offered as the ideal alternative to versions of the Two Forks project [Dave Miller, letter to Hubert Farbes, 24 July 1990; and Dave Miller, letter to William Reilly, 17 May 1989].

* Our responses: While the 2 for 1 multiplier is pointed out by proponents as a cost advantage, its value is questionable. A buyer would be expected to purchase on the basis of anticipated average supply - 60,000 acre-feet per year [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 14-2]. Various component costs can be included or taken out of the proposal to arrive at the unit cost per acre-foot of annual yield which is \$4200 at its lowest and \$8600 at the high end [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 11-1 - 11-4]. Costs may ultimately be on the high side because of a buyer's inability to utilize all the concepts packaged into the proposal.

* Other viable and sensible alternatives to the Union Park proposal do exist and include conservation and water sharing within the Denver metropolitan area. If transmountain diversion must be undertaken in Colorado, the Colorado Aqueduct Return Project (- CARP-) offers many advantages - including reliability, cost, and basin of origin protection - over Union Park for the Gunnison Basin, the Western Slope, and Colorado as a whole [Ralph Clark, Colorado Aqueduct Return Project, January 1989 and March 1990].

2. Expansion alternatives for the Union Park project range up to a project capacity of an annual average 210,000 acre-feet taken out of the Upper Gunnison Basin principally by pumping water out of Blue Mesa Reservoir [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 12-3 and chapters 15 - 19 and Arapahoe County, presentation handout, April - May 1988].

* Our response: Such plans would be more devastating to the Gunnison Basin than the proposal discussed above. It appears that the initial application to the water court for storage rights is only the beginning.



September 10, 1990



September 1990

The Honorable Tillman Bishop
The Colorado State Senate
Chairman, Interim Committee on Water
of the Colorado Legislature
and Interim Committee Members
State Capitol Building
Denver, Colorado 80203

Dear Senator Bishop and Committee Members:

On behalf of POWER (People Opposing Water Export Raids), we express our appreciation for the opportunity to testify before the Interim Committee on Water at its meeting on September 12, 1990, about Gunnison River Basin concerns relating to the proposed Union Park Project.

We are submitting for your consideration details of our concerns in the attached written report. We wish to emphasize:

1. the extent of the adverse effects which the Union Park project would impose upon the Gunnison River Basin from its headwaters down to its confluence with the Colorado River in Grand Junction;
2. the speculative nature of the project and its economic and practical unsoundness;
3. the misleading and uninformed statements made by its proponents; and
4. on behalf of many Western Slope citizens, our annoyance at the constant challenge of having to respond to water project proposals such as Union Park which threaten our property and interests.

Respectfully:

P.O. Box 1742
Gunnison, CO 81230

CONCERNS AND PROBLEMS WITH THE PROPOSED UNION PARK RESERVOIR

Introduction

Proponents of the Union Park Reservoir and transmountain diversion project frequently express its "advantages and benefits." These and other aspects of the proposed project are questioned below, particularly as they pertain to the Upper Gunnison Basin. This report was researched and written by members of the POWER Technical Committee and is based on information available to it. Comments, criticisms, and suggestions are appreciated. References are given to enable further study and clarification. It is anticipated that additional concerns will arise as additional information about the Union Park proposal becomes available.

A. Background

1. Proponents claim: "The Upper Gunnison has only one fifth the population of the Upper Colorado, needs economic development, and should welcome the opportunity to exploit their surplus water to provide a lower cost water supply system for Denver that is environmentally sound". [Dave Miller, letter to Governor Roy Roner, 23 March 1987].
* Our response: The proposed Union Park Reservoir project for transmountain diversion would result in very serious environmental and economic impacts. It is not welcomed. This proposal raises critical issues requiring further attention and study.

B. Project Details

1. Proponents claim: Capacity of the Union Park Reservoir could be 1.1 million acre-feet [Union Park Water Supply Concept, 8 July 1988], but is usually given as 900,000 acre-feet [Application for Water Storage Rights, Water Division No. 4, in Case No. 86-CW-226, 31 December 1986].
* Our Response: Clarification is needed; we know Union Park Reservoir is supposed to be very big, but how big?

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Gunnison, CO 81230

2. Proponents claim: An annual average diversion of 60,000 acre-feet is to be taken from the Upper Gunnison drainage for storage and later sent to the Denver metropolitan area [Dave Miller, letter POWER, 21 May 1990]. However, by reducing commitments to instream flow maintenance, average annual diversions of 80,000 acre-feet can be achieved [D. B. Raitt and A. W. Watts, Union Park Plan for Optimum Development of Taylor River Water Resources, July 1989; Dave Miller, letter to William Miller et al., 16 February 1987; Arapahoe County, presentation handout, April - May 1988].

* Our Response: There is confusion about the scale of diversions because the water right application for the project states: "Total maximum appropriation for the entire unified and interdependent facility is 900,000 acre-feet per year. All points of diversion are in Gunnison County, Colorado. Reservoir to be filled and refilled so as to achieve this maximum annual amount." [Application for Water Storage Rights, Water Division No. 4, Case No. 86-CW-226, 31 December 1986]. The project's concept is to take all water that can be made available - and from the Gunnison Basin's headwaters. This would be very damaging to almost all present and future water users and uses, and to indirect beneficiaries of water flow from the headwaters on downstream.

3. Proponents claim: Expansion alternatives, or ultimate phase plans, for the Union Park project range up to a project capacity for an annual average 210,000 acre-feet taken out of the Upper Gunnison Basin, principally by pumping water out of Blue Mesa Reservoir [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 12-3 and chapters 15 - 19].

* Our response: Such plans would be far more detrimental to the Gunnison Basin than the initial proposal discussed and set forth in the application for water storage rights. They would require major changes in Bureau of Reclamation policy and practice, which in turn requires consideration of state policy and interstate implications.

C. Union Park's Drought Protection

1. Proponents Claim: Union Park is supposed to provide drought protection to both the Western and Eastern Slopes. The East Slope is supposed to be willing to pay for drought protection on the Western Slope because the project's concept offers dry year storage for the East Slope - possibly as a by-product [Dave Miller, letter to Hubert Farbes, August 15, 1990; Dave Miller, letter to Colorado River Water Conservation District, 27 April 1990; Dave Miller, Gunnison County's Courageous Water Policy, 4 June 1990; Dave Miller, letter to POWER, 21 May 1990; Dave Miller, letter to Governor Roy Rorer, 16 April 1990].

* Our Responses: This seems an optimistic expectation of Eastern Slope municipalities.

* Beneficiaries of such drought insurance could not afford it. At best the annualized cost of safe yield from Union Park, the water cost is about \$305 per acre foot [Dave Miller, letter to Hubert Farbes, 24 July 1990]. Many agricultural water users are unwilling to pay even \$10 per acre foot, when given the value of what they produce.

* After investing in Union Park, would the owners want to release expensive water for drought and environmental protection? At \$305 per acre-foot, a release of 20,000 acre-feet would amount to foregoing use of \$6,100,000 worth of water.

* As a practical matter drought releases from Union

Park could reach and benefit only a small proportion of irrigation in the Upper Gunnison Basin. Below the land reached lies the water storage in the Aspinall Unit reservoirs for the benefit and protection of the Western Slope. Union Park would harm, not help, this source of drought protection.

* The Upper Gunnison Basin really does not need the drought protection Union Park is supposed to provide. Already there is Blue Mesa Reservoir and Taylor Reservoir. Some agricultural consumptive water shortages do exist in the Upper Gunnison Basin [HDR Engineering Inc., Upper Gunnison-Uncompahgre Basin Phase 1 Feasibility Study, May 1989]. But, these are dealt with by water sharing and use coordination. It is less expensive and more practical. Given the value of crops produced, it is also very cost effective.

2. Proponents claim: In a dry year such as 1977, the historic release from Taylor Park Reservoir of 81,600 acre-feet could be increased to about 100,000 acre-feet with Union Park Reservoir [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our Response: However, only 20,000 acre-feet appears to be actually set aside for dry year environmental releases into a combination of the Gunnison, South Platte and Arkansas Rivers [Arapahoe County, presentation handout, April - May 1988]. This is only about 28 cfs on a year round basis and does little when spread around the three river systems.

3. Proponents claim: There is a diminishing need for water in the Upper Gunnison Basin. They note economic trends in agriculture; they claim decreasing requirements for water, they deny the consequences of more water lost to downriver states; and finally they perceive water owners looking for ways to realize a higher use and return for their water [Dave Miller, letter to William Miller et al., 16 February 1987].

* Our Response: All this would suggest less need for drought protection. However, water use is not diminishing in the Gunnison Basin. The basin's water resource is being used more and more intensely, in more and more ways, out of the stream and instream. The protection offered in the Union Park proposal is trivial in comparison to the injuries to the Gunnison Basin from headwater diversion of the much greater amounts for the project.

D. Flood Protection

1. Proponents claim: Union Park would offer flood protection to the Upper Gunnison Basin by capturing excess spring runoff and flood waters [Dave Miller, letter to Roger Morris, 29 June 1990]. The Taylor River is said to experience wide fluctuation in flow because of floods and droughts [Union Park Facts, 3 April 1990]. * Our response: This is characteristic of Western Slope streams. Physically and ecologically the streams have adapted to this. However, Taylor Park Reservoir is already present to capture flood flows at the upper end of the drainage. Already there is the 1975 Storage Exchange Agreement to smooth out Upper Taylor flows and the Second Filling of Taylor Park Reservoir application intended to also provide flow stabilization. What more can Union Park provide?

2. Proponents claim: Reported flood damage cost in 1984 was about \$500,000 for an event with a recurrence interval of 30 years and: "Based on this occurrence and more frequent smaller floods and the fact that Taylor Park Reservoir controls only a small proportion of the flow in reaches where damage

is most likely to occur, it is evident that flood control benefits, while of great value to those affected on the Taylor, will not have large monetary benefits." [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 12-7 and 12-8].

* Our response: Even Union Park could not cope with "extra ordinary" flood events. For more frequent events appropriate land use planning are a better way of dealing with such threats. For example, the 1984 flood had damage costs of only \$500,000 and a frequent recurrence interval of 30 years. While this flooding was wide spread, locations offered protection by Union Park's capability to control flood flows from the upper part of the Taylor River drainage are small in comparison. At present and because of topography, most development is appropriately outside the danger zone where protection would occur.

3. Proponents claim: Taylor Park Reservoir has a storage capacity of 111,330 acre-feet. Long-term average annual inflow into Taylor Park Reservoir is over 140,000 acre-feet, and during the period from 1977 to 1984 the flow varied from 62,500 acre-feet to 233,700 acre-feet [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our response: Since implementation of the Storage Exchange Agreement in 1975 a large portion of late season irrigation flow for the Uncompahgre Valley has come from Blue Mesa Reservoir. This has smoothed the late season flow from Taylor Park Reservoir and, in turn, benefits instream and out of stream water users.

4. Proponents claim: In a good water year such as 1984, 170,000 acre-feet of the historic release of 224,900 acre-feet from the Taylor Park Reservoir would be pumped into Union Park Reservoir [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989]. On an average year Union Park would extract less than 10% of the Gunnison River's "wasted flood waters" estimated on the basis of the Gunnison River contributing a loss annually of over 900,000 acre-feet from the Colorado's compact entitlements [Union Park Facts, 3 April 1990].

* Our responses: The extracted amount would be a much greater percentage of the flow at the headwaters location where it was withdrawn - 40% on average to the more than 75% in the 1984 year example given above. This quantity taken from the headwaters river would cause severe harm.

* More recent junior water rights in the Gunnison Basin depend on floods or higher than normal flows for satisfaction. A purpose of the Aspinall Unit and Taylor Reservoir is flood flow storage. The Union Park proposal, especially the possible withdrawals of 100,000 to 900,000 acre-feet per year, would conflict with this. Flood water stored in the Aspinall Unit of the Colorado River Storage Project goes toward meeting interstate compact requirements, as well as Western Slope needs.

* Flooding should not be eliminated - just respected. The regular reliable surges of flood waters are essential for maintenance of ecological and physical systems associated with the river, especially the highly valued and increasingly rare riparian system. In turn these systems support valued economic systems, especially those associated with recreation and the second home industry. Physical and ecological characteristics of western streams are dependent on significant variations of flow from season to season and year to year. With loss of flood water, much of economic and ecologic value would be lost. These systems and their values are not sustained by constant minimum and limited flows released from dams. For

example, optimal conditions for a naturally reproducing trout fishery require seasonal changes in flow, temperature, chemistry, turbidity, and other factors required for "triggering" lifecycle changes in the supporting food chain. As they move downstream, flood water provides benefits such as channel maintenance, fertilization, recreation, and aesthetics down through the Black Canyon and on through the Lower Gunnison and the Colorado River systems. A great proportion of these benefits would be lost.

* Withdrawal of flood water and strict stream flow control may well be detrimental to squawfish habitat from Delta to Grand Junction. More importantly it may cause environmental protection calls upon the North Fork of the Gunnison drainage.

5. Proponents claim: To achieve the intended capture of flood water in Union Park Reservoir, the Taylor Park Reservoir would have to be operated with 31,300 acre-feet of this storage capacity transferred into Union Park Reservoir in order to provide vacated capacity exclusive to flood control purposes [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our Response: Storage capacity in Taylor Park Reservoir is 111,300 acre-feet. To transfer this quantity of storage would reduce the reservoir by about one-third to the detriment of recreation. "Bathtub ring" problems in Taylor Park Reservoir would be exacerbated by rapid rises and falls of water level prior to extraction of inflows for storage in Union Park. Also with reduced volume, Taylor Park Reservoir would fluctuate more because of flushing back and forth of water from NESCO's proposed Rocky Point pump-storage hydropower project and from the Union Park project when it operates in a pump-storage mode. While Union Park's proponents recognize the problems of fluctuation in Taylor Park Reservoir attributed to the Collegiate Range project operations, they appear to neglect problems their own proposal will cause [Dave Miller, Technical Summary - Union Park vs Collegiate Range, 6 December 1989].

E. Water Yield From Union Park

1. Proponents claim: Union Park Reservoir offers an "unprecedented 2 for 1 safe yield increase" if used as a backup supply for Denver's water system according to a Corps of Engineers study, and this is "unprecedented in water engineering history [Dave Miller, letter to Hubert Farbes, 24 July 1990; Dave Miller, letter to POWER, 21 May 1990; see also Dave Miller, letter to William Reilly, 17 May 1989; Dave Miller, letter to William Miller et al., 16 February 1987]. This would reduce the safe yield cost of the project by about half [Abner Watts, letter to the Rocky Mountain News, 19 December 1989].

* Our Response: "However, since the project [Union Park] is envisioned as a dry year source, the time at which this supply would be provided cannot be determined and, hence, the revenue stream becomes too uncertain to satisfy financing requirements. The buyer of the water must therefore contract on the basis of anticipated average supply." [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 14-2]. Thus the value of the multiplier is questionable.

* This 2 for 1 safe yield "multiplier" effect of Union Park is its ability to top-up or backup a water supply system. The significance of this depends on water inventory management policy [EBASCO Services Inc. Union Park Water Supply Project Reconnaissance Evaluation Study,

October 1986, pp. 5-3 - 5-4]. A city can choose to spend enough to store enough water for a long series of dry years or choose to spend only for storing just enough water for the average year with conservation programs in place for dry years. Again, the value of the multiplier in the Union Park proposal is questionable.

2. Proponents claim: With the claimed multiplier, the yield from Union Park is expected to be 140,000 acre-feet [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989 and Dave Miller, nomination for Take Pride in America Award, 1989].

* Our response: However, the Corps of Engineer's in the Metropolitan Denver Water Supply EIS, volume VIII, indicated that the safe yield for Union Park varied from 63,000 to 111,000 acre-feet depending on operating assumptions and this yield range would only be achieved if there were no releases from Union Park to any other users except for instream flows in Taylor River and Lottis Creek (HDR Engineering Inc., Upper Gunnison - Uncompahgre Basin Phase 1 Feasibility Study, May 1989, p. 15-23). The lower end of this range assumes a 200 cfs flow below Taylor Dam, May through September, agreed to by NECO as a stipulation of their 1982 water decree for Union Park [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 4-2]. The upper end of this range requires summer flows below Taylor Dam be reduced to 100 cfs, as opposed to the Colorado Water Conservation Board minimum of 150 cfs [Arapahoe County, public handout, April-May 1988]. What are the yields; what are the plans for instream flows? Reduction in minimum instream flows is very significant throughout the Gunnison Basin.

3. Proponents claim: To store water for many years until needed in a dry cycle, the reservoir is sized at 900,000 acre-feet; but in an annual mode of operation wherein the assumed annual diversion of 60,000 acre-feet is transferred out each year for use, the storage volume needed would only be about 270,000 acre-feet [EBASCO Services Inc. Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 5-2 - 5-3].

* Our Responses: While the average annual yield reflects assumptions of stream flow commitments below Taylor Reservoir, the size of Union Park Reservoir reflects the mode of its operation. This difference is significant in many ways for the Upper Gunnison Basin. In the dry-year mode, filling the 900,000 acre-foot reservoir would take 15 years on average but draining it eastward could be at a rate in excess of 300,000 acre-feet per year [Application for Water Storage Rights, Water Division No. 4, Case No. 86-CW-226, 31 December 1986]. Expressed in another way, Union Park could move 1000 acre-feet per day to Denver when required in dry periods without need for any new regulating reservoirs on the Eastern Slope [Colorado's Union Park Water Supply Project, 8 July 1988]. More consistency and predictability in reservoir operation over the years would contribute toward achieving Union Park's claimed recreational and fishery benefits. The reservoir would be slow to fill and quick to empty.

* The 1982 power decree gives Union Park the right to fill and refill the Union Park Reservoir during flood periods to enhance Western Slope power, fish, and recreational flows [Dave Miller, letter to Aurora City Councilmembers, 14 September 1989]. Again, given the filling capabilities of a 1000 cfs pumping system, the fluctuations in both Union Park and Taylor Park Reservoirs would produce severe "bathtub ring" problems.

F. Water Availability and Downstream Commitments

1. Proponents claim: The Gunnison River is the largest "leak" of Colorado's compact entitlements and loses almost a million acre-feet of Colorado's interstate compact water to California on average, but Union Park would put to use about 8% economically for growth in the Denver Metropolitan area [Dave Miller, Gunnison County's Courageous Water Policy, 4 June 1990 and D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989]. Proponents point to Bureau of Reclamation studies in the 1950's showing 450,000 acre-feet could be exported from the Gunnison River Basin without danger to senior water rights or the environment [Union Park Facts, 3 April 1990].

* Our Responses: This may have been possible on paper then - but, there have been subsequent events and actions limiting the availability of water for the Union Park project. These include adjudication of water rights for Blue Mesa, Crystal, and Morrow Point reservoirs of the Aspinall Unit in 1960 and 1961 [Colorado River Water Conservation District, Assignment Of Water Rights, 23 October 1965] and adjudication of the "Taylor Park Pool" rights in 1974 and 1975 [HDR Engineering Inc., Upper Gunnison - Uncompahgre Basin Phase 1 Feasibility Study; Final Report, May 1989, p. 6-5].

* Upper Basin and Colorado Compact deliveries are measured by total flow, not by date of flow. Transmountain diversion is a totally consumptive use of water otherwise available to meet our compact requirements. In 1984 or 1985 the State of Colorado estimated it had 1.2 million acre-feet available for consumptive use from all of the Colorado drainages before compact calls could not be met. At another time the Bureau of Reclamation estimated 500,000 acre-feet and California water authorities estimated less than 200,000 acre-feet. What ever the number is it would appear that now is the time to inventory the resource and prioritize planned investments in it - not after the Union park and Collegiate Range projects take out 60,000 or 150,000 or more acre-feet.

* Exportation of water from headwaters, such as from Union Park Reservoir is damaging. Recognition of this gave rise to demands for basin of origin compensation. Water in the Gunnison River is used and reused many times over on its way downstream. Direct users and indirect beneficiaries from the head waters on down the stream will be severely harmed by removal of the quantities of water from the headwaters contemplated in the Union Park proposal.

2. Proponents claim: Colorado's water resource consumption is out of balance because all transmountain diversions for the Eastern Slope come from the Upper Colorado Basin [Union Park Facts, 3 April 1990]. They say the Gunnison has never been tapped with a transmountain diversion project and the Colorado River district should declare a moratorium on all diversions from the Upper Colorado Basin until beneficial uses of the Gunnison's overlooked floodflows are properly evaluated [David Miller, letter to Colorado River Water Conservation District, 27 April 1990].

* Our Response: In fact the Gunnison Basin has been tapped to a limited extent for transmountain diversions averaging 1,300 acre-feet per year into the San Luis Valley. However, the Gunnison Basin is the major source of storage of water for meeting interstate compact obligations, hence the Aspinall Unit of the Colorado River Storage Project. In addition, the near annual diversions from the Gunnison River through the Gunnison Tunnel are presently about 336,000 acre-feet per year and may increase to between 661,000 and 726,000 acre-feet [Bureau of Reclamation, Uncompahgre Valley Reclamation

Project - AB Lateral Hydropower Facility - FEIS, August 1990, pp. S-5 - S-7]. Again, direct users and indirect beneficiaries from the head waters on down the stream will be severely harmed by removal of the quantities of water from the headwaters contemplated in the Union Park proposal.

3. Proponents claim: Colorado is the only western state that has not inventoried its water resources, and developed planning guidelines for them with the result of a water development gridlock damaging the economy and creating the highest water development costs and fees in the west [Dave Miller, letter to Governor Roy Romer, 10 April 1990].

* Our responses: The state of Colorado has approved and/or encouraged storage projects which hold conditional decrees in the Greater Gunnison Basin that predate the Union Park project. All may be adversely affected by Union Park either during the next 35 years before Union Park is built or when they seek financial support. Examples are the Dominguez, Cactus Park, Fruitland, Mesa and Cow Creek projects. As a practical matter the lack of dam proposals is not the cause for a planning gridlock in water resource development, nor would the gridlock vanish with the inclusion of the Union Park proposal. Unbuilt water projects need to make sense in today's world, and Union Park does not. Gunnison River water is already committed downstream and used many times over to the benefit of the Gunnison Basin and Colorado.

* Regardless of the strict appropriation method of calculating existing water resources in Colorado, the current status of water as a resource is that various interests have now, by historical practice and social value awareness, allocated all of the state's water resources. No matter what new proposed use of water arises, it causes serious dislocation to a segment of the society which has come to depend on the existing allocated use. Complete consumptive use is, of course, that most difficult to reallocate and when such use occurs at the headwaters of a major river system, the detrimental effects to the "allocated" user are greatly magnified. To introduce now such a consumptive use as Union Park becomes more the allocation of harms and not water.

* Withdrawal of the quantities of water proposed by the Union Park would alter planning for salinity control downstream and all other water quality considerations.

* The Union Park project will have serious implications to endangered species recovery programs. It would effectively cripple use of the Gunnison River in the endangered species recovery program unless more senior rights are condemned downstream.

4. Proponents claim: The Colorado Water Resources and Power Development Authority's Phase 1 Study found a need for supplemental water to meet proposed in-stream flow requirements through the Black Canyon of about 60,000 acre-feet in the dry year of 1977 with about 40% of this amount possibly coming from a total release of 99,700 acre-feet from Taylor Park, if Union Park Reservoir was in place [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our response: Union Park has already interfered with the minimum stream flow claims in the Black Canyon and would obviously place additional non-designed and unintended storage burdens on the power production capabilities of the Aspinall Unit which, in turn, is detrimental to all of the Upper Basin states.

5. Proponents claim: Down river states get Colorado's surplus water at no cost because Colorado has not developed it for its own usage [Union Park

Facts, 3 April 1990].

* Our response: However, water originating in the Gunnison Basin does not lose its economic productivity if eventually it flows to California. As noted above, much of the water originating on the Western Slope is obligated to flow downstream; however, first Colorado gets to use and reuse it, instream and out of stream, many times before it crosses our stateline.

6. Proponents claim: Consumptive water needs on the Western Slope are declining and an outside interest can challenge any water right by technically proving underutilization or wasted water [Dave Miller, Gunnison County's Courageous Water Policy, 4 June 1990].

* Our Response: While some traditional water uses decline in some places, there are increases in non-traditional uses which are much larger - especially those associated with recreation and water quality management. Use and reuse of the water out of stream and instream sustains a complex web of economically beneficial relationships. For example, return flows and deep percolation from flood irrigation permit "subbing." One person's use and application practices sustains another's. As a practical matter water is not "wasted" in flood irrigation or lost irretrievably. Withdrawal of water at the headwaters destroys this economically and ecologically productive system of water use relationships.

G. Operational Considerations

1. Proponents claim: The Bureau of Reclamation in 1983 acknowledged benefits of Union Park in regulation and conservation of Blue Mesa complex water by capturing low value flood waters at high altitude for later release to high value purposes - irrigation and hydropower - and indeed that the Bureau may be interested in paying to developers a share of the costs of the project [Union Park Facts, 3 April 1990].

* Our response: However, very little water actually spills and it does so very seldom from the Aspinall Unit. Hydrologic modeling of the performance of the Aspinall Unit between 1906 and 1979 shows spills average 6,500 acre-feet per year when they occur, but up to 35 years pass between actual spills [EBASCO Services Inc. Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 3-2 - 3-3]. Besides these releases, water passes through the turbines producing some low value non-peak power at the Aspinall Unit, but that appears to be a function of inventory management policy rather than storage capacity limitations. Union Park is not needed to furnish hydroelectric power.

* The annual average flow at Taylor Dam is about 140,000 acre-feet and the annual average flow at Blue Mesa Dam is 1,081,000 acre-feet [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 3-3 - 3-4]. Water stored in Blue Mesa reservoir has the highest value on the Colorado River system for hydropower production because of the cumulative head between the Blue Mesa Reservoir water level and the power turbines at Havasu Reservoir. The loss of an annual average of 60,000 acre-feet of water to Union Park diversion amounts to an annual loss in excess of \$4,500,000 in power revenues from Blue Mesa through Havasu Reservoirs assuming the value of \$.05 per kilowatt hour and this may require compensation [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 5-5 - 5-6; for methodology see T. C. Brown and B. L. Harding, A Preliminary Assessment of Timber and Water Production in Subalpine Forests in Management of Subalpine

Forests: Building On 50 Years of Research, GTR RM-149, Rocky Mountain Forest and Range Experiment Station, Fort Collins, 1987, pp. 126-137].

2. Proponents claim: The long-term average annual inflow to Taylor Park Reservoir is over 140,000 acre-feet, during the period from 1977 to 1984 the flow varied from 62,500 acre-feet to 233,700 acre-feet, and in the water short year of 1977 the Uncompahgre Valley Water Users purchased 45,000 acre-feet from the Bureau of Reclamation [D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our responses: Management of water originating in the upper basin of the Taylor River is not an issue. As illustrated, the Uncompahgre Valley Water Users Association has the capability of efficiently managing their water inventory utilizing both the Taylor Park and Blue Mesa Reservoirs.

* In terms of average operational conditions the Union Park project is not viable - withdrawal on average of 60,000 acre-feet into Union Park from the average watershed yield of 140,000 acre-feet does not leave sufficient water to satisfy the Taylor Reservoir storage decree for 111,300 acre-feet.

3. Proponents claim: Evaporation losses from the high altitude Union Park Reservoir would be only one-fourth the amount lost from the low altitude Two Forks concept [Colorado's Union Park Water Supply Project, 8 July 1988]. Evaporation from the average 3550 acre surface of Union Park is estimated to be 10 inches per year for an average net loss of 3,000 acre-feet [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 3-4].

* Our response: The critical consideration is the excess of evaporation over precipitation from the reservoir surface. The sagebrush vegetation of the basin for Union Park suggests that during the ice free period evaporation is fairly high and that the estimate of 10 inches per year is too small. Publication of more recent studies done in a comparable South Park area for the Denver Water Board indicate that pan evaporation rates, measurement of the amount of water lost from a free water surface, are 28 to 37 inches from May to October [I. A. Walter, E. G. Siener and others, Evapotranspiration and Agronomic Responses In Formerly Irrigated Mountain Meadows - South Park, Colorado, vol. 1, Denver Board of Water Commissioners, Denver, Colorado, March 1990, pp. 170-179.]. This recent report suggests evaporation from the Union Park Reservoir would conservatively be about 3 times the amount anticipated earlier, given that the elevation and climate between sites is generally comparable and due consideration is given for increased evaporation caused by wave action in the large reservoir.

Consequently Union Park can expect to lose about 9000 acre-feet per year on average to evaporation which is about 15% of its average 60,000 acre-feet of inflow by diversion. Evaporative loss or shrinkage of water inventory could be severe if Union Park is operated in the dry-cycle mode of storing water over many years before release.

3. Proponents claim: Union Park Reservoir would provide massive high-altitude storage of water taken from the headwaters of a sub-basin of the Gunnison River [Dave Miller, letter to POWER, 21 May 1990; D. B. Raitt and A. W. Watts, Union Park Plan For Optimum Development Of Taylor River Water Resources, July 1989].

* Our Response: As indicated above in Item 2 of this section, high altitude sub-basins are subjected to greater variability in received precipitation than their parent basin as a whole. Dependability of flow to

satisfy the Taylor Park Reservoir storage decree is quite high, however, the dependability for Union Park's operation at the quantities contemplated is much less. It has been suggested that the Union Park Reservoir can and will perform a variety of functions. The fact that the intended combination and priority among these functions remains unclear at this time, makes review of the proposal's operating rules and their implications difficult - especially under conditions of increasing climatic variability commonly associated with the Greenhouse Effect [for discussion of operational rules see Edward Kuiper, Water Resources Development: Planning Engineering and Economics, Butterworth and Co., London, 1965, Chapters 6 through 11].

H. Environmental and Recreational Implications

1. Proponents claim: Union Park is to guarantee flows below Taylor Dan substantially higher than the minimum flows established by the Colorado Water Conservation Board [Union Park Facts, 3 April 1990].

* Our Responses: This appears unlikely. There is a commitment to a 200 cfs flow below Taylor Dan during the summer resulting in an average annual yield of 60,000 acre-feet [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 4-2 - 4-3]. However, proponents appear to contemplate reducing this and the Colorado Water Conservation Board's 150 cfs flow decree as well to produce a larger water yield [Arapahoe County, public handout, April-May 1988]. The maintenance, and indeed improvement, of flow conditions, below Taylor Dan are economically very important to the Gunnison Basin. Beginning in 1975 the Upper Gunnison Water Conservancy District has, along with the Uncompahgre Valley Water Users Association and the Bureau of Reclamation, controlled releases of water from Taylor Park Reservoir with an exchange agreement for the purpose of enhancing fisheries, irrigation, flood control, and ice control. The Gunnison District has also filed in water court for the second filling of Taylor Reservoir with purposes of environmental and economic enhancement.

* The monetary significance of flows below Taylor Dan has recently been studied. Indirect valuation studies of the Taylor River below Taylor Dan indicate that increasing the critical winter flow by 10 cfs above the Colorado Water Conservation Board minimum of 50 cfs produces an increase in the fishery and an imputed net value within this flow range to anglers of approximately \$193.00 per cfs or \$1.63 per acre foot released [David Harpman, The Value of Instream Flow Used To Produce A Recreational Fishery, Ph.D. Dissertation, Colorado State University, Fort Collins, Colorado, 1990, pp. 119-121]. This study indicated that summer releases above the present pattern contribute little additional value for the fishery, but reports on the value of increased flows for recreational and other purposes are still in the process of preparation.

2. Proponents claim: The private minimum stream flow water rights on the Taylor River benefit only the property owners along certain stream segments by having water pass by the property on its way out of the state. They say the land is posted with no trespassing signs and that the amount of water in the decreed rights is far in excess of need for rafting, fish and plants, and indeed, that it is more than the same private owners agreed to accept in decrees pertaining to the Union Park hydroelectric power rights [Dave Miller letter to Roger Morris - Editor of the Gunnison Country Times, 29 June 1990].

* Our Response: There are many owners of private instream flows on the Taylor River and in the Taylor River drainage. In 1973 individuals with

foresight tried to protect a part of the Gunnison Basin's heritage by obtaining water rights to assure instream flows on the Taylor River and its tributaries. These rights were decreed in 1974 and 1975 for recreation, wildlife protection, fish culture, heritage preservation, and stockwater purposes [HDR Engineering Inc., Upper Gunnison-Uncompahgre Basin Phase 1 Feasibility Study, May 1989, p. 6-5]. Residents, and visitors have shared in the benefits of their effort. In 1990, proponents of Union Park set out, along with proponents of the Collegiate Range project, to quash these valued rights in water court to further their own objectives.

3. Proponents claim: Union Park will enhance Gunnison's water based economy by providing excellent Lake Trout fishery in an off-river sage covered bowl and by stabilizing the current wide fluctuation in Taylor Park Reservoir [Dave Miller, letter to POWER, 21 May 1990; Union Park Facts, 3 April 1990].

* Our Response: Given the frequency and extent of fluctuation, as noted above, that would be expected in both Taylor Park and Union Park Reservoirs as a result of the Union Park proposal, fisheries in both reservoirs would be poor. There is not a need for an additional flat-water recreation resource with large "bathtub rings." The Gunnison Basin already has a sufficiency of flat water recreation opportunities and indeed one of particularly outstanding quality - Taylor Park Reservoir. Withdrawal of water by Union Park will be detrimental to this resource base. Development of a lake trout fishery in Union Park appears questionable and the project's effects in conjunction with the Rocky Point hydroelectric project would adversely impact the existing high quality fishery and other recreational usage in Taylor Park Reservoir and the Taylor River. Can the proponents quantify the value of recreation foregone because of diversions to Union Park?

* Concerns for the adverse implications upon wildlife were voiced at presentations of the Union Park and Rocky Point projects [Laura Anderson - reporter, Crested Butte Chronicle and Pilot, 27 February 1987]. The district wildlife manager for the Division of Wildlife questioned the description of the impacts from the proposed Rocky Point and Union Park projects as being "minor" and brought up concerns for elk migration routes and fawning areas for bighorn sheep. A fisheries biologist for the Division of Wildlife raised the issue of draining and filling of Taylor reservoir making it difficult to keep a major fishery going. Also the impact of powerline corridors was raised at the meeting.

* Union Park will fluctuate greatly and more erratically than most traditional reservoirs, if it is operated in the dry-cycle or topping-up mode. This causes storage in Union Park to fluctuate between about 900,000 acre-feet and 200,000 acre feet over a period of 17 years, with yearly withdrawals of often more than 150,000 acre-feet [Dave Miller, letter to William Miller et al., 16 February 1987]. This is indeed detrimental to biological conditions above and below the reservoir's water line.

I. Relations With The Gunnison Basin

1. Proponents claim: The Union Park project is to benefit the Gunnison Basin community by building a consensus rather than the traditional nonproductive infighting between historically competitive interests [Dave Miller, nomination for the Take Pride in America National Awards, 1989].

* Our response: However, proponents have undertaken to quash a sufficient quantity of established conditional water rights within the Upper

Gunnison Basin to assure a safe yield for their project, saving those conditional rights applied for by the City of Gunnison in 1981 [Agreement between Natural Energy Resources Company and the City of Gunnison, January 1987, p. 6]. This is not neighborly. More recently the proponents joined with proponents of the Collegiate Range project to quash and invalidate decreed private instream flow rights on the Taylor River which were adjudicated in 1974 and 1975.

2. Proponents claim: Participation in the Union Park project is said to provide the City of Gunnison with a value of \$50 million, for a downpayment of \$1000 and total cost of \$200,000, which includes needed storage, water rights, and reduced power fees [Union Park Facts, 3 April 1990].

* However, by resolution in February of 1990, the City of Gunnison acted to formally and expeditiously withdraw from its agreement with NESCO and Arapahoe County regarding water storage in the proposed Union Park Reservoir and to vigorously and persistently oppose transmountain diversion of Gunnison Basin water. Water and water storage space is available in Blue Mesa Reservoir five miles away for purchase from the Bureau of Reclamation and this would imply less cost and less commitment to operating expenses [HDR Engineering Inc., Upper Gunnison-Uncompahgre Basin Phase 1 Feasibility Study, May 1989, pp. 10-5 and 10-6; Bureau of Reclamation, Water Service Contracting From Colorado River Storage Project Storage Reservoirs, circa 1985].

* The City of Gunnison does not need peaking power. "The ultimate criterion of a pump-storage project is whether or not its addition to an existing power system will lower the overall cost of the system as compared to the least costly alternative addition to the system [Edward Kuiper, Water Resources Development: Planning Engineering and Economics, Butterworth and Co., London, 1965, p. 310]. Under the agreement between the City of Gunnison and proponents of Union Park, the City must pay the full cost of pumping water up into Union Park Reservoir for later release as peaking power which the City is able to purchase at half the going price. This would not lower the overall cost of the City's system.

J. Alternatives

1. Proponents claim: Union Park is offered as the ideal alternative to versions of the Two Forks project [Dave Miller, letter to Hubert Farbes, 24 July 1990; and Dave Miller, letter to William Reilly, 17 May 1989].

* Our response: While the 2 for 1 multiplier is pointed out by proponents as a cost advantage, its value is questionable. A buyer would be expected to purchase on the basis of anticipated average supply - 60,000 acre-feet per year [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, p. 14-2]. Various component costs can be included or taken out of the proposal to arrive at the unit cost per acre-foot of annual yield which is \$4200 at its lowest and \$8600 at the high end [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 11-1 - 11-4]. Costs may ultimately be on the high side because of a buyer's inability to utilize all the concepts packaged into the proposal.

* Other viable and sensible alternatives to the Union Park proposal do exist and include conservation and water sharing within the Denver metropolitan area. If transmountain diversion must be undertaken in Colorado, the Colorado Aqueduct Return Project (- CARP-) offers many advantages - including reliability, cost, and basin of origin protection -

over Union Park for the Gunnison Basin, the Western Slope, and Colorado as a whole [Ralph Clark, Colorado Aqueduct Return Project, January 1989 and March 1990].

2. Expansion alternatives for the Union Park project range up to a project capacity of an annual average 210,000 acre-feet taken out of the Upper Gunnison Basin principally by pumping water out of Blue Mesa Reservoir [EBASCO Services Inc., Union Park Water Supply Project Reconnaissance Evaluation Study, October 1986, pp. 12-3 and chapters 15 - 19 and Arapahoe County, presentation handout, April - May 1988].

* Our response: Such plans would be more devastating to the Gunnison Basin than the proposal discussed above. It appears that the initial application to the water court for storage rights is only the beginning.

MEMORANDUM

Date: September 10, 1990

To: Legislative Interim Committee on Water
Tilman Bishop, Chairman

From: City of Grand Junction
County of Mesa

Re: TESTIMONY before the Committee, September 12, 1990
Transmountain Diversions from Gunnison River Basin

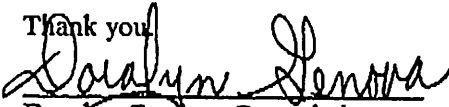
On June 4, 1986, the City of Grand Junction filed in opposition to an application for water rights of the City of Aurora in the Gunnison River Basin. Since 1986, the City of Grand Junction and Mesa County, along with the Colorado River Water Conservation District, the Upper Gunnison Water Conservancy District, and other western slope water users have participated in actions concerning Aurora's filings and Arapahoe County's and Natural Energy Resources proposed Union Park Project.

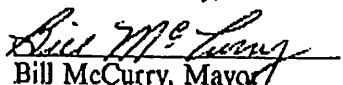
Our position has been and is unequivocal opposition to any proposed transfers of water from the Gunnison River Basin.

1. Is there unappropriated water available for appropriation? The City of Grand Junction has major conditional and absolute decrees on the Gunnison River that could be affected by appropriation and removal of water from the Gunnison River Basin.
2. Are the Aurora and Natural Resources applications made for the purpose of speculation in the sale of this water?
3. What are the effects of appropriations and transfer of water from the Gunnison River Basin on water quality within the Grand Valley? Water quality is a major issue within the Grand Valley. Though the salinity control programs address water quality leaving the Valley, our concern is the long-term decline in water quality coming into the Grand Valley.
4. Finally, the issue of a rounded economic development program for Mesa County includes a strong recreational component which is based, in part, on a vibrant recreational base within the headwater counties. The availability of stream resources within reach of Mesa County visitors and residents is important. The Taylor River drainage is unique and is known world-wide for its scenic and recreational values.

We hope the Interim Committee considers these comments in their deliberations and understands that Mesa County and the City of Grand Junction are united on this issue.

Thank you


Doralyn Genova, Commissioner
for Mesa County, Colorado


Bill McCurry, Mayor
for City of Grand Junction, Colorado

WRITTEN TESTIMONY TO
LEGISLATIVE INTERIM COMMITTEE ON WATER

Submitted by
Gunnison Basin POWER, Inc.

September 12, 1990

We respectfully urge and encourage the members of the Colorado General Assembly to seek ways, through law and/or policy:

1. To better reflect the values of instream waters and their vital role in maintaining Colorado's scenic beauty, fishery, wildlife, and thus, the state's present economic realities, including its growing recreational tourism industry.
2. To encourage broader public involvement and participation in water resources planning and decision-making at all levels, including, first of all, election of water conservation and conservancy board members, as is appropriate since they are funded by property tax levies and assume important public responsibilities.
3. To consider the interests of the people, present and future, of the river basins from which water is exported; such protection to include, if appropriate--but not to be limited to--provisions for compensatory storage.
4. To encourage (or establish, if need be), a process and criteria for evaluating effects of water appropriations and transfers on the general welfare or public interest.
5. To give some priority to "conservation" of our state's water, rather than just project development, in order that maximal efficiency measures of all types are encouraged and implemented, in order to produce "new" water through better management.

In addition, we respectfully urge:

1. Please do not amend law to prohibit the Colorado Water Conservation Board from acting, as it deems necessary, on a case by case basis regarding project proposals which would entail the inundation of state protected minimum instream flow segments. (POWER testified on this matter at CWCB hearings).
2. Please do not act to prohibit the Colorado Water Conservation Board from accepting appropriate contributions of conditional rights for instream flows when warranted, as, for example, in the case of the Chevron/Nature Conservancy donation to help clear the way for the wild and scenic designation of the Gunnison River Gorge segment as supported by the local governments of that region.

September 1990

COLORADO WATER STATUTE IS HELPING CALIFORNIA

One of the principal changes in the Colorado law of conditional water rights in recent years was the addition of § 37-92-305 9(b). 9(b) requires, for the first time, that a claimant for a conditional water right prove that waters "can and will" be diverted and that the project "can and will" be built.

Though seemingly simple on its face, the so called "can and will doctrine" has proven to be a can of worms in the Water Courts, and in a manner which has given water project opponents an undue advantage, which we believe was not intended.

I will handle the simplest problem first. The "can and will" doctrine has been held to require that the availability of unappropriated water be demonstrated. Town of Florence. This, in itself, is not an unusual engineering exercise. Unfortunately, project opponents are now arguing that the Water Courts are bound to assume that all currently decreed conditional rights will be built, and that even in our most water-rich divisions, that no water is legally available. This argument is of great benefit, of course, to California and to Arizona, and a net loss to Colorado.

The basis for this bizarre argument is the "can and will" test itself; project opponents argue that because of findings previously made by the Water Courts in each and every conditional rights case, that everyone on the river is legally bound to assume that every project will be built in addressing their own water availability. This, of course, has never been true, is not true now, and Colorado is suffering for it. Historical experience has shown that only a fraction of conditionally decreed projects are actually built. Qualified engineers assessing water availability should not be forced to assume that every project which has a conditional decree will be built.

The larger problem with "can and will" is that no guidance is given as to what an applicant must prove in Court as far as future project construction. To the extent that it means that an applicant must prove its general financial capabilities, its right to condemn, its general ability to secure permits, etc., there is no insurmountable obstacle. But that is not how "can and will" is being used by project opponents and by self-styled environmentalists. They use it as a club to stop all new projects.

They maintain that an applicant must demonstrate in Water Court that it will secure each of a list of permits and contracts which may be needed for project construction, many of which will not be applied for for years, or even a decade or more. They argue that condemnation actions be initiated before filing in Water Court, and that other land acquisition be complete before a conditional decree can be obtained. There is no limit to the list of items large and small which they

maintain an applicant must prove today in Court no matter how speculative and premature the issue is.

For example, if a pumping plant is to be installed on Federal land, how do you prove that you will get a permit or permits when the facility may only be preliminarily designed, for which no permit is yet applied for, or which could not yet be applied for, for which an Environmental Impact Study has not been prepared, and which will not be prepared until a permit is actually applied for?

The answer by a project opponent is simple. No matter how much an applicant has done, it is not enough, or it is the wrong thing altogether. Every municipality with a large project must now fight charges that it is a speculator, or that it could not build its project, 5, 10 or 20 years down the road, for any of a hundred hypothetical reasons.

This is a complete reversal of 100 years of law. An applicant needs the certainty of a decreed conditional water right to proceed with full engineering, permit applications, contracts, Environmental Impact Studies, and the like. We now have a Catch-22: the only safe way to file in Water Court is to have all your permits, land acquisitions and contracts in place when you go to Court. FWS Land & Cattle Co. As anyone with any experience knows, this is impossible, as a condemnation powers and permit applications may require the existence of a decreed water right. The completion of final engineering, which is necessary for the permit process, requires that you know how much water you will be handling, in other words, the decreed amount.

Project opponents now argue that the Legislature has decreed the dawning of a new age of conservation in which no new water supply projects will be built. This theory is short-sighted and dangerous, and Colorado will be the big loser. We don't believe this is what the Legislature intended, and this damage must be undone if our economy is to prosper in the long-term.

John R. Henderson
Colorado Attorney

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

September 14, 1990

Senator Tillman Bishop
Chairman, Legislative Committee on Water
c/o Legislative Council Staff
State Capitol Building
Denver, CO 80203

Dear Senator Bishop:

As a representative of the private sector with extensive water management experience, we respectfully request that your committee sponsor the enclosed State Water Planning Bill during the next legislative session.

We sincerely believe a consolidated state water planning process is long overdue, and one of the most important legislative needs in Colorado's history. We are also convinced that your other pending water bills can be better staffed, formulated, and reviewed within the framework of a formalized planning process.

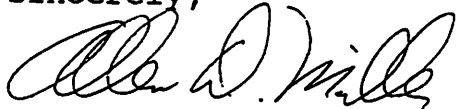
The enclosed article, Colorado's Water Management Crisis, explains the need and urgency for state water planning.

The enclosed paper, Colorado Water Statute Is Helping California, is a good example of how unplanned, piecemeal legislation is inadvertently damaging Colorado's competitive ability to conserve water for its future environmental and economic needs.

If Colorado does not soon adopt an efficient process to resolve its growing internal water conflicts and confusion, our vital water resource decisions will surely be determined more and more by federal agencies and the more unified down river states.

Thank you very much for your thoughtful consideration.

Sincerely,



Allen D. (Dave) Miller
President

/tjm

Encls: 1) Draft Colorado Water Planning Bill
2) Article, Colorado's Water Management Crisis
3) Paper, Colorado Water Statute Is Helping California

cc: Colorado legislators and water management agencies

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

September 14, 1990

Ms. LaJuana S. Wilcher
Assistant Administrator For Water
United States Environmental Protection Agency
401 M Street
Washington D.C., 20460

RE: Two Forks Veto

Dear Ms. Wilcher:

The Metro Denver Water Provider's slide presentation, Hidden Impacts Of Two Forks Veto, was prepared for your recent Denver visit. The presentation is well done, but is based on the false premise that a Two Fork veto is a threat to Northern Colorado agriculture.

EPA files show there are several viable ongoing alternatives that were improperly screened from the EIS. None of these alternatives are a threat to agriculture. The City of Thornton's City-Farm Recycling Project is often cited as a threat, but this concept is designed to return 100% of the water to the same diversion point. There is no reason to dry up Northern Colorado if Two Forks is denied.

The argument that a veto will destroy Metro cooperation is also a "red herring". Two Forks cooperation was based on a false notion that Colorado had no other reasonable options. In fact, there are several promising alternatives that were improperly discounted, but potentially far less damaging. The major "overlooked" alternatives currently being pursued include Arapahoe County's Union Park Project, Thornton's City-Farm Recycling, Denver's Green Mountain Pump Back, and San Luis Ground Water. If all of these projects are built, the total impact would be less than Two Forks, and the yield would triple.

Two Forks is the result of political momentum created by skillful promotion of old water rights in a state water planning vacuum. In Colorado's market based water allocations system, state water management agencies could not evaluate alternatives within the state's overall water supply and demand situation. Hopefully, Colorado's water laws will soon be supplemented with some water planning.

We strongly recommend that EPA's veto includes assistance to Colorado in the evaluation of its water supply options. The veto will facilitate real cooperation by opening the process to objectivity.

Sincerely,



Allen D. (Dave) Miller, President

/tjm

encl. Letter on state water planning legislation, 9/14/90.
cc: Interested parties.

POWER
9/5/90

Butch
This was A
FAX TO
SERVICES.
WILL be

SECRETARIAL
Lorna gave it to me
back Sun. eve.
Betsy

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

September 5, 1990

Senator Tillman Bishop
Chairman, Legislative Committee On Water
C/O Legislative Council Staff
State Capitol Building
Denver, Colorado 80203

Dear Senator Bishop:

Per your request at the Committee's August 24th hearing, copies of our Union Park briefing slides are enclosed for distribution to your committee members.

As pointed out in our briefing, the Union Park Water Conservation Project's massive high altitude storage will:

- 1) Satisfy Metro Denver's future growth for about half the safe yield cost of Two Forks.
- 2) Help correct the gross imbalance in water usage between the over depleted Upper Colorado Basin and the wetter, untapped, and under utilized Upper Gunnison Basin.
- 3) Provide supplemental water for the river basins and wet lands of both slopes during the critical drought cycles when local economies and environments are endangered.
- 4) Help reverse the historic devisiveness that has prevented Colorado from conserving its entitled water before it is permanently lost to the faster growing states who are efficiently planning their water future.
- 5) Enhance the Gunnison's ranching and recreation economies by guaranteeing adequate river flows, stabilized reservoirs, and additional world class fishing during the worst drought cycles.

I would appreciate the opportunity to give our views on the urgent legislation required to achieve state water planning, during your committee's October hearing.

Thank you for your consideration.

Sincerely,



Allen D. (Dave) Miller
President

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

August 16, 1990

Mr. Hubert A. Farbes, Jr.
President, Denver Water Board
1600 W. 12th Avenue
Denver, CO. 80254

Re: Union Park Alternative To Two Forks Dam

Dear Mr. Farbes:

Thank you for your telephone call today in response to my July 24th letter.

I am sorry, but I can not agree with your view that a Denver Water Department evaluation of the Union Park Water Conservaton alternative should be deferred until EPA rules on your smaller Two Forks counterproposal.

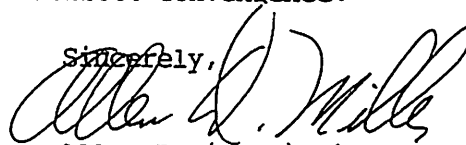
Union Park is one of the major structural alternatives identified by EPA's staff that was improperly excluded in the EIS from detailed consideration. This alternatives oversight is one of the basic legal reasons for the pending Two Forks veto. The continued "stonewalling" of a superior alternative in favor of a smaller, less efficient Two Forks would only compound the earlier travesty. Even the Corps of Engineers' belated analysis confirmed Union Park's unprecedented 2 for 1 hydrology that gives it major yield, cost, and environmental advantages over any size Two Forks.

Over the past several years the Metro Denver Water Providers have chosen to follow the Denver Water Department's leadership in the single minded pursuit of an obsolete project that has proven to be the most expensive, environmentally damaging option. Now, instead of pursuing an even less efficient variation, the Department bears an urgent moral responsibility to help find an economical, environmentally sound, water alternative for Metro Denver's citizens.

Arapahoe County and the City of Aurora are already cooperating on developing the best water supply option from the wetter, untapped, overlooked Gunnison Basin. The engineers who have objectively evaluated Union Park's massive, high altitude, off-river storage, know it is the ideal answer for West and East Slope drought protection, and Metro Denver's water future. The basic reason Arapahoe County has not formally offered Union Park as an alternative to Two Forks is to avoid being labeled a Metro spoiler before the veto is final.

To help with the Denver Water Department's long overdue decision to evaluate the Union Park alternative, I would be honored to provide an informative presentation for your board at its earliest convenience.

Sincerely,



Allen D. (Dave) Miller
President

ADM/bm

cc: Denver City Council Members, EPA (Ms. LaJuana Wilcher), Arapahoe County.

Times forum

Cooperation is necessary for state's water future

The front page of the July 25th *Gunnison Country Times* reported that cooperation between regions is the key to Colorado's water future. This theme was expressed by most speakers at the 15th annual Colorado Water Workshop.

However, on page 2 the ghost writer for POWER's weekly Taylor Talks column continues to attack past and present city of Gunnison officials for cooperating with the Union Park Water Conservation Project. Union Park's large, high-altitude storage concept is specifically designed to share a small percent of the Gunnison's surplus flood waters with dryer populated areas, while providing needed drought protection for Gunnison's water-based economy.

POWER's founder may be well-meaning, but her uncompromising slogans and tactics are misleading the public, intimidating local political leaders and damaging professional careers.

The democratic process would be better served if POWER's leadership would stop questioning the loyalty of anyone who is not bound to the selfish slogan of "not one drop over the hill." Instead, POWER's leaders should consider some of the historical and technical perspectives of those who have more water management experience.

For example, during the 1950s, the Bureau of Reclamation conducted detailed studies that identified up to 450,000 acre-feet of surplus Gunnison flood waters that could be diverted out of basin without impacting senior Gunnison water rights. In 1974 a study by Morcan Engineering, Inc., of Delta recommended that the city of Gunnison construct a water storage capability. Water Resource Consultants, Inc., of Gunnison conducted a similar study in 1981, and as a result, the city now has reservoir decrees on the Taylor and East rivers, as well as Antelope Creek.

In 1982 the founders of Natural Energy Resources Company (NECO) decided to defer the transmountain phase of its Union Park Project until the demand and politics were clearer. The climate improved somewhat in 1984 when prominent West and East Slope leaders formed the Colorado Alliance to cooperate on water storage projects to save the state's Colorado River Compact entitlements before these waters were permanently forfeited to California and Arizona. A special state water development sales tax was being proposed, and the Alliance's initial goal was to construct a 250,000 acre-feet reservoir on the West Slope that could be used for recreation, and diversion of 50,000 acre-feet to the East slope.

In late 1985, the Gunnison representative on the Colorado Water and Power Authority (Dick Bratton) encouraged NECO to sell its Union Park Project to the Authority. The intent was to use Union Park as a cash generator to construct recreation reservoirs for the West Slope. Dick indicated that 50,000 acre-feet would be consistent with the Alliance's objective and a politically acceptable amount for export from the Upper Gunnison. Although the Authority declined NECO's proposal, it did initiate the Phase I Upper Gunnison Water Study to evaluate alternative water and power export projects to generate cash for enhancing the Upper Gunnison's water-based economy. Phase I was conducted at the request of the Upper Gunnison River Water Conservancy District, the Uncompahgre Valley Water Users Association, and the Colorado River Water Conservancy District.

Unfortunately, most of the study's funds were politically wasted on trying to justify a Gunnison controlled diversion direct from the existing Taylor Park Reservoir. It was only after the Alliance's

actions, Bratton's encouragement, and the Gunnison District's initiation of Phase I that NECO decided the time was right to apply in water court for Union Park's diversion rights.

In late 1986 the city of Gunnison council members voted to purchase some Union Park water rights, storage and power from NECO. This purchase had a total 1986 value of approximately \$50 million, and the cost to the city was only \$2,000 down and \$198,000 upon construction. In 1988 NECO sold Union Park and its contract with the city of Arapahoe County for \$2.2 million. This was an extraordinary coup for the city. Unfortunately, in early 1990 a new city council caved in to disruptive political tactics from POWER and Rep. Scott McGinnis. Arapahoe County has not released the city from its contract obligations.

If POWER wants to hang someone for Union Park, it should look to the players involved in these historical facts. It should also blame geography for making the Upper Gunnison the wettest, untapped water area in Colorado.

POWER's uncompromising stance "not one drop over the hill" is a far cry from inter-region cooperation based on reasoned analysis of Colorado's water supply and demand situation. Instead of inflammatory slogans and unfair attacks on the loyalty and professional integrity of public officials and advisors, POWER should try to specifically refute Union Park's extraordinary technical claims that the project will enhance the Gunnison's environment and water-based economy.

In the meantime, Gunnison's elected officials should have the courage to resist unreasonable political tactics from a few uninformed activists.

Dave Miller
NECO president

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

August 27, 1990

Mr. Hubert A. Farbes, Jr., President
Denver Board of Water Commissioners
1600 W. 12th Avenue
Denver, Colorado 80254

Re: Union Park Alternative To Two Forks Dam

Dear Mr. Farbes:

From your August 23rd reply to my August 16th letter, it is apparent you are being misinformed regarding the relative merits of Two Forks and the Union Park Water Conservation Project.

Arapahoe County's latest industry supplied estimates indicate Union Park's construction costs would be \$334 million. Allowing 20% for contingencies, 15% for engineering and administration, \$6 million for environmental mitigation, and \$7 million for fees and owner's costs, the total 1989 development cost would be \$464 million.

The Corps' hydrology modeling has confirmed when Union Park is used as drought backup storage for Denver's existing reservoirs, an average 60,000 acre feet from the untapped Gunnison Basin can increase Metro Denver's safe annual yield by 120,000 acre feet. This is 20% more than Two Forks. The unprecedented 2 for 1 "multiplier effect" is what gives Union Park an annualized yield cost of about half that of EPA's latest \$595 per acre foot estimate for Two Forks.

Your point on the uncertainty of Union Park's water rights is not valid. The Denver Water Department's 20 year water rights battle for Two Forks was quickly resolved by negotiation in a few days shortly before the Corps' release of the Draft EIS. The water rights logjam was broken when the Department finally agreed to pay the Colorado River Water Conservancy District for West Slope compensatory storage. These very high mitigation costs were inexplicitly and illegally excluded from all Two Forks studies. The River District also soiled its own nest by agreeing to the further over depletion of the Upper Colorado Basin, while its wetter, untapped Gunnison Basin continues to lose nearly a million acre feet of Colorado entitled water to the down river states.

Union Park's water rights are on a much sounder footing than Two Forks for an equitable negotiated settlement based on **balanced** use of Colorado's water resources. Union Park is a multipurpose West Slope compensatory storage site that can be flexibly managed to provide needed drought protection for the river environments and wet lands of both slopes. For example, Union Park's massive, high

altitude storage can guarantee the doubling of the Colorado Water Conservation Board's minimum flows on the Taylor River during the worst drought cycles, while also providing an average 60,000 acre feet for Metro Denver. Its remote, off-river, sage covered site is truly unique, and far less objectionable to the environmental community. Union Park's cyclic storage will substantially enhance the Gunnison's water based economy by providing a world class Lake Trout fishery, and stabilizing the drastic fluctuations in Taylor Park Reservoir and the Taylor River. The innovative combining of advanced pumped storage technology with a naturally ideal reservoir site is what gives Union Park its unprecedented advantages.

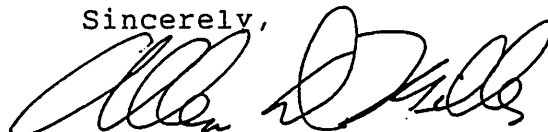
In short, Union Park is probably the most efficient, environmentally sound, multipurpose, water conservation project ever conceived -- especially in this new age of environmental enlightenment. Except for a last minute token review, at our insistence, the Metro Denver System Wide Analysis completely overlooked the detailed government studies on the Gunnison water source for East Slope growth. Two Forks objectors would have a field day in court with this illegal oversight. Even if EPA were to reverse its expected veto of your 25 year Two Forks application, your board would still be morally and legally obligated to consider the viable ongoing alternatives that were "overlooked". The detailed EIS was effectively and improperly limited to those options that could be controlled by the Denver Water Department's water rights. These rights were secretly acquired in the Upper Colorado and South Platte Basins over the last 50 years with only one long-range concept in mind.

As board members of a powerful public entity, your concerns and allegiance should surely be with the public -- not with the managers who have spent a lifetime promoting a single outmoded idea that has proven to be the most costly, environmentally damaging option.

Because of the urgent need to minimize further waste of the state's water and the public's funds, we again request that the Denver Water Department conduct an immediate, objective, preliminary analysis of Union Park. We stand ready to assist with briefings and engineering assistance.

Thank you for considering this critical Colorado water issue.

Sincerely,



Allen D. (Dave) Miller, President

ADM/bm

cc: EPA, Denver Council Members, Metro Denver Water Providers, Arapahoe County, Colorado officials and Legislators.



W. H. MILLER, Manager

Board of Water Commissioners

1600 W. 12th Avenue Denver, CO 80254 Phone (303) 628-6000
Telecopier No. (303) 628-6509

HUBERT A. FARBES, JR., President
MALCOLM M. MURRAY, 1st Vice-President
MONTE PASCOE
DONALD L. KORTZ
MS. ROMAINE PACHECO

August 23, 1990

Allen D. (Dave) Miller, President
Natural Energy Resources Company
P.O. Box 567
Palmer Lake, Colorado 80133

Re: Correspondence dated July 24 and August 16, 1990
Regarding Union Park Proposal

Dear Mr. Miller:

I have received your letter of August 16, 1990, and as promised during our telephone conversation, have discussed with other members of the Denver Water Board your request for a personal presentation on the Union Park proposal.

First of all, let me correct your August 16 letter regarding my alleged "view" on evaluation of your Union Park proposal. I advised you that, consistent with the Board's April 1989 Policy Statement, it is prepared to consider any legitimate proposals by its contract distributors or other third parties for utilization of Denver's system in the delivery of water supplies. However, Denver is committed by its agreement with many other project participants throughout the metropolitan area to pursue its 404 permit application for and with respect to the Two Forks project. It would be inappropriate to, and inconsistent with those agreements that this Board undertake or promote another major water development project at this time. You are badly mistaken in your assumption that the Denver Water Board may, now or in the future, "evaluate" the Union Park proposal or some other water project as an "alternative" to the present 404 permit application. The Denver Water Board has not made any policy determination as to whether, in the event its existing 404 permit application is vetoed by the United States Environmental Protection Agency, the Board will undertake or promote any other major water storage project.

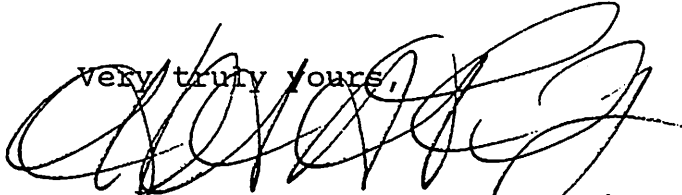
I also take strong exception to your description of the Board and Department conduct as "stonewalling" the Union Park proposal. An objective review of the Union Park proposal by the Army Corps of Engineers, in the context of the systemwide and site specific EIS process, has demonstrated your proposal to be an inferior, not a superior alternative to other projects evaluated by or recommended for consideration (for the Denver metropolitan area) by the Corps.

Allen D. (Dave) Miller, President
August 23, 1990
Page 2

One of the more obvious and apparent reasons for the Corps' conclusion is the fact that Union Park proponents had not obtained conditional water rights, properly decreed under Colorado law, which entitle them to divert the waters identified by this proposal. To my knowledge, you still have not resolved this rather elemental impediment to development of this proposal.

The members of the Denver Water Board have reviewed your written presentation of July 24, 1990. The Board members are also familiar with the variety of documentation you previously presented, during the EIS process, regarding the Union Park proposal. At this time, the Board has concluded there is no need or good purpose served by further presentations from you regarding this proposal.

very truly yours,



Hubert A. Farbes, Jr., President
Denver Board of Water Commissioners

HAF/hc

cc: Members of the Denver City Council
Members of the Denver Water Board
Mr. William H. Miller, Manager
Denver Water Board

Testimony Before
Legislative Interim Committee On Boards And Commissions

by

Allen D. (Dave) Miller, President
Natural Energy Resources Company

August 15, 1990

I am president of Natural Energy Resources Company testifying for the private sector.

Since 1982, our company has been developing two major water projects in Colorado. Our \$ billion, 1,000 megawatt, Rocky Point Peaking Power Project is scheduled to come on line in 1997. We have recently sold our Union Park Water Conservation Project to Arapahoe County, and this project has the potential of being a lower cost alternative to Two Forks Dam. It also has substantial drought benefits for the environments of both slopes.

My testimony is related primarily to Colorado's organization for managing its vital water resources.

Historically, most water development in Colorado was done by private initiative. However, the process has become so uncertain and complex, there are very few private companies willing to invest in Colorado's water future. The situation is almost as difficult for public entities. Although Colorado's high topography generates much of the water for the West, we paradoxically have the highest water development costs and fees in the region.

From our perspective, we believe the Colorado Legislature is largely responsible for the state's water development quagmire. We also believe there is a way to cure our water paralysis, if the Legislature is willing to take some bold corrective measures, i.e.

1. Too Many Agencies Colorado has a proliferation of water

boards, authorities, districts, and offices, with overlapping responsibilities for planning and managing its water. We recommend a special legislative task force to clearly define specific functions and reduce the number of agencies involved in water decisions. As a starter, the functions of the recently formed Colorado Water Resources And Power Development Authority should be returned to the Colorado Water Conservation Board and the State Engineers Office.

2. **Too Many Attorneys** About 70% of the nation's water attorneys practice in Colorado's highly inefficient water management system. This group dominates the state's water management agencies. Attorneys are not trained to efficiently conceive, plan, and develop water resources in the public interest. New legislation should be enacted that would require more engineers and water resource specialists to head and man the state's water management agencies. Water attorneys should be used more as technical advisers for our agencies, instead of managers and board members.

3. **Not Enough Planning** Colorado is the only Western state without some sort of state water planning and policy effort. The charters of all of our water agencies require planning, but in reality none do it for fear of upsetting one special interest or another. The proposed Two Forks Dam is probably the best example of ineffective state water planning. None of our state agencies evaluated Two Forks within the context of the state's overall water resources and demand picture. As a result, we continue to overdeplete the Upper Colorado Basin while better water sources, such as the untapped Gunnison Basin, are not considered. Instead of planning in the public interest, water rights are the primary driving force in Colorado. The Legislature should initiate a definitive state water planning and policy effort. This effort should be carried out by a special commission of water resource experts, who are not representing any special interest group or region.

Thank you for your consideration.

(719)481-2003



Betsy Bearden

Wright Water Engineers, Inc.

DENVER OFFICE
2490 West 26th Ave., Suite 100 A
Denver, Colorado 80211
(303) 480-1700

GLENWOOD SPRINGS OFFICE
818 Colorado Avenue
P. O. Box 219
Glenwood Springs, Colorado 81602
(303) 945-7755
Denver Direct Line: 893-1608

August 3, 1990

Mr. Charles T. Reeder
7774 South Niagra Way
Englewood, Colorado 80112

Re: Engineering Report Concerning Water Availability and Economic Analysis
of Bertha Gulch Tunnel Diversion

Dear Mr. Reeder:

Enclosed please find a copy of our engineering report investigating water availability for the proposed Arapahoe County project diverting through the proposed Bertha Gulch Tunnel located on and near the Rainbow Services property. Included in this report is a preliminary economic analysis concerning the feasibility of the Bertha Gulch Tunnel diversion as compared to pumping from Taylor Park Reservoir.

Wright Water Engineers has enjoyed preparing this report for you. We especially want to thank you for your cooperation and assistance during our recent field visit.

If you have questions or concerns involving this report, please contact me.

Very truly yours,

WRIGHT WATER ENGINEERS, INC.

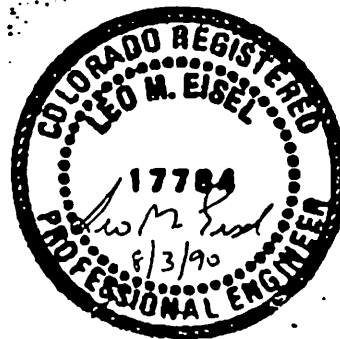
By

Leo M. Eisel, Ph.D., P.E.

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**ENGINEERING ANALYSIS OF WATER
AVAILABILITY FOR PROPOSED
ARAPAHOE COUNTY PROJECT
AND PRELIMINARY ECONOMIC
ANALYSIS OF BERTHA GULCH
TUNNEL DIVERSION PROJECT**

**PREPARED FOR:
RAINBOW SERVICES, INC.**



**PREPARED BY:
WRIGHT WATER ENGINEERS, INC.
ENGINEERING CONSULTANTS
DENVER, COLORADO**

AUGUST 1990

TABLE OF CONTENTS

<u>Description</u>	<u>Page</u>
INTRODUCTION	1
WILLOW CREEK HYDROLOGY	1
WATER AVAILABLE FOR DIVERSION	3
Water Available in Cases 86CW202 and 86CW203	8
PRELIMINARY ECONOMIC ANALYSIS	8
PRELIMINARY CONCLUSIONS	11
APPENDIX A - WILLOW CREEK BASIN	
WATER RIGHTS TABULATION	
APPENDIX B - GUNNISON COUNTY ELECTRIC ASSOCIATION	
INDUSTRIAL RATE TARIFF	

INTRODUCTION

The general purpose of this report is to investigate water availability for diversion from Willow Creek and Shingle Creek at the proposed diversion points for Arapahoe County's Union Park Reservoir project diverting through the proposed Bertha Gulch Tunnel. This collection system would divert from points on Willow Creek and its tributary Shingle Creek approximately one mile north of Tincup, Colorado. These points of diversion are described in the application for conditional water rights in Case No. 88CW178. The specific purposes of this report are:

- o To analyze the estimated volumes of water which could be available for diversion by the Arapahoe County project from these proposed points of diversion; and
- o To determine if sufficient water is likely to be available to make this proposed tunnel and collection system an economically feasible alternative to pumping all water from the existing Taylor Park Reservoir to the proposed Union Park Reservoir.

WILLOW CREEK HYDROLOGY

The Willow Creek basin upstream from Taylor Reservoir has an area of approximately 60 square miles. The portion of Willow Creek basin upstream from the proposed Arapahoe County point of diversion near Bertha Gulch is approximately 27.6 square miles in area as measured by Wright Water Engineers. Measurements by George Palos (Union Park Hydroelectric Project Hydrology For Water Right Application, Case No. 82CW340, August 1983) for the National Energy Resources Company indicate an area of 23.7-square miles. The Willow Creek watershed is a typical subalpine Rocky Mountain watershed with an average elevation for the 27.6-square mile watershed of approximately 10,900 feet.

The Colorado Water Conservation Board (CWCB) has an instream flow filing on Willow Creek for the reach from West Willow Creek, near Tincup, Colorado downstream to the confluence of Willow Creek and Cow Creek. This instream flow filing is for 6 cfs year-round and is described in Case No. 87CW255 with a priority date of October 2, 1987.

An instream flow water right is also held by the Colorado Water Conservation Board for the reach of Willow Creek from its confluence with Cow Creek downstream to Taylor Park Reservoir. This filing is for 15 cfs year-round and was decreed in Case No. 74W-2375 and has an appropriation date of September 19, 1974. Both of these instream flow filings are senior to the conditional water rights filing by Arapahoe County for the proposed diversion at Bertha Gulch in Case No. 88CW178.

Limited streamflow data are available for Willow Creek. The only available streamflow gaging records are for the period from 1929 through 1934, for a gage at Taylor Park, Colorado. This gage was located approximately two miles upstream from the present Taylor Park Reservoir. As shown in Table 1, the prorated historical streamflow for the 27.6-square mile watershed based on the historic gaging records at Willow Creek at Taylor Park, Colorado is approximately 8,400 acre-feet per year.

**TABLE 1
ESTIMATED FLOWS FOR WILLOW CREEK BASIN
ABOVE ARAPAHOE COUNTY POINT OF DIVERSION**

<u>Gage</u>	<u>Gage #</u>	<u>Watershed Area (Square Miles)</u>	<u>Watershed Mean Elevation (feet)</u>	<u>Period of Record</u>	<u>Flow From 27.6-Square Mile Willow Creek Watershed (acre-feet/year)</u>
Willow Creek at Taylor Park, Colorado	0910800	59.3	10,910	1929-34	8,400
Texas Creek at Taylor Park, Colorado	14020001	40.2	10,940	1930-34, 1988	19,630
CWCB estimated flows for Willow Creek above Cow Creek for Case No. 87CW255	--	31.8	11,026	--	23,980

Because of the relatively short duration of the historical gaging records available for Willow Creek, additional gaging records from Texas Creek at Taylor Park, Colorado were obtained and streamflow data from this watershed were also prorated to the 27.6-square mile Willow Creek watershed. These flow records are included in Table 1.

Also included in Table 1 are estimated flows for Willow Creek above Cow Creek prepared by the Colorado Water Conservation Board in Case 87CW255. The CWCB prorated average flow for the 27.6-square mile watershed above the proposed Arapahoe County point of diversion is 23,980 acre-feet per year. The CWCB estimated flows are virgin flows and do not incorporate depletions caused by diversion of existing water rights in the Willow Creek basin. Consequently, the CWCB estimated flows can be expected to be higher than the historical gage flows which do incorporate the effects of historical depletions resulting from diversion of water rights.

The estimated flows from the 27.6-square mile Willow Creek basin upstream from the proposed Arapahoe County point of diversion in Table 1 demonstrate only the physically available and not the legally available flows for diversion. In order to determine the legally available flows that would be available for diversion by the water rights applied for in Case No. 88CW178, it is necessary to determine the frequency and duration of periods when the junior rights applied for in Case No. 88CW178 would be in priority and could divert. This determination requires extensive analysis and is discussed below.

WATER AVAILABLE FOR DIVERSION

The Arapahoe County proposed diversion at the Bertha Gulch Tunnel would be junior to many senior water rights on Willow Creek. A tabulation of Willow Creek absolute and conditional water rights is presented in Appendix A. Review of this tabulation indicates the potential for significant diversion and depletion to Willow Creek from rights senior to the proposed Arapahoe

County diversion at Bertha Gulch. Among existing senior rights, the Churchill Ditch, Lowline Ditch, Korn Ditch, Murdie Mesa Irrigation Ditch and Harrington Shingle Ditch rights are the major irrigators on the stream. These rights could make a priority call on the Arapahoe County Bertha Gulch Tunnel diversion and must be considered in determining the physical and legal availability of water for diversion through the Bertha Gulch Tunnel facility.

In addition to the senior water rights on Willow Creek which could affect the proposed diversion by Arapahoe County at the Bertha Gulch Tunnel, there are significant senior water rights downstream in the Gunnison basin which can influence diversion by Taylor Park Reservoir and, consequently, the proposed diversion by Arapahoe County at the Bertha Gulch Tunnel site. These senior water rights in the Gunnison basin are discussed elsewhere (see WBLA, Inc., 1988, Phase I Feasibility Study for Upper Gunnison-Uncompahgre Basin, Task Memorandum No. 5, Development and Calibration of Basin Model Comparison of Existing Supplies with Future In-Basin Demands, and WRC Engineering, Inc., 1989, Engineering Report for the Union Park Project Water Rights).

The effects of the CWCB instream flow rights must also be taken into account in a manner similar to any other water right. In the case of Willow Creek, the two instream flows must be considered. Usually, the upstream instream flow (the 6 cfs right) would be expected to be the more restrictive because of the availability of downstream tributary inflow to meet the 15 cfs instream flow. Calculations using the CWCB hydrology developed for Case No. 87CW255 confirm that the 6 cfs will be the more restrictive instream flow requirement on the requested Arapahoe County Bertha Gulch diversion. To estimate the effect of the CWCB instream flow available water for diversion at the Bertha Gulch Tunnel, the 6 cfs have been deducted from the available flow for diversion by Arapahoe County in Table 2, leaving an estimated 4,060 to 19,640 acre-feet per year available for diversion by Arapahoe County through the Bertha Gulch Tunnel. These estimated quantities, however, do not include the effects of downstream senior water rights.

**TABLE 2
ESTIMATED FLOWS FOR WILLOW CREEK BASIN
ABOVE ARAPAHOE COUNTY POINT OF DIVERSION**

<u>Gage</u>	<u>Gage #</u>	<u>Estimated Flow in Excess of 6 cfs CWCB Flow (acre-feet/year)</u>
Willow Creek at Taylor Park, Colorado	0910800	4,060
Texas Creek at Taylor Park, Colorado	14020001	15,290
CWCB estimated flows for Willow Creek above Cow Creek for Case No. 87CW255	--	19,640

The usual procedure for incorporating the effect of existing water rights in the determination of legal and physical availability of water for diversion is to do a computer simulation analysis. An analysis of the expected yields of the proposed Union Park for involving various scenarios for these downstream senior water rights in the Gunnison basin has been completed by WRC Engineering, Inc. for Arapahoe County (Engineering Report for the Union Park Project Water Rights, October, 1989). Results of this analysis of project yield are presented in Table 3 for three situations:

1. Historic operation of the river system with the CWCB instream flows.
2. Operating conditions of WRC Engineering report Scenario 1b. This scenario had the greatest yield of the scenarios presented in the WRC Engineering report.

TABLE 3
UNION PARK PROJECT YIELD ANALYSIS

<u>Station</u>	<u>Project Yield¹ (acre-feet/year)</u>	<u>Proportionate Share² of Project Yield From 27.6-Square Mile Willow Creek Watershed (acre-feet/year)</u>
Historic operation of ³ river system with CWCB instream flows	79,750	8,000
Operating conditions of ⁴ WRC Engineering report Scenario 1b	104,400	10,710
Operating conditions of ⁵ WRC Engineering report Scenario 4c	33,800	2,950

¹ Project yields are from: WRC Engineering, Inc., 1989, Engineering Report for the Union Park Project Water Rights, p.49.

*someone has
been depositing*

² The 27.6-square mile Willow Creek basin above the Arapahoe County planned point of diversion is approximately 11^{10.8%} percent of the total 254-square mile drainage basin upstream from Taylor Park Reservoir. The project yields estimated in the WRC Engineering report include flow from Lottis Creek which is approximately 7,000 acre-feet of "Storable Lottis Creek flow in Union Park Reservoir" (p. 28 of above referenced WRC Engineering report). Therefore, the proportionate share of the Union Park project yield from the Willow Creek watershed is:

*OK
OK
5 257 acft*

(0.11) x (estimated project yield from WRC Engineering report - 7,000 AF) *OK*

³ Approach 1, From: WRC Engineering, 1989, Engineering report for Union Park Project Water Rights, p. 31.

⁴ Operating conditions for Scenario 1b are described on page 34 of the WRC Engineering report referenced above. Scenario 1b produced the maximum annual project yield.

⁵ Operating conditions for Scenario 4c described on page 40 of the WRC Engineering report referenced above. Scenario 4c produced the minimum annual project yield.

3. Operating conditions of WRC Engineering report Scenario 4c. This scenario had the smallest yield of the scenarios presented in the WRC Engineering report.

These project yields provide estimates of the amount of water which could be legally and physically diverted from the basin upstream from Taylor Park Reservoir together with Lottis Creek for the Union Park project. In Table 3, these yields have been prorated to the 27.6-square mile Willow Creek watershed. Results of prorating these estimated yields to the 27.6-square mile watershed indicate that, for historic operation of the river system with the CWCB instream flows for downstream from Taylor Park, approximately 8,000 acre-feet could be diverted for the Union Park project. The maximum project yield would occur with Scenario 1b which would produce approximately 10,710 acre-feet of yield from the 27.6-square mile watershed. The minimum yield would occur with Scenario 4c which would produce approximately 2,950 acre-feet per year.

The estimated yields calculated in the WRC Engineering report account for the CWCB flows downstream from Taylor Park Reservoir; however, it is unclear whether the yields incorporate the restrictions imposed by the CWCB instream flows on Willow Creek. If these instream flows were not considered, the prorated yields in Table 3 would be less than the amounts indicated. The reduction in yield cannot, however, be calculated by simply subtracting the 6 cfs for one year (4,336 acre-feet) because the yields in Table 3 are based on the Arapahoe County water rights being in priority only a portion of the year; bypassing the 6 cfs would not be required when the Arapahoe County water rights are not in priority at the Bertha Gulch Tunnel point of diversion.

? How does this work for willows

These expected project yields from the 27.6-square mile watershed upstream from the proposed Arapahoe County point of diversion provide estimates of the available water that would be available for diversion through the Bertha Gulch Tunnel under existing and possible future water rights conditions.

Water Available in Case Nos. 86CW202 and 86CW203

The potential effects of the exchange and "second filling" water rights applications by the Upper Gunnison Water Conservancy District in Case Nos. 86CW202 and 86CW203 are not incorporated into the Union Park project yield estimates presented in Table 3. Analysis of an engineering report prepared for these cases (May 22, 1990 letter to Anthony W. Williams and L. Richard Bratton from Duane D. Helton, subject: Water Rights Applications by the Upper Gunnison River Water Conservancy District in Case Nos. 86CW202 and 86CW203) indicates that essentially no water would be available for diversion from Taylor Park Reservoir or streams above Taylor Park Reservoir for the Union Park project if the applications in 86CW202 and 86CW203 are successful.

PRELIMINARY ECONOMIC ANALYSIS

The major objective of the Bertha Gulch Tunnel is to provide inflows to the Union Park Reservoir by gravity rather than by pumping all Union Park inflows from Taylor Park Reservoir. Therefore, it would appear that the economic feasibility of the Bertha Gulch Tunnel is dependent upon the amount of pumping costs which would be saved by gravity diversion through the tunnel as compared to pumping from Taylor Park Reservoir. Based on review of the estimated diversions through Bertha Gulch Tunnel (Table 3) as compared to the 1,000 cfs Taylor Park Reservoir-Union Park Reservoir pumping capacity used in the WRC Engineering report for most of the project scenarios, it is doubtful that any reduction in pumping facility capital cost can be achieved by including the Bertha Gulch Tunnel facility.

The pumping costs associated with water that would otherwise enter Union Park Reservoir through the Bertha Gulch Tunnel depend on the cost of electricity. It cannot be known with precision what the cost of electricity will be when and if the Union Park project becomes operational. However, an indication of the cost of the needed electrical power in 1990 dollars can be obtained from today's cost of power.

Attached in Appendix B is the industrial rate tariff for the Gunnison County Electric Association. Taylor Park Reservoir and Union Park Reservoir sites are within the association's certificated service area and, thus, the association would sell pumping energy under normal circumstances to the project.

The tariff shows that electricity may be purchased at about 32 mills per kilowatt hour for energy. However, a demand charge also applies. Adding 18 mills of demand cost to each kilowatt hour brings the total cost of a kilowatt hour to \$.05 per kilowatt hour in 1990 dollars. This assumes a customer load factor of about 80 percent. The demand cost equals the demand charge (\$/kilowatt of billing demand/kw) divided by the hours in a monthly billing period multiplied by the customer load factor, or $\$10.48 / (720 \text{ hours} \times .080)$. Of note is the possibility that Arapahoe County may be able to negotiate a lower rate as a large purchaser.

Pumping costs have been calculated and are provided in Table 4 for the volume of pumping resulting from the various situations analyzed in Table 3. For example, for the 8,000 acre-feet per year of estimated average annual yield from the 27.6-square mile Willow Creek watershed under historic operation of the river system, the annual cost would be \$336,000 for pumping the 8,000 acre-feet at a pumping cost of \$0.05 per kilowatt hour from Taylor Park Reservoir to Union Park Reservoir. This annual cost would represent a present worth of approximately $\$3,181,787$ over a period of 30 years at a discount rate of 10 percent. In a similar fashion, the annual costs and present worth costs are tabulated in Table 4 for pumping the various amounts of water produced under Scenario 1b operating conditions and Scenario 4c operating conditions. *2,950 ac-ft* *10,710 ac-ft*

see page 7

When the present worths of the annual pumping costs in Table 4 are compared with the \$14.2 million cost for construction of the Bertha Gulch Tunnel and collection system estimated in the cost calculations provided by WRC Engineering, Inc. in response to a request of the Andy Andrews deposition, it is apparent that pumping the water from Taylor Park Reservoir to Union Park Reservoir would be the least costly alternative.

**TABLE 4
COMPARATIVE PUMPING COSTS**

<u>Situation</u>	<u>Annual Pumping Volume (AF/year)</u>	<u>Annual Cost¹ (Dollars)</u>	<u>Present Worth²</u>	<u>Cost of Power³ For Bertha Gulch Tunnel to Break-Even With Pumping From Taylor Park Reservoir (\$/kwh)</u>
Historic operation of river system with CWCB instream flows	8,000	336,000	3,168,000	0.22
Scenario 1b operating conditions	10,710	450,000	4,242,000	0.17
Scenario 4c operating conditions	2,950	124,000	1,168,000	0.61

¹ Assumes: 516 ft. pumping head
 pump efficiency = 70 percent
 motor efficiency = 90 percent
 1,000 cfs pumping rate
 \$0.05/kilowatt hours

² Assumes: 10 percent discount rate and 30 years

³ Total capital cost for Bertha Gulch Tunnel is \$14.2 million. The source of this estimate is set of cost calculations entitled "Willow Creek Collection System and Bertha Gulch Tunnel Cost Estimate," February 26, 1990, provided by WRC Engineering, Inc. in response to request in deposition of Andy Andrews.

Because of the uncertainty in power costs, the unit power costs which would make the present worth of the time stream of annual power costs equivalent to the capital cost of the Bertha Gulch Tunnel and collection system were calculated. These estimated power costs are presented in column 5 of Table 4. For example, power would have to cost \$.22 per kwh before the present worth of the annual power costs for pumping 8,000 acre-feet from Taylor Park Reservoir to Union Park Reservoir would be equivalent to the \$14.2 million capital cost of the Bertha Gulch Tunnel and collection system.

PRELIMINARY CONCLUSIONS

Based on the data and analyses presented herein, the following preliminary conclusions can be made:

1. The estimated physical availability of water at the proposed diversion point on Willow Creek for the Bertha Gulch Tunnel ranges from 4,060 to 19,640 acre-feet per year. The 4,060 acre-feet per year is based on actual recorded stream gage data for Willow Creek. These estimates of physically available water for diversion must, however, be combined with estimates of legally available water in order to determine the potential for diversion at the Bertha Gulch Tunnel.
2. Estimates of legally available water for diversion at the Bertha Gulch Tunnel must incorporate the effects on the junior Union Park rights of priority calls from downstream senior water rights. Estimates of legally available water for diversion to Union Park Reservoir have been prepared by Arapahoe County. These estimates of legally available water for diversion indicate 2,950 to 10,710 acre-feet per year could be diverted from Willow Creek at the Bertha Gulch Tunnel site in an average year.
3. Based on these estimated diversions, power would have to cost from \$.17 per kilowatt hour to $\$0.064$ per kilowatt hour before construction of the \$14.2 million Bertha Gulch Tunnel would be economically feasible.

APPENDIX A
WILLOW CREEK BASIN
WATER RIGHTS TABULATION

TAYLOR RIVER

Willow Creek

SE NO.	Priority No.	Ditch No.	NAME OF DITCH	DATE OF APPROPRIATION	DATE OF DECREE	AMOUNT DECREED	BOOK & PAGE
	19	26	Churchill Ditch	05-31-1980	09-14-1906	0.50 cfs	A - 27
	154	158	Lowline Ditch	05-31-1902	" " "	.875 cfs	A - 160
	529	St. 26	McCormick-Osborne Pipeline	08-08-1955	06-20-1957	0.10 cfs	D - 148
	530	" 27	Dickson Pipeline	10-11-1955	06-20-1957	0.08 cfs	D - 150
	556	" 32	Cranor Pipeline	04-15-1947	01-27-1961	0.05 cfs	E - 81
	588	" 52	Cranor Pipeline No. 2	06-05-1960	01-27-1961	0.05 cfs (cond)	E - 166
	634	" 70	Rainbow Pipeline	03-15-1961	10-28-1965	0.33 cfs (cond)	F - 149
	644	" 75	Schammerhorn Pipeline	09-01-1963	10-28-1965	0.023 cfs	F - 170
	657	" 86	Multhup Pipeline	07-15-1964	" " "	0.08 cfs (cond)	F - 196
W-73	657	" 86	Multhup Pipeline	" " "	03-22-1971	0.08 cfs	F - 197(a)
W-74	588	" 52	Cranor Pipeline No. 2	06-05-1960	" " "	0.05 cfs	E - 1
W-157	634	" 70	Rainbow Pipeline	06-29-1961	" " "	0.33 cfs	F - 151
W-784	--	--	Tincup Cabins Spring & Pipeline	06-01-1964	12-18-1972	0.011 cfs	G - 57
W-1269	--	--	Webb Springs Pipeline	08-01-1966	05-09-1973	.022 cfs	G - 193
W-1425	--	--	Korn Ditch	05-01-1911 09-09-1972	06-22-1973	2.0 cfs (abs) 2.0 cfs (cond)	G - 199
W-1559	--	--	The Andrews Well	06-16-1958	10-16-1973	15 gpm	H - 52
W-1724	588	52	Cranor Pipelines 1 and 2	10-01-1972	11-27-1973	.334 cfs (cond)	E-167(c) also F-196
"	657	86	Multhup Pipeline Enlargement	10-01-1972	" " "	.223 cfs (cond)	" "
"	--	--	Meadow Springs Pipeline	" " "	" " "	1.0 cfs (cond)	" "
W-1425(74)	--	--	Korn Ditch	09-02-1972	05-13-1975	2.0 cfs (abs)	G-200

APPENDIX B
GUNNISON COUNTY ELECTRIC
ASSOCIATION INDUSTRIAL
RATE TARIFF

County Electric Association, Inc.

name of utility

Colo. PUC No. 2

2nd Revised
Cancels 1st Revised

Sheet No. 3

Sheet No. 3

LARGE POWER - INDUSTRIAL
(General Service Classification)

SCHEDULE LP-I
(Rate Title or Number)

Company
Rate
Code

AVAILABILITY

Throughout the Cooperative's service area.

12

APPLICABILITY

Applicable services for all uses where a transformer capacity of 750 kVA or more is required.

RATE

TYPE OF SERVICE

Three-phase, 60. Hz., at Cooperative's standard voltage.

RATE-MONTHLY CODE 12

Consumer Charge: Per meter per month

\$60.00

Energy Charge: Per kWh per month

.03189 (I)

Demand Charge: Per kW of billing demand per kW

\$10.48 (I)

DETERMINATION OF BILLING DEMAND

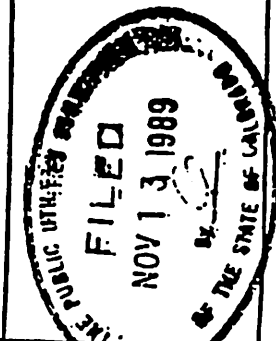
The billing demand shall be the maximum kilowatt demand established by the consumer for any period of fifteen consecutive minutes during the month for which the bill is rendered, as indicated or recorded by a demand meter and adjusted for power factor as provided below.

MINIMUM MONTHLY CHARGE

The minimum monthly charge shall be the highest one of the following charges as determined for the consumer in question.

1. The consumer charge.
2. As provided by contract for new construction consistent with the line extension Rules & Regulations.
3. As previously established by contract consistent with the line extension Rules & Regulations.

DO NOT WRITE
IN THIS SPACE



Advice Letter No. 67

Decision or Authority No. _____
Signature of Issuing Officer
General Manager

Issue Date November 10, 1989

Effective Date December 10, 1989

Title

Note chronology
re NECO/Union Park

ini

B. Clark
POWER
7/30/90

July 30, 1990

SHE IS ALL WET

The front page of the July 25th Gunnison Country Times reported that cooperation between regions is the key to Colorado's water future. This theme was expressed by most speakers at the 15th annual Colorado Water Workshop. However, on page 2 the ghost writer for POWER's weekly Taylor Talks column continues to attack past and present City of Gunnison officials for cooperating with the Union Park Water Conservation Project. Union Park's large, high altitude storage concept is specifically designed to share a small percent of the Gunnison's surplus flood waters with dryer populated areas, while providing needed drought protection for the Gunnison's water based economy.

POWER's founder may be well meaning, but her uncompromising slogans and tactics are misleading the public, intimidating local political leaders, and damaging professional careers. The democratic process would be better served if POWER's leadership would stop questioning the loyalty of anyone who is not bound to the selfish slogan of "not one drop over the hill". Instead, POWER's leaders should consider some of the historical and technical perspectives of those who have more water management experience.

For example, during the 1950's the Bureau of Reclamation conducted detailed studies that identified up to 450,000 acre feet of surplus Gunnison flood waters that could be diverted out of basin without impacting senior Gunnison water rights. In 1974 a study by Morcan Engineering, Inc. of Delta recommended that the City of Gunnison construct a water storage capability. Water Resource Consultants, Inc. of Denver and Coe, Van Loo, & Jashke Engineering, Inc. of Gunnison conducted a similar study in 1981, and as a result, the city now has reservoir decrees on the Taylor and East Rivers, as well as Antelope Creek.

In 1982 the founders of Natural Energy Resources Company (NECO), decided to defer the transmountain phase of its Union Park Project until the demand and politics were clearer. The climate improved somewhat in 1984 when prominent West and East Slope leaders formed the Colorado Alliance to cooperate on water storage projects to save the state's Colorado River compact entitlements before these waters were permanently forfeited to California and Arizona. A special state water development sales tax was being proposed, and the Alliance's initial goal was to construct a 250,000 acre feet reservoir on the West Slope that could be used for recreation, and diversion of 50,000 acre feet to the East Slope.

In late 1985 the Gunnison's representative on the Colorado Water and Power Authority (Dick Bratton) encouraged NECO to sell its Union Park Project to the Authority. The intent was to use

Note chronology
re NECO/Union Park

B. Clark
P. 02
POWER
7/30/90

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In late 1985 the Gunnison's representative on the Colorado Water and Power Authority (Dick Bratton) encouraged NECO to sell its Union Park Project to the Authority. The intent was to use

Union Park as a cash generator to construct recreation reservoirs for the West Slope. Dick indicated that 50,000 acre feet would be consistent with the Alliance's objective, and a politically acceptable amount for export from the Upper Gunnison. Although the Authority declined NECO's proposal, it did initiate the Phase I Upper Gunnison Water Study to evaluate alternative water and power export projects to generate cash for enhancing the Upper Gunnison's water based economy. Phase I was conducted at the request of the Upper Gunnison River Water Conservancy District, the Uncompahgre Valley Water Users Association, and the Colorado River Water Conservancy District. Unfortunately, most of the study's funds were politically wasted on trying to justify a Gunnison controlled diversion direct from the existing Taylor Park Reservoir. It was only after the Alliance's actions, Bratton's encouragement, and the Gunnison District's initiation of Phase I that NECO decided the time was right to apply in water court for Union Park's diversion rights.

In late 1986 the City of Gunnison council members voted to purchase some Union Park water rights, storage, and power from NECO. This purchase had a total 1986 value of approximately \$50 million, and the cost to the city was only \$2,000 down and \$198,000 upon construction. In 1988 NECO sold Union Park and its contract with the city to Arapahoe County for \$2.2 million. This was an extraordinary coup for the city. Unfortunately, in early 1990 a new City Council caved in to disruptive political tactics from POWER and Representative Scott McGinnis. Arapahoe County has not released the city from its contract obligations.

If POWER wants to hang someone for Union Park, it should look to the players involved in these historical facts. It should also blame geography for making the Upper Gunnison the wettest, untapped water area in Colorado.

POWER's uncompromising stance "not one drop over the hill" is a far cry from inter region cooperation based on reasoned analysis of Colorado's water supply and demand situation. Instead of inflammatory slogans and unfair attacks on the loyalty and professional integrity of public officials and advisors, POWER should try to specifically refute Union Park's extraordinary technical claims that the project will enhance the Gunnison's environment, and water based economy. In the meantime, Gunnison's elected officials should have the courage to resist unreasonable political tactics from a few uninformed activists.

Dave Miller (NECO)
Palmer Lake, Colorado
(719)481-2003

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

July 24, 1990

Mr. Hubert A. Farbes, Jr.
President, Denver Water Board
1600 West 12th Avenue
Denver, Colorado 80254

Re: Union Park Alternative To Two Forks Dam

Dear Mr. Farbes:

In lieu of a smaller Two Forks Dam and Reservoir, respectfully request that your board seriously consider Arapahoe County's superior Union Park Water Conservation Project.

At our insistence, Union Park was given a last minute cursory review in the Metro Denver Final EIS. This review was legally necessary because the Corps of Engineers had overlooked the vast surplus flood flows of the untapped Gunnison Basin during its system-wide analysis. Although the Corps confirmed some of the yields, costs, and environmental advantages of Union Park, this alternative was improperly screened from detailed consideration because the water rights had not been fully perfected. However, federal environmental laws do not require resolution of all institutional constraints before thoroughly evaluating all reasonable alternatives. EPA recognized this fact, and the Gunnison oversight is a major underlying reason for the pending Two Forks veto.

quote
The Corp's computerized hydrology simulation did confirm, however, Union Park's unprecedented 2 for 1 safe yield increase if it were used as a backup drought supply for Denver's existing reservoirs. This concept would only require operational changes for Denver's reservoirs, instead of an environmentally damaging dam on the South Platte River. An analysis of Union Park by Denver Water Department engineers would quickly show that Union Park's annualized safe yield cost would be about \$305 per acre foot compared to EPA's latest estimate of \$595 for the large Two Forks proposal. Union Park is especially attractive because its million acre feet of high altitude, off-river storage can also be flexibly managed to augment the river flows of both slopes during the environmentally damaging drought cycles. *P*

It is unfortunate the Denver Water Department has limited its substantial West Slope water right holdings to the same Upper Colorado River Basin that has already been seriously dewatered by 18 transmountain diversion projects. These West Slope holdings were acquired over many years with the undisclosed use of Two Forks as the primary storage facility for future additional diversions such as Muddy Creek, Straight Creek, Eagle Piney, East

Gore, Green Mountain, etc.. This is the underlying reason your staff is so concerned with the long-term loss of Two Forks. This belated realization is also why the Colorado River Water Conservancy District's cooperation on Two Forks is now being questioned by many concerned West Slope interests. Why continue the over depletion of one basin, while a wetter untapped sister basin loses almost a million acre feet of Colorado compact water to Arizona and California?

Arapahoe County's enthusiasm and confidence has grown substantially with its continuing detailed analysis of Union Park's economic and environmental benefits for both slopes. Because of its extraordinary advantages, it is only a matter of time until Union Park's water rights are finalized by negotiation or judicial action.

In short, Union Park is Colorado's ideal alternative to the devisive Two Forks concept. The Denver Water Board could provide the catalyst for Metro Denver and West/East Slope cooperation by objectively evaluating the Union Park option.

Enclosed is a copy of the national recognition our firm has received for its environmentally sound water development and planning efforts.

Thank you very much for your consideration.

Sincerely



Allen D. (Dave) Miller
President

ADM/bm

Encl: Take Pride In America Award

cc: Metro Denver Water Providers, Arapahoe County, Governor Roy Romer, Mayor Peña, EPA, Secretary of Interior, Secretary of Agriculture, Colorado Legislators.



THE SECRETARY OF THE INTERIOR
WASHINGTON

June 15, 1990

Dear Take Pride in America Award Winner:

On behalf of the Take Pride in America campaign, I am pleased to inform you that you have been selected as a National Semi-Finalist in the 1989 Take Pride in America National Awards Program.

The fourth annual Take Pride in America National Awards Ceremony will be held in Washington, D.C., this summer at a time soon to be released. You will be receiving an invitation to attend this ceremony as well as a special VIP reception that will be hosted by The Nashville Network and the American Recreation Coalition.

I want to take this opportunity to commend you for the outstanding work you are doing to promote wise use of our nation's public resources. Your involvement in this campaign helps to ensure that future generations also can enjoy and benefit from our public resources.

A Certificate of Merit is enclosed. I hope this will express to you in part our appreciation for your efforts and the contribution you are making to this great nation.

Once again, congratulations on your selection as a semi-finalist, and we look forward to seeing you at the awards ceremony this summer.

Sincerely,

Manuel Lujan Jr.

Enclosure

Take Pride in America 1989 National Awards Program



Certificate of Merit

presented to

Natural Energy Resources Company (NECO)

in recognition of demonstrated commitment and exceptional contribution to the volunteer stewardship of America's natural and cultural resources.

Presented on behalf of the Take Pride in America Campaign, 1990

Barbara Bush

Barbara Bush, Honorary Chairman,
Blue Ribbon Panel of Judges

Manuel Lujan, Jr.

Manuel Lujan, Jr., Secretary of the Interior and
Chairman, Blue Ribbon Panel of Judges

William W. Cobey, Jr.

William W. Cobey, Jr., Secretary
North Carolina Department of Environment,
Health and Natural Resources
Co-Chairman, Blue Ribbon Panel of Judges

Darrick A. Crandall

Darrick A. Crandall, President
American Recreation Coalition
Co-Chairman, Blue Ribbon Panel of Judges

1989 Celebrate Colorado! Awards Application

All entries must be received by October 1, 1989

Mail to: Celebrate Colorado!
Governor's Office
136 State Capitol Bldg.
Denver, CO 80203-1792

NOMINEE INFORMATION

(Please type or Print clearly)

Name of Individual/Group being Nominated NATURAL ENERGY RESOURCES COMPANY (NECO)

Nominee Address P. O. BOX 567

PALMER LAKE

COLORADO

80133

City

State

Zip Code

Name in Nominee's Organization Allen D. (Dave) Miller Title President

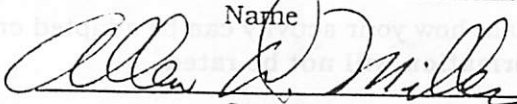
Daytime Phone Number (719) 481-2003

Type of Award (Check only one, see Fact Sheet for details)

- Constituent Organization Business/Corporation Youth Group
 Civic/Citizen Organization Educational Institution Individual
 Government

Submitted by Allen D. (Dave) Miller

Name



Signature

DESCRIPTION: Describe your environmental activity, the role you or your organization played, and how it contributed to the goals of *Celebrate Colorado!*. The description should be no longer than 500 words- additional sheets of paper may be included if the space provided is not enough. **Please type or Print clearly.**

Since its founding in 1982, Natural Energy Resources Company has conceived and aggressively pursued two major water development projects that will have significant environmental and economic benefits for Colorado and the Western United States.

The 1,000 megawatt Rocky Point Pumped Storage Hydroelectric Project will provide clean, low-cost, peaking power for the Western power grid. This \$995 million project at Taylor Park Reservoir in Colorado's Gunnison County is projected to come on line in 1997. Detailed engineering estimates by NECO's major engineering firms indicate that Rocky Point will be the world's largest, most efficient, non-polluting, peaking power operation. During its first 30 years the project is projected to save Western power users \$11.3 billion, as compared to the best fossil fueled alternatives.

NECO has also conceived the Union Park Water Supply Project, which is designed to store surplus flood waters from the untapped Gunnison Basin in

a large reservoir on the Continental Divide for drought protection of Colorado's river environments on both slopes. The off-river, million acre-foot, Union Park Reservoir and high volume gravity siphon to the South Platte River will also increase the safe yield of Denver's existing reservoirs by 140,000 acre-feet (40% more than Two Forks). Because of Union Park's unique 2 for 1 "multiplier effect", NECO's international consultants have determined that Union Park's annualized safe yield cost for Metro Denver will be only \$305 per acre-foot. This is less than half the latest unit cost of Colorado's other surface and ground water alternatives, including Two Forks. The balanced Union Park Project has widespread appeal for both slopes, because it uses overlooked surplus waters to save a nationally treasured canyon and fishery near Denver, while augmenting the Taylor, Gunnison, and Colorado River flows in critical drought periods. It will also stop further over-depletion of the Upper Colorado headwaters, which currently supply all of Colorado's transmountain water. Union Park's water rights were recently purchased by Metro Denver's Arapahoe County. The City of Gunnison, Town of Parker, and Castlewood Water District are the initial subscribers. Union Park has excellent potential to be Colorado's primary, multipurpose, water conservation project of the future.

In addition to these two major environment enhancing water projects, NECO has conducted a factual information campaign over the last three years to promote coordinated local/state/federal water planning for the arid Western United States. This ongoing campaign has highlighted several "overlooked", but superior, alternatives to the environmentally destructive Two Forks Dam as a prime example why coordinated water planning is needed. EPA's veto and the rapid decline of political support for Two Forks is solid evidence of the campaign's impact. Further confirmation of the program's effectiveness can be obtained from local, state and federal permitting officials, as well as from Two Forks proponents and the national environmental community.*

2. Replication: For our information only, please explain how your activity can be adapted or expanded to other areas and locales. **This information will not be rated.**

Coordinated local/state/federal water planning will facilitate environment enhancing water conservation projects in the West, based on informed consensus building, instead of the traditional nonproductive infighting between historically competing interests. Although Colorado's high topography generates most of the renewable water for the West, local state, and federal officials are severely handicapped in evaluating specific Colorado water developments because of the state's past resistance to any form of state and regional water planning.

3. Suggestions: Please make any suggestions for improving the *Celebrate Colorado!* Awards Program. **This information will not be rated.**

Suggest the Celebrate Colorado awards committee be composed of a wide spectrum of responsible citizens who are not closely associated with special interest groups.

*The attached August 28, 1989 letter to USFS is an example of numerous letters promoting Western water planning.

Contact Lisa Largent or Kate Kramer at (303) 866-3311 with any further questions

1989 TAKE PRIDE IN AMERICA AWARDS APPLICATION

NOMINEE INFORMATION

(Please type)

Name of Individual/Group Being Nominated* NATURAL ENERGY RESOURCES COMPANY (NECO)

Nominee Address P. O. BOX 567

PALMER LAKE, COLORADO 80133
City State Zip Code

Contact in Nominee's Organization ALLEN D. (DAVE) MILLER Title PRESIDENT

Daytime Phone Number 719 481-2003 Category Name ENVIRONMENT

Type of Organization (Check Only One)

- Civic State Federal Military Media Conservation Employment User-Group
 Citizen Youth Fraternal Professional Corporation University Community
 Other (Specify) _____

Responses must be confined to the space provided on the application. (do not "reduce" your answers)

1. **DESCRIPTION:** Describe your activity (e.g., clean up, patrol/watch, communications program).
Since 1982 NECO has developed two major water projects that will provide 1,000 megawatts of non-polluting peaking power for the West, and drought protection for Metro Denver and three major Western river systems. In addition, NECO has initiated a public awareness campaign for initiation of state and regional water planning to optimize the use of Western water resources.

2. **PURPOSE:** Why did you conduct this particular activity?
These activities were conducted to enhance the Western states' environment, while realizing a reasonable return for the company's investors.

3. **METHOD:** How did your activity further the Take Pride in America goals? (See page 2)
The Rocky Point Power Project is designed to use Western public lands and waters to provide the world's largest, most efficient, non-polluting peaking power operation. The Union Park Water Supply Project is designed to store surplus flood water of the Gunnison Basin in a large high altitude reservoir on the Continental Divide for re-lease to the South Platte, Arkansas, Gunnison and Colorado River systems during multi-year droughts.

4. **RESULT:** What effect did your activity have on public awareness of the need for wise use of public lands and resources?
NECO's water resource planning and development work informed the public and federal permitting officials that Colorado had overlooked sound water supply and power alternatives for both population growth and environmental protection. This realization led to EPA's veto of Denver's environmentally destructive Two Forks Dam.

* If there is more than one group involved in this nomination, name the lead group on the application, then provide the organization name, address and phone number of the other groups on a separate sheet of paper.

5. RESULT: What effect did your activity have toward the betterment of the public lands and resources?
The Union Park water supply alternative will save the nationally treasured South Platte Canyon and fishery from being inundated by Two Forks Dam and Reservoir. It will also help the Western river ecosystems during critical multi-year drought periods. The Rocky Point hydroelectric peak power operation will reduce the need for polluting fossil fuel power facilities in the West.

6. INVOLVEMENT/COMMITMENT: Answer only one of the following (as appropriate to your category selection).

- A. Individual category: Explain the extent of your personal contribution to this activity.
- B. Group, organization, public/private partnership, business or governmental body categories: Explain the degree of participation received from citizen groups, governmental bodies, the general public and/or other groups.
- C. Media category: Explain your contributions to public awareness of the public lands. Videotapes, newspaper and/or magazine clippings, etc., should be submitted to support your explanation.

The Union Park Project has been purchased by Metro Denver's Arapahoe County, and the initial subscribers are The City of Gunnison and the Castlewood and Parker water districts. Union Park and Rocky Point are scheduled to come on line in 1997.

7. REPLICATION: For our information only, please explain how your activity can be adapted or expanded to other areas and locals. This information will not be rated.

The above two projects are large enough to satisfy a large part of the West's future growth need for both power and water.

8. SUGGESTIONS: Please make any suggestions for improving the Take Pride in America Awards Program here. This information will not be rated.

NOMINATOR INFORMATION

Nominator Name Allen D. (Dave) Miller

Organization Natural Energy Resources Company (NECO)

Title President Daytime Phone Number (719)481-2003

Address P.O. Box 567

<u>Palmer Lake,</u>	<u>Colorado</u>	<u>80133</u>
City	State	Zip Code

AWARDS APPLICATION PACKAGE CHECKLIST:

Required Submissions:

- Completed Awards Application
- Two-page Summary Statement
- Completed Activity Data Record

Optional Submission:

- Supplementary Information (limit - 10 pages, front and back)

See application for 1989 Celebrate Colorado awards, and letter dated October 6, 1989 to Legislative Water Committee.

June 4, 1990

GUNNISON COUNTY'S COURAGEOUS WATER POLICY

Gunnison County Commissioners are courageously developing Colorado's first County Water Policy. This farsighted effort could lead to modernization of the state's obsolete water management practices. Several popular Colorado water myths are objectively being considered in the process, i.e.,

Future Water Needs Contrary to common belief, West Slope consumptive water needs are steadily declining with the gradual shift from agriculture, mining, and timbering to a more tourist oriented economy. Some areas are retiring marginal irrigated land because of excess salt build up from traditional deep irrigation techniques. Modern trends toward ditch lining, shallow irrigation, and other water conservation techniques are also reducing consumptive needs for agriculture. Colorado's recently completed Phase I Upper Gunnison Water Study conclusion that West Slope consumptive needs are growing is based on invalid engineering assumptions that are not consistent with worldwide irrigation trends. Since over 95% of the West Slope's consumptive water is used for agriculture, small incremental improvements in irrigation efficiency are multiplying the amount of water available for municipal, industrial, recreational, and environmental uses, either in Colorado or downriver.

Underutilization of Water Many West Slope water diversions for agriculture are substantially greater than required by crop consumption and ditch flows. Colorado's historically wasteful "use it or lose it" laws are one of the reasons. Under current Colorado law, any outside interest can challenge any water right by technically proving underutilization. Water laws in other Western states are changing to promote conservation instead of waste. Colorado water strategists should quickly seek realistic ways to hold and utilize its growing water surplus before it is permanently lost to thirsty downriver users.

Wet vs. Dry Cycles As the state with the highest terrain, Colorado has bountiful renewable water resources. On the average, the Gunnison Basin loses almost a million acre feet of Colorado's interstate compact entitlement as a free gift for the grateful down river population areas. During wet cycles, this lost surplus can more than double. In multi-year droughts, the West Slope's environment, agriculture, and tourist economies are seriously threatened. Colorado needs more high altitude water storage to accumulate excess water in wet years for use on both slopes during the critical drought cycles. The populated East Slope is willing to pay for the West Slope's drought protection storage. Local interests on both slopes need to recognize that objective planning and cooperation are the keys to balancing the state's water between the wet and dry cycles and areas of supply and demand. Surplus water held in high altitude storage for droughts has immeasurable environmental value compared to the wasted 60 day flood runoff during wet cycles.

Upper Gunnison vs. Upper Colorado Basins The overlooked Gunnison River is by far the largest leak in Colorado's water compact entitlements. On the other hand, the seriously dewatered Colorado main stem tributaries provide all of Colorado's transmountain water to the East Slope via 18 diversion projects. The Colorado River Water Conservancy District is worsening the West Slope's grossly unbalanced water usage by cooperating with the Denver Water Department's ill-conceived Two Forks, Muddy Creek, Straight Creek, Eagle Piney, and Green Mountain diversion plans. Meanwhile, this District is incongruously trying to prevent the untapped Gunnison Basin from obtaining needed drought protection and recreation storage by fighting Arapahoe County's multipurpose Union Park Water Conservation Project. Union Park's massive, high altitude, off-river reservoir can economically satisfy Metro Denver's growth needs, while providing guaranteed drought insurance for the Gunnison's water based environment. Union Park can also help correct the West Slope's seriously unbalanced water usage between basins.

Phase I Upper Gunnison Basin Water Study The Upper Gunnison and Colorado River Districts initiated the state's Phase I Study primarily to determine how Gunnison water exports to the East Slope could be used to enhance the Gunnison's water based economy. This was an excellent objective. Unfortunately, local politics improperly influenced the study to the point where it is misleading and largely useless as a planning tool. In fact, most of the study's public funds were spent on a futile attempt to prove a Gunnison Water District controlled diversion from Taylor Park Reservoir would be more viable than other ongoing alternatives, including Union Park. Union Park's unprecedented environmental and economic advantages for the West and East Slopes were totally ignored, and its construction costs were grossly exaggerated. Because of this distorted study, Gunnison officials and the concerned public have been left with a planning guide that is seriously hampering the public's understanding of the Gunnison's water situation. This void could soon be corrected with an objectively managed Phase II Upper Gunnison Water Study. However, the Upper Gunnison and Colorado River Districts are currently refusing to participate in Phase II. This is a clear case of power politics over public interest. The public needs to know the overall long-term value of well conceived water conservation projects for their local environments and economies.

Gunnison County Commissioners are providing a great public service by insisting on an objective County Water Policy that is based on facts instead of reactionary citizen group scare slogans, such as "not one drop over the hill". Hopefully, the Gunnison's courageous grassroots water policy efforts will soon inspire our reluctant state leaders into formulating a coherent, long-overdue, State Water Policy. Colorado is the only Western state that still relies primarily on very costly, unresponsive, court determinations for managing its water resources. Concerned Colorado citizens should press for modern policy and planning practices for managing Colorado's water in this new age of environmental enlightenment.

Dave Miller
Palmer Lake, Colorado 80133
(719)481-2003

Handwritten initials or mark.



ARAPAHOE COUNTY COLORADO
 533 South Prince Street • Littleton, Colorado 80160
 BOARD OF COUNTY COMMISSIONERS

John J. Nicholl
 District No. 1

Thomas R. Eggert
 District No. 2

Jeannie Jolly
 District No. 3

(303) 795-4630
 FAX 730-7903

June 29, 1990

Roger Morris, Editor
 Gunnison Country Times
 P.O. Box 240
 Gunnison, CO 81230-240

Dear Mr. Morris:

In order to try to set the record straight I'd like to point out that Arapahoe County's Union Park Project respects all water rights presently decreed for use in irrigation and stock watering.

The private minimum stream flow water rights, which Arapahoe County believes are invalid, are not decreed for irrigation or stock watering. These rights benefit only the property owners along certain stream segments by increasing the amount of water which flows past those scenic properties on its way out of our state. Some of these stream flow rights exist on the Taylor River below the dam as evidenced by the prominent "No Trespassing" signs. If I'm not mistaken these rights, known as the Vader rights, are owned in part by Mr. Sams, publisher of the Gunnison Country Times. P

These stream flow claims are far in excess of what is necessary to support rafting, fish or plants. These claims are also far in excess of the minimum stream flows which the same private landowners agreed to accept in the decree for the Union Park Reservoir project's hydro power rights. } P

These claimed instream flow rights are invalid because under Colorado law only the Colorado Water Conservation Board (CWCB) may own or acquire minimum stream flow decrees. There has never been a time in Colorado when a valid instream water right could be acquired which did not require proof of a beneficial use such as a commercial fish hatchery. Colorado law has always barred private instream water rights for scenic purposes.

The only legal and practical way to assure Taylor River stream flows in the amounts decreed by the CWCB, 100 cfs May through September and 50 cfs at other times, without drawing down the Taylor Reservoir, as I remember about 3 feet in 1989, is to build the Union Park Project and reach agreement on releases of water for this purpose. Arapahoe County has always been willing to discuss this. A 40 year USGS record of Taylor River stream flows shows minimums in the range of no flow to 2270 cfs. Wouldn't it seem more sensible to capture the excess spring runoff in Union Park and release it as needed to maintain stream flows? Union Park is the only viable way to assure in stream flows during drought periods. Arapahoe County is not seeking to cancel any presently used decreed irrigation or stock water rights, amounting to about 360 acre feet between Taylor Reservoir and Almont, and has no reason to do so. There is plenty of water for everyone if we use it wisely! P

Very truly yours,

Thomas R. Eggert
 Thomas R. Eggert
 Arapahoe County Commissioner

/jkl

*June 4
 Wilder letter
 over*

POWER
5/30/90

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

May 30, 1990

Board of County Commissioners
Gunnison County
200 East Virginia
Gunnison, Colorado 81230

Re: Gunnison County Water Policy

Dear Commissioners:

Gunnison County Commissioners should consider several popular water misconceptions during its June 5th public work session to develop a County Water Policy, i.e.,

Future Water Needs Contrary to common belief, West Slope consumptive water needs are steadily declining with the gradual shift from agriculture, mining, and timbering to a more tourist oriented economy. Some areas are retiring marginal irrigated land because of excess salt build up from traditional deep irrigation techniques. Modern trends toward ditch lining, shallow irrigation, and other water conservation techniques are also reducing consumptive needs for agriculture. The Phase I Upper Gunnison Water Study conclusion that West Slope consumptive needs are growing is based on invalid engineering assumptions that are not consistent with worldwide irrigation trends. Since 95% of the West Slope's consumptive water is used for agriculture, small incremental improvements in irrigation efficiency are multiplying the amount of water available for municipal, industrial, recreational, and environmental uses, either in or out of Colorado.

Underutilization of Water Many West Slope irrigation diversions are substantially higher than required by crop consumption and ditch flows. Colorado's wasteful "use it or lose it" laws are one of the reasons. Under current Colorado law, any outside interest can challenge any water right by technically proving underutilization. Western water laws are also changing to promote conservation instead of waste. Colorado water strategists should seek realistic ways to utilize its growing water surplus before these waters are permanently lost to thirsty downriver users.

Wet vs. Dry Cycles As the state with the highest terrain, Colorado has bountiful renewable water resources. On the average, the Gunnison Basin loses almost a million acre feet of Colorado entitled water as a gift for the grateful down river population areas. During wet cycles, this lost surplus can more than double. In multi-year droughts, the West Slope's environment, agriculture, and tourist economies are seriously threatened. Colorado needs more high altitude water storage to accumulate excess water in wet years for use on both slopes during the critical drought cycles. The populated East Slope is willing to pay for the West Slope's drought protection storage. Local interests on both slopes need to recognize that objective planning and cooperation are the keys to balancing the state's water between the wet and dry cycles and areas of supply and demand.

2

Upper Gunnison vs. Upper Colorado Basins The overlooked Gunnison River is by far the largest leak in Colorado's water compact entitlements. On the other hand, the seriously dewatered Colorado main stem tributaries provide all of Colorado's transmountain water to the East Slope via 18 diversion projects. The Colorado River Water Conservancy District is worsening the West Slope's grossly unbalanced water usage by cooperating with the Denver Water Department's ill-conceived Two Forks, Muddy Creek, Straight Creek, Eagle Piney, and Green Mountain diversions. Meanwhile, this District is incongruously trying to prevent the untapped Gunnison Basin from obtaining needed drought protection and recreation storage by fighting Arapahoe County's multipurpose Union Park Water Conservation Project. Union Park can economically satisfy Metro Denver's future needs, while providing guaranteed drought insurance for the Gunnison area. Union Park can also help correct the West Slope's seriously unbalanced water usage between basins.

Phase I Upper Gunnison Basin Water Study The Upper Gunnison and Colorado River Districts initiated Phase I primarily to determine how Gunnison water exports to the East Slope could be used to enhance the Gunnison's water based economy. This was an excellent objective, but unfortunately, this state sponsored study was influenced to the point where it is misleading and largely useless as a planning tool. In fact, most of the Study's public funds were spent on a futile attempt to prove a Gunnison District controlled diversion from Taylor Park Reservoir would be more viable than other alternatives, including Union Park. Union Park's unprecedented environmental and economic advantages for the West and East Slopes were totally ignored, and its construction costs were grossly exaggerated. Because of this distorted study, Gunnison officials and the concerned public have been left with a planning guide that is seriously hampering the public's understanding of the Gunnison's water situation. This void could soon be corrected with an objectively managed Phase II Upper Gunnison Water Study. However, the Upper Gunnison and Colorado River Districts are currently refusing to participate in Phase II. This is a clear case of power politics over public interest. The public needs to know the long-term value of well conceived water conservation projects for their area.

Gunnison County Commissioners can provide a great public service by insisting on an objective County Water Policy that is based on facts instead of POWER's irrational scare slogan of "not one drop over the hill". Hopefully, the Gunnison's grassroots water policy efforts will soon force our reluctant state leaders into formulating a coherent, long-overdue, state water policy. Colorado is the only state that still relies primarily on very costly, unresponsive, legal determinations for managing its water. Concerned Colorado citizens should press for modernized water management practices in this age of environmental enlightenment.

Sincerely,



Allen D. (Dave) Miller, President

ADM/bm

cc: interested local, state, federal officials.

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

May 21, 1990

Members

People Opposed To Water Export Raids (POWER)
P.O. Box 1742
Gunnison, Colorado 81230

Subject: **POWER'S MISTAKEN WATER PURPOSE**

Dear POWER Members:

People Opposed To Water Export Raids (POWER) should broaden its purpose from: "Not One Drop Over The Hill" to an objective understanding of Colorado's public water interests. It was a mistake for a concerned Gunnison citizens' group to launch a media campaign against water diversion from the untapped Gunnison Basin before investigating the technical facts. The resulting misinformation could seriously damage Colorado's public interests on both slopes.

Colorado's social and economic progress has historically been plagued by counterproductive infighting between the more populated East Slope and the water rich West Slope. POWER seems determined to widen this emotional gap by misusing the media to exploit old water fears.

POWER could better serve the public by first acknowledging that some water projects can be very beneficial. Each project should be thoroughly evaluated before judging its relative merit. For the last several years, our company's water resource experts have been evaluating the extraordinary potential of the Gunnison's Union Park Water Conservation Project. As a result, we have claimed many unprecedented benefits for both slopes. To date, no one has successfully refuted any of our basic facts. Those who take the time to objectively understand Union Park, soon become believers. This is why Arapahoe County, City of Gunnison, Parker, and Castlewood Water Districts were the early subscribers. Other public entities will soon follow. West Slope interests should be the most enthusiastic, because Union Park can help correct its seriously unbalanced water usage between basins, while providing invaluable insurance against the damaging drought cycles. History shows that multi-year droughts are the only uncontrollable threat to the West Slope's environment, recreation, agriculture, and economic values.

The underlying value of Union Park's massive, high altitude, off-river, storage is based on the fact that renewable surface flows vary drastically between the inevitable wet and dry cycles. Union Park will store surplus flood waters in wet years for managed release to both slopes during the destructive dry years. On the average, the Gunnison Basin currently loses almost a million acre feet of Colorado entitled water to the grateful down river states. In some years this surplus is more than double the average, while in other years there is a severe shortage -- even for senior appropriators. Water has practically no value when it is flooding, but its value during droughts is immeasurable. Union Park will augment the Gunnison,

South Platte, and Arkansas rivers during droughts, while satisfying Metro Denver's future growth for about half the unit cost of the discredited Two Forks concept. Union Park will also substantially enhance the Gunnison's water based recreation economy by providing an excellent Lake Trout fishery and stabilizing the current wide fluctuations in Taylor Park Reservoir. P

POWER is unfortunately using the emotional transmountain feature of Union Park as a media red herring. Several hydrology studies show Union Park can guarantee Taylor River flows 100% above the Colorado Water Conservation Board minimums, while still diverting an average 60,000 acre feet to Metro Denver. P
 If Union Park is integrated as a dry year backup for Denver's existing reservoirs, this 60,000 acre feet can increase Denver's safe yield by 120,000 acre feet. We believe this 2 for 1 multiplier effect is unprecedented in water engineering history. If Union Park's annual diversion averaged 80,000 acre feet, the Taylor River's guaranteed summer flows would still be 50% higher than the CWCB minimums. Without Union Park, the record shows there have been many drought years when the Taylor and Gunnison Rivers have been substantially below CWCB's minimums. During these severe drought periods, the Gunnison area's environment, agriculture, recreation, and economy are seriously damaged. *Proof*

If POWER were to adopt a constructive water purpose, a more appropriate name might be: **People's Objective Water Environmental Review.**

We wish you the best as a future positive force for helping educate the public in the factual complexities of managing Colorado's bountiful, but uneven water resources.

Sincerely,



Allen D. (Dave) Miller
 President

ADM/bm

cc: Interested local, state, and federal entities.

has substantially increased the importance of water management activities. The Regional Guide should fully access the value of water conservation projects for improving the seasonal and cyclic values for these new priorities.

5) **Supply - Demand Assessment** In the past, the Forest Service's EIS evaluation of water development alternatives has been limited to individual national forests or basins. As a result, water diversions have been approved in areas that have already been seriously dewatered, while other wetter areas were overlooked as viable alternatives. The Forest Service should insist that future EIS scoping includes a region-wide assessment of supply and demand for water resources.

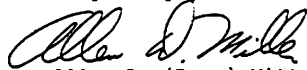
6) **Below Cost Timber Sale Policy Assessment** Timber policy is consuming much of the region's management resources, while water assessment is being largely overlooked. With the public's changing values, water policy development is probably more socially and economically important than timbering for the Rocky Mountain Region.

7) **Skiing Demand Assessment** The skiing industry complements the region's year-round water based recreation economy. Suggest the skiing assessment be handled as a sub-section under recreation.

8) **Recreation Strategies** Water is the key element in developing Rocky Mountain recreation strategies. The Forest Service should guard against rising pressures that would prematurely force water out of the headwater region before it can be stored for conservation.

In summary, water is probably the most important factor in revising the Forest Service's Rocky Mountain Regional Guide. Although water issues may be more controversial than timber, it is a major area that must be addressed to have a meaningful planning document. We sincerely believe Colorado should be concurrently working on a similar water planning effort. Hopefully, increased federal agency emphasis on water can help change the state's historic attitude and legal barriers against water resource planning.

Very truly yours,



Allen D. (Dave) Miller
President

ADM/bm

cc: Governor Romer, Colorado Legislators, USFS, BLM, EPA.

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-2013

May 14, 1990

Mr. Gary Cargill
Regional Forester
USDA, Forest Service
P.O. Box 25127
Lakewood, CO. 80225

RE: Amendment To Forest Service's Rocky Mountain Regional Guide

Dear Mr. Cargill:

Recommend that water resources be included as a major consideration in the next revision to your Rocky Mountain Regional Guide.

The following water related comments are provided for the eight assessment areas listed in your Issue No. 3 request for input to the Forest Service's Regional Guide Amendment:

1) **Forest and Range Management Assessment** Since the Rocky Mountain Region is the nation's headwater area for most rivers west of the Mississippi, a major portion of this section should be devoted to assessment of water resources. Some of the most critical water management areas to be addressed are drought cycle protection, balanced water usage between basins, point and non-point pollution, water conservation, and water resource development. To assure relevancy and consistency, the Regional Guide should be developed within the context of water resource plans and policies of the individual states. Since Colorado is the only Western state without water planning and policy guidelines, the Forest Service should insist on a state water plan or full time participation of Colorado's various water management agencies in developing the Rocky Mountain Regional Guide.

2) **Biological Diversity Assessment** Considerable emphasis should be given to the value of well conceived water conservation developments for the long term enhancement and protection of fish, wildlife, and wetlands during severe drought cycles. Drought cycles cause the greatest uncontrollable stress on the environment.

3) **Social and Economic Assessment** Water availability, usage, and development is certainly the region's most significant natural resource factor for evaluating the region's social and economic values.

4) **Economic Diversity Analysis** The shift of emphasis from timber, grazing, and mining to tourism, recreation, and wildlife

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

April 27, 1990

Board of Directors
Colorado River Water Conservation District
P. O. Box 1120
Glenwood Springs, Colorado 81602

Re: Rejection of Muddy Creek Transmountain Diversion Project

Dear Board Members:

Request the Colorado River Water Conservation District withdraw its application to construct the Muddy Creek Transmountain Diversion Project.

Colorado's Blue River has already lost much of its historical flow to Metro Denver. The Muddy Creek scheme will allow diversion of another 15,000 to 30,000 acre feet from this seriously distressed Upper Colorado river tributary. The Muddy Creek Final EIS is flawed because it does not include a cumulative analysis of Denver's planned additional diversions from the Blue River, i.e. Two Forks, Straight Creek, East Gore, Green Mountain, etc.. It also does not include several other non-Upper Colorado alternatives that would be less damaging to Colorado's environment.

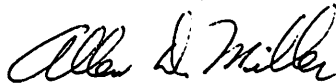
Instead of continuing to add to the Upper Colorado's 18 transmountain diversion projects, suggest the Colorado River District use a portion of its \$10.2 million Windy Gap mitigation funds to help fund the Phase II Upper Gunnison Basin Study. Although the Gunnison Basin is substantially smaller in area, it has historically generated almost as much water as the dryer Upper Colorado Basin. Since the Gunnison Basin has never been tapped with a transmountain project, this basin is the main source of Colorado's wasted water entitlements that are gratuitously flowing to the down river states. Because of these Gunnison losses and Colorado's seriously unbalanced water usage, the Colorado River District should declare a moratorium, on all diversions from the Upper Colorado Basin until the beneficial uses of the Gunnison's overlooked flood flows are properly evaluated. P

An objective Phase II Upper Gunnison Basin Water Study will undoubtedly confirm the environmental and economic advantages of the West Slope's high altitude Union Park water conservation pool for Colorado. Preliminary studies have already shown Union Park's 900,000 acre feet of storage can provide much needed multi-year drought protection for the Gunnison, South Platte, and Arkansas Basin environments. In addition, Union Park can enhance the Upper Colorado Basin by slowing Metro Denver's relentless legal and financial push to further dewater this seriously threatened area.

As a byproduct of its drought protection, Union Park can also satisfy Metro Denver's future water needs for about half the unit cost of Two Forks. The recreation value of Union Park's cyclic storage would be a major boost for the West Slope's economy.

If the Colorado River District would drop its support of the damaging Muddy Creek diversion and help evaluate the beneficial uses of the Gunnison's wasted flood flows, the West Slope's environment and economy would soon have needed protection for the inevitable drought cycles.

Sincerely,



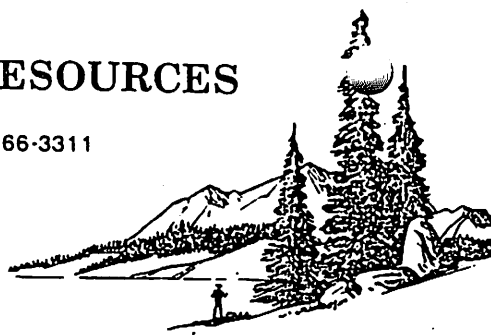
Allen D. (Dave) Miller
President

ADM/bm

cc: Governor Romer, Colorado Legislators, Club 20, Western Colorado Congress, Bureau of Land Management, United States Forest Service, Bureau of Reclamation, Environmental Protection Agency.

STATE OF COLORADO ROY ROMER, Governor
DEPARTMENT OF NATURAL RESOURCES

HAMLET J. BARRY III, Executive Director
1313 Sherman St., Room 718, Denver, Colorado 80203 866-3311



Geological Survey
Board of Land Commissioners
Mined Land Reclamation
Division of Mines
Oil and Gas Conservation Commission
Division of Parks & Outdoor Recreation
Soil Conservation Board
Water Conservation Board
Division of Water Resources
Division of Wildlife

April 24, 1990

Mr. W. Watts
7231 W. Bayaud Place
Lakewood, Colorado 80226

Dear Mr. Watts:

Governor Romer has asked me to acknowledge your essay "Colorado Water Perestroika." Many of the suggestions and observations you offer are interesting ones - in fact, several have been incorporated in legislation and introduced into the General Assembly, although without success.

As we enter the 1990's we will certainly need to examine how we plan for and manage water use and development. I appreciate your taking the time to share your ideas on this critical subject with the Governor.

Sincerely yours,

HAMLET J. BARRY III
Executive Director

HJB:c1b

0427A

P.S. I did listen to your comment at a Senate Ag. committee hearing on 5.15 or 6 or 8 weeks ago, and I appreciate the thought & time that went into your presentation.

COLORADO WATER PERESTROIKA

Public frustration with Two Forks and Colorado's confused water scene has generated several water bills in this legislative session. Unfortunately, the proposed bills, would worsen Colorado's ability to manage its water resources for today's environmental, recreational, and economic values.

Because of strong parochial differences between basins, Colorado's Legislature has purposely structured state water management agencies to be weak and ineffective. In fact, Colorado's Natural Resources Department, State Engineers Office, Water Conservation Board, and Water Development Authority have all been given nebulous, overlapping legislative charters to plan, promote, and develop Colorado's water for the public's optimum benefit. Confusing charters enable these agencies to avoid the politically difficult task of developing specific state water policies and plans. The resulting policy and planning vacuum has created management chaos and a costly water development grid lock. Our water tap fees are the highest in the West. Colorado's economy and public are suffering, while the more organized down river states and federal agencies preempt our water development decisions.

Objective state water planning became essential in the 1970s, when the federal government started reducing its funding for Western water development. However, Colorado is the only Western state that has refused to establish a strong state water planning function within its non-political State Engineers Office.

Colorado is also the only state that still requires costly court action for allocating its renewable surface waters. This highly confrontational, legalistic system supports 70 percent of our nation's water attorneys. The public ultimately pays for their endless infighting and delays. This non-technical group now also dominates our state water management agencies, as well as the politically powerful water conservancy districts.

Water conservancy districts are the state's only governmental bodies that have court appointed board members instead of members elected by the people. Because of this unique closed system, it is almost impossible to get new thinking into Colorado's traditional water establishment.

The proposed water bills sound good on the surface. However, they all have similar hidden agendas to preserve the status quo, while protecting powerful interest groups. Instead of these unproductive water bills, Colorado needs basic legislative restructuring to modernize its water management practices, i.e.:

1. Consolidate state water planning under an independent, non-political agency such as the State Engineers Office.
2. Terminate the politically oriented Colorado Water Development Authority, and re-assign its water development function back to the more effective Colorado Water Conservation Board (CWCB).
3. Direct the State Engineer's Office, in concert with CWCB, to formulate a state water plan to serve as a non-political water development guide for local, state, and federal decision makers.
4. Require at least half of the governor appointees to the Water Conservation Board to be water resource specialists, instead of non-technical representatives of special interest groups.
5. Require the State Engineers Office to issue technical opinions based on engineering and environmental merit before new water development applications are automatically referred to the courts.
6. Publicly elect water conservancy district board members.

Abner Watts, P.E., Lakewood, (303)237-3449
 Dale Raitt, P.E., Lakewood, (303)489-7427
 Consulting Engineers & retired Bureau of Reclamation executives

'Gunnison Country' opposed to water plans

Former foes unite to fight Aurora, Arapahoe 'raid'

By Bill McBean
Denver Post Staff Writer

4-16-90

Initial opposition to the Two Forks dam and reservoir began with grumbling about the partial destruction of an obscure butterfly's habitat.

But early opposition to Gunnison Basin water projects is much less ethereal — dropping on would-be water developers like a plague of locusts.

Aurora and Arapahoe County want to remove 60,000 to 100,000 acre-feet of water a year from the Gunnison River and its tributaries. That's enough water for an extra 400,000 people.

But opposition to the south suburbs' "raid" on "Gunnison Country," as residents call it, has united former enemies. Cattlemen and environmentalists, professors and state bureaucrats are linking up against the proposals.

Even though the suburbs don't anticipate needing the water for at least 20 years, they already face substantial obstacles in bringing the first drop over the Continental Divide.

Aurora city records and Water Court depositions show:

■ Bald eagle habitat is threatened by Aurora's proposed Almont Reservoir. The reservoir would be formed by damming the East River and inundating the Roaring Judy Fish Hatchery, both of which serve as a source of food for the bird.

■ Brown trout in the Taylor River may be reduced by as much as 70 percent if proposed reservoirs cut stream flows.

■ At least 200 acres of federally protected wetlands are endangered by Aurora's Collegiate Range project and Arapahoe Park's Union Park project.

■ Winter grazing land for Rocky Mountain bighorn sheep, elk and deer would be inundated in the Almont area.

■ Still, the chief objection to the projects is the loss of water.

"If you divert 100,000 acre-feet to the eastern slope, which is what both plans contemplate, you would essentially cut in half the flow of the river. That's where the real damage would be," said Assistant Attorney General Steve Sims, who represents the Colorado Water Conservation Board and the state division of wildlife,

Water projects swamped by objections

GUNNISON from Page 1B

both of which oppose the projects.

Tom Griswold, Aurora's utilities director, says abundant water in the Gunnison area isn't being used and is subject to appropriation.

Although the city has taken a preliminary look at environmental problems, he said, solutions won't be sought until the city prepares to seek a federal permit.

The environmental issues are "substantial" and will be addressed, he said, but it's too early to say how.

It's not too early, though, for Aurora's environmental engineer, Enartech Inc., to gauge the cost of mitigation for the \$320 million Collegiate Range project.

The estimate is \$36 million to \$42 million, including about \$15 million to rebuild the Roaring Judy Hatchery.

Anticipating environmental problems with Collegiate Range, Aurora last month began talks with the U.S. Bureau of Reclamation to buy more than 100,000 acre-feet of Western Slope water from Blue Mesa Reservoir.

But even removing water from an existing reservoir will cause substantial legal problems, Sims said, because critics claim the bureau's water decree says water can't be shipped out of the basin.

Potential lawsuits over a proposed Blue Mesa water sale aren't the only court challenges anticipated.

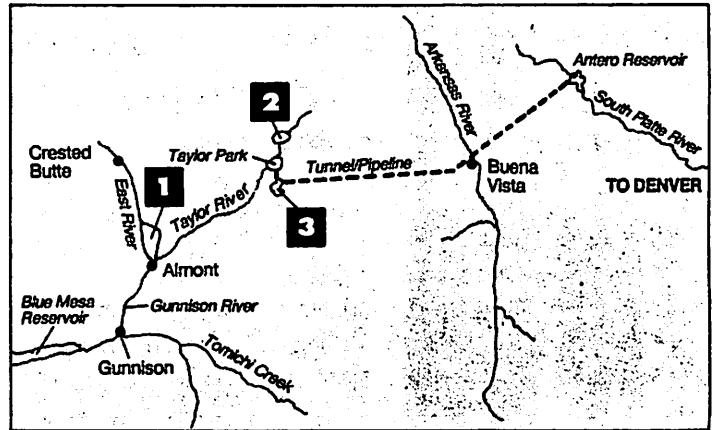
In the next year, two trials are slated in state Water Court with more than 30 individuals, companies and governmental agencies opposing the projects.

Aurora and Arapahoe County also face challenges by the National Wildlife Federation, which insists that project impact on the environment should be arguable in Water Court.

That claim has been rejected by the Water Court, but the federation has said it plans to appeal to the Colorado Supreme Court.

In addition, extensive water litigation ongoing in Greeley could affect the amount of water available

PROPOSED UNION PARK AND COLLEGIATE RANGE WATER PROJECTS



1. AURORA'S PROPOSED ALMONT RESERVOIR
2. AURORA'S PROPOSED PIEPLANT RESERVOIR
3. ARAPAHOE COUNTY'S PROPOSED UNION PARK RESERVOIR

The Denver Post

to south suburban users.

The U.S. Forest Service, which owns much of the land in the Gunnison Basin, has asked a Water Court judge to certify its water rights as a way to ensure that the forests aren't dried up by future water development.

And finally, the Colorado Water Conservation Board could fire a broadside at the suburbs by ruling that proposed reservoirs on the East and Taylor rivers would eliminate the legally mandated minimum flows.

For Arapahoe County and Aurora, the next step is a 10-day trial to begin June 25 in Gunnison Water Court. Several issues will be decided, including whether current agreements between Gunnison Basin water users and the Bureau of Reclamation are legal.

Bob Krassa, Arapahoe County water attorney, said the proposed Union Park Reservoir, a 900,000 acre-foot facility to be built above 10,000 feet, would have far fewer environmental problems than the Aurora proposals because less animal habitat would be inundated.

And Union Park's engineer, An-

drews, said the cost to mitigate environmental damage from Union Park — pegged at \$6 million — is much less than the cost for Aurora's reservoirs.

In addition, Andrews said, Union Park is more environmentally acceptable because it's an "off-stream" reservoir fed by small creeks and springs. It wouldn't dam a major river.

In droughts like the one now parching the Gunnison Basin, the carry-over supply in Union Park could do a lot to help maintain stream flows.

But the Union Park sales pitch hasn't dissuaded those who insist that "not one drop" be exported from the basin to the Front Range.

Sims says the bottom line is that either project permanently deprives the basin of its most valuable natural resource.

"That water will be no more," he said. "Once that water is pumped over the hill, it never again contributes to that basin. That's the worst impact. That in and of itself is the single most environmentally damaging aspect of both plans."

Please see GUNNISON on 4B

STATE OF COLORADO

EXECUTIVE CHAMBERS

136 State Capitol
Denver, Colorado 80203-1792
Phone (303) 866-2471



April 26, 1990

Roy Romer
Governor

Allen D. "Dave" Miller, President
Natural Energy Resources Company
P.O. Box 567
Palmer Lake, CO 80133

Dear Mr. Miller:

Thank you for your April 16, 1990, letter.

The State of Colorado has not taken a position in opposition to the Collegiate Range or Union Park project.

Mr. Sims of the Attorney General's Office informs me that the statement that implied otherwise in The Denver Post was based on the fact that the Colorado Water Conservation Board and Division of Wildlife filed statements of opposition to the water rights applications of the City of Aurora and Arapahoe County. This action gives the state agencies standing in the water court to seek terms and conditions to protect the senior water rights they own in the Upper Gunnison Basin. Filing a statement of opposition is not an unusual step for interested parties to take in a water court proceeding.

Even though Colorado does not, at this time, support or oppose either of these projects, there are a number of issues of concern to the state, some of which were described in the article. These concerns vary to some degree depending on the project under consideration. Assuming either of these projects moves forward, we expect these concerns will be addressed through the normal environmental impact statement process.

Thanks again for writing.

Sincerely,


Roy Romer
Governor

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

April 10, 1990

Governor Roy Romer
State Capitol Building
Denver, Colorado 80203

Subject: Governor's Consistency Review, Muddy Creek Transmountain Diversion Project.

Dear Governor Romer:

Request a veto of the Final EIS decision during your consistency review of the proposed Muddy Creek Transmontain Diversion Project.

As indicated in our enclosed March 17, 1990 letter to the U. S. Forest Service and the Bureau of Land Management, subject EIS violates both logic and environmental laws requiring objective consideration of all viable alternatives. Colorado's water usage between basins is seriously out of balance. The Muddy Creek diversion would only worsen this untenable situation.

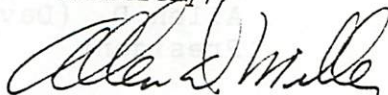
Federal and state agencies are currently severely handicapped by Colorado's EIS review process for water developments. This is because Colorado is the only Western state that has not inventoried its water resources and developed some planning guidelines for its future growth. The resulting water development gridlock is sapping the state's resources, damaging our economy, and creating the highest water development costs and fees in the West.

We strongly recommend that state laws be changed to allow state and federal evaluation of water development proposals within the context of statewide water policy and planning guidelines. This would be good management -- not socialism, as indicated by Colorado's politically powerful water traditionalists.

The public deserves some aggressive leadership in this very important state water management arena.

Your views on this subject would be appreciated.

Sincerely,



Allen D. (Dave) Miller
President

ADM/bm

Encls: Letter dated March 17, 1990, Union Park Facts, April 3, 1990.

cc: USFS, BLM, state legislators.

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

FAXED TO (303)844-8243)

April 16, 1990

Governor Roy Romer
State Capitol Building
Denver, Colorado 80203

Dear Governor Romer:

Request an immediate Governor's statement refuting today's Denver Post article that indicates state agencies oppose the Union Park Water Conservation Project for environmental reasons.

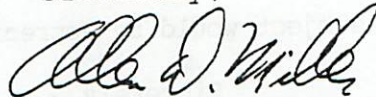
Assistant Attorney General Steve Sims is the attorney representing the Colorado Division of Wildlife and the Colorado Water Conservation Board. He is advising the media these agencies are opposing Union Park because it will cut river flows and damage the environment.

The Sims' statements have no basis in fact. Union Park's high altitude water storage is specifically designed to enhance Colorado's environment by augmenting river flows on both slopes during the damaging drought cycles. No Colorado agency has evaluated the potential beneficial uses of the Gunnison's wasted flood flows, and no state agency has evaluated Union Park as a water conservation pool for enhancing Colorado's four major river environments.

Union Park water rights are currently being considered in state water court. An unsubstantiated public statement by a state official against a proposed water development is unprecedented in Colorado's legal history. An immediate public refutation from your office is a necessary first step toward correcting the prejudicial damage.

Please advise with regard to additional action contemplated.

Sincerely,



Allen D. (Dave) Miller
President

ADM/bm

Enclosure: Denver Post Article, April 16, 1990.

cc: Colorado Attorney General, Division of Wildlife, Water Conservation Board, Department of Natural Resources, State Engineer, Arapahoe County, City of Aurora, Colorado Legislators, Denver Post.

April 3, 1990

UNION PARK FACTS

(The Gunnison's Water Conservation Project For Colorado)

FACT NO. 1 - Surplus Water During the 1950's, the Bureau of Reclamation's Regional Water Planning Studies identified up to 450,000 acre feet of surplus Upper Gunnison flood waters that could be used for East Slope growth, without adversely impacting senior water rights or the environment. Since that time, Upper Gunnison water needs have actually been declining, because of improved irrigation techniques and retirement of marginal land that has become salty from over irrigation. By comparison, the Denver Water Department's safe annual yield from its existing West and East Slope reservoirs totals 295,000 acre feet. Colorado is annually losing over 900,000 acre feet of its Colorado River Compact entitlement via the Gunnison River. Down river states are happily using this surplus water at no cost, because Colorado has not been able to develop it for its own usage.

FACT NO. 2 - Unbalanced Usage Colorado's renewable surface water consumption is seriously out of balance. Currently, all transmountain water for East Slope use comes from the Upper Colorado Basin via 18 diversion projects. Although this basin has already been severely dewatered, the cumulative impact of the planned Two Forks, Muddy Creek, Home Stake II, Straight Creek, East Gore, Eagle Piney, Green Mountain, etc. would further damage this area's seriously depleted headwater tributaries. Meanwhile, the wetter Upper Gunnison area remains untapped and generally overlooked when considering the state's overall water resources.

FACT NO. 3 - Union Park's Efficiency By pumping less than 10% of the Gunnison's wasted flood waters into high altitude Union Park storage, this 900,000 acre feet West Slope reservoir will provide invaluable benefits for Colorado's four major river environments. Union Park's off-river storage can provide needed drought cycle protection for the Gunnison, South Platte, and Arkansas River environments, while also satisfying Metro Denver's future growth needs. The Upper Colorado will also benefit, as it will not be necessary to construct the near and long-term diversions planned from this dewatered area. Corps of Engineers' computer analysis has confirmed Union Park can increase the Denver Water Department's safe annual yield by 2 acre feet for every acre foot actually diverted to the South Platte. Because of this unprecedented "multiplier effect", Union Park can increase Metro Denver's safe annual yield 40% more than Two Forks for about half the unit cost.

FACT NO. 4 - Benefits For Upper Gunnison The Union Park Water Conservation Project will provide major environmental, recreational, and economic benefits for the Upper Gunnison area. The Taylor Park Reservoir and Taylor River currently experience wide fluctuations from floods and droughts. During multi-year droughts, the Taylor and Gunnison Rivers are currently reduced to damaging low levels. Union Park can guarantee flows on these rivers at rates substantially higher than the minimum flows recently established by the Colorado Water Conservation Board. Union Park's 4,000 acre reservoir will also be a world class Lake Trout fishery located in a remote, off-river, sage covered bowl with a very low cost dam site. At 10,000 feet altitude, Union Park will be the world's largest and highest multi-purpose water project. The non-polluting peaking power revenue from its high tech reversible pump generators will more than pay for the cost of filling this reservoir. The

high volume gravity siphon to the South Platte and Metro Denver will only be used as back up drought insurance for Metro Denver's existing reservoirs. The Upper Gunnison's environment and water based recreation economy will benefit from stabilized reservoir levels and guaranteed river flows. Metro Denver will welcome the privilege of paying for a project that will provide a very low cost water supply for its future growth. Environmentally damaging reservoirs on the scenic Gunnison and South Platte Rivers will not be required. If the City of Gunnison retains its \$1,000 option contract to participate in Union Park, it will net a value of at least \$50 million in needed storage, water rights, and reduced power fees for its citizens. Union Park will stimulate Colorado's entire economy with its superior efficiency.

FACT NO. 5 - Collegiate And Taylor Not Comparable The Collegiate Range and Taylor Park transmountain diversion proposals from the Gunnison are not comparable with Union Park. Aurora's Collegiate concept would siphon continuously to a Two Forks type reservoir on the South Platte from a small collection reservoir above Taylor Park. Another small reservoir on the East River at Almont would supposedly mitigate the constant flow diversion to the East Slope. The Upper Gunnison River District's proposed Taylor Park diversion is similar to Collegiate, except the Bureau's Blue Mesa Reservoir would absorb the diversion loss. Both of these concepts would worsen the current problem of wide fluctuations in Taylor Park Reservoir levels and Taylor River flows. These concepts would also seriously impact major tourist routes, and require additional carryover storage on the South Platte. In contrast, Union Park holds many years of surplus flood flows in remote, high altitude, West Slope storage where it can be flexibly managed to guarantee water supply and environmental protection for both slopes during the critical drought cycles.

FACT NO. 6 - Benefits For Bureau As early as 1983, the Bureau of Reclamation acknowledged the benefits of Union Park's water regulating and conservation benefits above its Blue Mesa complex. By capturing and holding low value flood waters at high altitude, the value of these waters is increased many fold when it is released to the Bureau's down river power and water supply systems during drought cycles. Because of this very important drought augmentation for the Colorado River, the Bureau and other down river water users may be interested in paying a share of Union Park's construction cost.

FACT NO. 7 - State Water Planning Until the 1970's, the Bureau of Reclamation did most Western water planning. Now that federal construction funds are drying up, Colorado is the only Western state that has not developed a strong water planning agency of its own. In fact, Colorado's water management agencies are prohibited from evaluating the state's overall water development options. This is because of historical mistrust between basins, and a complete dependence on a highly legalistic procedure for allocating the state's water resources. In this planning vacuum, high handed proposals like Two Forks can be forced on our innocent public without due regard to the state's overall water supply and environmental situation. None of our state's water management agencies officially evaluated the ill-conceived Two Forks concept. If Colorado had effective water planning, the ignored Union Park Project would have clearly surfaced long ago as the most efficient, environmentally sound, large water alternative ever conceived for Colorado.

(This Natural Energy Resources Company message was prepared for a special April 3rd public meeting on water, sponsored by the City of Gunnison. Natural Energy is a private water development firm that sold its Union Park Project to Metro Denver's Arapahoe County in 1988 for \$2.2 million.)



W. H. MILLER, Manager

Board of Water Commissioners

1600 W. 12th Avenue Denver, CO 80254 Phone (303) 628-6000

Telecopier No. (303) 628-6509

HUBERT A. FARBES, JR., President
MALCOLM M. MURRAY, 1st Vice-President
MONTE PASCOE
DONALD L. KORTZ
MS. ROMAINE PACHECO

March 5, 1990

Dave Miller
Palmer Lake, CO 80133

Dear Mr. Miller:

Ordinarily I read the material that you send out and ignore your continuing attacks on Two Forks.

However, your February 1990 diatribe comparing Two Forks Dam and the Berlin Wall is not only in bad taste, but it is insulting to the Board of Water Commissioners and the 1100 employees here where we are dedicated to providing a community service.

The debate on the facts of any water project - yours included - is one thing. But your most recent comments are in bad taste and inexcusable.

W. H. Miller

April 27, 1990

Bill:

The Two Forks debacle is a result of management's myopic push for a ruinous concept. The 1100 dedicated employees surely do not share the blame. Neither do most Berliners for the Wall.

DWD's management can soon correct its mistake and provide a community service by participating in an objective evaluation of the superior alternatives that were purposely ignored in the EIS.

Dave

Colorado needs to clear up muddied waters surrounding water policy

Editor: Colorado's abortive Two Forks Dam is a classic example of how public agencies can go wrong when allowed to operate in a policy and planning vacuum.

It all began more than 30 years ago when the Denver Water Department started to secretly purchase West and East Slope water rights for Two Forks. Surrogate buyers were often used to disguise DWD's eventual ownership.

Most of these targeted waters were from West Slope tributaries that had already been severely dewatered by metro Denver. DWD ignored the Bureau of Reclamation's regional studies, which identified the untapped Gunnison Basin as an ideal alternative for East Slope growth.

DWD had its own closed agenda. Its

lawyers skillfully engineered water laws that prevented state agencies from evaluating new water developments. Because of these laws, Colorado is the only Western state that has never developed state water policy and planning guidelines.

A few courageous water engineers questioned the state's unbalanced water usage. Unfortunately, these resource professionals were quickly submerged under DWD's relentless political push for Two Forks.

The demise of Two Forks has now shifted the district's priority to construction of Muddy Creek Reservoir, as an alternative money generator. Muddy Creek may cover the district's substantial staff expenses, but this new diversion project will also

worsen the Upper Colorado's water depletion problem.

If Colorado's laws were changed to allow objective evaluation of the state's water sources, Arapahoe County's Union Park Water Conservation Project would stand out as the creme de la creme of all water projects. This 900,000-acre-foot Upper Gunnison reservoir will soon provide urgently needed drought insurance for Colorado's four major river environments.

In flood times, about one-tenth of the Gunnison's wasted flows will be pumped into long-term, high-altitude storage for release to the Gunnison, South Platte and Arkansas basins during the critical multi-year drought cycles.

The depleted Upper Colorado Basin will

also benefit because DWD's planned Two Forks, Muddy Creek, Green Mountain, Straight Creek and Eagle-Piney reservoirs would not be required. Colorado is entitled to almost a million acre feet of Gunnison flood waters that are currently lost to California.

Colorado's economy is suffering from costly water development confusion, and a gridlock that has created the highest water fees in the West. This cloudy water could be cleared if Colorado would develop some objective policy and planning guidelines for managing its water resources.

DAVE MILLER

Natural Energy Resources Company
Palmerdale

Rocky Mountain News

Wed., April 25, 1990

LETTERS

Colorado well-served by water policy

Editor: Dave Miller's April 5 letter ("Colorado needs to clear up muddied waters surrounding water policy") was a condemnation of one of the finest water systems in the United States. Colorado's system of prior appropriation, which is administered by the water courts, the state

engineer and the Colorado Water Conservation Board, has served Colorado well.

It is not a new water policy that is needed. We need to give all of Colorado participation in all the water to which the state is entitled no matter where it comes from.

Dave Miller deserves support, however, for his proposal that 900,000 acre feet of water to which Colorado is entitled be stored in the Upper Gunnison River Reservoir for use in the South Platte, Arkansas and the Gunnison river basins.

The inter-basin exchange should also be applied to the billions of acre feet of groundwater storage in the San Luis Valley. With additional water storage, interconnected to existing and proposed projects, Colorado could supply water to the entire state in short water years.

DAVID J. MILLER

Former member, Colorado Water Board

Greely

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

January 23, 1990

Ms. Stephanie Raphael
Colorado Environmental Coalition
777 Grant Street, Suite 606
Denver, Colorado 80203-3518

Dear Ms. Raphael:

Sorry for the delay in answering your November 1989 request for information on Colorado's Union Park Water Supply Project.

The enclosed material provides a brief overview and some of the basics of the concept. As you probably know, NECO sold the Union Park Project to Arapahoe County in August 1988.

I understand Arapahoe's engineer is sending you their latest Union Park Engineering and Environmental Report. The yields in this report are based on the assumption that Union Park is a stand alone project, primarily for Arapahoe County.

The Corps of Engineers has confirmed that if Union Park is used as a dry year backup for Metro Denver's existing reservoirs, Denver's safe annual yield would multiply by two acre feet for every acre foot actually diverted from the Gunnison Basin. This unprecedented multiplier effect means Union Park's cost per acre foot of safe annual yield would be less than half that of Two Forks. Because of the cost and environmental benefits, we are confident Union Park will prevail as Metro Denver's and Colorado's water project of the future.

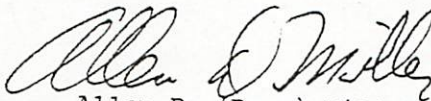
In short, the high altitude Union Park Project can use a small portion of the Gunnison's wasted flood flows to benefit the Gunnison, South Platte, and Arkansas environments and wet lands during the critical drought periods. It will also indirectly help the Upper Colorado Basin by reducing the need to continue the excessive depletions from the one area that is the source of all current transmountain water.

For the first time, Colorado will have a cost effective water supply system that provides **balanced** use of our renewable water resources.

We would be honored to provide additional information and briefings on the Union Park concept whenever desired.

Thank you for your interest.

Sincerely,


Allen D. (Dave) Miller
President

ADM/bm

Enclosure: Union Park information.

NATURAL ENERGY RESOURCES COMPANY

P. O. Box 567 • Palmer Lake, Colorado 80133 • (719) 481-2003 • FAX (719) 481-4013

January 18, 1990

Congressional Candidate Merlyn Carlson
R.R. 1, P.O. Box 6
Lodgepole, Nebraska 69149

Dear Candidate Carlson:

One of our rancher board members has advised that you are interested in learning more about Colorado's Union Park Water Supply alternative before formulating your pending Congressional election position on Two Forks Dam. The enclosed material briefly explains why the overlooked Union Park option from the untapped Gunnison Basin is substantially superior to Two Forks, from both an environmental and economic viewpoint.

For the past three years our company has been aggressively pointing out to Colorado, Nebraska, and national leaders that the Corps' Metro Denver Water Supply EIS seriously violates the intent of the National Environmental Policy Act (NEPA). This is because the analysis purposely ignored several ongoing water projects that are reasonable alternatives. The Bush Administration is vetoing Two Forks largely because NEPA's basic requirement to study "all reasonable alternatives" was buried under intense political pressure to approve Denver's obsolete Two Forks concept.

You are correct that the Corps' EIS indicates Two Forks would slightly increase the Platte's average flow in Nebraska. However, water right experts know that the EIS overlooked the fact that Denver's West Slope Blue River decrees require maximum use of transmountain water. This means when Denver fully develops its recycling capability, the Platte's total flow in Nebraska would be less than now. Even without recycling, a low altitude South Platte dam would decrease the critical drought flows in Nebraska to the point where dry-ups would jeopardize fish and food supply for water birds.

An even greater threat is the fact that a major low altitude dam on the South Platte will interrupt the natural flood flows in Nebraska. The periodic scouring effect of the floods keeps the Platte's river banks and channels open for the internationally important migratory birds. Open areas are essential to give these birds protection from predators. Wildlife experts who have the freedom to conduct objective studies know that Denver's offer to artificially clear vegetation encroachment along the Platte would not be adequate for Nebraska's highly sensitive bird population.

Union Park's massive, high altitude, off-river storage of a small portion of the Gunnison's wasted flood waters will actually enhance the Gunnison and Platte River flows and environments

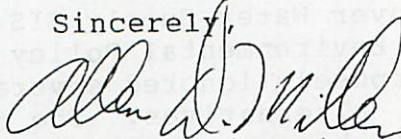
during the critical drought periods. On the other hand, the low altitude Two Forks Dam requires further depletion of the same Upper Colorado River tributaries that have already been hard hit with 19 transmountain diversions to the East Slope. It is well known that Two Forks would also devastate a nationally treasured canyon and fishery near Denver.

In short, the 70 year Two Forks idea gained a great deal of political momentum in Colorado in the absence of a state water plan or objective analysis of reasonable alternatives. We sincerely believe it would be a serious mistake for a Nebraska Republican politician to support Two Forks in opposition to the courageous, farsighted veto decision of the Bush Administration.

We would be honored to further explain the several superior ongoing alternatives to Two Forks whenever desired by you and/or other Nebraska interests.

Thank you very much for your thoughtful consideration.

Sincerely,



Allen D. (Dave) Miller
President

ADM/bm

Encls: Papers and articles on Union Park

cc: Colorado, Nebraska, and national leaders.

COLORADO BASIN OF ORIGIN BILL, HB 90-1014
(California Water Relief Act)

The following is a brief summary of this bill's impact and hidden agenda:

1. The Upper Colorado Basin has already been severely depleted with 19 trans-mountain diversions to the East Slope. There are many undeveloped decrees that would further deplete this same distressed basin. (i.e. Two Forks, Home Stake II, Eagle Piney, Green Mountain, Straight Creek, Williams Fork, East Gore, Muddy Creek, etc.) These old decrees would be exempt from the very broad basin protection hurdles proposed in subject bill.
2. The real impact of subject bill is to stop innovative new water concepts from other basins until East Slope entities have fully developed their decrees from the overly depleted Upper Colorado tributaries.
3. The bill is specifically aimed at stopping the balanced use of the untapped Gunnison Basin's wasted flood flows. Colorado is entitled to these nearly million acre feet that are gratuitously flowing to California.
4. The Colorado River and Northern Colorado Water Conservancy Districts support subject bill to create an artificial market for their surplus Windy Gap water, which is an embarrassing financial strain for the project's participants. Also, the additional Upper Colorado diversions would produce income to cover the substantial staff overhead expenses of these districts.
5. Under Colorado's constitution, unallocated surface waters belong to all the people. Colorado water laws use the same criteria for new decrees, regardless of basin of origin. Subject bill would give basins and conservancy districts inordinate power over the public's water. In fact, this bill would impose overly broad new protection measures for "present and future appropriators in the basin of origin" that must be resolved before any inter-basin or inter-district transfers could get to first base. This is a sure legal formula for extortion or stoppage of new water developments that maximize the beneficial use of water for the greater good.
6. Although Colorado generates most of the renewable water for Southwestern States, it has by far the highest water development costs and tap fees. Seventy percent of our nation's water attorneys are required to administer Colorado's highly unplanned, legalistic, confrontational water management system. This archaic system has created a very costly water development grid lock, that has virtually stopped innovative water development for the public. Meanwhile, the down river states that have effective water planning are exploiting Colorado's byzantine infighting and confusion.
7. The bill would further worsen Colorado's parochialism and ability to modernize its water management practices for today's environmental, recreational, and economic values. The public would suffer while the old guard would be free to continue its unbalanced dewatering of a single basin.
8. Subject bill should be called the California Water Relief Act.

Andy Andrews, P.E., Denver, (303)757-8513
Dave Miller, Palmer Lake, (719)481-2003



Rocky Mountain News

EDITORIALS

"Give light and the people will find their own way"

December 19, 1989 Rocky Mountain News

LETTERS

Colorado's water future lies with Union Park project

Editor: Coloradans should stop worrying about the Two Forks' veto. For the first time, Colorado has a water project that will unite people on both slopes.

The innovative Union Park Project is quite simple. Instead of Colorado losing a yearly average of a million acre-feet of its Gunnison flood waters to California, a small portion of these wasted waters will be pumped into Union Park's off-river, sage-covered bowl on the Continental Divide. In drought years, this Two Forks-sized reservoir will release water by gravity conduit and siphon to the river environments on both slopes.

Union Park was first envisioned by Marvin Greer, a retired Bureau of Reclamation engineer and father of Colorado's Big Thompson Project. Greer recognized how advanced technology could be applied to this overlooked, high-altitude reservoir site. In 1982 he helped form the Natural Energy Resources Co. to develop the potential of Union Park. In 1986, the company disclosed the project's details when it

filed in water court for a diversion from the Gunnison River.

The Union Park Project was sold to farsighted Arapahoe County in 1988. Arapahoe County and the City of Aurora have recently agreed to cooperate instead of compete for the Gunnison's flood waters. The Gunnison, Parker and Castlewood water districts are initial Union Park participants. The Denver Water Department and other metro-Denver water providers are expected to join, when they are freed from Two Forks enough to consider Union Park's extraordinary environmental and economic advantages.

Union Park can unite Colorado on water, because it satisfies today's public values regarding the environment, recreation and economic efficiency. Environmentalists are not in the habit of endorsing large water projects, but those who have taken an objective look are impressed with Union Park's capability to benefit river flows and wetlands during droughts. Union Park is environmentally unique, too, because its

remote, off-river site can enhance Colorado's treasured rivers and canyons.

Colorado's water community is also starting to recognize Union Park's surprising advantages. Corps of Engineer's computer modeling has confirmed that Denver's safe yield multiplies by two acre-feet for every acre-foot of Gunnison water actually diverted. This "multiplier" phenomenon is upsetting to many water traditionalists because it is a key reason Union Park's safe-yield cost is only about half that of their Two Forks project.

If Colorado's powerful, appointed water experts were to allow state water planning, the Gunnison's untapped flood waters would quickly surface as the state's most logical future water source. It is only a matter of time until the Union Park Conservation Project becomes the public's water choice for all of Colorado.

ABNER WATTS
Retired Bureau of Reclamation engineer
Denver

December 5, 1989

UNION PARK - THE PUBLIC'S WATER CHOICE

Coloradans should stop worrying about the Two Forks' veto. For the first time, Colorado has a water project that will unite its people on both slopes.

The innovative Union Park Project is quite simple. Instead of Colorado losing a yearly average million acre feet of its entitled Gunnison flood waters to California, a small portion of these wasted waters will be pumped into Union Park's off-river, sage covered bowl on the Continental Divide. In droughts, this Two Forks sized reservoir will release water by gravity conduit and siphon to the river environments on both slopes.

Union Park was first envisioned by Marvin Greer, a retired Bureau of Reclamation engineer and father of Colorado's Big Thompson Project. Greer recognized how advanced pumped storage technology could be applied to this overlooked, high altitude reservoir site. He was 73 when he helped form Natural Energy Resources Company in 1982 to develop the potential of Union Park. In 1986 the company disclosed the details of its multipurpose concept when it filed in water court for a diversion from the Gunnison.

The Union Park Project was sold to farsighted Arapahoe County in 1988. Arapahoe County and the City of Aurora have recently agreed to cooperate instead of compete for the Gunnison's flood waters. The City of Gunnison, Parker, and Castlewood Water Districts are initial Union Park participants. The Denver Water Department and other Metro Denver water providers are expected to join, when they are freed from Two Forks enough to consider Union Park's extraordinary environmental and economic advantages.

Union Park can unite Colorado on water, because it satisfies today's public values regarding the environment, recreation, and economic efficiency. Environmentalists are not in the habit of endorsing large water projects. But those who have taken an objective look, are impressed with Union Park's capability to benefit river flows and wetlands during droughts. Union Park is environmentally unique because its remote, off-river site can enhance Colorado's treasured rivers and canyons.

Colorado's water community is also starting to recognize Union Park's surprising advantages. When Union Park is used as backup drought insurance for Metro Denver's existing reservoirs, Corps of Engineer's computer modeling has confirmed Denver's safe yield multiplies by 2 acre feet for every acre foot of Gunnison water actually diverted. This "multiplier" phenomenon is upsetting for many water traditionalists, because it is a key reason Union Park's safe yield cost is only about half that of their Two Forks Project.

If Colorado's powerful, appointed water experts were to allow state water planning, the Gunnison's untapped flood waters would quickly surface as the state's most logical future water source. It is only a matter of time until the balanced Union Park Conservation Project becomes the public's water choice for all of Colorado.

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Technical Summary

UNION PARK VS COLLEGIATE RANGE

An independent technical evaluation of the Gunnison's Union Park and Collegiate Range transmountain water alternatives would quickly show Union Park can substantially enhance the environmental, recreational, and economic values for Colorado's West and East Slopes. Collegiate is not technically acceptable for either slope for the following basic reasons:

- 1) Collegiate can not increase Metro Denver's safe annual yield without extensive additional East Slope storage.
- 2) Collegiate's small diversion and replacement reservoirs above Taylor Park Reservoir and Town of Almont are environmentally unacceptable, because of the sensitive nature of these locations and high cost of mitigation. (Aurora's own study indicates 34 to 42 million dollars).
- 3) Collegiate's low-head, continuous-flow diversion to the East Slope would substantially reduce the Bureau of Reclamation's current ability to regulate Taylor Park Reservoir levels and West Slope river flows. In contrast, periodic releases from Union Park's massive West Slope storage can be managed to optimize reservoir levels, river flows and drought protection for both slopes.
- 4) Collegiate's continuous-flow diversion above Taylor Park Reservoir would exacerbate Taylor's shoreline fluctuations, which would create a direct environmental conflict with Natural Energy's senior Rocky Point Pumped Storage Project.
- 5) Collegiate does not have Union Park's multi-year back-up storage which will give Metro Denver the unprecedented, proven ability to multiply its safe annual yield by 2 acre feet for every acre foot actually diverted from the Gunnison Basin.
- 6) When Collegiate's necessary East Slope multi-year, carry-over storage is included, Collegiate's true safe yield cost would be almost triple that of Union Park and double that of Two Forks.

Note: The transmountain comparisons in the Colorado Water Resources and Power Development Authority's Phase I Upper Gunnison Study should be disregarded. These comparisons were "politically engineered" with erroneous cost estimates and unequal evaluations of project yields, system costs, and environmental impacts and benefits. This improper treatment drastically skewed the study results to favor the Taylor Reservoir diversion alternative preferred by the Gunnison's water district representative on the Authority's board.

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