



July 1, 2003

Mr. Ron Carlson, PE
Regional Manager
Idaho Department of Water Resources
900 North Skyline
Idaho Falls, Idaho 83402

Dear Ron:

Rocky Mountain EnvironmentalSM has reviewed the draft mitigation plan for the Andrew Povey transfer dated June 26, 2003. In the proposed plan, mitigation will be obtained from the Water District 1 Global Rental Pool.

- Based on mitigation from the rental pool, Rocky Mountain EnvironmentalSM
- A. has revised the *effects.xls* spreadsheet to estimate depletion resulting from the proposed transfer, and
 - B. has revised a mitigation plan that reflects changes in stream flow that result from the change in the P/D.

CHANGES IN STREAM DEPLETION

The effect of a pumping well on surface water is a function of aquifer properties [transmissivity and storativity], duration of pumping, and the distance from the stream [the **geographic effect**]. All other parameters held equal, a well located closer to a stream has a greater effect sooner than a well located farther from a stream. Because the proposed transfer of Water Right 35-2391 and 35-7777 will move the P/D southwest across the ESRP aquifer, the *effects.xls* spreadsheet predicts that there will be an increase in depletion in the Neeley-Minidoka and Milner-King Hill reaches of the Snake River.

This mitigation reflects the projected increase in stream depletion calculated by *effects.xls*, rather than a percentage of CU of the crops grown at the new P/U.

The following conditions should be placed on the mitigation plan:

1. In years when reservoirs fill and there are flood releases past Milner dam, purchase from the rental pool is no required.
2. Should IDWR rules or procedures for calculation of depletion change, any revisions may only be applied to reduce applicant's mitigation requirement.
3. Applicant may purchase additional water rights that would provide an offset to the analysis under which this plan is based.

Please call me to discuss any questions that may arise.

Please visit www.rockymountainenvironmental.com for information about recent projects and accomplishments at Rocky Mountain EnvironmentalSM.

Sincerely,



James D. Rush, PG
Vice President
e-mail: jrush@rockymountainenvironmental.com



Rocky Mountain EnvironmentalSM completed the hydrologic analysis using the following inputs:

1. Consumptive use commenced in 1954 at 344 ac-ft/trimester in spring and summer and increased in 1978 to 552 ac-ft/trimester in spring and summer. At 4 acre-ft/a, 276 acres are irrigated.
2. All consumptive use stopped at the FROM well in 1987.
3. In 2004, 1104 ac-ft/yr will be transferred to the TO well. C/U is 552 ac-ft/trimester, divided into spring and summer: there is no C/U in winter of each year.
4. If the transfer is not approved, pumping at the FROM well will resume in 2004.
5. TO well is located in Grid 12, 36, and FROM well is located in 22, 44.

Please allow me to summarize the attached charts:

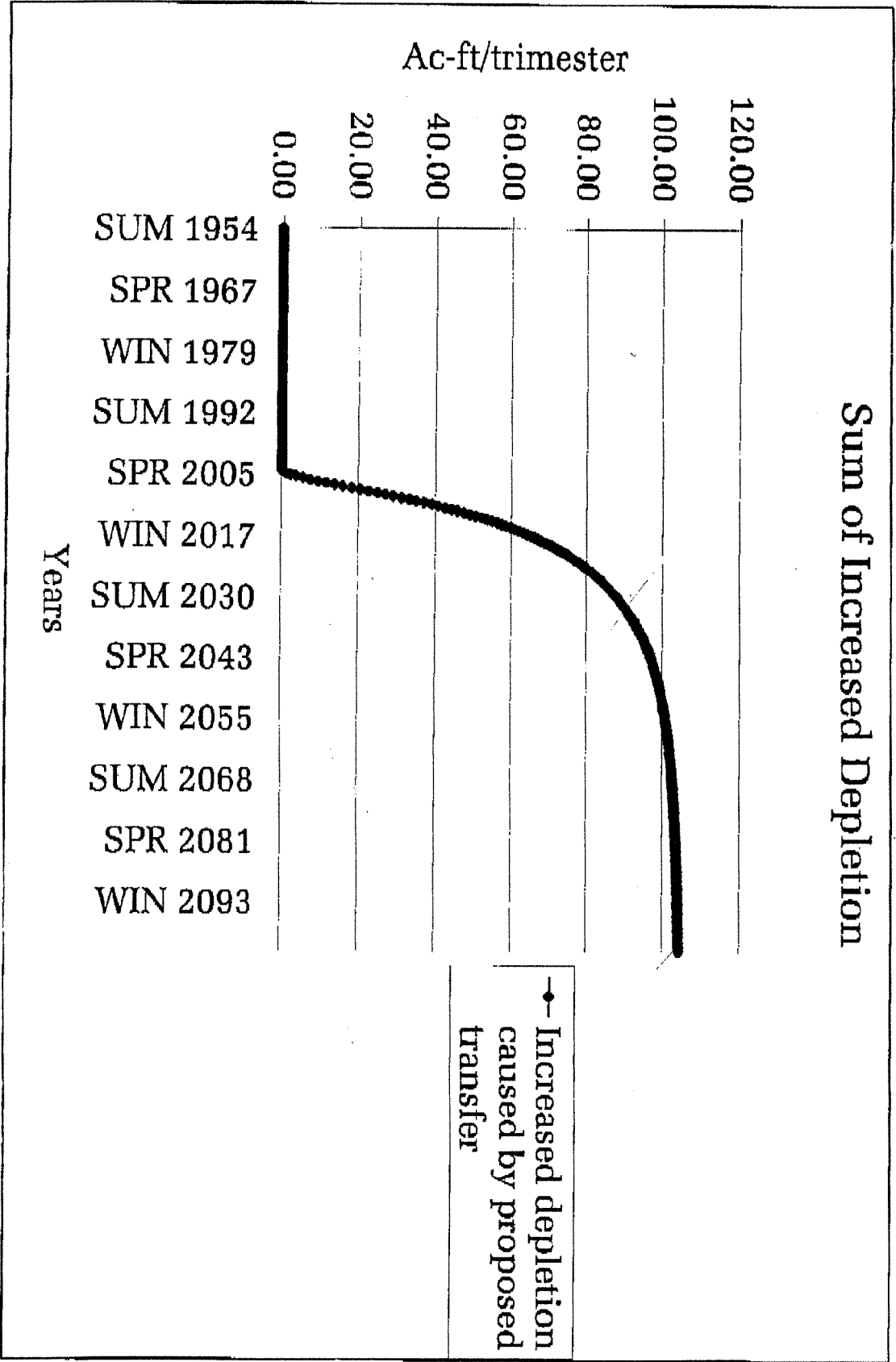
- A. *Hydrologic Response—Near Shelley to Neeley Reach*: There is less depletion, because the P/D is moved away from this reach.
- B. *Hydrologic Response—Neeley to Minidoka Reach*: The movement of the P/D southwest across the ESRP has major **geographic** effect on the Neeley-Minidoka reach of the Snake River, because the new P/D is closer to this reach.
- C. *Hydrologic Response—Milner to King Hill Reach*: The movement of the P/D southwest across the ESRP has major **geographic** effect on this reach, because the new P/D is closer.
- D. *The Net Transfer Effect* reveals that there is an increase in depletion in the Neeley and Milner Reaches.

PROPOSED MITIGATION

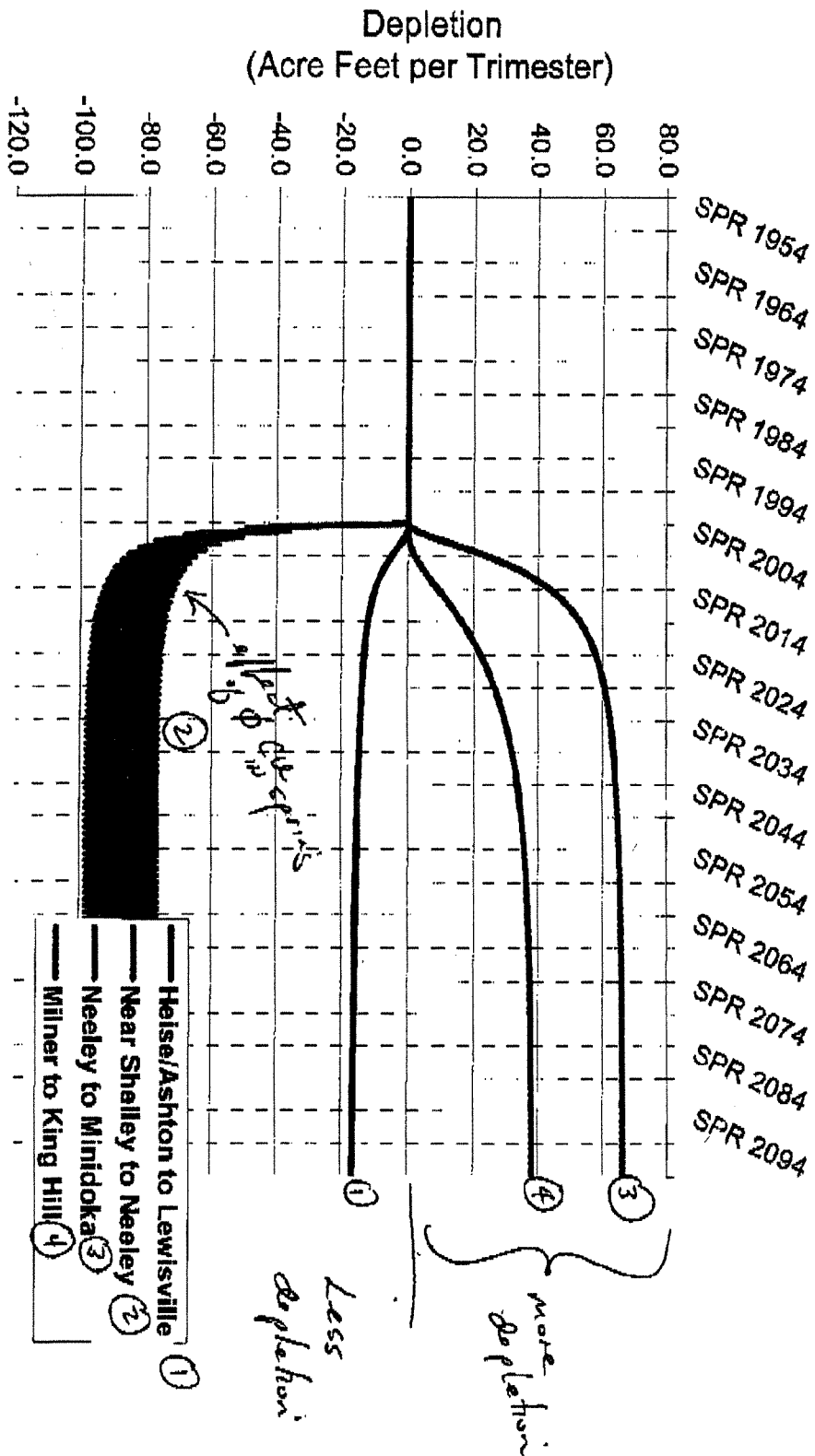
The proposed change in the P/D will increase depletion in the Neeley to Minidoka and Milner to King Hill reaches. This increase is summarized in the chart entitled *Sum of Increased Depletion*. This chart summarizes the increases in depletion in the two affected reaches. Basically, the increase in depletion is 2 ac-ft/yr in 2004, 12 ac-ft/yr in 2005, and rises to 313 ac-ft/yr in 2103. The depletion in each trimester is summarized on the attached tables.

Rocky Mountain EnvironmentalSM suggests that the proposed transfer of Water Right 35-2391 and 35-7777 be mitigated using Water District 1 Global Rental Pool. Each spring, the applicant would purchase the projected increase in depletion from the rental pool. Basically, the increase in depletion is 2 ac-ft/yr in 2004, 12 ac-ft/yr in 2005, and rises to 313 ac-ft/yr in 2103.

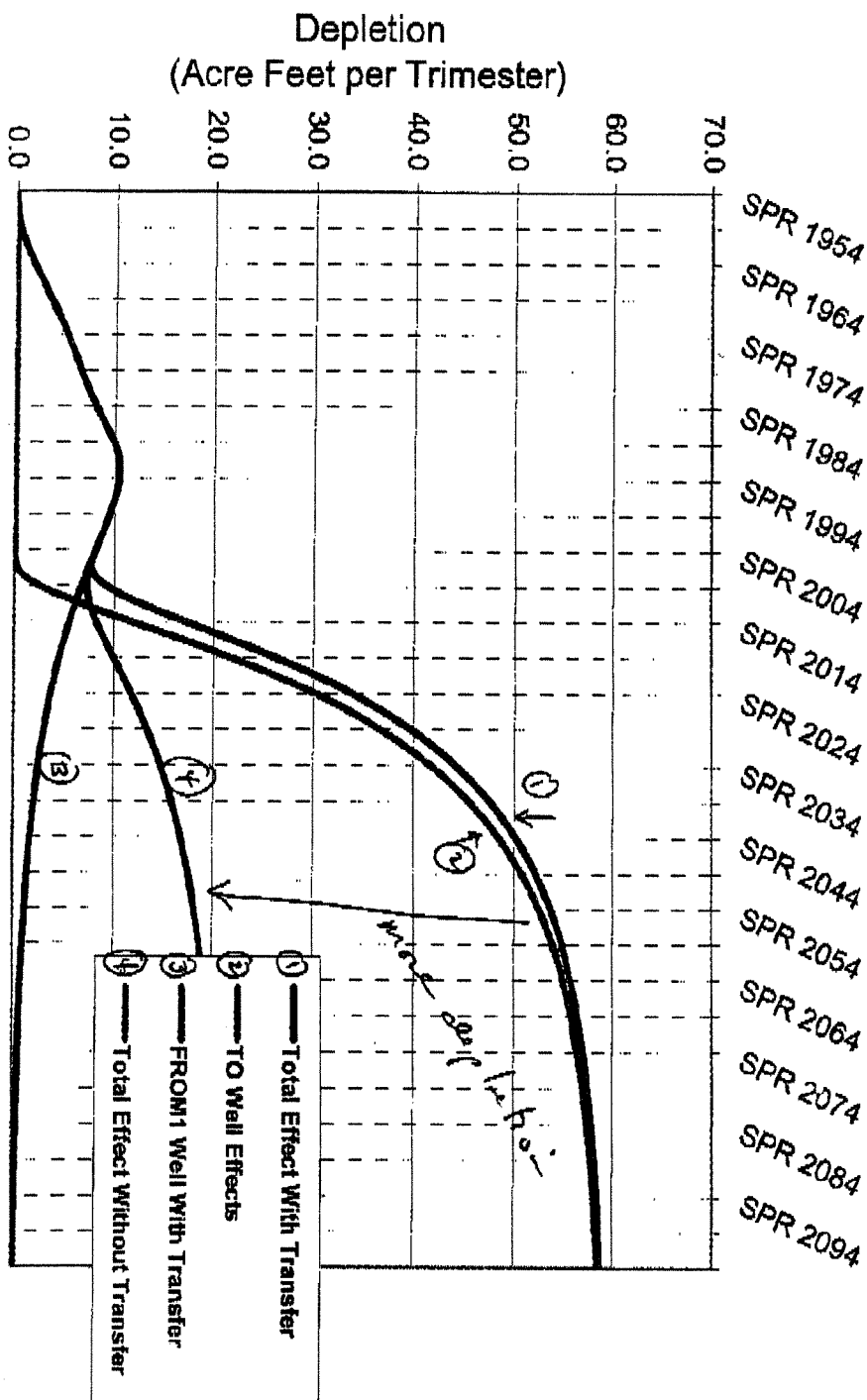




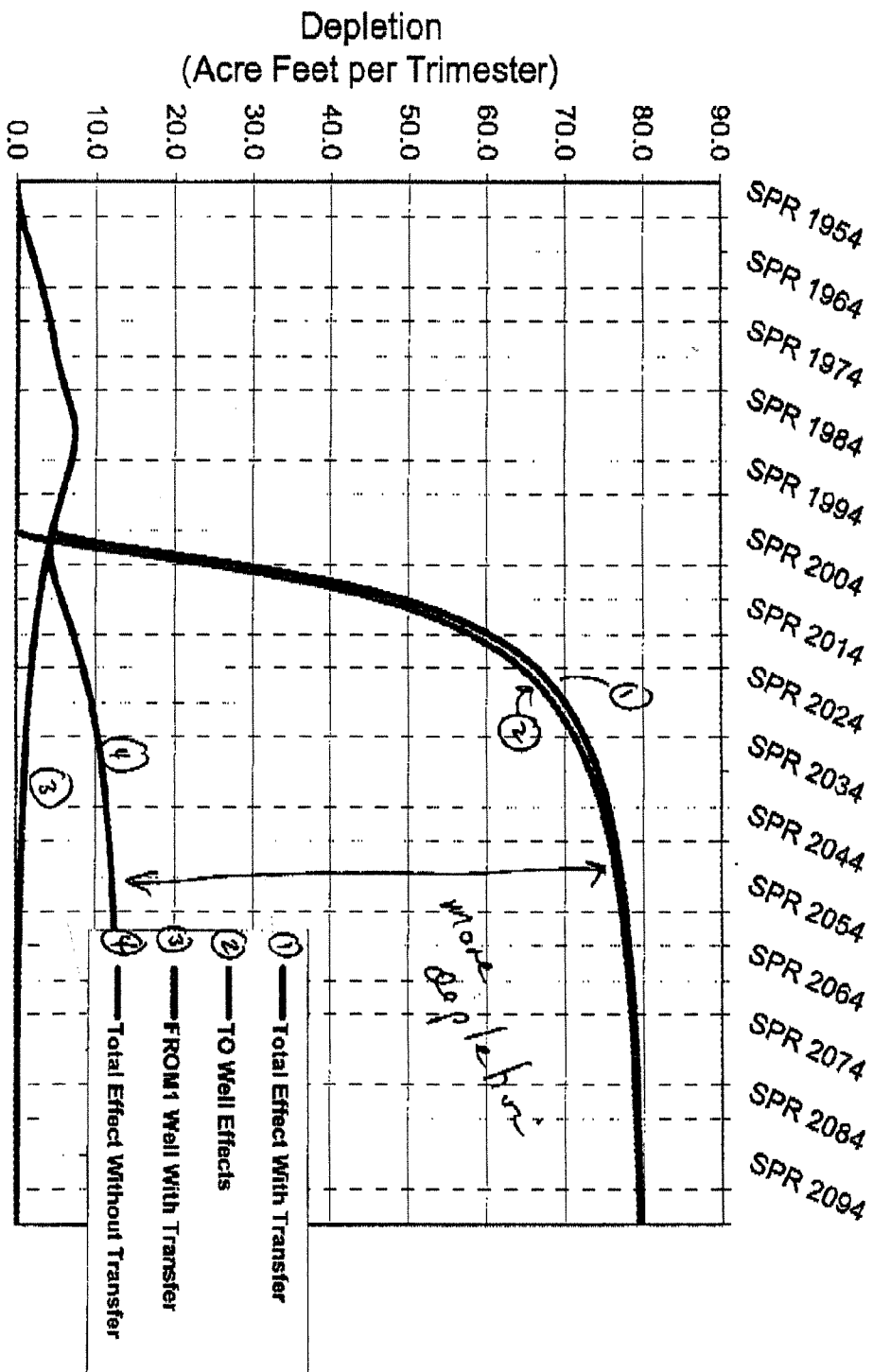
Net Transfer Effect **(Total Effect With Transfer - Total Effect Without Transfer)**



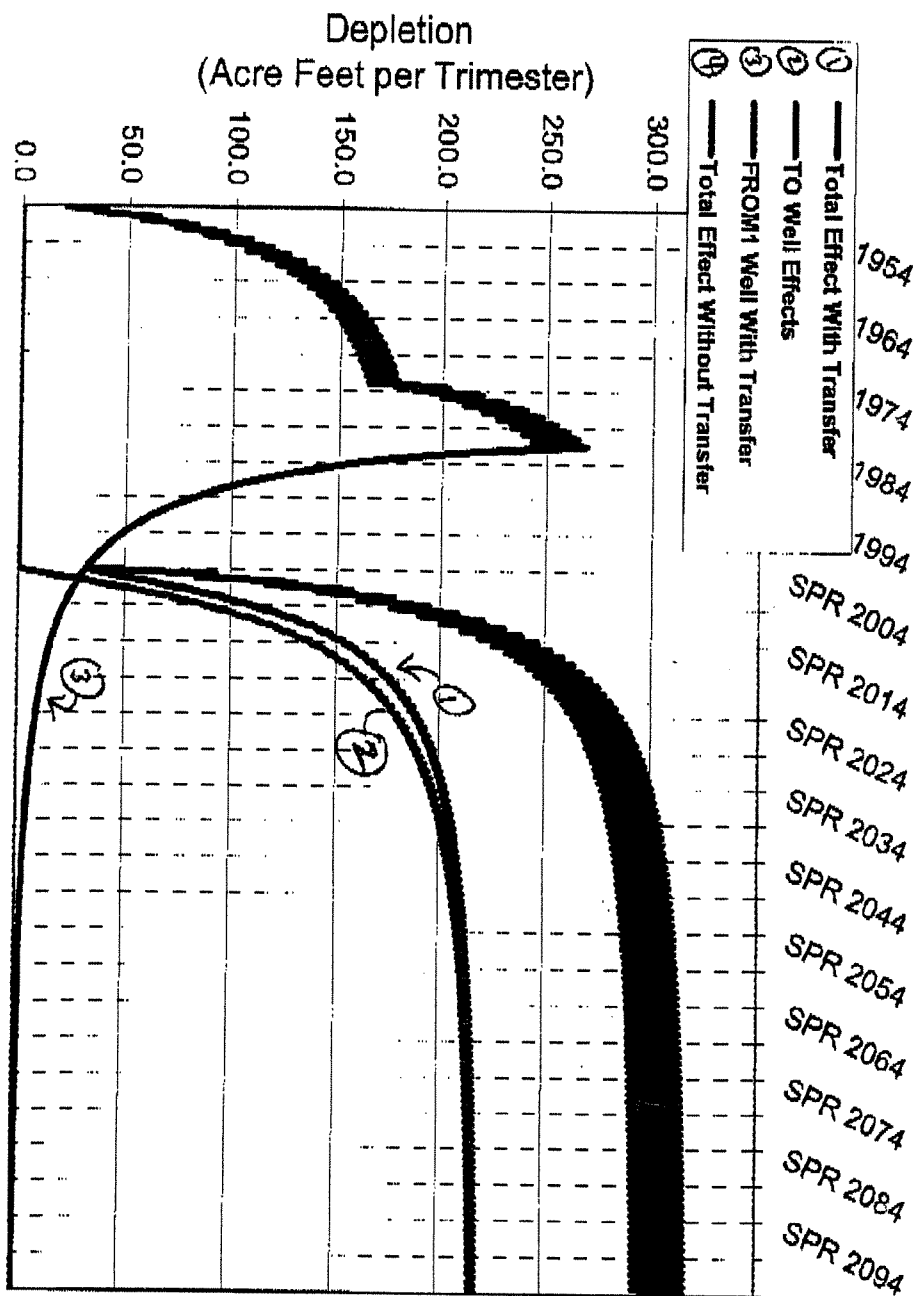
Hydrologic Response-- Milner to King Hill Reach



Hydrologic Response--Neeley to Minidoka Reach



Hydrologic Response--Near Shelley to Neeley Reach



Revised Mitigation Plan
For Transfer 70663
Filed in the name of Andrew Povey

The applicant, Andrew Povey, has applied to the Idaho Department of Water Resources to change the point of diversion of water right 35-2391, 7777. Based upon the consultant's computer analysis using what is known as the *Impacts Spreadsheet* there would be a residual impact moving through the aquifer from the original point of diversion that would require the right to be reduced between 73% and 80% to mitigate the changes in effects associated with the applicant's proposed change. This reduction is not acceptable to the applicant and as an alternative he has proposed to provide storage water to mitigate the impact on those years when no storage is wasted past Milner Dam for purposes of flood control. Twin Falls Canal Company, TFCC protested the approval of the proposed change apparently because of lack of specificity in the applicant's mitigation plan. The protestant assumes it will be entitled to mitigation as a result of this change and have requested to know the process that would be used for allocating the mitigation storage. After consultation with staff from the Idaho Department of Water Resources, IDWR, the applicant proposes to amend and clarify his mitigation plan as follows:

Background Theory

The IDWR currently assumes that the depletion associated with all groundwater pumping on the Eastern Snake Plain has an adverse affect on surface water rights in connected reaches of the Snake River. The maximum annual depletion from the aquifer associated with irrigation pumping is equal to the evapotranspiration, ET, of the crop being grown. The impact on the river from ground water diversions is generally assumed to increase over the years until steady state conditions are reached, at which time the annual impact on the river is equal to the average annual ET. It is anticipated that IDWR will annually run the Snake Plain aquifer model to determine the reaches impacted by various groundwater diversions, including the diversion from which the subject water right has been transferred.¹ In the case of this change, the impacts associated with water right 35-2391, 7777 are already in the system. The impact on the river will actually diminish over time and eventually there will be no residual impact. The only impact that currently should be subject to mitigation will be the differential impact that results from the relative changes among the connected reaches. The sum of the impacts among these reaches will sum to zero. However, the applicant's mitigation plan is designed to actually over mitigate by agreeing to provide storage to offset the total estimated river depletions associated with his groundwater during years when surface water supplies are short. On these years the computed diversion volumes will be converted to flow and included in the Water District 1 accounting model as surface diversions in the appropriate reaches. The depletion of the natural flow of the Snake River will be reflected in an increase in storage use by impacted canals. The full amount of the water depleted from the aquifer in any year will never be fully reflected in a reduced irrigation supplies for surface water users.

¹ It may not be necessary to run the aquifer model annually if steady state percentages have been established for all groundwater diversions needing mitigation plans.

Because of the nature of ground water depletions they will be spread over the entire year, not just the 150 to 200 day irrigation season. During years when flood control operations on the upper Snake cause storage water to be wasted past Milner dam this mitigation plan asserts that ground water diversions reduced that waste and thus diverted the unappropriated water for which they were licensed by the State of Idaho and would therefore not be subject to mitigating the impacts on senior users.

Mitigation Proposal

The IDWR must have the ability to electronically track mitigation plans that have been approved by the director. Each year the electronic question will be asked, "was stored water released past Milner Dam." If the answer is "yes" no mitigation analysis will be needed and the right holder will have no obligation to purchase or otherwise provide storage for mitigation. If no storage was released past Milner that "no" answer would trigger a letter from IDWR (or Water District 1) to the right holder asking that he identify the crop or crops he will be irrigating in the coming year. He will also be asked to purchase from the Water District 1 Rental Pool an amount of storage equal to the average ET of these crops. The purchase of this storage will be a condition that must be met before water right 35-2391 will be valid that year.

+35-7777

At the end of a year when mitigation is required, IDWR will use the aquifer model to allocate the impacts among affected river reaches. Water District 1 will then include in the District's accounting model phantom river pumps that divert from the affected reaches the volumes of water predicted by aquifer model. This accounting run will show a change in the amount of storage water senior each surface water users diverted. The difference between the Water District's final accounting for the year and the accounting with the phantom diversions will dictate the distribution of the mitigation water among the affected canals. This total increase in storage use will be equal to the sum of the water diverted by the phantom river diversions.

Should storage not be available for the applicant to purchase, his pumping volume will be restricted to 25% of the computed ET for the crops grown that year.