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## Trial Transcript, Vol. 99, Afternoon Session

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case # 4993

File # 206

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IN THE DISTRICT COURT FOR THE FIFTH JUDICIAL DISTRICT  
WASHAKIE COUNTY, STATE OF WYOMING

IN RE: )  
)  
THE GENERAL ADJUDICATION OF )  
ALL RIGHTS TO USE WATER IN )  
THE BIG HORN RIVER SYSTEM ) Civil No. 4993  
AND ALL OTHER SOURCES, )  
STATE OF WYOMING. )

FILED \_\_\_\_\_  
10/30 1981  
*Margaret V. Hampton* CLERK  
DEPUTY

VOLUME 99

Afternoon Session

Tuesday, September 1, 1981

**ORIGINAL**



1 THE SPECIAL MASTER: Come to order, please.

2 Mr. Sachse?

3 Q. (By Mr. Sachse) Dr. Cummings, now that you've explained  
4 for us your historical comparative work, would you turn  
5 to Table 2 on Page 12 of your report and go over columns  
6 2, 3 and 4 for us? You have already explained Column 1.

7 A. Well, in Column 2 are construction costs per acre for  
8 the various Wind River Projects, and there I used  
9 Stetson and Bliesner's data, and I also, for your interest,  
10 have the relative historical average.

11 For example, North Crowheart, if we use Bliesner  
12 or Keller's data -- or Stetson's data -- 1,653 for  
13 North Crowheart appears with a historical average of  
14 1,875 -- 1,875 per acre.

15 I remind you that 1,875 is an average that ranges  
16 from .675 to 3971, the implications being that --  
17 well, certainly for all of the projects on the Wind River,  
18 they compare well with historic averages.

19 They are certainly not the lowest cost projects  
20 that, you know, we've ever seen in this region nor are  
21 they the highest costs.

22 You'll notice that the Big Horn Flats and Big Horn  
23 Flats Extension the costs per acre using Stetson's  
24 data is larger than the average as is cost per acre-foot.

25 cummings-direct-sachse



1 Cost per acre-foot using Stetson's data is \$35.10  
2 an acre-foot compared with an average of \$23.92.

3 The point that I made earlier is relevant here for  
4 the Big Horn Flats and Big Horn Flats Extension. Water  
5 use per acre is, oh, roughly 60 percent of water  
6 use per acre on the other projects, and for that reason,  
7 as you might expect when you are using pipes to bring the  
8 water in, et cetera, you would expect to see higher  
9 cost per acre.

10 In terms of a benefit-cost ratio based on NED,  
11 which is to say a benefit-cost ratio excluding secondary  
12 benefits, the NED benefit-cost ratio varies from .9 for  
13 Wind River -- .9 for Big Horn Flats Extension to 1.2  
14 for North Crowheart.

15 In all cases, the NED benefit-cost measures are  
16 well above the average for such projects in the Wyoming  
17 and Pick-Sloan area.

18 I again remind you that the historical average  
19 of .75 is an average, and those historical benefit-  
20 cost ratios without secondary benefits vary from .36 to  
21 1.46.

22 THE SPECIAL MASTER: It varies from .236 to 1.46?

23 THE WITNESS: .36 to 1.46.

24 THE SPECIAL MASTER: All right. Thank you.

25 cummings-direct-sachse



1 Q. (By Mr. Sachse) Now, taking into account both the  
2 benefit - cost measures that you figured and that you think  
3 are appropriate and the historical data, you give your  
4 opinion as to whether all seven of these projects,  
5 the five planned by Stetson and the two additional  
6 projects planned by Keller Engineers, met the test for  
7 practicably irrigable acreage i. an economic test used?

8 A. If you are going to use an economic test, benefit-cost  
9 ratio that is consistent with those used in the development  
10 of the bulk of projects in the West, benefit-cost ratio  
11 including secondary benefits for all seven projects is  
12 well above unity.

13 In terms of the comparative measures, as you can  
14 see on Table 2, the seven Wind River projects on the  
15 basis of costs compare very well with these historical  
16 averages.

17 In terms of the NED benefit-cost measure, again  
18 using this for comparative purposes, all seven projects on  
19 the Wind River are well above the historical average for  
20 NED projects in Wyoming and the Pick-Sloan region.

21 \* \* \* \* \*

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24  
25 cummings-direct-sachse



1 MR. SACHSE: Thank you. This concludes my examination  
2 of Dr. Cummings. At this point I offer as Tribes' Exhibit  
3 24, Dr. Cummings report, which we've already supplied to  
4 the Court and to opposing Counsel.

5 THE SPECIAL MASTER: Do you wish to voir dire the  
6 document, Mr. Merrill?

7 MR. MERRILL: Your Honor, I'll reserve my voir dire  
8 and combine it with cross-examination.

9 THE SPECIAL MASTER: All right. Does anyone from the  
10 United States wish to --

11 MR. ECHOHAWK: None by the United States.

12 THE SPECIAL MASTER: All right. I'll reserve holding  
13 on admitting Tribes' Exhibit 24 until such time as Mr.  
14 Merrill has concluded his cross-examination.

15 Mr. Merrill, you may cross.

16 MR. SACHSE: Your Honor, before Mr. Merrill crosses,  
17 in light of his reserving voir dire, I want to point out  
18 that we have here today Mr. Bliesner, and if there's  
19 anything in the voir dire of the document that would refer  
20 to the division of the cost between on-farm and off-farm,  
21 that should be done today, where if it's necessary to  
22 put Mr. Bliesner on to clarify anything he's already here  
23 to do it. In our opinion, he doesn't need to be here,  
24 Dr. Cummings has testified as to what's done, but just so  
25 that we have all bases covered we do have him here but only



1 for today.

2 THE SPECIAL MASTER: All right. Mr. Radosevich first,  
3 very good.

4 CROSS-EXAMINATION

5 BY MR. RADOSEVICH:

6 Q Dr. Cummings, my concern with your, with the report, and  
7 I don't have the report with the updated numbers in it,  
8 but based upon the testimony you gave this morning, is  
9 with your use of the NED account and your concept of the  
10 total cost benefit -- or benefit cost analysis. First of  
11 all, you stated that -- and correct me if I'm wrong -- You  
12 stated that your conclusions are based upon the three  
13 criteria and that would overlay all your analysis; the fact  
14 that it would penalize the Indians by not having developed  
15 the project.

16 A Yes, sir.

17 Q That you would expect a priority date, and then the third  
18 criteria, I can't -- which. I'm not quite sure I fully  
19 understand, to not discriminate as far as future needs.  
20 Would you elaborate on that third one for a moment for me,  
21 please?

22 A Well, again it seemed to me in my reading of, in particular,  
23 Arizona versus California, that -- that the -- the option  
24 of the practicably irrigable acreage rule central to

25 cummings-cross-radosevich





1 adoption was providing for future needs of the Indians.  
2 I simply took that to mean that -- that in looking at  
3 economic measures we would want one that would not  
4 discriminate against the satisfaction of the future needs  
5 of the Indians.

6 Q How, in your analysis, did you take into account that in  
7 fact there are existing water users? Did you take that  
8 into account in your benefit cost analysis at all?

9 A No, I didn't.

10 Q Okay. You stated that the period between '39 and '73 --

11 A Yes, sir.

12 Q Did not take into account secondary benefits.

13 A No, no, on the contrary. Between 1939 and 1973, the period  
14 wherein you saw the bulk of the water reclamation  
15 developments in the west, there was the period wherein  
16 project feasibility was assessed by comparing total benefits,  
17 primary and secondary benefits with cost, with total benefit  
18 cost ratio, secondary benefits were included.

19 Okay. only after 1973, only after that point in time  
20 were you required to assume full employment or secondary  
21 benefits were excluded.

22 Q Okay. Then you stated in response to a question that the  
23 Special Master made, that by going beyond this NED and  
24 including secondary benefits, that the benefits that you

25 cummings-cross-radosevich



1 derived were 50 to 100 percent higher than if you used  
2 the NED account, NED measures. In responding, does it  
3 make any difference whether you include secondary benefits  
4 or not?

5 A I see. Well, yes, the point that I made is that on the  
6 average, and as I've shown here, on the average a benefit  
7 cost measure based on NED for these fast projects would  
8 have been about .75. The total benefit cost ratio would  
9 have been 1.2, would have been almost double an NED benefit  
10 cost ratio.

11 Q Now, in calculating the secondary benefits for this project,  
12 the secondary benefits accrue to the area?

13 A Not necessarily.

14 Q Is it region-wide?

15 A It depends on what you mean by the area.

16 Q Well, in your report, in one place you refer to the  
17 project area and yet when you take into account the factor,  
18 I think it's on Page C.5 of your report, when you come up  
19 with a multiplier factor --

20 A Oh, yes.

21 Q B.5.

22 A Yes.

23 Q Okay. So then traditionally when you make this type of  
24 a calculation, these benefits would accrue to the region;

25 cummings-cross-radosevich



1 is that correct?

2 A In answering that question I'm worried about how you're  
3 defining region.

4 Q Well, your region, you say change in a regional income  
5 53.21 percent per area, and then you used this to  
6 incorporate this into your calculation as to what the  
7 impact of the secondary benefits would be. So this would  
8 be, this region, however it's defined --

9 A Yes, yes, that's correct.

10 Q Okay. Then the part that bothers me is you're incorporating  
11 in here, are you not, secondary benefits that are accruing,  
12 in fact, off the Reservation?

13 A Oh, by all means.

14 Q How much, in fact, impact of secondary benefits would  
15 actually accrue to the people on the Reservation?

16 A Impacts -- Impacts to individuals directly on the  
17 Reservation would be primarily included in your direct  
18 or NED benefits. Secondary benefits are primarily off  
19 of the Reservation.

20 Q So they'd be affecting other users, the Town of Riverton,  
21 the Town of Lander, outside in Wyoming?

22 A Outside of the project, yes.

23 Q Okay. When in your calculations you've talked about one  
24 of the reasons why you prefer your approach of taking total  
25 cummings-cross-radosevich



1 net, total benefit cost analysis versus the NED account,  
2 is that you don't want to exclude the secondary benefits,  
3 but why is there, in your calculations I see such minor  
4 reference to costs? We have direct costs too, isn't that  
5 correct?

6 A Yes.

7 Q What about indirect costs?

8 A If there are identifiable costs which are relevant, you  
9 would include them.

10 Q What about the indirect costs as were tied in to assess the  
11 aspects of the benefits, secondary benefits, the secondary  
12 costs such as loss of farming to individuals who would no  
13 longer have the water; existing users, these type of  
14 indirect costs or secondary costs or extranalties?

15 A Now, I have not considered, as cost the -- any cost  
16 associated with shifting water from one use to another,  
17 okay, for several reasons. One is my charge was to speak  
18 to the issue within the context of priority of rights,  
19 okay, what might be the beneficial use in the end. Any  
20 costs that might obtain to individuals with rights junior  
21 to those, of the Indians I've not considered.

22 Further -- Well, a priori or grounds, I had nothing  
23 given to me to suggest that would necessarily be the case.

24 We don't know if the cost that you referred, refer to may  
25 cummings-cross-radosevich



1 very well be benefits to another project that might or  
2 might not be built into that region.

3 Q Well, Dr. Cummings, my point is you emphasized a number  
4 of times this morning the need to have as appropriate an  
5 economic analysis as possible and yet it appears that the  
6 most favorable treatment is on the benefits side and yet  
7 certainly there are, are there not, secondary costs  
8 associated with these type of projects where there is just  
9 a given water supply which is allocated?

10 A I know of no secondary costs, you know, which are  
11 relevant to the issue at hand that I have excluded.

12 Q What about secondary costs of eliminating existing water  
13 uses by individuals not on the Reservation? In other  
14 words, we have a transfer here, do we not, possibly, as a  
15 result of a reallocation of water?

16 A Possibly, I suppose. I have not considered those costs.

17 Q What about in terms of, perhaps, rather than saying  
18 secondary losses, in fact direct losses. The costs that  
19 are involved in your analysis seem to be the project  
20 costs not even the on-farm costs; is that correct?

21 A Excuse me, I'm sorry?

22 Q The costs in your analysis are the project costs that are --

23 A Project and on-farm costs, yes, sir, associated with the  
24 irrigation system, yes, sir.

25 cummings-cross-radosevich



1 Q Right. And yet the benefits are not just the project  
 2 benefits in a sense of the direct benefits, you've gone  
 3 into secondary benefits?

4 A They're primarily secondary benefits.

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MR. RADOSEVICH: Is this possibly a flaw in the benefit-cost analysis looking at it this way, that it only treats direct and secondary benefits and only direct costs?

A. I have included all costs that are given to me as relevant, sir. With reference to the sorts of external costs that you are referring to, one, you'll recall that my second priority -- that, you know, I set up as a criterion recognizing, you know, when appropriate the relative priority of the Indians' rights. Secondly, while I'm not an attorney, in my reading of Winters, this was a consideration not taken up by the Court.

I asked myself when I was reading it -- I simply did not consider those -- the probability of those costs.

THE SPECIAL MASTER: I think he's consistent with virtually every witness in the case that no one has. They have worked on the assumption that this was virgin land and the Indians have a priority, and they proceed to try to prove the PIA.

MR. RADOSEVICH: The point I was trying to make is we have the expertise of the economists involved in the case, and you have alluded to principles of equity and what-not. How do you arrive at a system? Dr. Cummings said there must be something better, and what I'm concerned

cummings-cross-radosevich



1 with is why not look at both sides of the ledger and  
2 treat them equally where obviously we are not.

3 I think we can manipulate the benefit-cost analysis  
4 to come up with a favorable ratio, and that's why I'm  
5 concerned -- I'm interested in --

6 THE SPECIAL MASTER: I allowed the questions even  
7 though they were beyond the scope of the direct because  
8 that's my biggest headache is how do you do justice in  
9 this case not just to Indians, but 29,000 other people  
10 involved in this case too and a State that had its con-  
11 stitution approved by the United States of America, a  
12 constitution which gave to its settlers, guaranteed the  
13 rights to use water, some at about the same date as the  
14 Indians, although a little bit later, but this is the  
15 burden, you see, none of which is considered in these  
16 formulas whatsoever, is what you're telling Mr. Radosevich.

17 THE WITNESS: Yes, sir.

18 Q. (By Mr. Radosevich) Dr. Cummings, you stated you had  
19 these three criteria, and the first one in which you are  
20 stating that you should not penalize the Indians for  
21 already developing -- for not having developed their  
22 projects, is that actually a valid criterion? What do  
23 you base it on?

24 A. Well, in the homiest terms, what I understand reserved  
25 cummings - cross - radosevich





1 to mean, it is reserved, exempt from State appropriation.

2 Q Did you take into account what about penalizing the  
3 existing users in any way other than including any  
4 costs?

5 A No, sir.

6 Q In other words, there was no externalities, so to speak,  
7 of these projects taken into account?

8 A That's correct.

9 Q I don't know whether you testified to it on direct or  
10 not, and I'm sure Mr. Sachse is going to remind me if  
11 you did -- How did you take into account opportunity  
12 costs on this project?

13 A Opportunity costs related to what? I'm sorry --

14 Q The opportunity costs of not constructing these projects;  
15 for example, its impact on the reservation. Was that  
16 included as a factor in your benefit cost analysis at all?

17 A No.

18 Q The opportunity cost in terms of the region --

19 A No.

20 Q Well, if you failed to look at the indirect costs, what  
21 difference does it make for -- would it be just as  
22 equitable to use the NED measure? Wouldn't it be just  
23 as equitable to use the NED measure, the NED approach  
24 if you do not take into account indirect costs?

25 cummings - cross - radosevich



1 A. I'm sorry. I don't see the relationship between the  
2 two.

3 Q. Would there not be an offsetting -- if you don't take  
4 into account indirect costs or secondary costs, that  
5 you could equally eliminate the secondary benefits?

6 A. I don't believe that consideration of the costs that  
7 you are concerned with has anything to do with -- it  
8 seems to me that would be a separate issue from the  
9 relationship between a total and an NED benefit cost  
10 ratio.

11 If one was doing a study, which I did not do,  
12 where you are considering the costs that you are con-  
13 cerned with, I would still argue that in terms of the  
14 issue at hand, if you are going to use a benefit-cost  
15 ratio -- if you are going to use benefit-cost measures  
16 for speaking to the PIA issue, that you'd use a total  
17 ratio.

18 Q. A total ratio?

19 A. A total -- you would include primary and secondary bene-  
20 fits.

21 Q. Was it your instructions not to use total primary and  
22 secondary benefits and total and secondary costs?

23 A. I'm sorry?

24 Q. Was it your direction -- were you instructed not to  
25 cummings - cross - radosevich



1 include in your analysis, say, a total benefit-cost  
2 analysis?

3 A. I did a total benefit-cost analysis.

4 Q. That would be total net benefits, total net costs?

5 A. I have estimates on Table 2 of the ratio of total  
6 benefits to cost for the project at hand.

7 MR. RADOSEVICH: Your Honor, I have no further  
8 questions.

9 THE SPECIAL MASTER: Okay, Mr. Merrill?

10 MR. ECHOHAWK: Before Mr. Merrill crosses, I have  
11 a few.

12 THE SPECIAL MASTER: Very well.

13 CROSS-EXAMINATION

14 BY MR. ECHOHAWK:

15 Q. Mr. Cummings, just to cover a few points to make sure  
16 a few points are clear, one is you didn't do an NED  
17 cost analysis, is that right?

18 A. Excuse me?

19 Q. You didn't do an NED analysis?

20 THE SPECIAL MASTER: You did not use an NED  
21 analysis, did you?

22 A. Are you talking about the seven Wind River projects,  
23 or are you talking about --

24 Q. (By Mr. Echohawk) Yes.

25 cummings - cross - echohawk



1 A. Okay. I did calculate NED benefit-cost measures, yes,  
2 I did.

3 Q. Okay. Let me back up. You don't think the NED analysis  
4 is the appropriate analysis; is that right?

5 A. No, I don't.

6 Q. As I recall your testimony, I believe you said it was  
7 totally inappropriate; is that right?

8 A. Yes, that's correct.

9 Q. When you mentioned totally inappropriate, is that another  
10 way of saying too conservative?

11 A. You can interpret it that way. What I was referring to  
12 is, in very homey terms, was expressed in response to  
13 one of the Master's questions. All that criterion really  
14 means and what my major reason for rejecting the NED  
15 benefit-cost ratio is again, in very homey terms, had  
16 the Indians been advised in the thirties and the forties  
17 and the fifties that economists were going to come around  
18 with -- you know, here we have a period where we are  
19 constructing water reclamation projects, you know, through-  
20 out the West, and there is an established, you know, way  
21 of doing this, and were they advised that we were going  
22 to -- as soon as we kind of finished our development, we  
23 sort of lost our interest in water resources development  
24 as a means for achieving national goals, we were going to  
25 cummings - cross - echohawk



1 assume, let's say, full employment and now we are looking  
2 at what we call an NED benefit-cost ratio, surely, you  
3 know, again in homey terms, surely the Indians would  
4 have rushed in to get their projects analyzed at that  
5 point in time, okay?

6 The NED, as I've shown -- the NED benefit-cost  
7 ratio you would expect it to be and I have shown it  
8 to be much lower, on the average a .75, than a total  
9 benefit-cost ratio, so certainly an NED benefit-cost  
10 ratio, if you would like to describe it as conservative,  
11 is ultra-conservative relative to the total benefit-cost  
12 ratio.

13 Q I assume you are familiar with the analysis done by Mr.  
14 Dornbusch in this case; is that right?

15 A Yes.

16 Q And Mr. Dornbusch used the NED approach?

17 A He calculated an NED benefit-cost measure, yes.

18 Q So his approach then would be ultra-conservative; is  
19 that right?

20 A On at least two grounds.

21 Q On at least two grounds?

22 A Yes.

23 Q What would those two grounds be?

24 A First of all, he uses an NED benefit-cost measure as  
25 cummings - cross - echohawk



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opposed to a total.

Secondly, he includes all on-farm costs as a project cost.

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cummings - cross - echohawk



1 Q (By Mr. Echohawk) Okay. And once again, if you just  
2 briefly review for us what the effect of his putting those  
3 costs where he did, what does that do to the benefit cost  
4 ratio?

5 A It makes it lower.

6 Q Makes it lower. I assume you're also familiar with the  
7 fact that for the five projects testified to by Stetson  
8 Engineers, that each of those has a BC ratio above one;  
9 is that right?

10 A I believe so.

11 Q So by using the -- Strike that.

12 In your review of Mr. Dornbusch's work, would you say  
13 it's quite clear that Mr. Dornbusch did not include any  
14 secondary benefits; is that right?

15 A I see no evidence of secondary benefits.

16 Q Okay. In one of the -- Strike that. I notice that in  
17 your analysis you were concerned only with the future  
18 projects that were proposed by Stetson Engineers; that's  
19 North Crowheart, South Crowheart, Big Horn Flats, Riverton  
20 East and Arapahoe. Why didn't your analysis carry into  
21 the historic lands claimed by the United States?

22 A I was not asked to do so. I wasn't given data related to  
23 those, I don't know anything about them.

24 Q Okay. Assume that Mr. Dornbusch applied the same economic  
25 cummings-cross-echohawk



1 principals to his analysis of the United States' historical  
2 claim, assuming he's done the same sort of analysis on  
3 that portion --

4 MR. SACHSE: Your Honor, I object to this question,  
5 I think it's asking the Witness to speculate since he said  
6 he did not go into the historic claims, and I don't want  
7 him to be --

8 THE SPECIAL MASTER: Can we assume that the rest of  
9 your question would have been then what if -- The rest of  
10 your question, what I think it was going to be, I'm going  
11 to sustain the objection, Mr. Echohawk.

12 MR. ECHOHAWK: Okay. You're right.

13 Q (By Mr. Echohawk) Mr. Cummings, I assume since you didn't  
14 analyze the Government's historic claims, are you aware  
15 that the Tribes' employed another consultant besides  
16 Keller Engineers, Mr. Higginson, are you familiar with  
17 his employment?

18 A No, I'm not.

19 Q I assume you didn't perform any economic analysis of the  
20 lands that he presented in this trial?

21 A I don't know anything about it.

22 Q I noticed in your analysis one of the main concerns you  
23 had was that you didn't want, your analysis didn't want  
24 to penalize the future generations of Indians; is that right?

25 cummings-cross-echohawk





1 A Correct.

2 Q That was kind of the main goal. Why didn't your analysis  
3 include any industrial needs or livestock needs for  
4 future generations?

5 A I was not given information concerning industrial  
6 activities, municipal-industrial uses, whatever.

7 MR. ECHOHAWK: That's all I have. Thank you.

8 THE SPECIAL MASTER: Mr. Merrill.

9 CROSS-EXAMINATION

10 BY MR. MERRILL:

11 Q Mr. Cummings, I note throughout your testimony today as  
12 well as your report, Tribes' Exhibit 24, that you quote  
13 and discuss fairly extensively the two United States  
14 Supreme Court cases, Winters versus the United States and  
15 Arizona versus California; is that correct?

16 A I've talked about them, yes, sir.

17 Q During the course of your analysis for this case, did you  
18 read or review or analyze the holdings of any other cases  
19 written by the United States Supreme Court concerning  
20 reserved water rights?

21 A I have read articles dealing with this issue, certainly  
22 not in the depth that I've looked at Winters and Arizona v.  
23 California.

24 Q Were you instructed by your Counsel to restrict your economic

25 cummings-cross-echohawk  
cummings-cross-merrill



1 analysis to the confines of the holdings in Winters and  
2 Arizona versus California?

3 A No, I wasn't.

4 Q Why did you elect to discuss only those two cases and  
5 ignore the other cases that have been written concerning  
6 reserved water rights?

7 A Primarily because everything that I've read, these seem  
8 to be two of the, you know, two of the major cases, the  
9 Arizona v. California case was where the PIA Rule was  
10 established. I had my hands full with those two, believe  
11 me.

12 THE SPECIAL MASTER: That we can all believe you.

13 Q (By Mr. Merrill) Mr. Cummings, I direct your attention to  
14 Page A.29 of your report, and particularly the first  
15 paragraph on that page, and since it is not yet in  
16 evidence, I would ask you to read the second sentence of  
17 the first paragraph on Page A.29 into the record.

18 A Okay. "However, if an economic measure is to be used in  
19 this regard, it seems reasonable to insist that the  
20 economic criteria underlying the measure be as consistent  
21 as possible with the legal criteria underlying the  
22 practicably irrigable acreage rule."

23 Q Mr. Cummings, are you aware that since the promulgation  
24 of the practicably irrigable acreage rule by the Supreme

25 cummings-cross-merrill



1 Court in Arizona versus California, that that Court has  
2 had the opportunity to write several other divisions  
3 concerning reserved rights which of themselves discussed  
4 the scope of the decision in Arizona versus California?

5 A I'm vaguely aware that there have been other cases, yes.

6 Q If such cases exist and in light of the statement you just  
7 read, wouldn't it be proper to consider the facts and the  
8 holdings and statements in those cases in formulating the  
9 economic criteria to which you testified this morning?

10 A I'm sorry, that was very long, I didn't understand the  
11 question.

12 Q Let me try it again. Assume for the moment that the cases  
13 written by the Supreme Court since Arizona versus  
14 California concerning reserved rights have discussed the  
15 opinion in Arizona versus California itself. In other  
16 words, the Court has had opportunity to refer back to what  
17 it wrote in 1963. I ask you to assume that for purposes  
18 of this question.

19 If that is in fact the case, and in light of the  
20 statement you just read from Page A.29 of your report,  
21 wouldn't it be proper to consider those cases in  
22 establishing the three economic criteria concerning not  
23 discriminating against future needs and bearing in mind  
24 the priority of the right and not penalizing the Indians

25 cummings-cross-merrill



1 for not exercising their right, to consider these criteria  
2 in light of these later cases?

3 A Mr. Merrill, not being a lawyer -- I've read the, these  
4 two cases, I have a little trouble with legalese. I've  
5 read what other people, including yourself in the natural  
6 resources journal symposium dealing with water rights is  
7 concerned. It seemed to me that there was certainly, I  
8 think it's fair to say a lack of unanimity in terms of  
9 what the practicably irrigable acreage rule might mean,  
10 in which case not being a lawyer and I can see when --  
11 when I make the statement here the legal criteria, that's  
12 probably pretentious, I don't mean -- I should -- would  
13 certainly be more appropriate for me to say in terms of  
14 my attempts to glean out what they're after here. I  
15 simply -- I simply stated, in order to do my work as an  
16 economist I need something, I needed something to guide  
17 me with what are we trying to -- what's the legal  
18 profession trying to do, okay. And what do you have in  
19 economics, if anything, that might help them.

20 Now, in very homey terms it seems that -- at least  
21 it seemed to me that -- that the three criteria that I  
22 set up were certainly -- we're talking about, you know,  
23 just to talk about a reserved right, I kept looking at the,  
24 the Court's use of the terms, if I may -- Well, after a lot

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1 of head scratching, it seems to me that given even a  
2 homey definition of a reserved right; reserved, okay, it's  
3 reserved, it's exempt from State appropriation, but to say  
4 one guideline at least that I could get ahold of was, you  
5 know, look, reserved means if I've got an economic measure  
6 and it's one that if in using this measure I clobber the  
7 Indians for not having exercised what's reserved in the  
8 past, that seemed reasonable to me, and maybe not reasonable  
9 to someone else.

10 The second -- The second criterion, really most of  
11 my analysis is based just on that one. You know, I talk  
12 about let's don't penalize the Indians for -- Let's, you  
13 know, don't discriminate against future needs. In my  
14 judgment you wouldn't discount. In the end I've got this  
15 feeling you're going to discount and in point of fact when  
16 I do my analysis I do discount. I'm uncomfortable with it.

17 You can, in terms of -- in terms of my uses of these  
18 criteria, in rejecting NED, it's really based on the  
19 first one, reserved means reserved. You don't -- You  
20 don't come up to them now and wave a different rule.

21 I'm sorry, that's lengthy, I hope it responds to  
22 your question.

23 Q No, that's quite all right. It's one of those questions  
24 that takes a little time.

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1           Would it be fair then to characterize, of your three  
2 criteria, the first criteria A, concerning not penalizing  
3 the Indians for not having exercised their rights in the  
4 past as the cardinal of the three criteria?

5           A    Oh, I suppose. The cardinal of the three?

6           Q    I get the impression, and I'd like you to correct me if  
7 this is not correct, that that is the most important of  
8 the three rules that you have used in structuring your  
9 analysis.

10          A    In the end I think that's probably true. I think the  
11 others are important.

12          Q    Mr. Cummings, I'm handing you a copy of a United States  
13 Supreme Court opinion issued in 1976 entitled Cappaert  
14 versus the United States. I would ask you to turn to  
15 Page 535 of that document. Maybe I'll quit there and let  
16 Mr. Sachse make his objection.

17                   MR. SACHSE: I'll let you finish your question.

18                   THE WITNESS: I'm sorry, was there a question?

19                   THE SPECIAL MASTER: He just --

20          Q    (By Mr. Merrill) You got Page 535?

21          A    Yes.

22          Q    Okay. Second column begins with the paragraph and it's  
23 in brackets, 11 through 13. The first sentence of that  
24 paragraph, including the citation to Arizona versus

25 cummings-cross-merrill



1 California.

2 Based on that statement of law, Mr. Cummings, would  
3 you make any additional criteria to the three that you've  
4 discussed in your direct testimony or modify any of the  
5 three criteria?

6 A Mr. Merrill, to be perfectly honest, I sweated over what  
7 I got for a number of weeks. I would be very reluctant  
8 to try to interpret, interpret this in a few seconds. I  
9 have a tough time with your --

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cummings-cross-merrill



1 THE SPECIAL MASTER: Let's see if I can assist  
2 in fact finding regarding your feeling on this.

3 THE WITNESS: Okay.

4 THE SPECIAL MASTER: The "implied-reservation-of-  
5 water doctrine" reserves only that amount of water  
6 necessary to fulfill the purpose of the reservation,  
7 no more.

8 If Indians have been living for one hundred twenty  
9 years on the reservation and have developed four federal  
10 irrigation projects, 47,000 acres under irrigation,  
11 were living reasonably comfortably after one hundred twenty  
12 years, is that not a sign that they have sufficient water  
13 to fulfill the purposes of the reservation?

14 I guess that's what you have got in mind.

15 MR. MERRILL: That's precisely it, Your Honor.

16 MR. ROGERS: Well, I think, Your Honor, I would  
17 object to the question even though the Master has asked  
18 it, I understand. I believe it's beyond this witness'  
19 expertise, in any event, but we truly are on a legal  
20 point now as to the intention of the purpose of the  
21 reservation.

22 THE SPECIAL MASTER: Well, we are more really on  
23 the cardinal belief that the Indians should not be punished  
24 for not having developed -- which is one of the three  
25 motivating equitable concepts of the witness, and I think





1 an answer of that kind is appropriate.

2 MR. ROGERS: But I think the witness has already  
3 answered just by establishment of his third criterion of  
4 not discriminating against the Indians for not having  
5 exercised their right beforehand, and the Master's  
6 question implies that that is not a correct statement  
7 of law.

8 THE SPECIAL MASTER: Your exception to my question  
9 can stand, and it may be a valid one, although I hope and  
10 pray it would not be in a review of the case, but would  
11 you answer my question?

12 THE WITNESS: Well, sir, when I read -- and I have  
13 listened to what you have said, and when I look at this,  
14 I'm struck by the same thing that bothers me in this whole  
15 thing.

16 When I see the purpose of the reservation in light  
17 of whatever I've read, the purpose of the reservation is  
18 to provide for the -- you know, for the well-being of this  
19 generation of Indians and all future generations of  
20 Indians and what they are all going to need.

21 How in the world you guess at what those future  
22 needs are going to be, at least in my reading, seemed  
23 to prompt the Master in Arizona v. California to adopt  
24 the PIA rule.

25 THE SPECIAL MASTER: All right. Would it not be



1 in conformity with good conscience to conclude that  
2 the Supreme Court meant that one of the purposes to  
3 fulfill the purpose of a reservation would be to fulfill  
4 the completion of those resources which the government  
5 gave the Indians in 1868, including some land that is  
6 arable, irrigable, and practicably irrigable for farm  
7 purposes? Isn't that about what you can conclude?

8 THE WITNESS: You might conclude that.

9 THE SPECIAL MASTER: Now, if someone will just tell  
10 us how many acres, we will have the case finished.

11 THE WITNESS: I must confess going to bed at night  
12 wishing and praying that the Master in Arizona had said  
13 practicably irrigable acreage; in other words, this -- and  
14 I had the same reaction here; the purpose of the reser-  
15 vation, in other words -- that's the best I can do with  
16 your question, Mr. Merrill.

17 MR. MERRILL: That's better than I thought you would  
18 do, Mr. Cummings.

19 THE SPECIAL MASTER: I tried to touch that for you  
20 to see what -- go ahead, Mr. Merrill.

21 MR. MERRILL: I sure wish Mr. Rifkin were alive  
22 because I would like to call him as a witness.

23 MR. SACHSE: He is.

24 THE SPECIAL MASTER: He's a Special Master in  
25 another case. Somebody hired him.



1 MR. SACHSE: He is, and available to subpoena.

2 MR. MERRILL: That's right. I was thinking of  
3 his predecessor. I'm sorry.

4 THE SPECIAL MASTER: It probably wouldn't help,  
5 Mr. Merrill. We have got to bite the nail on this.  
6 This is the Wind River Indian Reservation, so many  
7 people, so many acres, so much water, and so much time.

8 MR. MERRILL: I suppose I owe an apology on the  
9 record to Mr. Rifkin in case --

10 THE SPECIAL MASTER: No, I don't think so.  
11 Off the record.

12 (Off-the-record discussion.)

13 THE SPECIAL MASTER: Back on the record.

14 Q (By Mr. Merrill) Mr. Cummings, I'm going to hand you  
15 another case. You may get tired of having all these  
16 opinions handed to you, but I have the feeling that you  
17 and I may discuss this in another lawsuit in the future,  
18 and I appreciate --

19 THE SPECIAL MASTER: We appreciate the xeroxes too.  
20 We can cut them up and paste them.

21 Q (By Mr. Merrill) I direct your attention to the copy  
22 of United States versus New Mexico, which I have handed  
23 you Page 1059 of that particular edition, which is the  
24 Lawyer's Edition.

25 cummings - cross - merrill



1 A. Yes.

2 Q. And I would ask you to read to yourself under II-A  
3 that entire paragraph that begins with two lines on  
4 Page 1059 and continues on to Page 1060.

5 A. Just the one paragraph, Mr. Merrill?

6 MR. SACHSE: Wait for the question.

7 MR. MERRILL: Just --

8 THE SPECIAL MASTER: He wants to know when to  
9 quit reading.

10 THE WITNESS: I could make a career of this.

11 MR. MERRILL: Some of us have.

12 THE WITNESS: I have finished.

13 Q. (By Mr. Merrill) Got it? Okay.

14 You stated a moment ago in response to one of Mr.  
15 Radosevich's questions that you did not consider any  
16 opportunity costs for water that might be taken away from  
17 other uses in the Big Horn Basin as a result of these  
18 projects; is that correct?

19 A. That's correct.

20 Q. Do you believe, in light of the statement that I just  
21 asked you to read, that perhaps it would be proper to  
22 consider those lost uses of water -- in an economic  
23 analysis?

24 MR. SACHSE: Is the question finished?

25 cummings - cross - merrill



1 MR. MERRILL: Yes.

2 MR. SACHSE: Objection, Your Honor. The case that  
3 Mr. Merrill is referring to is United States versus  
4 New Mexico. This did not involve Indian water rights.  
5 This involved an interpretation of the Organic Act for  
6 National Forests and an interpretation quite peculiar  
7 to that issue which we have argued and debated at some  
8 length in this Court already, and to hand the witness  
9 a paragraph from a decision not having to do with Indian  
10 water rights but having to do with this, we contend,  
11 separate issue is totally irrelevant and a bit tricky  
12 and should not be permitted.

13 THE SPECIAL MASTER: Well, I don't think it was  
14 tricky. He tried to kind of frame the question to try  
15 to avoid being tricky, but it's a close question.

16 My first feeling on it is that I will have to  
17 overrule it because it doesn't deal with the issue of  
18 water rights, but the question more specifically deals  
19 with Mr. Radosevich's inquiry as to whether there's a  
20 compensating factor to be adjusted as a cost at arriving  
21 at a B-C ratio when there is a detriment to others that  
22 used the water, and if this fact did not escape Congress,  
23 is it something to properly be considered for a reserve  
24 reservation for Indian water rights? That's the question

25 cummings - cross - merrill



16-7

1 before us.

2 MR. MERRILL: That's precisely --

3 THE SPECIAL MASTER: Can you throw some light on  
4 this?

5 MR. ECHOHAWK: I just join in a different question  
6 that an inquiry into any impact at all is totally irrele-  
7 vant and we shouldn't be wasting our time, and that's  
8 why we set the hearings in Worland, and we should not  
9 clutter up this portion of the trial.

10 THE SPECIAL MASTER: Let me have a couple minutes  
11 on this. It's a little closer than it appears.

12 I feel guided by the fact that it is a quantification  
13 of reserved water rights for the natural forests, and since  
14 it is, I had better sustain the objections.

15 MR. MERRILL: Your Honor, I would like to point out  
16 before we do that that we have heard a lot of talk this  
17 morning about -- if I could make my comment --

18 THE SPECIAL MASTER: I will reconsider my ruling.  
19 Go ahead with the argument. I want to hear it.

20 MR. MERRILL: Mr. Cummings has talked to you a lot  
21 this morning about what he called secondary benefits.  
22 Those are also impacts.

23 They happen to be good impacts. They happen to be  
24 the kind of impacts that make these projects look better,  
25 but there may be also associated with them bad impacts,



1 so they can't have it both ways.

2 Impacts have been brought up in Mr. Cummings' testi-  
3 mony. I am just talking about impacts that are less  
4 tasteful to the United States' and the Tribes' version  
5 of impacts, so impacts are definitely in the record  
6 already.

7 It's just a question of do we put on our blinders  
8 and only consider the good impacts, or do we look at all  
9 of the impacts?

10 THE SPECIAL MASTER: That is a little bit about  
11 the forewarnings of the Supreme Court in saying that the  
12 application of a reserved water right must be applied to  
13 sensitivity in regard for the people that use it. That  
14 may be true, but you still have to do the surgery and  
15 be careful of the organs around where you are working.

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1 MR. MERRILL: I agree, Your Honor.

2 THE COURT: And I just don't -- I think I'll stick  
3 with my ruling. I know that you want it considered, but  
4 the Witness has already said he has not considered this  
5 because it's outside of the grounds of his instructions,  
6 so I doubt even if I might rule that he can answer, it  
7 won't throw much probative value in the record.

8 MR. MERRILL: I'm not sure it would either, but then  
9 I would make an offer of proof.

10 THE SPECIAL MASTER: Please do.

11 MR. MERRILL: If asked this question of Mr. Cummings,  
12 he would give a response that he has not given any  
13 consideration to the statement that I asked him to read,  
14 which is already in the record, in his analysis, and that  
15 he did not include cost and would not include those  
16 opportunity costs --

17 THE SPECIAL MASTER: That's fine.

18 MR. MERRILL: -- in his analysis.

19 THE SPECIAL MASTER: Let's take a short break, five  
20 or ten minutes.

21 (Thereupon a ten minute recess  
22 (was taken.)

23 THE SPECIAL MASTER: May we come to order, please.

24 The ruling's been made, Mr. Merrill, I would abide by it.

25 cummings-cross-merrill





1 Q (By Mr. Merrill) Dr. Cummings, let's talk for a moment  
2 about what exactly is a secondary benefit as you have  
3 used that term in your analysis and in your report. Would  
4 you please identify a secondary benefit.

5 A Secondary benefits are that stream of benefits that --  
6 that emanate throughout the region as a result of whatever  
7 primary activity in the irrigation district or whatever  
8 it is that you're talking about. They come about as the  
9 result of the direct benefits.

10 Q Are the secondary benefits that you've discussed in your  
11 analysis for this case, those that would accrue as a  
12 result of constructing and operating the five proposed  
13 projects including the two extensions?

14 A Yes.

15 Q Isn't it true that by and large those secondary benefits  
16 would accrue to the residents and economy outside of the  
17 Wind River Indian Reservation?

18 A They may or may not.

19 Q Isn't it also true that those secondary benefits will  
20 accrue only if the projects are constructed and operated?

21 A I'm sorry, again?

22 Q Isn't it true that those secondary benefits that you're  
23 talking about in your report will occur only if these  
24 projects are built and operated?

25 cummings-cross-merrill



1 A That's correct.

2 Q Did you find your copy of the New Mexico case?

3 A I'm sorry.

4 Q Let me see if I can borrow Mr. Salazar's for one more  
5 question.

6 There is a copy for you.

7 A Okay.

8 Q Let me ask you to turn in that copy to Page 1068 --

9 MR. SACHSE: Now, wait a minute, we even object to  
10 this. The Court's already ruled that questions to that  
11 case are inadmissible, in that it's not an Indian water  
12 rights case, and for Mr. Merrill to then come with a  
13 second question to it is to ignore the Court's ruling.

14 THE SPECIAL MASTER: It might be. The first actually  
15 dealt with language there that's a little distinct, Mr.  
16 Sachse, and I'll find that distinction in a minute.

17 The first dealt with the quantifying of water rights  
18 for the national forest and would it require gallon for  
19 gallon reduction in amount available for water needy  
20 state and private appropriators, and I ruled that was a  
21 distinction here. That would not permit this evidence  
22 at this time.

23 Now, let's hear this next question before I extend  
24 the rule to it.

25 cummings-cross-merrill



1 MR. MERRILL: Your Honor, I did not understand your  
2 ruling to mean that I couldn't ask anymore questions  
3 about New Mexico. If that is --

4 THE SPECIAL MASTER: That's not what I ruled. You  
5 are correct, that is not what I ruled, but I'll reserve  
6 the right to listen to each question.

7 MR. MERRILL: I'll tell you what I want to do and then  
8 give Mr. Sachse a chance to object.

9 I'm going to ask Mr. Cummings to consider the first  
10 sentence of Mr. Justice Powell's dissenting opinion on  
11 Page 1068, and ask if he has had an opportunity to consider  
12 that statement, I intend to ask Dr. Cummings if in light  
13 of that statement he believes that an economic analysis  
14 which attempts to adhere to the contours of the Reserved  
15 Right Doctrine might properly consider the opportunity costs  
16 of water taken from other uses.

17 THE SPECIAL MASTER: I'll permit that. I will permit  
18 that, Mr. Sachse. It calls for an opinion of an expert  
19 and that's all it does.

20 MR. ECHOHAWK: But, Your Honor, Mr. Cummings isn't  
21 a lawyer, he can't interpret what the Supreme Court says.

22 THE SPECIAL MASTER: No, but he is an economist and  
23 he has cranked into his conclusion economic doctrine --

24 MR. MERRILL: As well as legal doctrine.

25 cummings-cross-merrill



1 THE SPECIAL MASTER: And this question deals with  
2 economic doctrine and what you put in with it. So, Dr.  
3 Cummings, if you'll read the paragraph beginning with the  
4 words "I agree with the Court" on Page 1068 through the  
5 words "In the national forest" --

6 MR. SACHSE: Can I have a chance to state my objection?  
7 It may not be what you're expecting.

8 My objection is that it's asking him to interpret  
9 this. This is a sentence from a dissenting opinion.

10 THE SPECIAL MASTER: No, he was not asked to interpret  
11 it.

12 MR. MERRILL: No, that's not the question. The  
13 question was in light of that statement and since it's  
14 dissenting opinion, that means all nine members agree on  
15 this particular provision, in light of that statement,  
16 taking that statement as true, wouldn't an economic  
17 analysis that conforms with this statement consider the  
18 opportunity costs of water diverted from other uses.

19 Take your time, Doctor.

20 MR. ECHOHAWK: Your Honor, the United States has  
21 the same objection regarding impact, it's improper.

22 THE SPECIAL MASTER: Okay. I'm constrained to  
23 overrule the objections and ask the Witness to answer.

24 THE WITNESS: Oh, Mr. Merrill, so that we get  
25 cummings-cross-merrill



1 everything well understood here, I suppose analogous  
2 to law where you begin with the facts of the case, in  
3 economics we begin with, you know, a set of assumptions,  
4 what is the problem that we're going to deal with. I set  
5 out to deal with the problem that might be described in  
6 a different way. We're concerned with quantifying the  
7 rights of water to the Indians that are senior in  
8 priority to anyone else's, in which case impacts on those  
9 with junior rights who might have gone ahead and used the  
10 water would not be relevant for that particular question,  
11 okay.

12 I must confess that I've thought about it, the things  
13 that you described as costs, I must confess occurred to me  
14 as benefits to a project that I might propose to the  
15 Bureau of Reclamation, to deal with this problem. And in  
16 direct answer to your question, that you can pose now any  
17 other question that you might like to pose and I'll try to  
18 come up with an appropriate way of doing an economic  
19 analysis, you know, for that problem. And if you wish to  
20 pose a question that says whatever it might be, look at  
21 net impacts on people who might use the water, then I would  
22 ask you what are those impacts, how much water's going to  
23 be taken away from them, will there be another project  
24 that might take care of those people, what are ways of

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1 mitigating the impacts, can't we increase efficiency,  
2 can we call the Bureau of Reclamation to invest in  
3 projects to improve efficiency, which incidentally has  
4 been sort of their major concern since about 1973, with  
5 the betterment of -- rehabilitation and betterment of  
6 existing projects as opposed to construction.

7 When you hand me -- What I'm weaseling or walking  
8 around is what does sensitivity to its impacts mean. We  
9 would -- If you're asking me how would I construct an  
10 economic analysis to deal with this problem, we'd have to  
11 talk a long time about what does the Court mean. I couldn't  
12 figure out what the Court means by practicably irrigable  
13 acreage, and I'm not any more enlightened when I see  
14 sensitivity to impacts. I'm -- I would do that with you  
15 and try to structure something -- Again, we'd have to ask  
16 the appropriateness question, what is an appropriate  
17 economic measure that reflects sensitivity to impacts.

18 Q (By Mr. Merrill) I realize they're hard questions. I'm  
19 asking you because you are an expert in this field and  
20 because I think the Master needs to know and wants to know.

21 Assume, for purposes of this question, that the  
22 proposed projects discussed in your report are built and  
23 operated --

24 THE SPECIAL MASTER: Are what?

25 cummings-cross-merrill



1 MR. MERRILL: Are built and operated.

2 THE SPECIAL MASTER: All seven?

3 MR. MERRILL: Yes.

4 Q (By Mr. Merrill) And also assume, without necessarily  
5 agreeing that this is the case, that as a result of the  
6 operation of those seven projects, that 50,000 acres of  
7 land that are now being irrigated will no longer be  
8 able to be irrigated. In other words, the water rights  
9 serving those lands will be called out by those priorities.  
10 Just assume that for purposes of this case.

11 MR. ECHOHAWK: Objection, Your Honor, no foundation.

12 THE SPECIAL MASTER: Let me hear the rest of the  
13 question.

14 MR. MERRILL: It's a hypothetical question, Your  
15 Honor.

16 Q (By Mr. Merrill) Isn't it true that the farm income and  
17 production associated with those 50,000 acres that will  
18 lost is a direct cost of the project?

19 THE SPECIAL MASTER: Yeah, I would sustain that  
20 objection, Mr. White -- Mr. Merrill.

21 MR. MERRILL: Could I have the grounds, Your Honor?  
22 Maybe I can fix the question.

23 THE SPECIAL MASTER: Yeah, that calls for cranking  
24 into the benefit cost ratio, a fact that I just don't think  
25 cummings-cross-merrill



1 belongs there, and I think would be -- would be clearly  
2 in error if it was to be considered as part of a benefit  
3 cost ratio.

4 Impact will be -- will be evidence regarding what the  
5 result would be of total grand of the claims of the Tribes,  
6 will be heard in due time in Worland and will be studied  
7 and will be utilized in my report to the extent that it  
8 will not be erred to take too much of it. Evidence now  
9 of a hypothetical question like that on which there is no  
10 basis, you see, yet, I think if not premature, it's  
11 improper.

12 MR. MERRILL: I'm not trying to introduce any direct  
13 evidence of impact. What I intend to do with this line of  
14 questions is inquire of Dr. Cummings whether, for example,  
15 the losses in farm income from the loss of water availability,  
16 what kind of a loss that is economically, how is it  
17 characterized, is it primary, is it secondary, is it some  
18 sort of a cost that perhaps might be included in what we  
19 call a total benefit-cost analysis. I respect the Court's  
20 ruling and I understand that Mr. Echohawk's objection has  
21 been sustained, and I'll drop that line of questioning,  
22 but I think it is an important question.

23 THE SPECIAL MASTER: I know it is, and it will be  
24 back. All right.

25 cummings-cross-merrill





1 Q (By Mr. Merrill) Dr. Cummings let me direct your  
2 attention to Page A.5 of your report, please.

3 When you're on Page 5, I would direct your attention  
4 to the first paragraph below the very long indented  
5 quotation at the top of the page.

6 A Okay.

7 Q And since it is not in evidence, ask you to read beginning  
8 at the top of that paragraph through the footnote 12, if  
9 you don't mind.

10 A "From the above, as well as earlier-cited language, it  
11 seems reasonable to assume that the Indians had good  
12 reason to feel secure in their reserved rights to whatever  
13 water required for their present needs; neither was the  
14 security of needs for water by future generations a  
15 matter of concern, given that rights to future needs for  
16 water, which were expected to evolve over years, were  
17 explicitly recognized by the courts."

18 Q Thank you. Dr. Cummings, what investigation, if any, did  
19 you make into the circumstances of the and history of the  
20 Wind River Indian Reservation to determine whether it is  
21 in fact reasonable to assume that the Indians of that  
22 Reservation had good reason to feel secure in their  
23 reserved water rights?

24 A Mr. Merrill, at this point in my study I was not concerned  
25 cummings-cross-merrill



1 with the Wind River Reservation per se, I was addressing  
2 the question in general, given what the Court was trying  
3 to do with practicably irrigable acreage, what economic  
4 measures might be appropriate. The application of those  
5 measures to the Wind River did not come until, you know,  
6 well beyond that.

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cummings-cross-merrill



1 Q (By Mr. Merrill) I take it from your answer then that  
2 you haven't made a specific investigation of the Wind  
3 River Reservation with respect to this assumption?  
4 A That's true.  
5 Q Okay. Dr. Cummings, if you were to discover by a search  
6 of historical documents that, in fact, the Indians of the  
7 Wind River Reservation, speaking particularly of that  
8 reservation, did not feel secure in their reserved water  
9 rights, would that affect in your mind the applicability  
10 of your three economic criteria to this specific reserva-  
11 tion?

12 MR. ECHOHAWK: Objection. Calls for speculation.

13 THE SPECIAL MASTER: I'm going to overrule that ob-  
14 jection.

15 THE WITNESS: I'm sorry. I didn't understand what  
16 happened.

17 THE SPECIAL MASTER: Why don't you read the question,  
18 and the objection was overruled. You may answer this  
19 question. She'll give it to you now.

20 THE WITNESS: I didn't understand.

21 (Whereupon the above question was read  
22 (back by the reporter as follows to  
23 (wit: "Q. Okay. Dr. Cummings, if you  
24 (were to discover by a search of his-  
25 (torical documents that, in fact, the  
(Indians of the Wind River Reservation,  
(speaking particularly of that reserva-  
(tion, did not feel secure in their

cummings - cross - merrill



1 (reserved water rights, would that  
2 (affect in your mind the applica-  
3 (bility of your three economic criteria  
4 (to this specific reservation?"

4 A. I don't believe so, no.

5 Q (By Mr. Merrill) Would you please explain why not?

6 A. Well, when the Court says that they have -- that they have  
7 a reserved right in terms of -- you know, interpreting  
8 changes, you know, that might come about, at least it  
9 seemed to me that the Court attempted to put their mind  
10 at ease.

11 If I may quote from the same page, a paragraph from  
12 Arizona versus California that I was particularly struck  
13 by, and I quote, "On account of their relations to the  
14 Government, it cannot be supposed that the Indians were  
15 alert to exclude by formal words any inference which  
16 militate against or defeat the declared purpose of them-  
17 selves and the Government."

18 Even if it could be supposed that they had intelligence  
19 to foresee the double sense which might sometime be urged  
20 against them, again in terms of -- I don't know how long --  
21 if you are telling me that the Indians in the Wind River  
22 Indian Reservation have had -- have been insecure, I do  
23 not believe the assurances given them by the Courts for  
24 I don't know since when -- I don't know. I would have to

25 cummings - cross - merrill



1 look into the circumstances of the case.

2 I don't know what more to do with your question.

3 Q Let's look at some of the circumstances of the case.

4 I hand you what's been marked for identification  
5 as Plaintiff's Exhibit WRIR EC-1.

6 THE SPECIAL MASTER: EC is Mr. Cummings?

7 MR. MERRILL: Economics, Cummings, Your Honor. We  
8 had ED for Economics, Dornbusch.

9 Q (By Mr. Merrill) And I will tell you for the record,  
10 Dr. Cummings, that that is a typewritten copy of what  
11 was originally a handwritten letter taken from the  
12 National Archives.

13 It's a letter dated July 28, 1904 signed by H. B.  
14 Brossius, who is the agent for the Indian Rights Associ-  
15 ation to the Secretary of the Interior in Washington.

16 The letter is fairly lengthy, but I would like you  
17 to take the time to review it in its entirety.

18 (Pause.)

19 A. What was your question, Mr. Merrill?

20 Q. (By Mr. Merrill) There's no question yet, Dr. Cummings.

21 A. Oh, I'm sorry.

22 Q. I just asked you to review the entire letter.

23 A. I have reviewed it.

24 Q. Now, Dr. Cummings, I direct your attention to the last  
25 cummings - cross - merrill



1 sentence at the bottom of the first page of the letter  
2 that begins, "It is clear."

3 A. Yes.

4 Q. And that sentence continues on for about a line and a  
5 half onto page 2.

6 A. Yes.

7 Q. Does that statement affect your opinion of the applicability  
8 of Criterion A to this particular reservation?

9 MR. SACHSE: Objection.

10 A. No.

11 MR. SACHSE: Your Honor, I want to point out to the  
12 Court that this letter is dated July 28, 1904. The Winters  
13 decision was decided in 1908. The Arizona versus California  
14 decision, if I remember correctly, was about 1953 --

15 MR. ROGERS: 1964.

16 MR. SACHSE: When? 1964. Dr. Cummings has testified  
17 that he looked in the Winters case which, of course, was  
18 the landmark case on this, and then Arizona versus Califor-  
19 nia is criteria for interpreting this. Nothing that's  
20 stated in a letter in 1904 could be relevant to the --

21 THE SPECIAL MASTER: Direct.

22 MR. SACHSE: -- Indians' right to believe that after  
23 the Winters decision in 1908 they had the rights that  
24 the Supreme Court talked about there, and, besides that,

25 cummings - cross - merrill



1 I think to ask the witness to interpret one piece of  
2 correspondence when we have spent two weeks going  
3 through the correspondence and other evidence around  
4 this period of time is really improper cross-examination --  
5 I won't go so far as to say improper cross-examination,  
6 but it's not admissible.

7 THE SPECIAL MASTER: Well, you may have a point, I  
8 don't know, but the witness slipped in a quick no already,  
9 and I guess I could properly rule that it's already been  
10 answered and expunge the no from the record, but what's  
11 the difference? So let --

12 MR. SACHSE: Since the witness has already answered  
13 no, to that extent, I'll remove my objection.

14 THE SPECIAL MASTER: The document more properly  
15 fits that portion of the case that goes back to the  
16 boundaries and dates; hassle that occurred about this  
17 time, as I recall.

18 MR. MERRILL: That's correct, Your Honor. We are  
19 going to get into these documents in quite a bit of detail,  
20 and I selected a batch, and I will candidly point out to  
21 the Court that I have about four or five more all dated  
22 after the Winters decision which I will be introducing.

23 It's my understanding that the argument of law here  
24 is that the Treaty of 1868 reserved the water if anything  
25 reserved the water, not the Winters decision.



1 THE SPECIAL MASTER: Well, we'll argue one of these  
2 days, about half an hour to each side and short briefs.

3 MR. CLEAR: If the question is here whether the Indians  
4 are insecure in their water rights, I think we should point  
5 out that if they are insecure in their water rights or feel  
6 insecure about their water rights, it's because of the  
7 actions of the State of Wyoming.

8 It's the State of Wyoming which instituted this law-  
9 suit and denies that the Indians have any reserved water  
10 rights, that the Indians must come to the State for their  
11 water rights, and in a sense, if the Indians -- if Mr.  
12 Merrill is arguing Indians should feel insecure in their  
13 water rights, it's a self-fulfilling prophecy because he's  
14 the one that's making them feel insecure.

15 THE SPECIAL MASTER: Gentlemen, let's don't --

16 MR. ROGERS: There's an additional point here that I  
17 would like to make, if I may, and that is the central  
18 question is not what in the Indians' mind is the security  
19 or insecurity of their water rights. It is what is the  
20 meaning of the law as to the security or insecurity of  
21 those water rights.

22 Now, Dr. Cummings' statement in his report on page  
23 A.5 may be written in terms that may reflect on the Indians'  
24 personal view of this, but the important point of the fact  
25 is what does the law say those rights are.





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Therefore, these letters are irrelevant and shouldn't be -- once we get to them --

THE SPECIAL MASTER: That may be so, Mr. Rogers, but the witness answered the question regarding whether or not one of his three criteria would have been different even if the evidence would prove that the Indians did have a gut feeling of insecurity about this water. I think that Mr. -- one of the Indians testified -- maybe not -- but I have a feeling in this case that some Indians on the reservation might have felt that sooner or later we are going to have a hassle over this water so there may have been a feeling of insecurity, and the question was would that change your criteria regarding any of these three guidelines, and his answer was no, it wouldn't, so we can go on to the next point.



1 MR. MERRILL: I believe that it's an important line of  
2 questioning, Your Honor, because you'll note that immediately  
3 after the statement that Dr. Cummings read from his report,  
4 appears the first criteria which he has stated is the  
5 most important of the three that he developed, and on which  
6 his entire analysis rests.

7 THE SPECIAL MASTER: Don't penalize the Indians for  
8 failure to exercise? I don't see that in his report right  
9 after the question you asked about --

10 MR. MERRILL: On page A.5, Your Honor.

11 THE SPECIAL MASTER: Yes.

12 MR. MERRILL: Dr. Cummings read the paragraph starting  
13 "From the above" immediately after the sentence he reads,  
14 "Thus, within this context, one would reasonably require  
15 that any measure submitted as demonstration of practicably  
16 irrigable acreage satisfy the following criterion:" And  
17 then he states the first of his criterion, directly as a  
18 result of the assumptions discussed in the previous  
19 paragraph. And what I am going to ask about these  
20 questions and these documents is the reasonableness of  
21 that assumption as applied to the specific facts.

22 THE SPECIAL MASTER: Precisely. That's why you're given  
23 good, wide latitude to make your questions in that regard.

24 Q. (By Mr. Merrill) Dr. Cummings, I hand you what's been  
25 Cummings-cross-Merrill



1 marked for identification as Plaintiff's Exhibit EC-2.

2 THE SPECIAL MASTER: EC-2.

3 Q. (By Mr. Merrill) Which I will tell you is a certified copy  
4 of a letter from Charles Lajeunesse to the Wyoming State  
5 Engineer dated January 14th, 1911, approximately three  
6 years and a week after the Winters decision was handed  
7 down by the United States Supreme Court.

8 A. Yes, I've read it.

9 Q. Does that affect your comfort with Assumption A?

10 A. No, it doesn't.

11 Q. Okay. I hand you what's been marked as EC-3 and tell you  
12 that that is also a certified copy of a letter to the  
13 Wyoming State Engineer dated January 16th, 1911, in which  
14 Charles Lajeunesse per SG Burnette, U.S. Farmer applied  
15 for a state water right to irrigate his mother's  
16 allotment. Does that affect the applicability of criteria  
17 A in your mind?

18 A. No, it doesn't.

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1 Q Dr. Cummings, I've handed you what's been marked for  
2 identification as Exhibit EC-4, also a certified copy  
3 of a letter from Mr. H.E. Wadsworth, a superintendent  
4 of the Wind River Indian Reservation, dated February 4,  
5 1908, approximately a month after the Winters Decision  
6 was issued. I direct your attention specifically to the  
7 portion of that letter that says "They at this time have  
8 no ditches and of course no water rights, but believe  
9 they can get ditches built if the State Engineer can give  
10 them the water."

11 A Um-hum.

12 Q In light of that statement, do you believe the criteria  
13 A still applies to the Wind River Indian Reservation?

14 A Yes, I do.

15 Mr. Merrill, I feel a little bit uncomfortable  
16 answering yes or no here.

17 Q I'm sorry, Dr. Cummings, you're free to explain and  
18 qualify your answer anytime you want. I'm sorry if you  
19 didn't know that. If you want to back up and take these  
20 one at a time, please do.

21 A If you will again understand what I'm trying to do in this  
22 section, okay, I'm trying to get at some rules drawn from  
23 the Court's language in setting up the PIA Rule that I  
24 can use as a basis for analyzing -- assessing some

25 cummings-cross-merrill



1 economic measures. I'm after what the Court's, as best  
2 I can determine it, what the Court was after, okay.

3 The Court was after, in my judgment, in reserving  
4 these rights to the -- in terms of relevance of the term  
5 security here, which seems to bother you, might be better  
6 phrased as the Court's attempt to give them peace of mind,  
7 if you will, in terms of their reserved right.

8 Now, if you told me every one of the Shoshone  
9 Reservation was ignorant of the Court's efforts in this  
10 right, it would not affect my effort at trying to get at  
11 what does the Court want, can I frame that in such a way  
12 that I can do something as an economist, okay. And it's  
13 when I respond does this change -- no to your question,  
14 would this change what I did, it's within that context,  
15 If you had one of these for every Indian on the Shoshone  
16 Tribe, I don't think it would be relevant to the context  
17 that I'm after here.

18 Q Are you stating then that these rules, the three criteria  
19 that you developed apply to this Reservation regardless  
20 of the particular history of that Reservation?

21 A They are intended to apply to the issue as to what, what  
22 kind of an economic measure might be consistent with what  
23 the Court's were after in establishing the PIA Rule.

24 Q Dr. Cummings, I'd like to shift gears a little bit and go  
25 cummings-cross-merrill



1 to the portion of your analysis that actually considers  
2 the benefits and costs associated with these particular  
3 projects.

4 A Okay.

5 Q Would you please turn in your report to Page B.4.

6 A B.4?

7 Q B as in boy.

8 A Okay.

9 Q As I understand your Table B.4, the present value of the  
10 average annual farm returns, the first column came  
11 directly from Mr. Dornbusch's Exhibit C-268; is that  
12 correct?

13 A Yes, um-hum.

14 Q As I understand it, the only modifications that you have  
15 made to Mr. Dornbusch's analysis involve the placement  
16 of on-farm costs and secondary benefits; is that correct?

17 A I believe so.

18 Q Is it correct then to say that the prices, the cropping  
19 patterns, the elevation breakpoints, the yields, the  
20 production costs, labor costs and all the other items in  
21 Mr. Dornbusch's analysis you accepted without modification;  
22 is that correct?

23 A That's correct.

24 Q So would it be fair to say that the results of your  
25 cummings-cross-merrill



1 analysis in Appendix B is only as good as Mr. Dornbusch's  
2 analysis on which you relied?

3 A I -- If I understand what you're asking, I'm -- The  
4 methodology I set out I'm prepared to defend. If there  
5 are any corrections and if you were to find any  
6 corrections that were required in either Mr. Dornbusch's  
7 work or Mr. Stetson's work or Mr. -- the Keller Engineer's  
8 work, I would then have to adjust my data accordingly.

9 Q Okay. Dr. Cummings, are you aware of the crop yields  
10 that Mr. Dornbusch assumed in his economic analysis?

11 A I was not asked to nor did I have the -- given the time  
12 nor did I take the time to analyze Dornbusch's work.

13 Q Are you aware of the construction schedules assumed in  
14 Mr. Dornbusch's work?

15 A No, I have not -- I have simply taken Mr. Dornbusch's  
16 estimates of farm income and my work was to -- and this  
17 part of my work began there.

18 Q Dr. Cummings, you were tendered and accepted by the Court  
19 as an expert in agricultural and water resources  
20 economics. If I told you that Mr. Dornbusch's analysis  
21 assumed that full yields would be obtained in these seven  
22 new projects beginning the very first year after their  
23 construction as -- as an agricultural economist do you  
24 believe that to be a reasonable assumption?

25 cummings-cross-merrill



1 MR. ECHOHAWK: Objection, beyond the scope of  
2 direct.

3 THE SPECIAL MASTER: I will overrule the objection  
4 even though it may be somewhat beyond the scope of direct.  
5 Nevertheless it touches on some of the Dornbusch matters  
6 in evidence on direct and the man's an expert and he may  
7 answer if he can.

8 THE WITNESS: A full yield on crops in the first year?

9 Q (By Mr. Merrill) Yes.

10 A Generally speaking I would expect that to be a little  
11 optimistic. It depends on the crops.

12 Q Dr. Cummings, if it were shown that the yields assumed  
13 in Mr. Dornbusch's analysis were unrealistically high, how  
14 would that affect the benefit-cost ratios that you've  
15 calculated in your analysis?

16 MR. ECHOHAWK: Can I have the question read back,  
17 please.

18 (Thereupon the following  
19 (question was read back as  
20 (follows: "Q Dr. Cummings,  
21 (if it were shown that the  
22 (yields assumed in Mr.  
23 (Dornbusch's analysis were  
24 (unrealistically high, how  
25 (would that affect the benefit-  
26 (cost ratios that you've  
27 (calculated in your analysis?"

24 MR. ECHOHAWK: Objection, no foundation.

25 cummings-cross-merrill





1 THE SPECIAL MASTER: Overruled.

2 THE WITNESS: I would correspondingly reduce the  
3 figure or figures that you see in Column 1.

4 Q (By Mr. Merrill) Dr. Cummings, in the course of your  
5 analysis, did you ever become aware of the fact that the  
6 projected yields for barley assumed by Mr. Dornbusch are  
7 approximately 30 percent higher than the historical  
8 average in Fremont County?

9 MR. ECHOHAWK: Objection, Your Honor, far beyond the  
10 scope of direct.

11 THE SPECIAL MASTER: It removes further from direct  
12 each time, but I'll overrule one more time. You see, if  
13 you're going to go into barley, corn and a little bit of  
14 the other feed grains, we've -- we're going to have some  
15 at some point, and this is beyond the scope of his direct  
16 evidence.

17 MR. MERRILL: Your Honor, the question simply was  
18 he aware of that. If he's not aware of that he can  
19 certainly say no and that pretty much ends my question.

20 MR. SACHSE: I object to the form of the question,  
21 in asking is he aware of da-da-da-, such and such, it  
22 assumes that to be a fact and there is no evidence that  
23 shows that.

24 THE SPECIAL MASTER: I'm aware of that, I'm aware of  
25 cummings-cross-merrill



1 the fact that I can't make any conclusions on these  
2 questions until what he asks of a hypothesis is a proven  
3 fact and admitted into evidence.

4 MR. SACHSE: So what I'm saying if the question is  
5 to be asked it should be asked as a hypothesis not as if  
6 it were a fact when it is not.

7 THE SPECIAL MASTER: Let us assume.

8 MR. MERRILL: Well, Your Honor, it was proven to be  
9 a fact during the cross-examination of Mr. Dornbusch.

10 MR. ECHOHAWK: Objection.

11 MR. MERRILL: I will withdraw the question and  
12 rephrase it.

13 THE SPECIAL MASTER: Well, no, if it was proven as  
14 a fact, you should cite the page of the record and say Mr.  
15 Dornbusch said so and so, now, in light of this evidence  
16 it's in the record and then go ahead with your question,  
17 but I don't --

18 MR. MERRILL: Your Honor, I'll get a cite for you and  
19 exhibit number.

20 THE SPECIAL MASTER: I'm not sustaining the objections,  
21 Mr. Merrill.

22 MR. ECHOHAWK: Your Honor, we could take a short break,  
23 I have the transcript in the Courtroom if Mr. Merrill wants  
24 to find that particular portion where he proved that fact.

25 cummings-cross-merrill



1 MR. MERRILL: That would be all right with me.

2 THE SPECIAL MASTER: All right, let's take five or  
3 ten minutes. Time for it anyway, we've been at it an  
4 hour. This time we'll recess for ten minutes.

5 (Thereupon a ten minute  
6 (recess was taken.

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1 MR. MERRILL: I found the exhibit --

2 THE SPECIAL MASTER: Okay, Vi? All right. Come to  
3 order, please.

4 MR. MERRILL: Your Honor, during the break I managed  
5 to locate the exhibit which I used in the cross-examination  
6 of Mr. Dornbusch. It's Exhibit ED-30, which is one  
7 monthly report from the Wyoming Crop and Livestock  
8 Reporting Service that showed barley estimates by counties  
9 that was released May 5, 1981.

10 I have not been able to locate the page of the  
11 transcript in which I established the yields based on  
12 that document, so I'll withdraw the question.

13 THE SPECIAL MASTER: All right. Fine. Thank you.

14 Q (By Mr. Merrill) Dr. Cummings, in your experience how  
15 many water resource projects of the magnitude of those  
16 that we are considering here have you evaluated?

17 A If you're asking -- I'm not quite sure I understand what  
18 you are asking. If you're asking how many water resources  
19 you know, projects I have studied, gone through, I have  
20 gone through virtually every one that the Bureau of  
21 Reclamation has done.

22 Is that your question?

23 Q That's a start. Let me try to focus my question a little  
24 more, and that is how many have you evaluated in terms of  
25 cummings-cross-merrill



1 breaking down project costs, on-farm costs, and  
2 establishing yourself an appropriate discount rate and  
3 the other more detailed areas of your investigation that  
4 you have done for this case?

5 A Okay. Now, understand that as in most professions we  
6 have specializations. I do not consider myself a specialist  
7 in farm budgets, things of this nature.

8 I will normally take from the soils scientist the  
9 information that I need and I'll get a farm management  
10 type to give me a hand, and I will then take all of those  
11 data, and in terms of working those data and working up  
12 an assessment, worrying about discount rates and prices  
13 and all these sorts of things, oh -- maybe 10 or 15, 10  
14 or 15 pretty good sized projects.

15 Q What do you mean by pretty good sized projects?

16 A Well, projects involving anywhere from 50,000 acres to  
17 500,000 acres.

18 Q In your evaluation of those 10 or 15 projects, have you  
19 ever assumed that the operation of one of those projects  
20 would employ laborers, 80 percent of whom will be un-  
21 employed over a 100-year project life?

22 A I don't know about 80 percent. I have worked in a number  
23 of projects, however, where a large percent of the labor  
24 was unemployed. This is among -- a good deal of my work

25 cummings-cross-merrill



1 has been with indigenous Indians, but in, for example,  
2 Northern New Mexico, the Yucci Tribes, in Peru, in Chili,  
3 and it's not all uncommon, you know, in studies like that  
4 for you to have a relatively high rate of unemployment.

5 I don't remember proportions, but -- I don't remember  
6 exactly, but certainly I have been involved in a number  
7 of projects where high proportions of the labor force are  
8 unemployed or underemployed.

9 Q Can you recall any project in which you've been involved  
10 in which that percentage was as high or higher than 80  
11 percent?

12 A I have been associated with projects where you have had  
13 unemployment rates probably that high, yes.

14 Q Where you have assumed unemployment rates that high for  
15 purposes of evaluating the project?

16 A Yes.

17 Q Ron, do you recall offhand which projects?

18 A I was just sitting here trying to do that. You see, if  
19 you think about it for a second, this would not be  
20 terribly surprising.

21 When you get, particularly in non-Anglo cultures,  
22 many of the assumptions, you know, that are common to us  
23 in analyzing, you know, a lot of projects, we depend upon  
24 what we call the mobility of labor.

25 cummings-cross-merrill



1 In other words, people can't find a job for while,  
2 they just leave, but there are many cultures, you know,  
3 where people just aren't mobile. You know, they don't  
4 leave their family.

5 Here is where their grandfathers and great-grandfathers  
6 are buried and --

7 THE SPECIAL MASTER: They will stay.

8 THE WITNESS: -- and they will stay there, and in  
9 which case you run into a lot of that, particularly with  
10 indigenous Indian tribes.

11 We worried a lot about that in some of our work in  
12 Northern New Mexico, and most of the projects that you'll  
13 see done by AID and the World Bank concerning Indian  
14 tribes or indigenous individuals in Latin America, it's  
15 not uncommon at all.

16 Q Ron, in your evaluation of these 10 or 15 large projects  
17 as well as all of the other Bureau projects and so forth  
18 that you've examined, have you become generally familiar  
19 with how long it takes to build large scale irrigation  
20 projects and storage facilities?

21 A Well, it can take anywhere from three to ten years,  
22 depending on what's involved.

23 Q Are you aware that in his analysis Mr. Dornbusch assumed  
24 that all of these proposed projects, with the exception  
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of the North Crowheart, could be built in one year?

MR. ECHOHAWK: Objection, Your Honor. Far beyond the scope of direct again.

THE SPECIAL MASTER: Are you aware -- what else did he say in the question, please, Vi?

(Thereupon, the following question was read back as follows: "Q Are you aware (that in his analysis Mr. Dornbusch assumed that all (of these proposed projects, (with the exception of the (North Crowheart, could be (built in one year?"

MR. SACHSE: I have an objection which I think can be resolved just by clarification of the question.

Are you inferring that Mr. Dornbusch testified that all would be built all at once in one year or that each of the five individual projects except for North Crowheart could itself be built in one year in your statement you are asking the Witness?

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1 MR. MERRILL: I intended to infer that all of the  
 2 remaining four projects except the North Crowheart could  
 3 together be built in one year and that North Crowheart  
 4 could be built in three years because that's what I  
 5 understood Mr. Dornbusch to say.

6 THE SPECIAL MASTER: Do you have the page where  
 7 Mr. Dornbusch said that?

8 MR. MERRILL: No, Your Honor, I'm afraid I don't.

9 MR. ECHOHAWK: Mr. Merrill had full opportunity to  
 10 cross-examine Mr. Dornbusch.

11 MR. MERRILL: I brought it out during cross-  
 12 examination, Your Honor, I just don't have which of  
 13 the ten thousand pages of this transcript it is.

14 THE SPECIAL MASTER: Mr. Merrill, he's got a point,  
 15 but he has a right also, Tom, to bring out his feelings  
 16 regarding or his knowledge of what Mr. Dornbusch had in  
 17 mind in practical project construction time.

18 MR. ECHOHAWK: The only thing Mr. Merrill has a  
 19 right to question Mr. Cummings on is Mr. Cummings'  
 20 analysis, and in Mr. Cummings' analysis he took at face  
 21 value the final figures that Mr. Dornbusch arrived at  
 22 and only plugged those into his analysis. Mr. Cummings  
 23 has not testified regarding any of the specific analysis  
 24 that Mr. Dornbusch did. Therefore, Mr. Merrill is  
 25 precluded from cross-examining on any of those fine



1 points. It's up to Mr. Merrill in his own case in chief.

2 THE SPECIAL MASTER: If Mr. Merrill's questions lead  
3 to a raising a doubt about a particular conclusion of  
4 this witness, and this witness' testimony was based upon  
5 work papers that were submitted and he accepted at face  
6 value from Dornbusch, he may inquire, but I don't think  
7 you can do this unless there's something in the record to  
8 show that Mr. Dornbusch did, in fact, say that those five  
9 projects could be completed in one year.

10 MR. MERRILL: Your Honor --

11 THE SPECIAL MASTER: Now, if you want to say assuming  
12 that Mr. Dornbusch testified in this case about those  
13 things would this make any difference in your reliance  
14 upon his facts and figures, that question I'll permit.

15 MR. MERRILL: I'll withdraw the question, Your Honor,  
16 and try to rephrase it.

17 THE SPECIAL MASTER: Do you want me to state it?  
18 Assuming Mr. Dornbusch said in this case that all the  
19 projects, four out of the five projects excluding North  
20 Crowheart could be constructed within one year, would that  
21 fact lead you to a different conclusion on your reliance  
22 upon his information, upon his testimony?

23 THE WITNESS: Your Honor, the only way I can really  
24 respond to that is the way it relates to what I might do.  
25 I just have to have an awful lot more information. The



21-3

1 fact that -- If it's a fact, if someone assumes or states  
2 that, look, I'm going to get this project going, you know,  
3 in a year, there are projects that you can get going in a  
4 year. I'd want to know a lot more about specifically  
5 what's involved, what you are putting in.

6 THE SPECIAL MASTER: Yeah, I doubt --

7 THE WITNESS: I just can't respond to that.

8 THE SPECIAL MASTER: I don't know of an irrigation  
9 project that ever got done in ten years, let alone one,  
10 and -- from authorization, I mean, until crops are being  
11 harvested. So I just don't think it has much probative  
12 value, Mr. Merrill. Perhaps you ought to go on into the  
13 next point.

14 MR. MERRILL: Mr. Watts informed me that I may have,  
15 in fact, misstated Mr. Dornbusch's testimony, and if, in  
16 fact, I've mischaracterized it, I apologize to him and to  
17 the Court.

18 THE SPECIAL MASTER: No problem.

19 Q. (By Mr. Merrill) Dr. Cummings, what assumptions did you  
20 make concerning the constructions times associated with  
21 the Big Horn Flats Extension and the Stagner Ridge pro-  
22 jects?

23 A. I made no assumptions, Mr. Merrill.

24 THE SPECIAL MASTER: Did you on those projects look  
25 cummings - cross - merrill



1 into the drainage thereof?

2 THE WITNESS: No, sir.

3 THE SPECIAL MASTER: Okay.

4 THE WITNESS: I simply took the data --

5 THE SPECIAL MASTER: I guess I can't ask -- All  
6 right.

7 THE WITNESS: The parties involved, and that's where  
8 my analysis began.

9 Q (By Mr. Merrill) Were you given an assumption concerning  
10 the construction time for those two projects by Keller  
11 Engineers?

12 A. None whatsoever.

13 Q. Okay. Dr. Cummings, if I understand correctly, on Table  
14 B.3 --

15 THE SPECIAL MASTER: B like in Baker?

16 MR. MERRILL: Yes, Your Honor.

17 Q (By Mr. Merrill) On Table B.3 you adjusted some of the  
18 systems costs provided you by Mr. Dornbusch for a variety  
19 of factors; is that correct?

20 A. That's correct.

21 Q. And isn't it true that one of the factors which you used  
22 to make an adjustment is the IDC or interest during con-  
23 struction?

24 A. That is correct.

25 cummings - cross - merrill



1 Q And isn't it true that the interest during construction  
2 adjustment factor is dependent upon the length of time  
3 that is assumed will be required to construct one of  
4 these projects?

5 A. That would be correct.

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1 Q Did you employ an interest during construction factor  
2 in your analysis without knowing how long it would take  
3 to construct these projects?

4 A Mr. Merrill, as I indicated on direct, I took Dornbusch's  
5 data, Stetson's data, I took these adjustment factors from  
6 Dornbusch, okay, adjusted them in a system with Dornbusch's  
7 data and went from there.

8 Q Do you know, in fact, what construction schedules are  
9 assumed by the IDC factors you've used?

10 A I do not know -- No, I don't.

11 MR. MERRILL: Could I have just a moment to confer  
12 with my experts, Your Honor?

13 THE SPECIAL MASTER: Yes. I might mention while  
14 you're conferring, it's nearly four o'clock, and if it's  
15 your desire to substitute a witness so that he may be  
16 dismissed by the end of the day, this might be the time  
17 to do it.

18 MR. MERRILL: That would be fine, Your Honor.  
19 I suspect it would only take five or ten minutes of  
20 his time to do it.

21 THE SPECIAL MASTER: Why don't you take a seat  
22 over here for a little bit, Doctor. We'll want to con-  
23 tinue with you, but we may want to call -- That's up to  
24 Mr. Sachse.

25 cummings - cross - merrill



1 We'll see what they want, give them a few minutes.

2 (Brief pause.

3 MR. SACHSE: Your Honor, just to keep the procedure  
4 straight here, we made Mr. Bliesner available in case  
5 Mr. Merrill had an objection to the report that would  
6 have anything to do with the data that Mr. Bliesner  
7 reported on the division of on-farm costs and so forth.  
8 Now, I think Mr. -- in our opinion, there's not a valid  
9 objection to the report on that basis. I think before  
10 Mr. Bliesner is put on, Mr. Merrill ought to state whether  
11 he has such an objection, you ought to rule on it. And  
12 if you rule that Mr. Bliesner's testimony is necessary,  
13 then he could testify and if not, he could go home.

14 MR. MERRILL: That's an agreeable procedure, Your  
15 Honor.

16 THE SPECIAL MASTER: Sit down, Mr. Bliesner. We  
17 are going to have a little discussion before we ask  
18 some questions.

19 All right, Mr. Merrill.

20 MR. MERRILL: Your Honor, if the Tribes were to  
21 offer Tribes' Exhibit 24 --

22 MR. SACHSE: We've offered it.

23 MR. MERRILL: -- without making Mr. Bliesner  
24 available for voir dire of that exhibit, I would object --

25 THE SPECIAL MASTER: Well, they're not doing that,



1 he's here, and the exhibit is here.

2 MR. MERRILL: I understand, but I'm going to make  
3 the objection so that you can rule, if that's the way  
4 we want to go about it.

5 I would object on the grounds, Number One, that  
6 Mr. Cummings' analysis is based in great part, particularly  
7 the analysis in Appendix B, is based in great part on an  
8 allocation of costs between the project and the on-farm  
9 as reflected in Tables B.8 and B.9, which I believe we'll  
10 find out are the work product of Mr. Bliesner and that  
11 without -- and which work product and which work process  
12 was not disclosed during Mr. Bliesner's direct examination  
13 and therefore, there was no opportunity for the State,  
14 up to this time, to cross-examine him with respect to the  
15 methodologies and assumptions that he did in determining  
16 Tables B.8 and B.9.

17 I would therefore, object on the grounds that first  
18 there was insufficient foundation for the admission of  
19 this document stemming from all of Dr. Cummings' work  
20 based on Mr. Bliesner's work, and secondly, I would object  
21 on due process grounds, essentially on due process, arguing  
22 that the State of Wyoming was precluded from fully and  
23 effectively cross-examining the analysis of Dr. Cummings  
24 without knowing the basis of some of the ground data on  
25 which he relied upon.





1 MR. CLEAR: Your Honor, due process does not apply  
2 to a State, it applies to people.

3 MR. SACHSE: In reply to that, all I want to say  
4 is one expert has the right to rely on work done by  
5 another expert, that in this case, almost everyone has  
6 had to rely on some work done by someone else. And  
7 Dr. Cummings asked Mr. Bliesner to make these divisions  
8 of the costs because they were divisions that should be  
9 made by an engineer. He then applied those divisions  
10 as he's already testified.

11 We thus think that the Court could -- could well  
12 rule that Mr. Bliesner's testimony is not necessary at  
13 all. On the other hand, since he is here we have no  
14 objection to it.

15 THE SPECIAL MASTER: I would be inclined to agree  
16 with your last observation. He's here, been waiting  
17 patiently all day, and I would believe it would be  
18 proper to permit questioning of Mr. Bliesner if you  
19 want to proceed with any.

20 MR. MERRILL: Thank you, Your Honor.

21 THE SPECIAL MASTER: Before you begin, may I remind  
22 you that you are the same person who testified before and  
23 you're under oath.

24 Proceed.

25



VOIR DIRE EXAMINATION1  
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BY MR. MERRILL:

Q Mr. Bliesner, did you have a copy of Tribes' Exhibit 24  
in front of you? That's Dr. Cummings' report.

A. Yes, I do.

Q Would you please turn in the report to Tables B.8 and B.9.

A. All right.

\* \* \* \* \*



1 Q. (By Mr. Merrill) Are you responsible for the breakdown  
2 of these costs shown on Tables B.8 and B.9 for the various  
3 projects between on-farm costs and project costs?

4 A. I was, with the exceptions of fencing and land preparation.

5 Q. All right. Would you please explain to the Court how you  
6 developed the breakdown between the on-farm portions of  
7 these costs and the project portions?

8 A. Certainly. There are several categories listed in both of  
9 these tables. The first category for each of the projects  
10 is listed as on-farm system, which has previously been  
11 testified to as being the side-roll laterals or center  
12 pivots, depending on what the type of system is, along  
13 with hydrant valves and turnouts and swing lines and  
14 associated paraphernalia that goes along with that.

15 THE SPECIAL MASTER: Including syphons?

16 THE WITNESS: I don't believe there are any syphons  
17 included in that, no.

18 THE SPECIAL MASTER: Okay.

19 A. That's the equipment that is attached to a particular field  
20 or farm and is placed there, so that's obviously on-farm  
21 equipment, and all of that cost goes into the on-farm  
22 column.

23 Now, the next division -- or the next category,  
24 excuse me -- is pipe network.

25 bliesner - voir dire - merrill



1           Now, the way the pipe networks were designed by  
2 Stetson, all of the pipe network was included as one  
3 unit cost. It was not split between that type which  
4 served to distribute water to -- or in a particular field  
5 and the water -- or the pipe that was used to deliver  
6 water to those fields or those farms.

7           Now, what we did is attempt to determine what that  
8 split was between the pipe that served or distributed the  
9 water within a field and the pipes that brought water to  
10 the field.

11           Now, that's a little bit difficult to do because  
12 there are several places you could make that break and  
13 would have good support in doing that.

14           What I tried to do in the analysis is take the most  
15 conservative approach in that we left as much of the pipe  
16 network as was -- as could be conceived in the project  
17 cost.

18           And what was actually done then, if you recall from  
19 my testimony earlier, we had several sample systems that  
20 we had redesigned to analyze the pipeline costs.

21           Well, in those systems we had an accurate breakdown  
22 of the pipes as far as what pipes served what field and so  
23 on, and so an analysis was done on those, and those pipe  
24 segments and their associated costs were separated out

25 bliesner - voir dire - merrill



1 that actually distributed water on a particular field  
2 from those that were sort of the main trunklines that  
3 went to the points where they split to the individual  
4 fields. And then I worked up a percentage breakdown on  
5 each of those systems, tabulated that percentage and  
6 gave -- allocated the weighted average of that percentage  
7 that went to on-farm, and that came up to be 17.9 percent  
8 on the average for the Stetson systems.

9 THE SPECIAL MASTER: To the farms and the balance to  
10 the project?

11 THE WITNESS: To the farms and the balance to the  
12 project. I did not use that percentage straight in,  
13 again for the same reasons that I discussed in my  
14 previous testimony.

15 There was some reduction on that and if you'll give  
16 me a moment, I'll check and see exactly what percentage  
17 was used.

18 Q. (By Mr. Merrill) All right.

19 A. No, I'm wrong. I guess that percentage was used straight  
20 in. Seventeen -- roughly -- it varies between 17 and 18  
21 percent, depending on the system and how it rounds, so  
22 that percentage was used straight in as the split.

23 Now, I could have easily decided that the pipe net-  
24 work from the pumping plant out is distributing water to  
25 bliesner - voir dire - merrill



1 farm and thereby should be an on-farm cost. There are  
2 many projects that are built that way.

3 There are also projects that are built along the  
4 lines that I've indicated, and so that's where that split  
5 was made.

6 Q Why did you decide to opt for the latter method, that of  
7 not splitting it immediately at the pump, but further  
8 down the distribution system?

9 A Well, it was the more conservative way to go. What we  
10 were doing was looking at something that would be com-  
11 parable to the way other Bureau projects would be done  
12 to make those comparisons as well as split out that  
13 portion that would be logically included in a farm unit,  
14 and the method that we used would be the least amount of  
15 pipe that would be associated with that farm unit and  
16 thereby is a conservative approach.

17 Q Did you make individual calculations with respect to each  
18 farm unit concerning where you broke the pipe for on-farm  
19 and project costs and then calculate from each direction?

20 A For those sample systems, yes, I did. For those, I  
21 believe it's nine sample systems, eight or nine sample  
22 systems.

23 Q Are those distributed both in the Big Horn Flats Extension  
24 and in the Stagner Ridge areas, or are these throughout

25 bliesner - voir dire - merrill



1 all seven projects?

2 A. Now, we are talking about just Stetson's work at this  
3 stage. This would be just Table B.8.

4 Q. Do you have with you your calculations with respect to  
5 those nine areas that you worked up?

6 A. I have only a tabulation of the individual percentages  
7 for each of those systems which would correlate to those  
8 system drawings that you obtained from my notes last time,  
9 and I have the percentages that went to on-farm for each  
10 of those.

11 I don't have the individual breakdown. That was just  
12 done with a calculator tabulating off of the drawings.

13 Q. Could you very quickly read those percentages into the  
14 record, if you don't mind?

15 A. Certainly. This is Riverton East No. 3 is the first unit;  
16 10 percent of the pipelines on on-farm.

17 North Crowheart No. 1, 10.6 percent.

18 North Crowheart No. 2, 18.8 percent.

19 North Crowheart No. 32, 29 percent.

20 North Crowheart 33, 14.3 percent.

21 North Crowheart 34, 29 percent.

22 North Crowheart 35, 24 percent.

23 North Crowheart 52, 10.8 percent.

24 North Crowheart 53, 19.8 percent.

25 bliesner - voir dire - merrill



1 Q Thank you.

2 A The weighted average is 17.9 percent.

3 Q Is that weighted on an average basis?

4 A Yes, it is.

5 Now, for the Stetson work, that takes care of the  
6 pipe network.

7 For Stagner Ridge and Big Horn Flats it was assumed  
8 that each center pivot system was a field, and under the  
9 same assumption then, we were required to deliver water  
10 to the field, and so all of the pipeline network systems  
11 are included in the project costs for Stagner Ridge and  
12 Big Horn Flats.

13 MR. CLEAR: Excuse me, Your Honor. I think to make  
14 it clear, we have been using Big Horn Flats and Big Horn  
15 Flats Extension, and I think if you could keep that dis-  
16 tinction going, it would be more clear.

17 THE WITNESS: Yes. Let me clarify that. I'm talking  
18 now about Big Horn Flats Extension and Stagner Ridge.

19 Now, the other area where there was a split in the  
20 costs between project and on-farm would be in pumping  
21 plants and then the energy cost.

22 Now, the method used for this again differed between  
23 whether it was the Stetson systems that were being  
24 analyzed or the projects that were added by our work.

25 bliesner - voir dire - merrill





1           On the Stetson project areas, the original five areas,  
2 a computer analysis was used since we had the information  
3 on the pumping plants from Stetson's work as far as the  
4 head that was required; the flow rate that was required  
5 on each of those pumping plants.

6           The computer was used to analyze that pumping data  
7 and subtract out the pressure that was required to operate  
8 the sprinkler systems.

9           Now, in this effort there were two assumptions made.  
10 One was on Stetson's systems without the reduction for  
11 pressure that you remember we made when we made our  
12 analysis.

13 Q       (By Mr. Merrill) Right.

14 A       In that case 140 feet of head was subtracted by the  
15 computer from the pumping levels of each of those pumping  
16 plants to determine the pumping head of each individual  
17 pumping plant required for the project.

18           That allows some 55 p.s.i. pressure plus some pressure  
19 lost in the sprinkler lines themselves. That does not  
20 subtract out anything from higher elevation portions of  
21 the field, so it's again a conservative estimate.

22           It's getting the water right to the edge, or in some  
23 cases, in the center of the field and taking care of all  
24 of the elevation that occurs plus essentially all of the

25 bliesner - voir dire - merrill



1 main line losses that occur.

2 Q Okay.

3 A Now, when you subtract out that 140 feet of head in some  
4 locations, we had some gravity pressure available.

5 Obviously, it did not come up with a negative head.  
6 If it hit zero, it truncated at zero and then the computer  
7 calculated the ratio of the on-farm head to the average  
8 head and thus giving you a percentage reduction in the  
9 pressure requirements and thereby a percentage reduction  
10 in the energy costs.

11 Now, this same percentage reduction was also assigned  
12 to the pumping plant cost as a straight ratio and that's  
13 where the reductions -- or rather, the splits between  
14 project and farm costs come in the pumping plants and also  
15 in the energy costs.

16 Q Okay.

17 A Now, you'll notice that engineering contingency is also  
18 split between farm and project, and that obviously is just  
19 the personal application of the engineering and contingency  
20 to those costs that are associated to the on-farm and  
21 project portions.

22 Now, in the Big Horn Flats Extension and Stagner  
23 Ridge area, the analysis followed the same basic assump-  
24 tions.

25 bliesner - voir dire - merrill



1           However, it was not done with the computer. There  
2 were not very many systems involved, and there was some  
3 variation from system to system, so what we did there  
4 under the several branches of the Big Horn Flats system,  
5 for example, associated with each of the pumping plants  
6 in the Big Horn Flats Unit, we had again a head associated  
7 with that pumping unit.

8           We subtracted off the pressure required at the pivot  
9 point for the operation of the center pivot from that  
10 head and calculated the new head requirement, then cal-  
11 culated the percent reduction and weighted that over the  
12 average, and there we came up with a 7 percent reduction  
13 in project pumping costs and pump unit costs, and that  
14 went in at the on-farm cost for those units.

15           Stagner Ridge, the same thing was done, the total  
16 head required to deliver water to the ridge was determined  
17 and then the pressure required to operate the sprinklers  
18 were subtracted -- was subtracted, and that came up to be  
19 -- let's see -- approximately a 31 percent reduction,  
20 slightly over 31 percent.

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23           \* \* \* \* \*



- 1 Q (By Mr. Merrill) Did you recalculate the energy and  
2 demand charges based on your new pressure results?
- 3 A Yes, just applying that ratio of the two pressures since  
4 the flow rates have to be delivered regardless of whether  
5 it's on-farm or project, and the split in energy and demand  
6 costs comes straight with the ratio.
- 7 Q All right. And you recalculated the engineering and  
8 contingencies in accordance with the new breakout of  
9 costs?
- 10 A That's true.
- 11 Q Okay. Do Tables B.8 and B.9 reflect the format in which  
12 you supplied the results of the analysis you just described  
13 to Dr. Cummings?
- 14 A Well, it's a little difficult to answer because it was  
15 supplied by telephone, but the information is the same.
- 16 Q Okay. Mr. Bliesner, you were responsible, were you not,  
17 for the planning of the Big Horn Flats extension and  
18 Stagner Ridge areas?
- 19 A Yes.
- 20 Q As part of the planning of those areas, did you make an  
21 estimate of the time required to construct those projects?
- 22 MR. SACHSE: Objection, Your Honor.
- 23 MR. ECHOHAWK: Objection, Your Honor.
- 24 MR. SACHSE: We made Mr. Bliesner available to take  
25 bliesner-voir dire-merrill



1 care of this problem, the information that he supplied.  
2 And I think if Mr. Merrill should be limited to those  
3 issues, and obviously he's completed that and Mr. Bliesner  
4 has explained those things.

5 MR. MERRILL: Your Honor, I'd like to speak to that,  
6 and the reason is this: During the United States' case in  
7 chief, the person in the string of witnesses who estimated  
8 the construction times for those projects was the  
9 economist who testified after the engineers testified.  
10 And based on that presentation and the fact that there  
11 were no representations to the contrary in the Tribes'  
12 case in chief, I assumed that Dr. Cummings had made any  
13 estimates of construction times associated with these two  
14 future projects. I now find out today, as a surprise,  
15 that in fact the engineer made -- or estimated the proposed  
16 construction times for those projects. I had no way of  
17 knowing before that that was the case.

18 When Mr. Bliesner described what he had done, he  
19 described in great detail the analysis that he went  
20 through and so forth, but there is never a mention made  
21 in the record that he had developed the construction  
22 times for those projects. And based on what we had seen  
23 before, I think it was perfectly reasonable for the State  
24 to assume that as in the United States' case in chief, it  
25 bliesner-voir dire-merrill



1 had been done by the economist. Now, I find out that's  
2 not the case.

3 We have Mr. Bliesner here, it will take about 30 seconds  
4 for him to answer the question if that long. I don't think  
5 it's going to prejudice any of the parties except to the  
6 extent that we find out actually what was done.

7 MR. ECHOHAWK: Perhaps Mr. Merrill should check the  
8 transcript again. Mr. Dornbusch testified that he'd gotten  
9 figures from Mr. Stetson.

10 MR. MERRILL; Well, that's for the Court to review.

11 THE SPECIAL MASTER: I'm going to overrule the  
12 objection and let the Witness answer if he may, and  
13 conclude that it's not going to have too much value to me  
14 anyway, gentlemen.

15 THE WITNESS: I was asked that question under  
16 probably cross-examination before, about how long I  
17 thought it would take to construct. Based on the  
18 assumptions made under the rest of the project, Stagner  
19 Ridge could easily be constructed in one year. It's 897  
20 acres. Farmers routinely construct that much ground in  
21 a season in and of themselves.

22 The Big Horn Flats is a larger project, however. It  
23 does not require any storage features, there are fairly  
24 simple features to construct, would construct rather

25 bliesner-voir dire-merrill



1 rapidly, and it would be possible to construct that  
2 within a year.

3 THE SPECIAL MASTER: And as I remember, both of these  
4 had one drainage pipe in the middle of each field and that  
5 was all. You claimed a nice natural -- and unless trouble  
6 developed afterwards then you'd go back and put in the  
7 pipe.

8 THE WITNESS: That's right, so the drainage  
9 installation does not, the drain installation does not  
10 have a bearing on getting the crop land into production  
11 the way most drainage systems are constructed because with  
12 the proper monitoring system then in place you can --

13 THE SPECIAL MASTER: Correct as needed.

14 THE WITNESS: Correct that as needed while things are  
15 in production.

16 THE SPECIAL MASTER: That's the reason that the west  
17 has so much spots of salt in big areas.

18 THE WITNESS: That's because they were improperly  
19 monitored.

20  
21 \* \* \* \* \*



1 THE SPECIAL MASTER: Well, something went wrong,  
2 that's for sure. All right.

3 MR. MERRILL: Your Honor, I have no further questions  
4 of Mr. Bliesner on voir dire.

5 THE SPECIAL MASTER: All right. I think you saved  
6 us a little trip in the return, so I thank you very,  
7 very much for this.

8 MR. SACHSE: We have no questions.

9 THE SPECIAL MASTER: Mr. Echohawk, Mr. Clear?

10 MR. CLEAR: No, Your Honor.

11 THE SPECIAL MASTER: Mr. Membrino?

12 MR. MEMBRINO: No, Your Honor.

13 THE SPECIAL MASTER: Mr. Rogers?

14 MR. ROGERS: No, Your Honor.

15 THE SPECIAL MASTER: Gentlemen, at the State table,  
16 Mr. Radosevich?

17 MR. RADOSEVICH; No, Your Honor.

18 THE SPECIAL MASTER: Thanks very much. Good to see  
19 you again.

20 We'll probably see you again too the way we're  
21 going, Mr. Bliesner.

22 All right. It's about 4:15. What do you think,  
23 gentlemen, shall we call it a day?

24 MR. ECHOHAWK: We'd prefer to keep going, Your  
25 Honor. I believe Mr. Merrill's about out of questions





1 and perhaps we can finish it.

2 THE SPECIAL MASTER: Is there a possibility we could  
3 finish Mr. Cummings today?

4 MR. MERRILL: I'm sure going to try. It may take us  
5 till about 5:00, 5:30.

6 THE SPECIAL MASTER: All right, let's go back on  
7 the stand, Mr. Cummings, and see if we can't carry on with  
8 the cross-examination unless you have a reason otherwise.

9 THE WITNESS: No.

10 THE SPECIAL MASTER: Let the record show Dr. Cummings  
11 resumed the stand.

12 MR. MERRILL: Your Honor, based on the Tribes' making  
13 Mr. Bliesner available, I will withdraw the foundation  
14 objections that I told you earlier that I would have made  
15 with the introduction of Tribes' Exhibit 24.

16 THE SPECIAL MASTER: Very good.

17 MR. MERRILL: And like to thank Mr. Sachse for making  
18 Mr. Bliesner available. That's a very kind courtesy.

19 THE SPECIAL MASTER: I appreciate that, and I will  
20 at this time admit into evidence Tribes' Exhibit No. 24.

21 MR. MERRILL: Well, wait a minute, Your Honor.

22 THE SPECIAL MASTER: Well, you got more on the voir  
23 dire?

24 MR. MERRILL: I'd like to continue my examination  
25 and voir dire of Dr. Cummings.



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THE SPECIAL MASTER: At the same time?

MR. MERRILL: Yes, Your Honor.

THE SPECIAL MASTER: Okay. I thought you were not going to object to its admission into evidence.

MR. MERRILL: I'll have quite a few objections when we get there, Your Honor.

THE SPECIAL MASTER: All right, then let's proceed with the cross-examination and voir dire simultaneously.

CROSS-EXAMINATION (RESUMED)

BY MR. MERRILL:

Q Dr. Cummings, you testified this morning that in the period 1939 to 1973, government agencies were using more lenient criteria to evaluate water resource projects than have been used since 1973; is that correct?

A. No, it's not.

Q You want to straighten me out?

THE SPECIAL MASTER: I think I did that instead of the witness, but I'm not sure.

A. I said nothing about -- No, I don't believe there was any more leniency then than there is now. I said that the major distinction is, relates to the inclusion or exclusion of secondary benefits..

THE SPECIAL MASTER: I think I used the term "liberal", they were much more liberal in those years and rationalized  
cummings - cross - merrill



1 a lot of the B-C ratios in those years.

2 Q (By Mr. Merrill) Mr. Cummings, isn't it true that during  
3 the period 1939 to 1973 government agencies were allowed  
4 to consider secondary benefits in evaluating feasibility  
5 of water resource projects?

6 A. Yes.

7 Q. Isn't it true since 1973 government agencies have not  
8 been allowed to consider secondary benefits?

9 A. It's true that after 1973, government agencies who have  
10 come under the auspices of Water Resource Council  
11 are required to assume full employment, thereby excluding  
12 secondary benefits.

13 Q. And as I understand your argument, you believe that it  
14 is equitable to evaluate these projects, even though it's  
15 1981, and consider secondary benefits so that we don't  
16 penalize the Indians for not having constructed these  
17 projects at an earlier time; is that correct?

18 A. Yes, that's -- Would you repeat the question? I think  
19 I would agree.

20 Q. Okay. Let me make sure I've got it right. As I understand  
21 your argument, you believe it equitable and consistent  
22 with criterion A. to evaluate these projects today and  
23 to consider secondary benefits so that we do not penalize  
24 the Indians for not having exercised their water rights

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earlier?

A. Yes, that's true.

Q. Dr. Cummings, isn't it true that the irrigation system design which has been proposed by Stetson Engineers and Keller Engineers in this case might be more efficient than the design that would have been proposed from 1939 to 1973?

A. No, I really can't comment on that. I have not been asked to study in any detail the irrigation -- either the -- either of the studies, Stetson, Dornbusch, whatever.

Q. Dr. Cummings, isn't it true that had these projects been proposed, say from 1900 to 1939, that they would have been evaluated in terms of ability to repay?

A. That is the principle that would have reigned.

Q. Did you evaluate the feasibility of these projects under an ability to repay criterion?

A. No, I did not.

Q. Wouldn't an evaluation of these projects under that criterion also be consistent with principle A. assuming that these projects have been proposed before 1939?

A. Mr. Merrill, as I testified under oath, I was addressing the question of feasibility, practicality, if you will, and as I indicated, considerations of feasibility, considerations of repayment were deliberately split in the 1936

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1 Reclamation Act. You consider issues of feasibility  
 2 first, issues of repayment are of really no great moment  
 3 in assuming the operating principle is the ability to  
 4 pay, in which case, in addressing the question, what  
 5 economic measures might be relevant for speaking, you  
 6 know, to feasibility, practicality of the project, I  
 7 considered only that question.

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1 Q (By Mr. Merrill) Dr. Cummings, as an agricultural  
2 economist, are you generally familiar with the modern  
3 techniques of sprinkler irrigation and when they were  
4 developed?

5 A I am not what is typically referred to as an agricultural  
6 economist, so we are keeping everything clean.

7 In general terms, I'm familiar with sprinkler  
8 irrigation. I do not know when we began using them, you  
9 know.

10 MR. MERRILL: Based on the Witness' last statement  
11 that he is not what is generally referred to as an  
12 agricultural economist, I would move that his acceptance  
13 as an expert witness in this case be modified to restrict  
14 his expertise to water resources economics and not  
15 agricultural economics.

16 THE SPECIAL MASTER: I will grant that, and I'll  
17 strike the agricultural economist specialist for which  
18 he was qualified this morning to as a water resource  
19 management specialist.

20 MR. MERRILL: Thank you, Your Honor.

21 MR. SACHSE: Your Honor, might I ask that before you  
22 strike that that we inquire what the Witness meant by  
23 the qualification he put in that statement?

24 THE SPECIAL MASTER: He said by his own admission he  
25 cummings-cross-merrill



1 did not consider himself an expert in agricultural  
2 economy but in the water resources phase of agriculture.

3 THE WITNESS: Excuse me, sir. I don't think that's  
4 precisely what I said, certainly not what I meant.

5 THE SPECIAL MASTER: Then why don't you clear this  
6 up for us?

7 THE WITNESS: I'm sorry, but it was simply to keep the  
8 record straight. When he described me as an agricultural  
9 economist, in my profession, okay, that description refers  
10 many if not most times to someone who is schooled and  
11 trained in farm management, budgets, and all of these  
12 sorts of things.

13 THE SPECIAL MASTER: All right.

14 THE WITNESS: My area of expertise, the area in which  
15 I have written, worked, and studied for some 20-odd years  
16 has to do with irrigation, you know, water use in irrigated  
17 farming and things of this nature.

18 THE SPECIAL MASTER: Yes, but the question was are  
19 you familiar with what year center pivot irrigation and  
20 sprinkler irrigation came in, and that's when you said,  
21 "Let me off that because I'm not an expert in agriculture."

22 THE WITNESS: No, my comment referred to his  
23 description of me as an agricultural economist.

24 THE SPECIAL MASTER: I see.

25 cummings-cross-merrill



1 THE WITNESS: And I was simply trying to keep the  
2 record straight. I had no idea that I would muddy, if you  
3 will excuse the pun, the waters in that regard.

4 MR. MERRILL: Your Honor, I believe the Court's  
5 ruling ought to stand because my notes, which I took  
6 down verbatim from Mr. Sachse's tender was of Dr. Cummings  
7 as an expert in agriculture and water resource economics.

8 Now, if an expert admits he's not an agricultural  
9 economist, I don't know what else you can ask for.

10 THE SPECIAL MASTER: I think the modification isn't  
11 all that crucial or critical, so go ahead with your  
12 questions.

13 MR. MERRILL: Thank you, Your Honor.

14 Q (By Mr. Merrill) Dr. Cummings, I forgot exactly where we  
15 were.

16 Are you familiar with when center pivot technology  
17 first became used in the arid lands of the West?

18 A I'm not familiar -- my familiarization begins in the 1960s  
19 when I was in school and it's really beginning use,  
20 wide-spread use, in the State of Kansas.

21 Q In the 1960s?

22 A Yes.

23 THE SPECIAL MASTER: Are you familiar, Doctor, with  
24 the areas in Kansas on the Arkansas River where center pivot  
25 cummings-cross-merrill





1 sprinkler irrigation by wells has become almost universally  
2 used on nearly all of the farms?

3 THE WITNESS: A bit. Most of our work when I was with  
4 the Kansas Water Resources Board was up a bit north.

5 THE SPECIAL MASTER: Of the Arkansas River?

6 THE WITNESS: Right.

7 THE SPECIAL MASTER: Go ahead.

8 MR. MERRILL: Thank you, Your Honor.

9 Q (By Mr. Merrill) Dr. Cummings, isn't it true that modern  
10 pumping and sprinkler technology have been used in Wyoming  
11 about 15 years or so?

12 A I'm not that familiar with the history of Wyoming.

13 Q Dr. Cummings, isn't it true that the highland areas which  
14 are to be irrigated under the projects we're discussing  
15 today could not have been irrigated using technology from  
16 20 to 40 years ago?

17 (Brief pause.)

18 MR. ECHOHAWK: Objection, Your Honor.

19 THE SPECIAL MASTER: A little late.

20 MR. ECHOHAWK: The Witness has not answered.

21 THE SPECIAL MASTER: No, he hasn't, but he's sure had  
22 a lot of time to think about an answer.

23 MR. ECHOHAWK: I have too.

24 THE SPECIAL MASTER: Go ahead with your objection.

25 cummings-cross-merrill



1 MR. ECHOHAWK: It's beyond the scope of the Witness'  
2 expertise. It calls for sheer speculation as to what  
3 was going on in agriculture 30 or 40 years ago.

4 MR. MERRILL: If the Witness doesn't know, I'm sure  
5 he'll tell us.

6 THE SPECIAL MASTER: No, I'm going to allow the  
7 question, Mr. Echohawk.

8 MR. ECHOHAWK: Furthermore, Your Honor --

9 THE SPECIAL MASTER: It's a little bit vague on  
10 highlands, and I don't know what you mean by highlands.  
11 Is North Crowheart a highland area?

12 MR. MERRILL: Yes.

13 MR. ECHOHAWK: The question is irrelevant. The issue  
14 here is to decide the water reserved for the present and  
15 future needs of the Indians. It's totally irrelevant.

16 THE SPECIAL MASTER: You may have a point there, but  
17 let's let it be answered.

18 MR. MERRILL: I'll tie it in, Your Honor.

19 THE SPECIAL MASTER: Go ahead, if you know the  
20 answer.

21 THE WITNESS: Would you repeat the question? Are you  
22 talking about the technology proposed for this particular  
23 project, or are you saying there was no technology that  
24 would allow you to irrigate that area?

25 cummings-cross-merrill



1 Q (By Mr. Merrill) Let me try it again.

2 I'm speaking of highland areas, mesa tops, things like  
3 this, such as are found in the Big Horn Flats area, the  
4 North Crowheart.

5 My question is: Would it have been possible to  
6 irrigate those types of lands with the irrigation and  
7 pumping technology that was available 20 to 40 years ago?

8 A Certainly you wouldn't be using sprinklers. I simply have  
9 not studied the topography of that area to the point --  
10 I'm not aware.

11 Is there some way you can use some sort of a head  
12 system to get water there or not? I just can't respond.  
13 I'm sorry.

14 Q Dr. Cummings, isn't it true that the systems that you  
15 evaluated for this case are state of the art in terms of  
16 irrigation and pump technology?

17 A Again, Mr. Merrill, you have got to understand that for this  
18 piece of my work in Appendix B I was given simply the data  
19 by Dornbusch and the data by the engineers.

20 I was not given the supporting data -- I have not  
21 analyzed what kind of systems are involved, what they are  
22 doing. I was not asked to do that.

23 Q Are you saying then that you are not familiar with the types  
24 of sprinkler systems that are proposed, the types of pumps  
25 cummings-cross-merrill



1 and pipelines and this sort of thing?

2 A I have no details on the details that underlie those  
3 cost systems.

4 Q Dr. Cummings, you have argued that on equitable grounds  
5 we ought to evaluate these projects using the standards  
6 that were applied from 1939 to 1973; is that correct?

7 MR. SACHSE: Objection, Your Honor. I don't think  
8 Dr. Cummings had used the words "equitable grounds."

9 THE SPECIAL MASTER: Let's let him answer and see if  
10 that's what he said.

11 A I was going to say I don't believe that I said if you were  
12 going to be consistent -- if you were to be consistent  
13 with those criteria that you would use a total benefit-cost  
14 ratio, yes.

15 Q (By Mr. Merrill) If you are to use a set of economic  
16 standards from 1939 to 1973, wouldn't it be consistent  
17 and fair to also use technology from that period of time?

18 A Well, I would take exception with -- the difference that I  
19 am arguing for simply turns around an assumption, okay,  
20 the assumption of full employment. My argument for the  
21 use of a total benefit-cost ratio simply says don't assume  
22 full employment, if that responds to your question.

23 Q Dr. Cummings, are you aware of when the first water  
24 development project was built in the Wind River or

25 cummings-cross-merrill



1 Big Horn River Basin?

2 A Early 1900s. I think -- let's see. Midvale was in, what,  
3 the 1920s.

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1 THE SPECIAL MASTER: If this was the Milk River  
2 and pioneers had been able to do what they tried to do  
3 in 1905 in Montana, I'd buy that argument, but there is  
4 nothing ahead upstream of the Indians here by way of  
5 diversion.

6 THE WITNESS: My argument again, I finally remind,  
7 the first part of my argument is a general argument  
8 dealing with -- with the use of economic measures. My  
9 conclusion concerning NED is based on two observations.  
10 First, the fact that you must assume full employment as  
11 of 1973, first and foremost that's what really hampers  
12 you.

13 I mentioned -- I mentioned this accumulative NED  
14 argument, that in general has some relevance. I also,  
15 for any practical purposes, however, as I go into explaining  
16 it, it really hasn't any relevance because you can't do  
17 anything about it. There are cases, not Wind River, that's  
18 essentially true. There are cases where -- where an NED  
19 benefit-cost ratio would penalize the Indians for this  
20 reason, okay, because of all of your cumulative development,  
21 but in the end you can't do anything about it unless you  
22 want to try to evaluate that project as if earlier  
23 development hasn't taken place, which I've said you can't  
24 do.

25 cummings-cross-merrill



1           So I mentioned that because there are cases, and  
2           again here we're talking about general terms, there are  
3           cases, you know, where that would be relevant, again  
4           you can't do anything about it. You then have to  
5           recognize that your, that your measure is going to be  
6           consumptive, but what really has the effect in terms of  
7           the observation that in my judgment, and as I have  
8           argued, that makes the NED benefit-cost measure penalize  
9           the Indians for not having earlier exercised their rights  
10          is the fact that prior to 1973, okay, that -- I beg your  
11          pardon, as of 1973 for some reason or other if you're  
12          going to use this particular measure you then must use  
13          an assumption of full employment which has the effect  
14          of eliminating secondary benefits which was included in  
15          part of that point.

16                 The only difference between those two measures is  
17                 whether or not you're assuming full employment, okay.

18                 To impose upon the Indians an economic measure  
19                 based on what the WRC recognizes is an arbitrary  
20                 assumption which would seem to fly in the face of what  
21                 I, at least, read the Court's after in this PIA.

22                 I've often speculated, if I may, if all were known  
23                 about this for five or six years before 1973, the  
24                 Indians had been advised, look, we're all going to play

25                 cummings-cross-merrill



1 a game now in five or ten years, we're going to play  
2 NED benefit-cost measures, I'm only speculating, but my  
3 argument turns on that observation not this cumulative  
4 NED. It is the general observation about which you can do  
5 little, but it's true. I'm sorry, Jim.

6 THE SPECIAL MASTER: All right, Mr. Merrill.

7 MR. MERRILL: That's quite all right.

8 Q (By Mr. Merrill) Dr. Cummings, did you say that you were  
9 aware that there were no dams or storage facilities  
10 proposed in this project?

11 A Oh, yes.

12 Q What flood control or recreational benefits do you  
13 attribute to a water resource project that has no storage?

14 A None.

15 Q You speak in terms of penalizing the Indians for waiting  
16 to assert their water rights. Isn't there a flip side of  
17 the coin here?

18 A No, I didn't..

19 Well, is that the same thing as penalizing the  
20 Indians for --

21 Q For not having asserted --

22 A Okay.

23 Q For not having exercised their rights in the past.

24 A Okay.

25 cummings-cross-merrill





1 Q Isn't the flip side of that the fact that as we go later  
2 and later in time when the Tribes do assert their water  
3 rights, they have the benefits of better and more modern  
4 technology that allows them to irrigate land which had  
5 requantified their water right in 1940 would not have been  
6 irrigable?

7 A I suppose.

8 THE SPECIAL MASTER: The other side of that coin is  
9 if they have adjudicated land that they irrigated 60 and 65  
10 and 70 years ago and quit irrigating some time in the last  
11 40, 50 years and isn't worth irrigating, now if they have  
12 a water right on these such as the nature of agriculture,  
13 and it's an on-going science.

14 MR. MERRILL: That's correct, Your Honor. We'll be  
15 presenting more evidence along that line of thought during  
16 our case in chief.

17 MR. ECHOHAWK: Your Honor, to make a point of  
18 clarification in regard to Mr. Merrill's last point,  
19 particularly in say reserved right cases, most notably  
20 Arizona versus California, that particular contingency  
21 was planned for in Article 9 of the Decree which allowed  
22 for people under that Decree to come back in at a later  
23 time for adjustments to that Decree. And as I have spoken  
24 of several times before in trial, this was just concluded

25 cummings-cross-merrill



1 and the second phase of Arizona versus California is  
2 where five Tribes on the lower Colorado River have in  
3 fact come in and reasserted a water right claim for  
4 additional land using sprinkler irrigation, which is  
5 covered by Article 9 of the Decree, which we hope we can  
6 get that same similar provision in this Decree.

7 THE SPECIAL MASTER: Yes. Do I read you correctly,  
8 Mr. Merrill, that you're about finished?

9 MR. MERRILL: I'm getting there.

10 THE SPECIAL MASTER: It's about five o'clock already.

11 MR. MERRILL: Your Honor, I have perhaps a half an  
12 hour, maybe a little less, if I can zip right along with  
13 the questions. If you want to quit now I'd be happy to,  
14 but if Mr. --

15 THE SPECIAL MASTER: Well, you're in town overnight  
16 anyway or were you planning on leaving tonight?

17 THE WITNESS: Well, if we're finished I'm going to  
18 leave, if we're not I'll be here in the morning.

19 MR. MERRILL: I'll go with the Court's pleasure,  
20 Your Honor.

21 THE SPECIAL MASTER: Oh, go ahead. If we can save  
22 you overnight in Cheyenne we'll do it, and go ahead and  
23 see if you can crank it up in ten, fifteen minutes.

24 I'll do my best not to interrupt you.

25 cummings-cross-merrill



1 Q (By Mr. Merrill) Dr. Cummings, I'd like to direct your  
2 attention to Table C.2 of your report.

3 A Yes.

4 Q As part of your analysis did you make any investigation  
5 concerning which of the projects listed in Table C.2 have  
6 some component in them that could be labeled a dam, a  
7 reservoir, storage unit or any other water containment  
8 facility?

9 A No. We were concerned primarily, solely with cost allocated  
10 to irrigation, cost allocated to these other NED benefits,  
11 whatever the project was.

12 Q Dr. Cummings, isn't it true that of all the projects listed  
13 on Table C.2 only three have no storage facility whatsoever?

14 A I don't know.

15 Q Dr. Cummings, isn't it true that a project with storage  
16 facilities will have a different array of benefits and  
17 costs than a similar project without storage?

18 A It will have a different array of benefits and costs, yes,  
19 it will.

20 Q Isn't it also true that the inclusion or exclusion of  
21 storage from a particular project design will have a great  
22 affect on the project from a structural point of view in  
23 terms of water delivery?

24 A I'm not sure what you have in mind, Mr. Merrill.

25 cummings-cross-merrill



1 Q Let's assume that you have one project that irrigates  
2 100,000 acres of land, it simply has a dam that crosses  
3 the river to divert water into a canal.

4 A Um-hum.

5 Q Let's assume the second project has a reservoir that stores  
6 half a million acre-feet, and then pumps that water into  
7 the same canal to serve the same field.

8 A Um-hum.

9 Q Isn't it true that the per acre foot cost of water supplied  
10 to the fields in the second project will be much higher  
11 than in the first?

12 A Not always, no. We've got a large -- It will depend.  
13 Most of these -- Most of these reservoirs were built since  
14 1939, they're all by design, they're called multi-purpose,  
15 okay. And by the time you allocate, you know, total  
16 system cost, you know, to the various uses, unilateral  
17 practices, it's not -- I don't think you can make that  
18 kind of a generalization.

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cummings-cross-merrill



1 Q (By Mr. Merrill) If the Tribes of the Wind River Indian  
2 Reservation had constructed a project prior to that, as  
3 you argue we should assume, what economic standards would  
4 have been used to evaluate that project's feasibility?

5 A. If the Indians had built a project?

6 Q Prior to the first non-Indian project on the Basin.

7 A. What standards would have been used? The reigning princi-  
8 ple at that point in time was users would repay costs not-  
9 withstanding the fact that --

10 THE SPECIAL MASTER: That very few did.

11 THE WITNESS: That's right, yes.

12 Q (By Mr. Merrill) Okay. Under the standard of users  
13 repay the costs, would these projects be feasible?

14 A. It's very difficult to get at. I have tried to get out  
15 reports. You don't have all the -- You didn't have back  
16 in those days all the reports that we have right now that  
17 describe everything exactly. The basis -- Let's see, back  
18 -- see, before the first project there you didn't get  
19 Congressional -- you didn't really get, get Congressional  
20 appropriations for these projects, if my memory serves me  
21 correctly, until 1912, 1915

22 THE SPECIAL MASTER: Do you recall the Shoshone Project  
23 and how it was financed?

24 THE WITNESS: No, I don't. But I do know the first  
25 cummings - cross - merrill



1 Congressional -- You'd be talking about a period of time  
2 before you had Congressional appropriations, in which case  
3 the only funds available for these projects were funds  
4 from the sale of public lands, and they would usually be  
5 dissipated like that, and one of the major problems that  
6 you had during this period was a lack of funds. I can't  
7 say if there were funds available and if the Indians, as  
8 everyone else did, made the claims that they could repay  
9 them, there's -- I suppose the project would have been  
10 built. If we are going to speculate, that's about the best  
11 I can say.

12 A lot of people went in there and got those monies,  
13 okay, later were unable to repay anything back, but they  
14 made the case, obviously, or they wouldn't have been built.

15 I have no reason for assuming that the Indians might  
16 not have been as persuasive as anyone else.

17 Q (By Mr. Merrill) You also made an argument this morning  
18 in support of criterion A, I believe, not penalizing the  
19 Indians for failing to exercise their rights -- and correct  
20 me if I'm wrong -- that just as the argument that we should  
21 treat the Indian project as it were the first project built  
22 because of this diminishing scope of other benefits, such  
23 as flood control and so forth, and that when you're the  
24 fifth or sixth project down the line you claim very many

25 cummings - cross - merrill



1 of those benefits to help boost your attractiveness?

2 A. Right.

3 Q. Okay. Let's assume for a moment that the projects pro-  
4 posed in this case are the first projects to be built on  
5 the Wind River Basin. What benefits of those listed on  
6 Page 3 of your report could we attribute to these seven  
7 projects?

8 A. Well, Mr. Merrill, if there were no -- If there were no  
9 water reclamation projects on the Wind River, we can  
10 speculate as to what we might do here. We would consider --  
11 To begin with, it's very unlikely that -- It's very un-  
12 likely that the Indians, you know, they have a, you know --  
13 You must be assuming that the Indians have an established  
14 water right and the non-Indians that have established  
15 water rights to the rest of the water, and I would expect  
16 to see, as we've seen in the past, a conservative effort  
17 on the part of these two to develop the best project  
18 possible.

19 THE SPECIAL MASTER: How do you bring that about?

20 THE WITNESS: I beg your pardon?

21 THE SPECIAL MASTER: How do you bring about that  
22 conjunctive effort you just referred to?

23 THE WITNESS: Well, we had a -- We have had projects  
24 in the past wherein parts of the project, you know, were

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1 to go to the Indians.

2 THE SPECIAL MASTER: Were they done by compact or  
3 by Acts of Congress, usually?

4 THE WITNESS: No, this would be -- I'm trying to  
5 think of the names of -- There are a number of projects  
6 where -- that were constructed and Indians were going to  
7 get so much water and non-Indians, you know, the rest,  
8 there was a conjunctive project designed by the Bureau  
9 of Reclamation.

10 Now, how they worked out agreements with everybody,  
11 who's going to do what and that stuff, no.

12 THE SPECIAL MASTER: Can you name a few?

13 THE WITNESS: Not just off the top of my head, I  
14 can't. I can -- I can certainly get ahold of them if  
15 you'd be interested.

16 THE SPECIAL MASTER: I would welcome into the record,  
17 if you can, a little bit about them.

18 THE WITNESS: Okay.

19 Q (By Mr. Merrill) Dr. Cummings, on Page 6 of your report,  
20 Paragraph 4, you speak of the potential magnitude of  
21 other benefits diminishing water development accumulated  
22 by water activities.

23 A. Excuse me, on page what?

24 Q Page 6, I'm sorry, Paragraph 4 on Page 6 I believe

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1 contains your argument concerning the diminishing scope  
2 of other NED benefits.

3 A. Yes, uh-huh.

4 Q. And you mentioned as an example flood control and  
5 recreation.

6 A. Yes.

7 Q. Can you cite some more examples to the Court of these  
8 other NED benefits that diminish with the succession of  
9 water development projects?

10 A. Well, those are -- Those again are probably the more  
11 important ones. The flood control effects of a second  
12 and a third project are very likely to be much less than  
13 a first. If you've got one recreation, water recreation  
14 area, facility in an area, a second one is likely to add  
15 less in a net sense, okay.

16 Other NED benefits, fish and wildlife and things of  
17 this nature may or may not. The major ones that would be  
18 affected by accumulative development would be those two.

19 Q. Flood control and recreation?

20 A. Um-hum.

21 Q. Dr. Cummings, are you aware that in the water resource  
22 projects proposed by the United States and Tribes in this  
23 case, that no dams or other storage facilities have been  
24 proposed?

25 cummings - cross - merrill



1 A. Oh, yes.

2 THE SPECIAL MASTER: I'd like to ask you a question  
3 in that regard. Your position, as brought out on Page 6,  
4 would appear to me, Dr. Cummings, would not be valid on  
5 the Wind River Indian Reservation for the reason that  
6 there is above the five or seven projects we've been  
7 talking about all day, nothing by way of a federal  
8 irrigation project, nothing by way of diversion -- by way  
9 of a diversion for irrigating or watering or doing any of  
10 the services by that water, it comes pure and native and  
11 virgin from the mountains in this area. Therefore, when  
12 you reject the benefit-cost measures based on those WRC  
13 '73 Guidelines and then you state for the reasons that  
14 there is the, the diminution effect for after the  
15 established programs, I don't think it's valid in this  
16 case.

17 Now, can you refute my conclusion there?

18 THE WITNESS: I would hope. Yes, sir. The -- My  
19 rejection of the NED is based primarily upon the fact  
20 that the Indians are penalized for not having exercised  
21 their right prior to 1973 in the sense --

22

23

24

25

\* \* \* \* \*



1 Q (By Mr. Merrill) Isn't it true that the inclusion or  
2 exclusion of storage will vary the costs of irrigation,  
3 depending on how the other uses of the storage such as  
4 recreation, flood control and hydro-power are charged  
5 on that project?

6 A Yes, this can be true, um-hum.

7 Q Dr. Cummings, on Page A.28 of your report --

8 A Excuse me?

9 Q A.28. I'm sorry.

10 A A.28.

11 Q Of your report you list some examples of problems  
12 concerning the comparability of cost measures between --

13 A Cost per acre measures.

14 Q Yes, between water resource projects. Is that true?

15 A Yes.

16 Q And now we have just determined that a project with water  
17 storage will have a different array of benefits and costs  
18 than a project without storage; isn't that true?

19 A Mr. Merrill, when you say that a project with the storage  
20 which by definition -- well, generally, by definition is  
21 multi-purpose will have a different array of benefits and  
22 costs, which is another way of saying multi-purpose -- you  
23 know, many purposes -- it's not clear that that's germane  
24 to what you are getting at here.

25 cummings - cross - merrill



1           When you allocate costs of a project, okay, you're  
2 allocating -- those costs that you allocate to, for example,  
3 irrigation are simply, you know, those -- the costs of  
4 the project that are attributable to adding that feature  
5 to the project, okay?

6           I'm just trying to keep away from, you know, putting  
7 a dam there in order to get water in that canal that you  
8 are talking about. It doesn't at all follow that for  
9 projects where you have got some storage facilities, you  
10 are going to have much higher capital costs than other  
11 projects because generally you have got that storage  
12 there for a purpose.

13 Q       Oh, I didn't mean to suggest, Ron, that it was higher.  
14 I was just wondering if it was different.

15 A       It may be different.

16 Q       The spread may be affected if storage is in the project?

17 A       By definition, you have got a different array of benefits  
18 and costs. You have got benefits attributable to fish  
19 and wildlife and all of these kinds of things. I'm not  
20 sure what -- I'm not sure what you are asking me, I suppose.

21 Q       Well, let me ask you something else, and I'll try to make  
22 it more clear.

23 A       Okay.

24 Q       The point I'm trying to get at is shouldn't the inclusion  
25 cummings - cross - merrill



1 or exclusion of storage be on the list of problems  
2 concerning comparability on Page A.28? In other words,  
3 it's certainly as important as differences in climate  
4 conditions and crop patterns in determining the comparability  
5 of water resource projects in terms of the cost per acre  
6 and the cost per acre-foot?

7 A. Oh, I don't really think so. I think probably the major --  
8 the major things that are going to swing you -- you know,  
9 give you wide ranges and things like cost per acre-foot  
10 and cost per acre are what kind of distribution systems  
11 you're using, and -- you know, obviously, in terms of  
12 cost per acre-foot, it's the water diversion.

13 Do you see what I mean? You are using a very  
14 efficient system so that your losses are smaller, and  
15 you must divert less water by definition. You know,  
16 your denominator is going to be smaller, you are going  
17 to get a higher cost.

18 Do you see what I mean?

19 Q. Yes. Dr. Cummings, as a water resource economist, are  
20 you familiar with the current costs of building new  
21 storage in large projects on a capital cost per acre-foot  
22 basis? Do you have any idea of the range?

23 A. I don't have a figure on the top of my head. It's not  
24 the useful kind of an average you carry around with you  
25 cummings - cross - merrill



1 because they differ so darn much.

2 You know, if you asked me cost per megawatt in  
3 electricity, that's a meaningful thing, doesn't come  
4 up much -- I can give it to you. Other than that, the  
5 average is like you see here. You know, something like  
6 1800, \$2000, something like that. That's about the best  
7 you can do.

8 THE SPECIAL MASTER: In none of your studies did  
9 you look to the cost per acre-foot of storing any water  
10 in the Wind River -- on the reservation; is that right?

11 THE WITNESS: No, sir, I was not given any projects  
12 involving storage.

13 Q (By Mr. Merrill) And you are not familiar with any  
14 storage studies or possibilities of dams to provide for  
15 storage or to increase annual beneficial sustained yield  
16 on the river?

17 A. Other than hearing it talked about, I know of no studies,  
18 no, sir.

19 Q Dr. Cummings, assuming for purposes of this question only  
20 that 17 of the 20 projects listed on Table C.3 -- there  
21 may now be only 19; I'm not looking at the updated version --  
22 let's assume that all but two or three of those projects  
23 involved the storage of water.

24 A. Okay.

25 cummings - cross - merrill



1 Q If we assume that's true, does that affect your opinion  
2 of the comparability of these projects with the Wind  
3 River Projects on the basis of cost per acre of land  
4 served or cost per acre-foot of water delivered?

5 A All of the projects that I looked at you may be sur-  
6 prisingly -- you just don't see that show up. No, I  
7 wouldn't -- based on the hundred and some odd of these  
8 projects that I have looked at, I would say no, I  
9 wouldn't expect that. I wouldn't expect to see that  
10 much of a difference.

11 Q Would you please turn to Table B, as in boy, 3 of your  
12 report? You testified earlier that you obtained the  
13 IDC factor from Mr. Dornbusch, and that you do not know  
14 the construction schedule presumed on which these figures  
15 were developed; is that right?

16 A That's correct.

17 Q What was your source for the labor factor displayed in  
18 Table B.3?

19 A Mr. Merrill, all of the data in that table, other than  
20 the last column, which is simply the product of those  
21 factors, I took from Dornbusch.

22 I have done no analysis of any of those factors.

23 I simply took those from him.

24 Q Do you know any of the assumptions that underlie

25 cummings - cross - merrill



1 each of these factors that you used?

2 A. No, sir, I don't.

3 MR. MERRILL: Your Honor, I would move to strike  
4 the direct testimony of Dr. Cummings on the grounds  
5 that his analysis of the benefit-cost ratios of the  
6 seven proposed projects is based in part on the adjust-  
7 ment factors which are shown in Table B.3.

8 The witness admits that he used those factors in  
9 his analysis and yet has no idea of what assumptions  
10 underlie their use.

11 During the direct testimony of Mr. Dornbusch, there  
12 was no mention made of these factors being developed or  
13 supplied to Dr. Cummings. Therefore, the State has been  
14 deprived of any opportunity to even determine the assump-  
15 tions underlying these factors, much less cross-examine  
16 those factors in any effective way to the Court.

17 I think that contrary to Mr. Clear's assertion that  
18 the State of Wyoming is not entitled to due process, I  
19 believe that all litigants in Courts of the United States  
20 are entitled to procedural due process, and one of those  
21 elements is the right to determine the facts and data  
22 upon which an opposing witness is based and to effectively  
23 cross-examine that information.

24 THE SPECIAL MASTER: The motion is denied. The  
25 cummings - cross - merrill





1 witness has clearly set forth on several occasions today  
2 his reliance upon documents already in evidence upon  
3 which he made his assertions, and one expert works from  
4 the work products of another witness, so it will be denied,  
5 Mr. Merrill.

6 Q (By Mr. Merrill) Dr. Cummings, in your analysis, you  
7 placed some weight on the criterion that whatever  
8 economic standards are used do not discriminate against  
9 the future water needs of the Indians; is that correct?

10 A That's correct. That's a criterion that I used.

11 I'll remind you that ultimately I wasn't able to  
12 do much with it, but I tried, God knows.

13 Q As a part of your analysis or as a water resource  
14 economist, generally, are you familiar with other methods  
15 than the reserved rights doctrine by which the United  
16 States or the Tribes may provide for the future water  
17 needs of the Indians?

18 MR. SACHSE: Objection, Your Honor. This is irrele-  
19 vant because what Dr. Cummings has been asked to do is  
20 testify about his quantification under the reserved rights  
21 doctrine which is what this case is about.

22 THE SPECIAL MASTER: It may be irrelevant to his  
23 direct, but I may have breached the subject earlier when  
24 I asked him to find examples, if he could, of how this

25 cummings - cross - merrill



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controversy can be settled in other ways.

I think it has some value to me, and I would allow the question on that basis, even though you are correct legally and literally.

THE WITNESS: Would you repeat the question again?  
I'm sorry.

MR. MERRILL: Yes.

Q (By Mr. Merrill) As the result of your analysis in this case or as a water resources economist, are you familiar with means other than the reserved rights doctrine by which the United States or the Tribes themselves can provide for the future water needs of these Indians?  
A. How can they provide for the future needs of the Indians?  
That's your question.

\* \* \* \* \*



1 MR. MERRILL: Your Honor, that concludes my voir  
2 dire and cross-examination of Dr. Cummings.

3 THE SPECIAL MASTER: All right.

4 MR. MERRILL: The only specific objections that I  
5 have to the introduction of Tribes' Exhibit 24 are  
6 based again on the same grounds as the Motion to Strike  
7 I made earlier, and that is that it's based on information  
8 received from Mr. Dornbusch which has never been put into  
9 evidence, and which the State has had no opportunity to  
10 examine and so, therefore, I have a foundation and due  
11 process objection with respect to those.

12 With respect to the interpretation of the legal  
13 criteria and the translation into the economic criteria  
14 in Appendix A, I would object to those on the grounds that  
15 they are based on a reading of only selected case law  
16 within the field in which we're all concerned, and that  
17 it, by the admission of the witness, does not consider the  
18 criteria laid down by the Supreme Court in the last  
19 several cases concerning reserved water rights. With  
20 respect to the rest of my foundation and evidentiary  
21 objections to Tribes' Exhibit 24, I believe they're  
22 contained within the cross-examination itself, and I  
23 will rely on those.

24 THE SPECIAL MASTER: Okay.

25 MR. MERRILL: I used four exhibits during my cross-



1 examination of Dr. Cummings; Exhibit EC-1 which is a  
2 letter from Brossius, B-r-o-s-s-i-u-s, to the Secretary  
3 of Interior; EC-2 is a letter from Mr. Lajeunesse to the  
4 State Engineer; Exhibit EC-3 is also a letter from Mr.  
5 Lajeunesse to the State Engineer, and EC-4 is a letter  
6 from Mr. H. E. Wadsworth to the Wyoming State Engineer.  
7 I would move the admission of those four documents into  
8 evidence for purposes of cross-examination only.

9 THE SPECIAL MASTER: All right. Does the United  
10 States wish to voir dire these four exhibits?

11 MR. ECHOHAWK: No voir dire, Your Honor. We just  
12 object to the relevancy; it's just cluttering up the  
13 record, and it has no probative value.

14 MR. SACHSE: The Tribes also object to their  
15 relevancy.

16 THE SPECIAL MASTER: All right. I'm ready to rule  
17 on all exhibits. I'll rule that Tribes' Exhibit 24, which  
18 is the critical review of Dr. Cummings, being the same,  
19 be admitted into evidence, and the same is hereby admitted  
20 into evidence, the objection notwithstanding.

21 And I will rule that four State of Wyoming Plaintiff's  
22 Exhibits WRIR EC-1, 2, 3 and 4 being the same are hereby  
23 admitted into evidence, although they do indeed clutter  
24 up the files, but the files have now filled half a dozen  
25 rooms, so a few more exhibits won't make that much



1 difference.

2 With that, we stand adjourned until 9:15 tomorrow  
3 morning.

4 MR. SACHSE: Thank you, Your Honor.

5 MR. ROGERS: Your Honor, for the record, we are  
6 through with Dr. Cummings, and we have no further redirect.

7 MR. SACHSE: We have no redirect of Dr. Cummings.

8 THE SPECIAL MASTER: Very good. And you are dis-  
9 missed, but still under the jurisdiction of this Court  
10 for a few short hearings.

11 Thank you very much, Dr. Cummings.

12 (Thereupon, the proceedings were  
13 (recessed at 5:15 p.m.

14  
15  
16 \* \* \* \* \*



1 MR. MERRILL: The question is do you know of any  
2 other means than the reserved rights.

3 THE SPECIAL MASTER: And you show the witness is  
4 shaking his head from left to right.

5 THE WITNESS: I'm sorry. No, I don't.

6 Q (By Mr. Merrill) Okay.

7 THE SPECIAL MASTER: Let me ask a question even  
8 though I said I was going to be silent. But you do know  
9 of some cases where devices were used to determine a  
10 fair reserved right other than by trial and you think  
11 you can find some examples?

12 THE WITNESS: Oh, no, sir, I didn't say that. No, no.

13 THE SPECIAL MASTER: I was wishfully thinking.

14 THE WITNESS: Oh, my, yes. I said I was simply  
15 referring to Bureau of Reclamation projects that have  
16 been constructed in the past where some part of the pro-  
17 ject, water was going to the Indians. I do not -- as  
18 a matter of fact, I'm sure that a rights question was  
19 not at issue there.

20 THE SPECIAL MASTER: I see. It was merely a compact,  
21 an agreement, division of --

22 THE WITNESS: Yes.

23 THE SPECIAL MASTER: To be gained by the dams  
24 constructed and so forth. Okay.

25 cummings - cross - merrill



1 Q (By Mr. Merrill) Dr. Cummings, I have only one small  
2 area left of cross-examination.

3 A. Okay.

4 Q And that concerns the computations shown on Table B.5  
5 of your report.

6 A. Okay.

7 Q As I understand it, you obtained gross output multiplier  
8 from the Water Resources Council; is that correct?

9 A. Um-hum.

10 Q And that multiplier was based on an input-output study  
11 of the economic region of the Big Horn Basin?

12 A. The -- In that Guideline 5 publication, yes, the multipliers  
13 that they have in there based on input-output study is  
14 my understanding.

15 Q Assuming for purposes of this question only that the  
16 exercise of the reserved rights claimed in this case  
17 will have the effect of reducing primarily agricultural  
18 production in the Big Horn Basin, if that were to be the  
19 case, is it valid economic analysis to use a multiplier based  
20 on a historical analysis in which that is not the case?

21 MR. ECHOHAWK: Objection.

22 MR. SACHSE: Objection, Your Honor.

23 THE SPECIAL MASTER: I'm going to sustain the  
24 objection to that. That's wide --

25 cummings - cross - merrill



1 MR. SACHSE: It's also --

2 THE SPECIAL MASTER: Big, wide curve ball that  
3 went by the plate. I'm not going to let him swing at  
4 it.

5 MR. MERRILL: Your Honor, I want to respond. I  
6 will withdraw the question based on your sustaining the  
7 objection.

8 THE SPECIAL MASTER: Make your offer of proof either  
9 way.

10 MR. MERRILL: I want to explain to the Court what's  
11 going on. The Tribes and the United States have consis-  
12 tently taken the position in this case the impact is not  
13 relevant to the quantification of a reserved right, and  
14 we've agreed that we disagree.

15 THE SPECIAL MASTER: I know what you're going to say;  
16 but you want to show that impact ought to be cranked into  
17 the fact that you go into a B-C ratio, that's what you're  
18 trying to tell me because they have taken advantage of  
19 the benefits.

20 MR. MERRILL: Of any economic analysis that looks  
21 forward should at least consider the possibility and not  
22 use historical data which may be based on factors that  
23 will be based in the future.

24 I'm not trying to bring impacts per se on this, I'm  
25 cummings - cross - merrill





1 I'm trying to show a potential flaw in the analysis, that's  
2 the purpose of the question, and I will make an offer of  
3 proof that Dr. -- if allowed to ask Dr. Cummings whether  
4 the change in the underlying base in the economy on  
5 which these gross output multipliers were in fact changed,  
6 he would admit that the use of that gross output multiplier  
7 would no longer be necessary, but that some different  
8 multiplier based on the changed conditions ought to be  
9 used.

10 THE SPECIAL MASTER: Yeah.

11 MR. MERRILL: That concludes my offer of proof.

12 THE SPECIAL MASTER: All right, thank you very much,  
13 Mr. Merrill.

14 The field of impact is so speculative, much depends  
15 on what would the quantification be, how much of it would  
16 be applied. So much depends upon the flows in the decades  
17 and the century ahead. Much depends on what activities  
18 there will be; will the State of Wyoming and United  
19 States and Indians take to salvage some of the water,  
20 store some of the water base. All of this has a direct  
21 bearing on the business of impact, so it gets a little  
22 far removed from certainty, I think.

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REPORTERS' CERTIFICATE

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We, Merissa Racine and Viola J. Lundberg,  
Registered Professional Reporters and Notaries Public,  
hereby certify that the facts as stated in the caption  
hereof are true; that we did at the time, date and place,  
as set forth, report the proceedings had before the  
Honorable Teno Roncalio, Special Master Presiding, in  
stenotype; that the foregoing pages, numbered 8826-9044,  
inclusive, constitute a true, correct and complete  
transcript of our stenographic notes as reduced to  
typewritten form under our direction.

We further certify that we are not agents,  
attorneys or counsel for any of the parties hereto, nor  
are we interested in the outcome thereof.

Dated this 1st day of September, 1981.

Merissa Racine  
MERISSA RACINE  
Registered Professional  
Reporter

Viola J. Lundberg  
VIOLA J. LUNDBERG  
Registered Professional  
Reporter

MERISSA RACINE - NOTARY PUBLIC  
COUNTY OF LARAMIE STATE OF WYOMING  
My Commission Expires Nov. 10, 1984

