

5-21-1981

Trial Transcript, Vol. 69, Morning Session

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File 176
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Case # 4993

File # 176

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IN THE DISTRICT COURT FOR THE FIFTH JUDICIAL DISTRICT

WASHAKIE COUNTY, STATE OF WYOMING

IN RE:)

)
)
THE GENERAL ADJUDICATION OF)
RIGHTS TO USE WATER IN THE)
BIG HORN RIVER SYSTEM AND)
ALL OTHER SOURCES, STATE OF)
WYOMING.)

Civil No. 4993

FILED

6/23

19 81

Margaret D. Hampton

CLERK

DEPUTY

VOLUME 69

Thursday, May 21, 1981

Morning Session

ORIGINAL



APPEARANCES

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FOR THE STATE
OF WYOMING:

HALL & EVANS
2900 Energy Center One Building
717 17th Street
Denver, CO 80202
BY: MR. JAMES MERRILL and
MR. MICHAEL D. WHITE, Special
Assistant Attorneys General

FOR THE UNITED STATES
OF AMERICA:

MR. JAMES CLEAR and
MR. JOSEPH MEMBRINO
Attorneys at Law
Land and Natural Resources Division
Department of Justice
1961 Stout Street
Denver, CO 89294

and

MR. THOMAS ECHOHAWK
Attorney at Law
Land and Natural Resources Division
Department of Justice
1961 Stout Street
Denver, CO 80294

FOR THE SHOSHONE
and ARAPAHOE TRIBES:

WILKINSON, CRAGUN & BARKER
1735 New York Avenue
Washington, DC 20006
BY: MR. R. ANTHONY ROGERS

CLERK TO THE
SPECIAL MASTER:

MR. RODGER McDANIEL
Attorney at Law
701 Rocky Mountain Plaza
Cheyenne, WY 82001



1 THE SPECIAL MASTER: We will come to order, please.
2 Is there anything to report on the pleadings of last
3 night hopefully regarding they are not being necessary
4 because there has been some agreement on the production
5 of documents?

6 MR. MERRILL: Your Honor, the record should reflect
7 that at the close of the proceedings last night the
8 State of Wyoming did supply the remainder of the
9 cross-examination exhibits that we intend to use with
10 Mr. Dorhbusch to Counsel to the Tribes and the United
11 States. In addition to supplying the exhibits themselves,
12 we also made available overnight the full original
13 copies of all of the textbooks from which those exhibits
14 are excerpted so Mr. Dornbusch could review them
15 overnight in preparation for testimony today.

16 I would like to ask them at this time, the United
17 States and Tribes, whether they will make the same
18 agreement with respect to their cross-examination of
19 our witnesses, to provide the cross-examination exhibits
20 in advance and to provide original copies for our use
21 and preparation of testimony.

22 THE SPECIAL MASTER: Does that touch base on all
23 crop and livestock enterprise cost and return budgets
24 projections you asked for?

25 MR. ROGERS: That is a different matter I think,



1 Your Honor.

2 MR. ECHOHAWK: It is a different matter, Your
3 Honor.

4 THE SPECIAL MASTER: Will you see to what he
5 requested as far as similar treatment when your case
6 is over and his is on?

7 MR. ECHOHAWK: No, Your Honor.

8 MR. MERRILL: Your Honor, that is remarkable.
9 Yesterday on the record Mr. Echohawk tells me that
10 he's entitled to see my cross-examination exhibits in
11 advance of when I actually use them at trial.

12 MR. ECHOHAWK: That is not what I said, Your
13 Honor. I said we were entitled to see the entire text
14 of the document. I asked him for any more articles
15 he was going to use, and he gave us one other article.

16 THE SPECIAL MASTER: I think what the theory is
17 here is we are using a page or two out of context out
18 of a whole document where it can be followed by other
19 material on other pages, and I think this is what is
20 raised at this time.

21 MR. ROGERS: Your Honor, for the record, too,
22 the Tribes in using any documents of that nature,
23 books, articles, whatnot for cross-examination
24 purposes would certainly furnish the entire document
25 as the State has now done now, but in terms of furnishing



1 them in advance, the Tribes didn't request that
2 yesterday and the Tribes aren't prepared to do that
3 except in the possible situation that we had last
4 night where we were wrapping it up and we had them
5 available, and if it's a matter of convenience over-
6 night, I think the Tribes can certainly do that,
7 but not something like days in advance. The Tribes
8 didn't request that.

9 MR. MERRILL: Your Honor, I'm wondering if we
10 can obtain the same courtesy from the United States
11 since they did specifically request documents in
12 advance of their use and we did supply them.

13 MR. ECHOHAWK: The same situation arises, Your
14 Honor.

15 THE SPECIAL MASTER: We are not getting anywhere
16 with that. Let's go on with the hearing.

17 MR. ECHOHAWK: Are we going to deal with the crop
18 budget requests now?

19 THE SPECIAL MASTER: Wyoming wants to argue the
20 Motion to shorten time on the crop budgets requests,
21 and we will do this later today if you want to and
22 proceed with the hearing if that's more orderly.

23 MR. MERRILL: We can do it now, Your Honor. We
24 have several other preliminary matters, as well.

25 THE SPECIAL MASTER: Which do you prefer? I don't



1 care..

2 MR. MERRILL: I would just as soon go ahead and
3 argue the motion.

4 THE SPECIAL MASTER: We will block out this noise.
5 All right, you are the movant, Mr. Rogers.

6 MR. ROGERS: Your Honor, the argument is fairly
7 short and sweet. We are obviously at a point where the
8 Tribes are in the final stages of preparing their
9 case for trial, and we have conducted previously, the
10 United States and Tribes have engaged in depositions
11 with experts from the State of Wyoming during last
12 summer and fall, and at that time primarily the State
13 and experts had not proceeded that far into their work,
14 certainly not to a point where we can tell where they
15 may be going and what type of case they may be pre-
16 senting in any kind of detail that the State had at
17 the time it went to trial for purposes of cross-
18 examination of Federal witnesses.

19 Discovery is in the nature of a continuing nature,
20 and certain of the requests were documents in detail
21 that were made at the time of the depositions and
22 earlier in the case were simply not available simply
23 because the State's experts had not done them. We now
24 have reason to believe with suspect with these crop
25 and livestock budgets and related documents that the



1 State has, in fact, prepared some. If we were
2 deposing those witnesses today, I think we would
3 be entitled to get them as they were entitled to
4 get the documents that were furnished by Federal
5 experts and whatever documents have been furnished
6 by Tribal experts during their depositions. It is
7 simply a case of they are necessary, and I think
8 it shouldn't be any issue. The reason we ask for
9 an expedited consideration is because of the 30-day
10 rule, but it's fairly close to the time the Tribes
11 will go on and present their case, and we think, as
12 I say, if we were deposing them today and they had
13 them available as we think they do, they would be
14 furnished. So we see no reason why they can't be
15 furnished at this time within seven days.

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1 MR. MERRILL: Your Honor, I find it remarkable
2 that in the Tribes' Motion to shorten time that they
3 state that the work product of Wyoming's experts is
4 necessary for the Tribes to prepare their own case in
5 chief. I thought that's what the Tribes had their own
6 experts for.

7 I have no objection to the Motion to shorten time,
8 and we will make the information requested in the Tribes'
9 discovery request available, but I want to make several
10 comments with respect to that.

11 First, I want the record to be clear that the
12 information that's been compiled thus far is preliminary
13 in nature and, in all likelihood, will be revised before
14 the State's experts testify as part of our direct case at
15 trial.

16 Secondly, the information requested is mostly
17 compiled in the form of computer printouts and, as I
18 understand from talking with our experts, they are fairly
19 voluminous.

20 We will make those printouts available during normal
21 business hours at the offices of Wyoming Research Corporation,
22 the State's economist, whose offices are in Laramie, Wyoming,
23 and we will make the services of WRC's xerox machine
24 available because we only have one copy of all of these
25 printouts, and the Tribes' attorneys or their consultants



1 are free to go to Laramie and get those printouts and make
2 photocopies at any time starting next week.

3 THE SPECIAL MASTER: All right. That alleviates the
4 need for an Order; is that right? And we appreciate your
5 cooperation on that.

6 MR. ROGERS: That's fine, Your Honor. Beginning, Mr.
7 Merrill, a week from today?

8 MR. MERRILL: Yes, that would be fine.

9 THE SPECIAL MASTER: All right, Mr. Merrill. You can
10 proceed -- what is the address of the Wyoming Research
11 Corporation in Laramie?

12 MR. WATTS: 512 University.

13 CROSS-EXAMINATION (RESUMED)

14 BY MR. MERRILL:

15 Q Mr. Dornbusch, I'm returning to you what was temporarily
16 marked as ED-51. Would you check that and make sure I
17 have given you back everything you gave me for that
18 exhibit?

19 A Yes, that's all I gave you for that exhibit.

20 Q And here also is ED-52. Would you please make sure that
21 those papers are complete --

22 THE SPECIAL MASTER: Off the record, please.

23 (Discussion off the record.)

24 A This appears to be complete too. May I return these to my
25 dornbusch - cross - merrill



1 files, or do you need them further?

2 Q. (By Mr. Merrill) I think you can go ahead and put them
3 away.

4 A. Thank you.

5 MR. MERRILL: Your Honor, as you'll recall yesterday
6 we had quite a major flap about whether there was really
7 a seven and three-eighths percent discount rate, and there
8 were a lot of objections to admitting that into evidence
9 or the use even of Wyoming's Exhibit ED-11, and I have
10 obtained a copy of the Federal Register publication showing
11 the same information.

12 THE SPECIAL MASTER: From which the excerpt was taken
13 that we labored over yesterday?

14 MR. MERRILL: That's correct.

15 THE SPECIAL MASTER: All right.

16 MR. MERRILL: I will withdraw Exhibit ED-11, and at
17 the end of my cross-examination, move the admission of
18 Exhibit ED-11-A into evidence.

19 THE SPECIAL MASTER: I think we ended on the note that
20 the witness -- I had almost guaranteed the witness some
21 time to devote to these matters in response to some of the
22 questions, so you may proceed, Mr. Merrill.

23 MR. MERRILL: Well, Your Honor, along those lines,
24 I would point out that I made representations to you

25 dornbusch - cross - merrill



1 earlier in the week that I would complete my cross-
2 examination of Mr. Dornbusch by this evening. Yesterday
3 afternoon I did not anticipate that we would get into the
4 protracted discussions about the economic theories behind
5 selecting an appropriate discount rate, and my cross-
6 examination has been set back somewhat.

7 I believe that I can still complete the cross-
8 examination if I can move through it in an expeditious
9 manner.

10 However, Mr. Dornbusch has reviewed a number of the
11 books that we provided to him overnight, and if he is to
12 make some lengthy statements or defense of the techniques
13 and analysis that he has used, I think that the Court ought
14 to do one of two things: either first require him to do
15 that on redirect examination or, secondly, allow me to
16 extend my cross-examination to account for the length of
17 time this occupied in extra discussions of these matters.

18 THE SPECIAL MASTER: All right. Let's see where it
19 takes us.

20 MR. ECHOHAWK: Just for the record, Mr. Dornbusch is
21 entitled to answer any question asked him fully.

22 THE SPECIAL MASTER: Let's see where it takes us.

23 Q. (By Mr. Merrill) Mr. Dornbusch, before we return to a
24 discussion of the discount rate, I would like to ask you
25 dornbusch - cross - merrill



1 some questions about how you derived your irrigation and
2 water delivery system costs as part of your analysis both
3 for the future and especially for the historic lands.

4 I believe in your direct examination you indicated
5 that you took many of your system costs from Dr. Mesghinna's
6 report on Page 42. Is that correct?

7 A. I don't have a copy of his report, but, yes, I did take the
8 system costs from his report. I don't recall the page.

9 Q. Would you please take out your copy of Exhibit C-278, which
10 is your report concerning the Type VII and Type VIII lands,
11 and turn to Table 5 of that report?

12 THE SPECIAL MASTER: What page on the report?

13 MR. MERRILL: Page 15, Your Honor.

14 A. You said 278?

15 Q. (By Mr. Merrill) Yes.

16 A. Page 15?

17 Q. Right. It should be Table 5.

18 A. All right.

19 Q. Got it?

20 A. This is for Type VIII lands; is that correct?

21 Q. Yes.

22 A. Yes. All right.

23 * * * * *

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25 dornbusch - cross - merrill



1 Q (By Mr. Merrill) Would you please tell the Court
2 the source the costs shown on Table 5?

3 A Yes. The source of the costs for the Type VIII lands
4 was from Stetson Engineers, most of them. Not all of
5 the costs shown on the table are entirely from
6 Stetson Engineers.

7 Q Did Stetson Engineers provide you these various types
8 of costs for each of the units in tabular form?

9 A Yes, they did.

10 Q Did you rely on that information as part of your
11 analysis?

12 A Yes, I did.

13 Q Do you have that information with you?

14 A Okay. Are you asking me do I have the --

15 THE SPECIAL MASTER: Tabular forms, is what he's
16 asking about, that Stetson provided you on which you
17 relied upon and used as to costs.

18 THE WITNESS: Well, the tabular is the same form
19 you have here. It is not any different. It shows for
20 each of the units across the top and each of the
21 cost categories down the left side. It is the same
22 form.

23 Q (By Mr. Merrill) May I see your copy of the
24 information provided you by Stetson?

25 dornbusch-cross-merrill



1 A Yes, you may.

2 (Whereupon, the Witness
3 (hands a document to
4 (Counsel.

5 Q Mr. Dornbusch, did you make any adjustments to the
6 figures you received from Stetson Engineers before
7 you used those figures in your analysis and put
8 them in Table 5?

9 A Yes, I did.

10 Q Will you please describe to the Court what adjustments
11 you made?

12 A They were the same adjustments that we made for the
13 new project lands. We normalized costs to 1979
14 normalized values, we made an adjustment for the
15 opportunity cost of labor, we moved the construction
16 costs in time to account for the imperative
17 construction to move it to a times zero, and we
18 determined the net present value of those costs
19 recognizing that each of these systems have different
20 lives and replacement values at the end of those
21 lives, and arrived at for the main components of each
22 of the investment costs a net present value which is
23 shown in my report.

24 Q Did you normalize costs using the same methods and
25 indices as for the future lands?

dornbusch-cross-merrill



1 THE SPECIAL MASTER: He just said he did.

2 MR. MERRILL: Your Honor, I didn't ask him about
3 what specific index he used.

4 THE SPECIAL MASTER: No, but in his answer he
5 just said he used the same one as he did on the
6 future lands. I'm going to try to help you shorten
7 up your time today, Mr. Merrill, with the redundancy,
8 duplication and repetition and we will make some
9 time, headway.

10 Q (By Mr. Merrill) Mr. Dornbusch, did you also cost
11 your labor at 20 percent of its full value?

12 A No, I never said that I did that. In the construction
13 costs sectors we account for the skilled and the
14 unskilled labor separately and we opportunity costed
15 accordingly the same way we did for future projects
16 lands.

17 Q Would you please describe what you did to move the
18 construction costs in time?

19 A Yes. The construction period would be during the
20 year prior to the times zero point which is the
21 start-up of the projects. It occurs over a period
22 of -- whose midpoint is approximately seven and a
23 half months from times zero, and I moved those costs
24 by adding additional costs to account for the time

25 dornbusch-cross-merrill



1 cost for that seven and a half month period.

2 Q Did you prepare a sum schedule of the construction
3 costs and the times in which they would be incurred
4 in building these projects?

5 A Well, in this case we made a judgment that all of
6 the construction would occur in the year prior and
7 during the construction period of that year just as
8 we did for all of the new project lands with the
9 exception of the North Crowheart and the same way I
10 described in my deposition to you.

11 Q Their analysis assumed that all of the systems for
12 all six units shown on Table 5 would all be built
13 in a year, is that correct?

14 A That's right.

15 Q You said in determining the opportunity cost of
16 labor you treated skilled and unskilled labor
17 differently. Would you please elaborate on how you
18 did that.

19 MR. ECHOHAWK; Objection, Your Honor, it has
20 been asked and answered both on direct examination
21 and cross.

22 THE SPECIAL MASTER: We will give it one more
23 time.

24 THE WITNESS: Yes. Based upon the Bureau of
25 dornbusch-cross-merrill



1 Reclamation publications of the percentage budget
2 which is composed of labor, both the skilled and
3 unskilled, we took those portions of the total
4 investment cost in the respective categories and
5 we applied the same approach as we did before, as
6 I described before for the opportunity cost for
7 skilled and opportunity cost for unskilled labor,
8 the same way we did with the new project lands.

9 Q What proportions did you use for skilled and
10 unskilled labor?

11 A What proportions did I use for skilled and unskilled
12 labor? Well, I believe they were the same percentages
13 that we used in the new project lands. I have to
14 check my notes to find the exact proportion.

15 Q Would you please do so?

16 THE SPECIAL MASTER: Mr. Dornbusch, you said
17 that you took labor costs at 80 percent to zero,
18 and that was what you used in high unemployment
19 areas. Is this what you are talking about now?

20 THE WITNESS: Is that --

21 THE SPECIAL MASTER: Is that what you want
22 to know about?

23 MR. MERRILL: No, Your Honor.

24 THE SPECIAL MASTER: What is the question, what
25 dornbusch-cross-merrill



1 proportion of what?

2 MR. MERRILL: Within the opportunity cost for
3 labor calculations which the Witness has stated
4 he used methods or different numbers for opportunity
5 cost in skilled and unskilled labor because of the
6 differing availability of those labor forces on
7 the Reservation. I don't think there has been any
8 testimony in the record thus far as to what numbers
9 he used for skilled versus unskilled labor, and that
10 is what I am trying to find out..

11 THE SPECIAL MASTER: All right.

12 THE WITNESS: Okay. The proportions -- let me
13 get an understanding. First, are we talking about
14 the proportion of the skilled labor component that
15 we costed at zero?

16 MR. MERRILL: Yes.

17 THE WITNESS: All right. The proportion of
18 skilled labor component that we costed at zero
19 was 43 percent. The percent of unskilled labor
20 component that we costed at opportunity cost was
21 80 percent.

22 Q Did you take those figures directly out of a Bureau
23 of Reclamation publication?

24 A No. The 80 percent figure, as I described before,
25 dornbusch-cross-merrill



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is my judgment as to what component of unskilled labor could be drawn from the unemployed work force. The 43 percent does come from a Bureau of Reclamation -- excuse me, it comes from -- I would have to check this before I cite that source. Excuse me just a moment.

(Brief pause.)

* * * * *

dornbusch-cross-merrill

409 West 24th Street
Cheyenne, WY 82001
(307) 635-8280

Frontier Reporting Service



201 Midwest Building
Casper, WY 82601
(307) 237-1493

1 A. Okay. The original source for the number I used comes from
2 the Federal Register, Friday, December 14, 1979, and in that
3 source it tells you that, based upon an analysis that was
4 performed where they have an objective for attracting unem-
5 ployed labor into the construction work force, that they have
6 a history of succeeding in attracting 43 percent of skilled
7 labor from the unemployed work force, and that's the basis
8 of the 43 percent that I used.

9 Q. Isn't it true that that 43 percent figure comes from the
10 WRC principles and standards?

11 A. Well, that's the citation that I gave you, the Federal
12 Register, Friday, December 14, that's right.

13 Q. Now, what percentage of the total labor requirement did
14 you assume would be skilled and what percentage unskilled?

15 A. I think that was the same question you asked me before,
16 isn't it?

17 Q. No, I asked you what percentage of the skilled and unskilled
18 labor you costed at zero, and you told me 43 and 80 percent,
19 respectively.

20 My question now is what percentage of the labor
21 requirements for the project did you assume would be
22 skilled labor and how much did you --

23 THE SPECIAL MASTER: That's a different question.

24 The first question was what percentage of the labor force
25 dornbusch - cross - merrill



1 was skilled or unskilled. Now, do you want the labor
2 requirement or the labor force? Do you want what percent-
3 tage of the labor available on the reservation was skilled
4 and unskilled of the unemployed or what percentage of the
5 requirements?

6 MR. MERRILL: I see your point, Your Honor. I apologize.

7 Q (By Mr. Merrill) I would like to know what percentage of
8 the labor requirements for this project are skilled labor
9 and what percentage of the labor requirements are for
10 unskilled labor.

11 A Okay. I have to make some calculations because I did not
12 make a direct calculation of the proportion that was
13 skilled and unskilled, which is what I understand you are
14 asking me.

15 Q Yes. That is what I am asking you. Do you have it broken
16 down some other way that would save you from having to do
17 the calculations?

18 A Yes. The way I did it was by the proportion -- the percent-
19 tage of the total budget that was skilled and unskilled.
20 It's simpler, since I have the total cost, to take then
21 the percentage that would be skilled and the percentage
22 that would be unskilled from that and apply the opportunity
23 cost to that dollar figure, and that's the way I did it.

24 Q And do you have those figures with you so that you don't

25 dornbusch - cross - merrill



1 have to calculate the overall?

2 A. Okay. The only components for which I made adjustments
3 for the opportunity cost of labor were the pipe networks,
4 the pump and pumping plant, canals, and related structures
5 and drainage.

6 And for the pipe network, the percentage of the total
7 budget that is skilled labor is 3.22 percent. The percen-
8 tage that's unskilled labor is 3.38 percent. For the
9 pumps and pumping plant, the percentage that's skilled
10 labor is 11.77 percent; the percentage of unskilled labor
11 9.43 percent.

12 For the canals and related structures, the percentage
13 of skilled labor is 9.58 percent; the percentage of unskilled
14 labor 8.33 percent.

15 For drainage, the percentage of skilled labor is 8.93
16 percent, and the percentage of unskilled labor is 7.17
17 percent.

18 THE SPECIAL MASTER: Mr. Merrill, let me ask the
19 witness for the benefit of clearing my understanding,
20 if the total percentages of skilled and unskilled in any
21 one category only comes to 15 or 16 percent, what's the
22 rest of the labor force?

23 THE WITNESS: Oh, this is the percentage of the
24 total cost.

25 dornbusch - cross - merrill



1 THE SPECIAL MASTER: Oh, this is the cost figure?

2 THE WITNESS: Yes, that's right.

3 THE SPECIAL MASTER: Oh, I beg your pardon. Thank
4 you.

5 Q. (By Mr. Merrill) Mr. Dornbusch, how did you determine
6 these percentages of total costs for skilled and unskilled
7 labor for these four types?

8 A. The Bureau of Reclamation publishes data on their construc-
9 tion budgets, and within those budgets they show the pro-
10 portions of skilled and unskilled labor.

11 Q. Did you adopt those proportions without modification?

12 A. Well, I had to make calculations from their budgets, but
13 in effect, I used their budgets.

14 Q. Mr. Dornbusch, do you know the source or the title of the
15 Bureau of Reclamation publication you used?

16 A. I could find it for you.

17 Q. If you would, please.

18 THE SPECIAL MASTER: I think I'll ask you not
19 to do that. I believe the table shows the source of your
20 information, Mr. Merrill. He said he took it from the
21 publication. That's adequate.

22 This thing can go on for a thousand years if we
23 don't make some limitation to the cross-examinations
24 that are taking place.

25 dornbusch - cross - merrill



1 MR. MERRILL: Well, Your Honor, I'm sure you are
2 well aware by now I am doing more discovery than cross-
3 examination, and the reason I am is that because at the
4 time we deposed Mr. Dornbusch, he hadn't done any work
5 at all on the historic lands, and the only information
6 that we have with respect to his historic lands analysis
7 is the information presented in Exhibit 278.

8 THE SPECIAL MASTER: I appreciate that.

9 MR. MERRILL: And a few details in direct examination.
10 If we are to prepare our case, as the Tribes need to do --

11 THE SPECIAL MASTER: I appreciate that. Let's go on
12 with our work and do the best we can and give it all we
13 have got, and I will try to conduct the proceedings in
14 what I understand is fairness in my own duties.

15 Q (By Mr. Merrill) Mr. Dornbusch, did you use the same
16 figures for skilled and unskilled labor with respect to
17 the future lands?

18 A. I believe so. I'd have to check my notes to be sure.

19 Q. Okay. Would you please check?

20 THE SPECIAL MASTER: These are costs again, Mr.
21 Merrill, you are talking about, not percentage of skilled
22 and unskilled labor?

23 MR. MERRILL: Yes. I just want to know if those
24 are the same percentages he used across the board.

25 dornbusch - cross - merrill (Pause.)



1 A. Oh, yes, the original calculations that we made, they
2 are all the same, with one exception, and that is for the
3 percent of unskilled labor of the total cost for the
4 drainage.

5 In our original calculations, we made an error in
6 addition, and for that factor, it was different.

7 Q. (By Mr. Merrill) What factor did you use for unskilled
8 labor for drainage?

9 A. In the original calculations, the figure we used was
10 13.12 percent.

11 THE SPECIAL MASTER: If these figures are going
12 to have any value to me, I imagine you ought to agree
13 what is skilled labor and what is unskilled labor and
14 give us a definition that is acceptable.

15 Q. (By Mr. Merrill) Mr. Dornbusch, what definition of
16 skilled and unskilled labor did you use in your analysis?

17 A. Okay. From the Reclamation construction impact budgets,
18 they have the on-site labor broken down into various
19 categories, and the category called laborers I used as
20 unskilled labor, and the categories that they called
21 operating engineers, carpenters, teamsters, et cetera,
22 I used as skilled labor.

23 Q. You said you originally used 13.12 percent for your
24 unskilled labor on drainage. Did you later change that
25 dornbusch - cross - merrill



1 to the 7.17 percent you used on the Type VIII lands?

2 A. And make a recalculation?

3 Q. Yes.

4 A. No, I didn't, but I checked the sensitivity, and it was --
5 none of the results were sensitive to that difference,
6 and I did not make a change.

7 Q. So you stuck with the 13.12?

8 A. That's right.

9 Q. Okay. Now, you stated earlier that you normalized Dr.
10 Mesghinna's costs; is that correct?

11 A. That's correct.

12 Q. Would you choose one of the irrigation system components
13 shown on Table 5 and demonstrate for the Court how you
14 normalized Dr. Mesghinna's cost?

15 A. Yes, I simply multiplied his cost by a normalizing factor,
16 the same way that I did for the new project lands.

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1 Q (By Mr. Merrill) Let me hand you what has been
2 temporarily marked for identification as Exhibit
3 ED-54. Would you please identify that?

4 A I believe this is the same table that I gave you
5 that shows the cost that we obtained from Stetson
6 Engineers. They are the per acre costs for each
7 of the investment cost categories that are shown
8 on the table we have been discussing in my exhibit,
9 Table 5 on Page 15. They are costs as given me
10 by Stetson Engineers.

11 MR. MERRILL: Your Honor --

12 THE SPECIAL MASTER: Pardon me, Mr. Merrill.
13 Let me ask what is the indexing or normalizing
14 figure that you multiplied to his costs to get what
15 you arrived at on your Table 5?

16 THE WITNESS: For each of the cost categories?

17 THE SPECIAL MASTER: Yes.

18 THE WITNESS: Okay. The normalizing factor for
19 the on-farm system is .874; for pipe network, .871;
20 for pump and pumping plant, .871; canals and related
21 structures, .897, and for drainage, .903.

22 THE SPECIAL MASTER: In other words, you took
23 the cost figures slightly less than his?

24 THE WITNESS: No, the cost figures he gave me
25 dornbusch-cross-merrill



1 were 1979 costs, and I made an adjustment to
2 normalize to 1979 values.

3 THE SPECIAL MASTER: By multiplying his costs
4 by this factor you just gave us?

5 THE WITNESS: By those factors, exactly.

6 THE SPECIAL MASTER: Doesn't that result in
7 a lessening to the total?

8 THE WITNESS: It lowers the dollars, right.

9 THE SPECIAL MASTER: That is what I asked.

10 THE WITNESS: But in order to make it comparable
11 to the same point in time, it was necessary to do
12 that. That is the principle we are seeking, we
13 must normalize costs and compare costs and returns
14 at the same point in time.

15 THE SPECIAL MASTER: Okay. Mr. Merrill.

16 MR. MERRILL: Thank you, Your Honor.

17 Your Honor, I would request the Court's permission
18 to withdraw ED-54 which has been temporarily marked
19 and mark copies sometime during a break.

20 THE SPECIAL MASTER: All righty.

21 Q (By Mr. Merrill) Mr. Dornbusch, would you look at
22 Exhibit ED-54 and tell the Court what figure you
23 received from Dr. Mesghinna for the pipe network?

24 A For all the units?

25 dornbusch-cross-merrill



1 THE SPECIAL MASTER: Is Arapahoe enough?

2 MR. MERRILL: Arapahoe would be fine, Your
3 Honor.

4 THE WITNESS: Two hundred fifty-eight dollars
5 per acre.

6 Q (By Mr. Merrill) And you then normalized that figure
7 by multiplying it by .871, is that correct?

8 A That's correct.

9 Q Now, that doesn't yield the corresponding \$319 shown
10 on Table 5, does it?

11 A No.

12 Q Or am I doing something wrong?

13 A The \$319 in Table 5 is derived from the \$258 shown
14 on ED-54 using the process that I described earlier;
15 that is making an adjustment for the opportunity
16 cost of labor, for the normalizing of those costs,
17 for the movement in time, for the construction period,
18 and then for the present value because you have
19 future replacements of those costs through time.
20 And the derivation of the number you see is a
21 function of all of those adjustments.

22 Q Okay. Now, with respect to the construction costs,
23 you said you determined that those would be
24 incurred on an average of seven and a half months

25 dornbusch-cross-merrill



1 before times zero?

2 A That's correct.

3 Q Would you describe to the Court how you moved that
4 cost through time and what discount rate you used?

5 A We use the four percent discount rate, and I
6 simply did it by taking -- since the four percent
7 discount rate is applied over a full year, I
8 multiplied four percent by seven and a half, divided
9 by 12 to get the proportion of the amount to be
10 moved.

11 Q Did you obtain total construction costs for each
12 of the investment costs of the Type VIII lands
13 shown on Table 5 from Stetson Engineers?

14 A Well, if I understand your question, I obtained
15 the investment costs for each of those categories
16 as shown on ED-54 just according to that table
17 that you and I have been talking about. Those are
18 the costs that they gave to us, and I suppose to be
19 clear, with the exception written in on that table
20 for the land development fencing costs, and we
21 did those.

22 Q Would you please describe how you determined --

23 A Oh, and also the other exception, I believe I
24 stated this in my direct testimony that the cost

25 dornbusch-cross-merrill



1 for operation, repairs and maintenance was not
2 from Stetson Engineers, but from Don Crook. Those,
3 I believe are the exceptions to the table.

4 Q You said that you determined the fencing costs on
5 your own.

6 A That's right.

7 Q Okay. Would you describe how you did that?

8 A Yes. Well, in general I can describe it without
9 my notes. We determined that the average parcel
10 size would be approximately 30 acres, and we
11 simply used the same costs that we had developed
12 for the future project lands for the fence cost
13 per mile, measured what would be the expected
14 average perimeter for that size parcel and computed
15 the costs.

16 Q What average perimeter length did you use for a
17 30-acre parcel?

18 A For that I need my notes.

19 (Brief pause.)

20 A Okay, for the 30-acre parcel we used a perimeter
21 of 1,760 yards. That is \$59 per acre.

22 Q Is that the same average parcel size that you used
23 for the future lands?

24 A No. We didn't do it the same way for future lands.

25 dornbusch-cross-merrill



1 For future lands we actually took a map of the
2 developed project areas and sketched in in
3 conjunction with Stetson Engineers the locations
4 of the additional fencing requirement recognizing
5 there would already be fences that they were
6 including in costing for the canals and that
7 additional fences were not required there. We
8 sketched in what additional fences would be
9 required, we measured those actually for each
10 project area, divided by the acreage in each project
11 area, multiplied it by the cost of either mile
12 or yard, I forgot how we did it, but that is to
13 compute the cost per acre for the new project lands.

14 Q You told us a few minutes ago the indexing figures
15 you used to adjust from Mesghinna's 1979 prices
16 to normalized 1979 prices. Did you use the same
17 index numbers for the future lands as for the
18 Type VIII lands?

19 A I believe where they are applicable, yes, I think so.

20 Q As part of your feasibility analysis did you
21 assume that each of the components of the irrigation
22 system would have a certain lifetime?

23 THE SPECIAL MASTER: Would have a certain
24 lifetime?

25 dornbusch-cross-merrill



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MR. MERRILL: Yes, Your Honor.

THE WITNESS: Yes, we did.

* * * * *

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(307) 635-8280

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Casper, WY 82601
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1 Q (By Mr. Merrill) Would you please tell the Court what
2 lifetime you assumed for each component of the irrigation
3 system?

4 A For the on-farm system -- we are talking about the VIII
5 lands?

6 Q Yes. Let's start with the VIII lands. I will ask you if
7 the same general factors apply for the future lands.

8 A For the on-farm system, fifteen years; for the pipe net-
9 work, thirty years; for the pump and pumping plant,
10 twenty-five years; for both canals and related structures
11 and drainage, 100 years.

12 Q Did you assume the same lifetime for each of these com-
13 ponents in the future lands analysis?

14 A Yes.

15 THE SPECIAL MASTER: Let me ask a question, Mr.
16 Merrill, please: What lifetime figures did you put on
17 the drainage facilities?

18 THE WITNESS: One hundred years.

19 THE SPECIAL MASTER: Same as the canals?

20 THE WITNESS: Right.

21 Q (By Mr. Merrill) How did you determine those useful lives,
22 Mr. Dornbusch?

23 A Stetson Engineers informed us what the useful life would be
24 of each of the systems that they designed and costed.

25 dornbusch - cross - merrill



1 Q What construction schedule did you assume for the irriga-
2 tion systems associated with the future lands?

3 MR. ECHOHAWK: Objection, Your Honor. Asked and
4 answered.

5 THE SPECIAL MASTER: It would be so easy for me to
6 sustain the objection, but I'm not sure I remember.

7 MR. MERRILL: I sure don't recall it.

8 THE SPECIAL MASTER: If it can be answered quickly --
9 Why don't you read the question?

10 (The pending question was read
11 (back by the reporter as follows:
12 ("Q: What construction schedule
13 (did you assume for the irrigation
14 (systems associated with the
15 (future lands?"

16 THE SPECIAL MASTER: He may answer. It may have been
17 different from the Type VIII.

18 A Okay. I think the quick answer, if I recall, is the same
19 construction schedule that I gave you in my -- in what I
20 believe is my second deposition.

21 THE SPECIAL MASTER: Is that adequate, Mr. Merrill?

22 MR. MERRILL: If the witness is sure that it's the
23 same one, Your Honor, but some part of the analyses have
24 changed since that deposition, and I just want to make sure
25 we have got the right figures.

A Well, I believe I did give you a construction schedule
dornbusch - cross - merrill



1 during my second deposition. Is that not correct?

2 Q (By Mr. Merrill) I'm not sure. I kind of think you said
3 that it would take three years to build North Crowheart
4 and one more year to build the remaining units, if I re-
5 call correctly.

6 A. Yes, the North Crowheart has a three-year construction
7 schedule and the other units have one-year, that's right.

8 Q As part of your analysis, did you use some set of figures
9 concerning the costs of construction of the future projects
10 and the times in which these costs would be incurred?

11 A. I guess I don't understand how that question differs from
12 the earlier one.

13 Q Okay. The first question was how long would it take to
14 build these things.

15 A. Right.

16 Q And you said three years for the big one, one more year for
17 the others?

18 A. Right.

19 Q My question is: In your analysis, to determine the appro-
20 priate value of the costs, did you use a schedule of when
21 the construction costs will be incurred over this total
22 four-year construction period?

23 A. Oh, yes, we did.

24 Q Do you have such a schedule with you?

25 dornbusch - cross - merrill



1 A I think I do.

2 Q May I see it, please?

3 A Here it is.

4 (Document handed to Mr. Merrill
5 (by the witness.)

6 MR. MERRILL: I will put a paperclip on it and mark
7 it temporarily as Exhibit ED-55.

8 THE SPECIAL MASTER: You had better let somebody have
9 a look at it over here, Mr. Merrill.

10 (Document handed to Mr. Echohawk
11 (by Mr. Merrill.)

12 Q (By Mr. Merrill) Mr. Dornbusch, you stated that you
13 developed the land development costs on your own and did
14 not get those from Stetson Engineers; is that correct?

15 A That's correct.

16 Q Will you please describe to the Court how you arrived at
17 your land development costs first for the Type VIII lands?

18 A For the Type VIII lands, well, I think I can do it altogether,
19 really.

20 Q Okay, if that's easier, do it that way.

21 A Okay. The first thing I did was to discuss with economists
22 at the Bureau of Reclamation who had been -- who are
23 familiar with that area and had done similar studies for
24 land preparation in that area, what they felt the

25 dornbusch - cross - merrill



1 appropriate cost would be, and obtained their estimate for
2 the operations -- for some of the operations.

3 In addition, we recognized that there would be some
4 extra fertilizer required to bring the fertility of the
5 soil up to a level that would be sufficient to raise the
6 crops and maintain the yields that we were projecting, and
7 in some cases it was necessary to remove rocks, and I
8 believe we talked about this before.

9 In fact, I think we talked about all of this.

10 Q Would you please tell the Court what operations are
11 included in land development?

12 A Okay.

13 THE SPECIAL MASTER: Is he a proper witness to be
14 telling us this, Mr. Merrill? He can work with some
15 figures that those gave him who removed the cobble or who
16 decided this is sprinkler and not gravity or who decided
17 that it had some other values, but is he the man to tell
18 us what steps to go through in what you have asked?

19 MR. MERRILL: Your Honor, I'm not sure that he is, but
20 he says that he developed those costs on his own and did
21 not get them from the engineers, and I would like to know
22 what the operations were that he developed the costs for
23 and what the costs were.

24 A Well, for the main land preparation, I obtained these, as I
25 dornbusch - cross - merrill



1 said, from the Bureau of Reclamation, and I believe this
2 includes brush clearing, leveling where it's required if
3 you have some gullies because we are talking -- in the new
4 lands we are talking about sprinkler irrigation.

5 THE SPECIAL MASTER: If this is sprinkler irrigation,
6 you are not going to have to do very much.

7 THE WITNESS: Well, there are some little gullies,
8 that's right. It's miniscule, but there's some of that
9 that will be required.

10 There's soil breakup to loosen the soil, and those are
11 essentially the components that were described by the
12 Bureau of Reclamation or costed by them.

13 Q (By Mr. Merrill) What costs did you use for land develop-
14 ment?

15 A For land development?

16 Q Yes.

17 A Land preparation, it varies by project area, and I believe
18 it's in my report.

19 Q Okay, what costs did you use for each of the components of
20 the land development cost which I see is \$41 an acre
21 throughout all of the Type VIII lands?

22 A For the Type VIII lands, that's right.

23 Q I would like to know the cost you used for brush clearing,
24 for land leveling, for soil breakup, and for fertilizer.

25 dornbusch - cross - merrill



1 A. Oh, I think the more appropriate way to describe this is to
2 describe the components for the new project areas.

3 Q. Okay.

4 A. We used -- and let me preface my remark first by saying
5 that the figure that I obtained from the Bureau of Reclama-
6 tion was a figure that they used as an all-inclusive figure,
7 and I specifically asked them about the fact that, "Might
8 you expect possibly lower yields in new project lands in
9 the first year or second year?" And they said, "Well,
10 that's a possibility."

11 I said, "Might you have to apply extra fertilizer to
12 increase those yields up to that level?" And they said,
13 "Yes, that would be -- there would be alternative ways of
14 handling it. You could either start off with lower yields
15 or put in the fertilizer."

16 They described operations that included plowing and
17 clearing and preparing the soil, and the way it was ex-
18 pressed to me was that all of the operations and all of the
19 things that you needed to do to get your first year yields
20 right up to the level of continuous yields for the life of
21 the project would be approximately \$25 per acre.

22 In addition to that, I added approximately \$5 for
23 extra nitrogen fertilizer and \$6 for extra phosphorous
24 because of the lime conditions in the soil and then

25 dornbusch - cross - merrill



1 handled rock removal on a project-by-project area basis
2 according to the particular requirements for that project
3 area.

14
15 * * * * *



1 Q (By Mr. Merrill) Do those comprise all of the land
2 development costs you considered?

3 A I think -- yes, I think I described all the costs I
4 considered, yes.

5 Q Okay. I just wanted to make sure we had a complete
6 list.

7 You stated that the third cost that you
8 developed on your own was the operation, maintenance
9 and repair costs, is that correct?

10 A I don't know what the number was, but -- you are
11 not talking about the VIII lands or the future
12 lands?

13 Q The VIII lands. I think you said you developed
14 three areas on your own:: Land development, fencing,
15 and OM and R.

16 A I'm just trying to keep my answers straight and be
17 sure we are all talking about the same thing at
18 the same time. Yes, for the operations costs we
19 developed the operation, repairs and maintenance
20 costs.

21 Q Would you explain to the Court how you do that?

22 THE SPECIAL MASTER: Isn't this your \$85 for
23 all the projects, \$85 an acre?

24 THE WITNESS: Yes, that's right, Your Honor.

25 dornbusch-cross-merrill



1 I've been shovelling papers so much, I right
2 now can't find my notes for the development of
3 that. Perhaps --

4 Q We can come back to that if that would be more
5 convenient.

6 A -- given me some time.

7 MR. ECHOHAWK: Your Honor, we have been going
8 about an hour. Perhaps we could take a break.

9 THE SPECIAL MASTER: All right. We will take a
10 shorthbreak.

11 (Whereupon, a ten-minute
12 recess was taken.)

13 THE SPECIAL MASTER: We will come to order,
14 please.

15 Q (By Mr. Merrill) Mr. Dornbusch, did you find the
16 document in your notes that you were looking for
17 before the break?

18 A Yes. In fact, it was a number I think that I told
19 you about earlier. The source of the costs for
20 operation, repairs and maintenance was Don Crook.
21 I was reminded by my staff that it was actually
22 supplied to us through Woldezion.

23 Q Dr. Mesghinna?

24 A Dr. Mesghinna, right.

25 dornbusch-cross-merrill



1 Q In what form did Dr. Mesghinna supply you information
2 concerning operation, maintenance and repair costs?

3 A What form?

4 Q Yes.

5 A Dollars per acre.

6 Q Is that broken down by units?

7 A Yes, it is.

8 Q Do you have that information with you?

9 A It is on your Exhibit ED-54.

10 Q How did you determine the operation, maintenance
11 and repair costs for the future lands?

12 A Those were given to us directly by Wold -- excuse me,
13 Dr. Mesghinna.

14 THE SPECIAL MASTER: By whom?

15 THE WITNESS: Dr. Mesghinna.

16 THE SPECIAL MASTER: Just roughly what was that
17 figure per acre per -- for these lands.

18 THE WITNESS: For quick, the new or the VIII's?

19 THE SPECIAL MASTER: The ones you are testifying
20 on.

21 MR. MERRILL: The new lands.

22 THE WITNESS: The new lands? They differ for
23 each project area. For North Crowheart it is \$6.84.

24 THE SPECIAL MASTER: Per acre for OM and R?

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1 THE WITNESS: Annual.

2 THE SPECIAL MASTER: I see. If you would annualize
3 that into your life, what figure did you get per
4 acre?

5 THE WITNESS: Over the life? I can give you
6 what the present value is after my adjustments.
7 I believe for North Crowheart it's \$72 an acre; for
8 South Crowheart, \$85 an acre; for Big Horn Flats,
9 \$115 per acre; for Riverton East, \$85 per acre, and
10 for Arapahoe, \$85 per acre.

11 THE SPECIAL MASTER: Okay, thank you. Thank
12 you, Mr. Merrill.

13 Q (By Mr. Merrill) Those are present values discounted
14 over 100 years at four percent?

15 A That's correct.

16 Q Okay. Going back to your land development costs for
17 a moment, did you assume that you would apply the
18 same amount of first year fertilizing to all of the
19 lands in the Type VIII projects?

20 A Yes. We used an average cost per acre for the
21 Type VIII lands.

22 Q How did you determine the fertilizer requirements?

23 A Okay. There were two different fertilizer
24 requirements. One was phosphorus, and that's --

25 dornbusch-cross-merrill



1 excuse me -- yes, that's as a result of the lime
2 conditions in the soil. It was developed on the
3 basis of information from HKM Engineers:

4 THE SPECIAL MASTER: Does that designate how
5 that fertilizer is designated? Is it zero dash one
6 hundred dash zero? I've seen that in the reports,
7 and I wondered about it.

8 A That's precisely the idea. The number indicates
9 pounds of available fertilizer for the particular
10 fertilizer.

11 THE SPECIAL MASTER: I thought the first number
12 was a particular nutrient, then the nitrogen,
13 phosphorus --

14 THE WITNESS: That's right, each number
15 represents a different fertilizer, that's right.

16 Q (By Mr. Merrill) Do the numbers reflect pounds of
17 available fertilizer per acre?

18 A I believe that's right.

19 THE SPECIAL MASTER: I thought the number
20 reflected the percentage of the total packaged or
21 sack as made up of that particular nutrient? We
22 are talking about two different things, but I
23 want to impress my line of thinking on this. This
24 is because the land is so high in lime?

25 dornbusch-cross-merrill



1 THE WITNESS: All right, the notations in the
2 crop budget indicate the pounds of available
3 fertilizer, but on a package, right, it's not a
4 per acre, it's just as you described it, sir.

5 THE SPECIAL MASTER: The soils analysis of the
6 land that goes into the Type VIII, let us say,
7 were the Type VIII's analyzed by soil and the soil
8 characteristics?

9 THE WITNESS: I think the way it works is
10 HKM discovered there was a considerable lime
11 problem throughout the Reservation, and I can't
12 remember the exact percentage, but there was -- oh,
13 wait, just a moment. I think I may have it in my
14 notes. Yes, HKM informed me, and I believe it was
15 Ross Waples in particular, approximately three-
16 quarters of the acreage has this lime condition,
17 and as a result, there was a requirement of additional
18 phosphate that's needed because of the lime problem
19 in the early years. The lime condition -- the
20 problem caused by that condition decreases through
21 time, and that the requirement for the fertilizer
22 decreases through time.

23 THE SPECIAL MASTER: Okay, thank you, Mr.
24 Merrill.

25 dornbusch-cross-merrill



1 MR. MERRILL: You're welcome, Your Honor.

2 Q (By Mr. Merrill) Are these two nutrients that are
3 included in the land development costs one-shot
4 applications the first year only?

5 A No, they're not -- oh, in the land development
6 costs they are for the following reason: That we
7 are applying fertilizer during the project, and I
8 specifically checked to see if sufficient fertilizer
9 was going to be included that would be adequate
10 to solve those problems and to provide for the
11 crops as needed, and I made my calculations based
12 upon what additional fertilizer would be required
13 in the first year of the project and if additional
14 fertilizer was required in the following years until
15 the problem was no longer occurring, and I only
16 added the fertilizer to the point where the problem
17 occurred and added that additional fertilizer and
18 costed it.

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1 Q (By Mr. Merrill) What information did you use in determining
2 the first year nitrogen requirements?

3 A I interviewed Stan Wilson of the Farmers Exchange; Ron
4 Cunningham, the Agricultural Extension agent in Riverton;
5 and Hugh Huff, who is a specialist in soils, Agricultural
6 Extension Service, and I believe it's in Laramie, Wyoming.
7 And on the basis of these interviews with these gentlemen,
8 I determined what additional nitrogen would be needed in the
9 first year and in the steady state conditions for the crops
10 that we're raising and determined the cost accordingly.

11 Q How much nitrogen are we talking about for the first year
12 application?

13 A How much additional nitrogen?

14 Q Yes.

15 A Over and above what's being applied and shown in the crop
16 budgets?

17 Q Yes.

18 A There's an additional 24 pounds of nitrogen.

19 Q Per acre?

20 A Per acre, that's right.

21 Q In determining the additional first year nutrient require-
22 ments, did you consider the soils information in the form
23 of soils logs or aerial photographs and land classifica-
24 tions supplied to you by HKM?

25 dornbusch - cross - merrill



1 A I spoke with HKM about this very situation, and I did not
2 interpret their soils -- I don't believe I have that
3 capability. I had them interpret their soils information
4 for me and discussed the situation and reached an under-
5 standing as to what would be the nutrient required.

6 For example, it was directly from Ross Waples that I
7 obtained the understanding of how many -- what proportion
8 of the acres would require the phosphate application and
9 the pounds required to solve the problem.

10 Q What problem is the additional first year nitrogen to
11 solve, if you know?

12 A I believe it's just the fact that you are going to be
13 growing crops on raw ground and because of the expected
14 fact that you would have lower nitrogen in the soil. When
15 you are going to be cultivating it right from the first,
16 you need an extra jolt of nitrogen to bring that level up.

17 As you continue through your agricultural development,
18 you're applying nitrogen as well as the other nutrients,
19 and it's shown in the crop budgets, and you also have the
20 nitrogen fixing capacity of the alfalfa, so you are add-
21 ing nitrogen throughout.

22 Q Did you include any first year costs for adding organic
23 matter to the soils, such as manure?

24 A No, I didn't.

25 Q Did you say earlier that your rock removal costs were
dornbusch - cross - merrill



1 determined on a tract-by-tract or field-by-field basis?

2 A. The rock removal costs were calculated on the basis of the
3 number of acres in each of the new project areas that have
4 that problem.

5 Q How did you determine what acreages had that problem?

6 A. From Ross Waples. He told us the acreage in each project
7 area.

8 Q How do you figure out what it costs to remove rock?

9 A. Well, you can do it one of two ways. You can either find
10 out what a custom operator would charge you and use that,
11 if you can find a custom operator to do it.

12 If you can't, which is the situation in our case, we
13 went about buying the equipment and operating the equipment
14 to remove the rocks and calculated the fixed and variable
15 costs for operating that equipment just as we did fixed and
16 variable costs for other equipment in the crop budgets.

17 Q Mr. Dornbusch, what is the difference between charges for
18 energy and charges for power on Table 5 of Exhibit C-278?

19 A. Okay. There's a charge for the amount of kilowatt hours
20 you consume, and that's energy.

21 There's also a charge that's effectively to recognize
22 that you may have a peak demand, and it's a charge according
23 to the horsepower, and I believe that's the difference,
24 that you have a charge for the kw and a charge for the kwh.

25 dornbusch - cross - merrill



- 1 One is power and one is energy.
- 2 Q What costs did you use in your analysis for those two items
- 3 for kw and for kwh, respectively?
- 4 A For the energy and power?
- 5 Q Yes.
- 6 A I used the costs that were given to me directly by Dr.
- 7 Mesghinna.
- 8 Q Do you have those costs with you?
- 9 A Well, I believe they were the same costs that were shown
- 10 in his report.
- 11 Q Okay.
- 12 A I shouldn't say I believe. They are the same costs shown
- 13 in his report.
- 14 Q Is that true with respect to the future lands as well as
- 15 the Type VIII lands?
- 16 A The source of those figures?
- 17 Q Yes.
- 18 A Yes, that's right.
- 19 Q Did you receive a detailed breakdown of operation, mainten-
- 20 ance and repair costs for Dr. Mesghinna for the Type VIII
- 21 lands?
- 22 THE SPECIAL MASTER: Did he receive a detailed break-
- 23 down of operational costs, is that what you asked?
- 24 MR. MERRILL: Yes, Your Honor, operation, maintenance
- 25 dornbusch - cross - merrill



1 and repair costs for the Type VIII lands.

2 A. Am I misunderstanding, or isn't this the same question you
3 asked me before?

4 THE SPECIAL MASTER: We went right through it just
5 recently with the 85 comparisons to the figures he gave me
6 for each of the project lands compared to the Type VIIIs.

7 MR. MERRILL: I'm asking if he received a list from
8 Dr. Mesghinna showing the components of the O, M & R costs.

9 THE SPECIAL MASTER: Very well.

10 A. Oh, the components?

11 Q (By Mr. Merrill) Yes.

12 A. Well, he gave us a total.

13 Q He didn't give you any breakdown by components, the amount
14 of labor included --

15 A. Oh, I see.

16 Q -- and the other charges?

17 A. Let's see. We obtained from Joe DeMaggio of Stetson
18 Engineers the number of irrigations that would be required
19 for each of the crops in the Type VIII lands.

20 Q What are those numbers of irrigations by each crop?

21 A. Okay. For nurse oat hay and barley, at the high elevation,
22 4 irrigations; for nurse oat hay, barley and corn, low ele-
23 vation, 5 irrigations; for highland, 7 irrigations; and
24 for alfalfa, 8 irrigations.

25 dornbusch - cross - merrill



1 Q Are the hay and alfalfa figures both highland and lowland?

2 A Yes.

3 Q Now, let's go back to the breakdown of O, M & R costs that
4 you received from Dr. Mesghinna.

5 A Let me check something.

6 Q Okay.

7 MR. ECHOHAWK: Mr. Merrill, could I inquire, did you
8 ask about on-farm O; M & R or system O, M & R?

9 MR. MERRILL: I'm asking about those that are shown on
10 Table 5 of Exhibit 278 for right now.

11 THE WITNESS: I didn't hear the answer. Was that for
12 on-farm or system?

13 Q (By Mr. Merrill) Let's start with the system and we'll go
14 to the on-farm.

15 A Oh, were you asking for the system? I misunderstood you.
16 I was giving you the answer for the on-farm.

17 Q As to the number of irrigations?

18 A Yes.

19 Q Okay.

20 A If you are asking about the system --

21 Q We can do them in either order. I want to ask you about
22 the system and the on-farm, and whatever is more convenient.

23 A It was the system that I thought I answered. That's why I
24 was talking about the on-farm.

25 dornbusch - cross - merrill



1 THE SPECIAL MASTER: When you say systems, aren't you
2 talking about on-farm systems? What other system is there
3 besides on-farm in this lawsuit?

4 THE WITNESS: You have the irrigation system, the
5 sprinkler systems. We call that -- that's the on-farm
6 operations. Then there's the entire system of the pipes
7 and canals.

8 THE SPECIAL MASTER: Well, the entire system of pipes
9 and canals, gentlemen, as I understand it, is broken down
10 into either pipe network --

11 THE WITNESS: That's right, but there's an operation,
12 maintenance and repair of that installed system.

13 THE SPECIAL MASTER: But when you talk about systems,
14 I thought you were talking about on-farm, and that's the
15 only term I have heard in the two years as Special Master.
16 If there is some other definition being used, I think we
17 should know about it, so I think your question was confus-
18 ing.

19 MR. MERRILL: I'm sorry, Your Honor, I didn't intend
20 for it to be.

21 MR. ECHOHAWK: Your Honor, I believe the difference
22 was there's a conveyance system and then there's the on-farm
23 sprinkler system.

24 THE SPECIAL MASTER: Well, if you will keep your answer

25 ~~time on the specific categories that are not in the~~
dornbusch - cross - merrill



1 questions on the specific categories that are now under
2 investment costs and now under operating costs, we will
3 have a better chance to make some sense and reason out of
4 this record. Otherwise, it's a quagmire of impossible
5 facts and figures, totally impossible to make sense out of
6 for any human being except those who have been listening
7 to this, and I doubt after six months that we will even
8 know.

9 MR. ROGERS: I would like to say for the record at
10 this time that this was one of the reasons that we put on
11 Mr. Dornbusch twice, once to discuss future and once to dis-
12 cuss historic in order to keep some of these things separate
13 and for the cross-examination to be that way.

14 THE SPECIAL MASTER: Go ahead with your deposition and
15 your cross-examination.

16 MR. MERRILL: Thank you, Your Honor.

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1 Q (By Mr. Merrill) Mr. Dornbusch, in developing the
2 operation, repairs and maintenance charges shown
3 on Table 5 of Exhibit C-268 --

4 A Well, let me get C-268 just to be sure I have it.
5 I don't know if I have it -- okay, Table 5, 268,
6 yes.

7 Q Did you receive from Dr. Mesghinna a breakdown of
8 the various components of the operation, repairs and
9 maintenance charges?

10 A You are talking about the operation costs, operation
11 repairs and maintenance that shows as \$85 for each
12 of the units?

13 Q That's correct.

14 A Okay. No, as I explained, we received from Dr.
15 Mesghinna the annual cost that I believe he obtained
16 from Mr. Crook. We did not obtain a breakdown.

17 Q Did you make any adjustments to those figures you
18 received from Dr. Mesghinna other than discounting
19 them to a present value?

20 A Yes, I made the same adjustments I described for
21 the other systems -- other components of the
22 systems; that is opportunity cost of labor and
23 normalizing, as well as the discounting to present
24 value.

25 dornbusch-cross-merrill



1 Q Did you use the same percentage figures for labor
2 that you discussed earlier in conjunction with the
3 construction costs?

4 A No, I did not.

5 Q Will you please tell the Court what numbers you used
6 to adjust the labor charges for an opportunity cost?

7 A Yes. I used the average percent of budget for the
8 future projects, skilled and unskilled.

9 THE SPECIAL MASTER: Let's don't go down that
10 road too much further again. You have been down it
11 I think thoroughly.

12 MR. MERRILL: Your Honor, I have never inquired
13 of this Witness as to the average percent of his
14 budget in OM and R costs devoted to labor, and I
15 don't believe it has been brought out in either the
16 direct or the cross-examination.

17 THE SPECIAL MASTER: All right, proceed, if
18 that's the case.

19 Q (By Mr. Merrill) Mr. Dornbusch, can you identify
20 the labor charges, going through them quickly, and
21 how you determined the percentages?

22 THE SPECIAL MASTER: Was there a difference
23 between how you apportioned these labor charges
24 and the labor dollar charges that you just testified

25 dornbusch-cross-merrill



1 to earlier this morning? Is the ratio the same or
2 the proportion the same?

3 THE WITNESS: Well, the percentages that I
4 testified to earlier were with respect to the
5 investment costs of the system -- of the delivery
6 system, the pipes and pumping plant and that sort
7 of thing. We are now talking about the operation
8 and maintenance.

9 THE SPECIAL MASTER: Right, and is there a
10 difference?

11 THE WITNESS: Yes.

12 THE SPECIAL MASTER: And would you tell us
13 that difference?

14 A Yes. Okay, the system OM and labor, operation repair
15 maintenance and labor, was developed from the table
16 excluding the water master and pump specialists.

17 This is for the adjustments for opportunity cost,
18 feeling that these were the individuals requiring
19 degrees, skills and could not be drawn directly
20 from the unskilled labor force -- excuse me, from
21 the labor force on the Reservation, they required
22 special skills. The remaining employees we
23 obtained from Dr. Mesghinna's list of employment,
24 and we calculated the total payroll from his dollars

25 dornbusch-cross-merrill



1 for each and then determined the skilled and
2 unskilled labor costs per acre, and from that
3 used 80 percent as the opportunity cost on the
4 basis there was 80 percent being drawn from the
5 unskilled labor force.

6 Q (By Mr. Merrill) Are those components of skilled
7 and unskilled labor and your other calculations
8 shown on your notes to which you are referring?

9 A Yes, they are.

10 Q May I see those, please?

11 A Yes, you may.

12 (Whereupon, the Witness
13 hands a document to Counsel.

14 Q (By Mr. Merrill) Mr. Dornbusch, would you please
15 identify what has been temporarily marked as ED-56?

16 A Yes. These are my notes as to the skilled and
17 unskilled labor payroll, that's the annual payroll,
18 and excludes the water master and pumping specialist
19 for the system; OM and R labor for the North Crowheart,
20 South Crowheart, Riverton East, Arapahoe and Big
21 Horn Flats Units of the new project areas; and it
22 shows the net acres of those areas; skilled and
23 unskilled labor costs per acre; it's the annual cost
24 per acre, and then the 80 percent which is costed at

25 dornbusch-cross-merrill



1 zero opportunity cost.

2 Q Thank you.

3 THE SPECIAL MASTER: That document is ED what
4 number?

5 THE WITNESS: Fifty-six.

6 THE SPECIAL MASTER: Thank you.

7 Q (By Mr. Merrill) Mr. Dornbusch, would you please
8 describe how you determined the present value for
9 contingencies shown in Table 5 of Exhibit C-278?

10 A It's conceptually the very same way we did it for
11 the new project lands, and I believe I described
12 that, that process, in detail when I gave my
13 original testimony for the new project lands, and
14 I think I repeated it again.

15 THE SPECIAL MASTER: You repeated it for me
16 the second -- I asked about it the second time.
17 I'm still not happy about the increase, but that
18 is my pique.

19 THE WITNESS: It is too high?

20 THE SPECIAL MASTER: Well, 25 percent you took
21 of the on-farm inventory, then you added a factor --
22 do you want to tell it again? -- Because you felt
23 there was an inevitable overrun on everything that
24 will be done?

25 dornbusch-cross-merrill



1 THE WITNESS: I didn't apply this factor, it
2 comes directly from Tom Stetson.

3 THE SPECIAL MASTER: But you didn't discount
4 it, you used it in your calculations. I see what
5 you mean, it originated with him.

6 THE WITNESS: That's right. I used that factor
7 on the advise of the engineers that oversaw the
8 design of this system, and I don't know all of the
9 components that he feels goes into it. I know it
10 includes design, I know he feels it included the
11 level of risk that you have to put in, but it very
12 well may be excessive. You may go out and find
13 the estimates --

14 THE SPECIAL MASTER: It is not my problem to
15 prove it is excessive, Mr. Dornbusch.

16 THE WITNESS: I don't know either.

17 MR. ROGERS: Your Honor, I would only say with
18 respect to that, as high as you think it is, the
19 higher it is the more it hurts our case.

20 THE SPECIAL MASTER: I just noticed that fact,
21 and all of you are aware of it.

22 THE WITNESS: I am just trying to keep track
23 of what you are taking from me.

24 MR. MERRILL: I don't blame you at all.

25 dornbusch-cross-merrill



1 THE SPECIAL MASTER: Go ahead.

2 MR. MERRILL: Thank you, Your Honor.

3 Q (By Mr. Merrill) Mr. Dornbusch, I direct your
4 attention to Table 2 of Exhibit C-278. It appears
5 on Page 3. Please tell the Court how you determined
6 the sprinkler irrigation costs for the crops shown
7 on Table 2.

8 MR. ECHOHAWK: Could I have the question read
9 back?

10 THE WITNESS: Give me a chance to --

11 THE REPORTER: Just a minute while I read the
12 question back.

13 (Whereupon, the Reporter
14 (read the back, "Q Mr.
15 (Dornbusch, I direct your
16 (your attention to Table 2
17 (of Exhibit C-278. It
18 (appears on Page 3. Please
19 (tell the Court how you
20 (determined the sprinkler
21 (irrigation costs for the
22 (crops shown on Table 2.")

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dornbusch-cross-merrill



- 1 A All right. These are the costs to which I thought you
2 were referring earlier when I started describing the
3 number of irrigations that would be required by crop.
- 4 Q (By Mr. Merrill) We got the number of irrigations. Why
5 don't you pick up from there and go on?
- 6 A All right. The number of irrigations are then used to
7 determine the cost of labor to reset the sprinklers and
8 to that is added the repair and maintenance, and from
9 hereon the process of the calculation is exactly the
10 same as I described in my deposition for the new project
11 lands and, in fact, which you helped me with the calcu-
12 lations, as I recall.
- 13 Q Would you please tell the Court what cost figures you
14 used for labor to reset the sprinklers?
- 15 A All right. We used .6 hours per application. We used
16 the same labor rate as before, \$3.50 per hour, full
17 costed, and 70 cents per hour for the opportunity cost
18 therefor.
- 19 Q How did you determine that it would take .6 hours to
20 reset the sprinkler for each acre of land?
- 21 A I believe that came from Stetson Engineers.
- 22 Q Did you use the identical calculations and figures
23 to determine the sprinkler irrigation costs for the
24 future lands?
- 25 dornbusch - cross - merrill



1 A Oh, no. I used the identical calculation process. As
2 I said, it's the same thing that's done here as in the
3 future lands, but the costs are different.

4 Q Would you tell the Court what costs you used for the
5 future lands?

6 A Okay. On the Type VIII lands we only have hand-moved
7 sprinklers. On the future lands there are both hand-
8 move and side-roll sprinklers.

9 And the on-farm irrigation system OM and R costs
10 for the side-roll for each of the project areas are
11 as follows: for North Crowheart, \$4.88; for South
12 Crowheart, \$5.86; for Big Horn Flats, \$5.08; for Arapa-
13 hoe, \$5.28; for Riverton East, \$5.75.

14 Then for the hand-move sprinklers, for North Crow-
15 heart, \$6.04; South Crowheart, \$7.09; for Big Horn Flats,
16 \$6.07; for Arapahoe, \$6.37; for Riverton East, \$7.20.

17 We then weighted those, and I believe I described
18 the weighting process according to the percentage of
19 hand-move and side-roll sprinklers to obtain the weighted
20 average for the OM and R costs, and in the new project --
21 excuse me -- in the Type VIII lands we didn't apply any
22 weighting process, but the process for calculating those
23 repairs, using maintenance, miscellaneous overhead and
24 management -- those things are the same process.

25 dornbusch - cross - merrill



1 Q Thank you. I direct your attention to page 18 of Exhibit
2 C-278.

3 A Page --

4 Q 18.

5 A 18?

6 Q Yes.

7 I'm sorry. It should be page 19.

8 A Okay. Now, we are talking about Type VII lands; is that
9 correct?

10 Q Yes.

11 A Give me a moment and I'll get that file.

12 Q Okay. The first question will be how did you determine
13 your yields for water-short lands, if that will help you
14 look for the right stuff.

15 A The yields for water-short lands?

16 Q Yes.

17 THE SPECIAL MASTER: Is your question really water-
18 short Type VII lands?

19 MR. MERRILL: Yes, Your Honor.

20 A Okay. The yields that are shown in that table were on
21 the basis of interviews with Lynn Merrick, Agricultural
22 Extension Officer at Fort Washakie; Wes Seamands, who
23 is an Agricultural Extension -- I can find his title,
24 I believe ---

25 dornbusch - cross - merrill



1 THE SPECIAL MASTER: I think you have described
2 it earlier, so you need not search for it.

3 THE WITNESS: All right.

4 A -- on the basis of an interview with Gordon Kearl, and
5 some publications from the University of Nebraska by
6 agronomists.

7 Q (By Mr. Merrill) Do you have your notes concerning the
8 interviews and a list of the University of Nebraska's
9 publications handy so that you need not describe all of
10 that in detail?

11 MR. ECHOHAWK: Objection, Your Honor. Mr. Merrill
12 is not entitled to see those unless the witness refers
13 to them.

14 THE SPECIAL MASTER: I'll sustain it, Mr. Merrill.

15 Q (By Mr. Merrill) Mr. Dornbusch, what University of
16 Nebraska publications did you consult?

17 A They were publications by --

18 THE SPECIAL MASTER: Mr. Merrill, I'm going to
19 inject the termination of your inquiry of that publica-
20 tion from the University of Nebraska.

21 You asked for his sources of information for the
22 annual yields on this table. He gave you about seven
23 of them. Six, I think, were individuals he talked to
24 and this publication.

25 dornbusch - cross - merrill



1 That's adequate. That's adequate in total answer
2 to your question. I don't think we need to go into
3 another ten or fifteen minutes of what publication and
4 agronomist from what department from the University of
5 Nebraska on what date and what page.

6 The record is so damn full of that stuff that will
7 never be looked at by anybody -- I tell you in all com-
8 passion and honesty --

9 MR. MERRILL: If I had the names of the publications,
10 I can assure you the State of Wyoming would look at them.

11 THE SPECIAL MASTER: You can put on your own case in
12 a little while. You don't have to try your case with this
13 witness. You are doing your deposition now and you are
14 doing your cross-examination now, and you are going to
15 have your case with months to try that.

16 Go find the publication at the University of Nebraska
17 and at Lincoln. You asked it and he doesn't know. That's
18 adequate, and I'm going to terminate any more questions
19 on that subject matter.

20 I'm being scolded now by most of the judges in the
21 nation for allowing much too much time in this case any-
22 way.

23 Q (By Mr. Merrill) Mr. Dornbusch, would you turn to table
24 7 on the previous page of Exhibit C-278?

25 dornbusch - cross - merrill



10-6

1 A Yes.

2 Q Would you please tell the Court the source of your yields
3 for oat hay and grass hay for full irrigation on Type
4 VII lands?

5 A All right. The information -- excuse me. The yields
6 shown are based upon interviews with Ron Cunningham, the
7 Agricultural Extension Agent in Riverton; Lynn Merrick,
8 the Wyoming Agriculture Extension Agent in Fort Washakie;
9 also interviews and publications too, I believe, by Wes
10 Seamands; and there's one more I recall that I have to
11 check in a moment.

12 Yes, Howard Olsen, Superintendent of the Carrington
13 Experimental Station, North Dakota.

14 Q All right. Let's go back to your water-short yields on
15 page 19, table 8.

16 In determining the water-short yields --

17 A Yes.

18 Q -- did you make any assumptions as to the quantity of
19 water available to those crops, or did you assume a
20 certain time of year at which the water will no longer
21 be available?

22 A We discussed the quantities of water and the time of
23 availability with HKM, who were the people who made the
24 determination of the amount of water and timing, and

25 dornbusch - cross - merrill



10-7

1 they informed us as to what quantities we could expect
2 and when.

3 Q What quantities did they tell you to expect?

4 A I believe they told us that we could expect full water
5 up to -- I can't remember the exact period, but it was
6 in early July sometime.

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dornbusch - cross - merrill



- 1 Q (By Mr. Merrill) And no water thereafter or some
2 limited amount?
- 3 A And I believe it was no water thereafter until --
4 that's by irrigation -- until the rains later in
5 the season.
- 6 Q Did you use those assumptions in computing all of
7 the water short yields shown on Table 8?
- 8 A Yes, I believe we did, that's right.
- 9 Q Did you consult any published sources concerning
10 yields in water shortages?
- 11 A I believe that I already referred you to two of
12 the articles, and there are possibly more.
- 13 Q I direct your attention to Table 12 on Page 23 of
14 Exhibit C-278.
- 15 A Yes, I see that table.
- 16 Q Okay. Did you use the same method you described
17 with respect to the Type VIII lands to determine
18 the on-farm irrigation costs for the Type VII lands?
- 19 A Yes, I did. I believe it's, in fact, the same table --
20 excuse me, I beg your pardon, I was answering too
21 quickly. I was answering just for the sprinklers,
22 and I neglected to look at the portion of the table
23 that refers to flood, and we did not do a calculation
24 for flood irrigation for the Type VIII lands, only
25 dornbusch-cross-merrill



1 for VII.

2 Q Will you please explain how you did the flood
3 irrigation costs for Type VII lands? Let's start
4 with full irrigation.

5 A All right. For each crop we first recognized the
6 fact that we were going to need equipment for which
7 we had not already calculated the fixed costs and
8 the variable costs.

9 THE SPECIAL MASTER: Are you talking now about
10 the crops on Page 23, Table 12 in answer to Mr.
11 Merrill's earlier question on that table?

12 Are we still on Table 12, Mr. Merrill?

13 MR. MERRILL: Yes, Your Honor, we are.

14 THE SPECIAL MASTER: Yes?

15 THE WITNESS: Yes, Up to this point we have
16 only been talking about sprinkler irrigation, and
17 my calculations have only been for sprinkler irrigation.
18 We are now talking about flood irrigation. To
19 operate a flood irrigation system, you require
20 equipment that I have not already discussed and
21 calculated the fixed and variable costs. So it
22 requires some additional equipment.

23 Q (By Mr. Merrill) Why don't you describe to the
24 Court what kind of equipment you are talking about.

25 dornbusch-cross-merrill



1 A Okay. For the flood irrigation you require a
2 ditcher, siphon, and gaited pipes, siphon tubes
3 and gaited pipe. It's just -- I need the fixed
4 and variable costs for this equipment I hadn't
5 gotten already.

6 THE SPECIAL MASTER: Those cost figures are
7 considerably lower certainly than the full irrigation
8 sprinkler for the same place, are they not?

9 THE WITNESS: That's right.

10 THE SPECIAL MASTER: Why then are they listed
11 higher on Page 23? If you can grow alfalfa for \$7.48
12 an acre with full irrigation sprinkler, why would
13 you want to use flood surface and have it cost seven
14 eighty?

15 THE WITNESS: I believe the problem is you have
16 some constraints of the land.

17 THE SPECIAL MASTER: Constraints of the land?
18 Couldn't it be you got some constraints on some
19 water use? You may have it flooded in some months
20 and it's scarce two months later?

21 THE WITNESS: Well, I think the question was
22 better directed to the engineers. They were the
23 ones that advised us as to where we would use flood
24 irrigation and where sprinkler irrigation, and they

25 dornbusch-cross-merrill



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were the ones that made that decision.

THE SPECIAL MASTER: On idle lands why would it cost \$5.70 with hand-move and side-roll sprinkler systems --

THE WITNESS: I believe hand-move.

THE SPECIAL MASTER: -- and end up paying \$7.21 when you are flooding the same place and you can flood it with shovels and some siphons and a ditch and nothing else? Why would it cost \$2 more?

THE WITNESS: That's right. There is a lot of labor in there. There is that extra -- there's that equipment that is required. You must open the ditch, perform the irrigations, close the ditch. You have the tractors and the implements to do that and you have the labor.

THE SPECIAL MASTER: Is there a breakdown of the figures that you have in additional costs when you surface irrigate compared to the cost when you sprinkler -- which would show the sprinkler costs run an awful lot of energy cost for your pumping?

THE WITNESS: Oh, okay. The energy costs, the energy costs show up in that system cost that you have for delivering the water.

THE SPECIAL MASTER: So it would be included
dornbusch-cross-merrill



1 in the surface figure also, is that right, the
2 energy costs?

3 THE WITNESS: Yes.

4 THE SPECIAL MASTER: To get the water to the
5 ditches?

6 THE WITNESS: To provide the energy required
7 to get water to the ditches.

8 THE SPECIAL MASTER: Okay. Thank you, Mr. Merrill.

9 Q (By Mr. Merrill) Mr. Dornbusch, in determining the
10 labor requirements for surface irrigation, did you
11 opportunity cost them in the same methods and using
12 the same proportions as for sprinkler irrigation?

13 A I handled the labor the same way, that's right.

14 Q Would you please describe the distinctions --

15 A Wait, I'm thinking about your question. I'm
16 wondering exactly what you meant. Could you re-
17 state your question?

18 Q Yes. In determining the irrigation on -- on-farm
19 irrigation costs for the Type VII lands -- I'm
20 referring to Table 12, Page 23 of Exhibit C-278 --
21 did you opportunity cost the labor required for
22 flood irrigation in the same and using the same
23 proportions -- I'm referring to the 80 percent and
24 so forth --

25 dornbusch-cross;merrill



- 1 A Just one proportion, that's what confused me.
- 2 All right.
- 3 Q -- as you did in computing the sprinkler irrigation
- 4 labor costs?
- 5 A Well, let me just answer simply that I used an 80
- 6 percent opportunity cost of the labor in the flood
- 7 irrigation.
- 8 Q That's for all labor and flood irrigation, is that
- 9 correct?
- 10 A Not the management labor. The management labor I
- 11 handled the same way as I explained before.
- 12 Q Okay. Could you please describe to the Court the
- 13 distinctions in your analysis to determine the
- 14 on-farm irrigation costs for flood irrigation in
- 15 water short years?
- 16 A Well, if I understand your question, the distinction
- 17 is in the number of times you irrigate. When you run
- 18 out of water you stop irrigating. Is that what you
- 19 are referring to?
- 20 Q Uh-huh. How many flood irrigations do your figures
- 21 on Table 12 assume, first, for full irrigation?
- 22 A For malt barley, five irrigations, full water;
- 23 for the nurse barley and nurse oat hay, full water,
- 24 six irrigations; for alfalfa, full water, four
- 25 dornbusch-cross-merrill



1 irrigations; for alfalfa and hay land, water short,
2 two irrigations; for --

3 THE SPECIAL MASTER: Alfalfa and hay lands,
4 water short?

5 THE WITNESS: Right.

6 THE SPECIAL MASTER: You don't have a category
7 like that on Table 12, but go ahead.

8 MR. MERRILL: I believe he does, Your Honor,
9 under Class 4.

10 THE WITNESS: Grass hay lands, Your Honor.

11 THE SPECIAL MASTER: All right, thank you. How
12 many, four times?

13 THE WITNESS: For partial water, two times.

14 THE SPECIAL MASTER: Okay.

15 THE WITNESS: For nurse oat hay, partial water,
16 three times.

17 Q Are the number of irrigations for nurse oat hay the
18 same for Class 4 lands as for Classes 1 through 3?
19 That would apply only to the water short.

20 A I'm sorry, would you repeat that question, please?

21 Q Let me rephrase it because I saw part of it didn't
22 make sense upon looking at your table. Did you
23 also use -- you said you used three irrigations for
24 nurse oat hay, and I'm wondering for water short

25 dornbusch-cross-merrill



1 surface irrigations. My question is: Is that the
2 same number of irrigations for Classes 1 through 3
3 as Class 4? I note you have the same cost figure.

4 A For water short?

5 Q Yes.

6 A Yes, I believe that's right.

7 Q Okay. I think the one figure you haven't told me
8 is grass hay land, full irrigation.

9 A Hay land, full irrigation, five times.

10 Q Thank you. I direct your attention to Table 14 on
11 Page 35 of Exhibit C-278.

12 A Page -- excuse me?

13 Q Thirty-five. Would you please describe to the Court
14 how you determined the transportation costs shown on
15 Table 14?

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dornbusch-cross-merrill



1 A. Okay. To begin with, to understand what we're doing here,
2 we were concerned about the fact that in the situation
3 where you had widely dispersed parcels, that there might be
4 an additional cost for just moving the equipment to those
5 parcels, over and above the normal movement costs that
6 you generally incur anyway in going to those fields.

7 Q (By Mr. Merrill) Are those normal moving costs included
8 in your ordinary crop budgets?

9 A. Yes, they are.

10 Q. Okay.

11 A. So this is to calculate additional costs of movement,
12 okay, recognizing that there would be clusters of acreage
13 that would be an efficient utilization of all equipment
14 and, of course, it varies for equipment.

15 Some equipment only requires a few hundred acres to
16 be fully utilized. Other equipment requires far more
17 acres to be fully utilized because it's used less.

18 We took the most conservative approach. By that,
19 I mean we took the largest number of acres, figuring that,
20 just to simplify our calculations.

21 Q. Okay.

22 A. And this would result in the higher cost -- highest cost,
23 and we then checked them out, and we determined for the
24 Category VII lands what those clusters were and identified

25 dornbusch - cross - merrill



1 how those clusters might conceivably be farmed and then
2 checked the distances, the added distances, that might be
3 expected and measured the distances, the average distances.

4 We found that we'd be hauling equipment an extra 5
5 miles each way, so it was necessary, we felt, to add a cost
6 for moving equipment an additional 10 miles.

7 Q Is that for each acre of land over the whole season?

8 A It's 10 miles for each time you have to move the equipment
9 to that acre for its operation on that acre. It comes out
10 to be .33 miles per acre.

11 Q Does that apply to all of the pieces of equipment shown
12 on Table 14?

13 A Yes, that's right, it does.

14 Q Do these figures include all of the variable costs
15 associated with moving the equipment?

16 A That's right, variable cost.

17 Q Do I understand correctly that the distance you would have
18 to move each piece of equipment is the same over the grow-
19 ing season, or would you have to move, for example, a
20 truck more often than a tractor?

21 THE SPECIAL MASTER: I don't understand that ques-
22 tion. I can't imagine -- Do you understand the question?

23 THE WITNESS: I'm not sure I do.

24 MR. MERRILL: ~~WITNESS~~: I'll rephrase it, Your Honor.

25 dornbusch - cross - merrill



1 Q (By Mr. Merrill) Is it correct that you -- Strike that and
2 let me start over.

3 THE SPECIAL MASTER: These are all fields not in the
4 Federal Irrigation Project, you know?

5 MR. MERRILL: I understand that, Your Honor. The
6 witness has testified, as I understand it, that he would
7 move each piece of equipment .33 miles per acre.

8 THE SPECIAL MASTER: Of his mean.

9 THE WITNESS: That was the average, right.

10 THE SPECIAL MASTER: The average figure.

11 MR. MERRILL: My question is: Does that .33 apply
12 to all of the equipment --

13 THE SPECIAL MASTER: He answered that and said, yes,
14 it does.

15 A That's the miles per acre times the number of -- and then
16 you must multiply that by the number of movements that
17 each piece of equipment requires.

18 THE SPECIAL MASTER: And I think Mr. Merrill's ques-
19 tion dealt with does every piece of equipment get moved
20 the same distance each year?

21 MR. MERRILL: That's correct.

22 A And the answer is obviously no. Each piece of equipment
23 is required a different number of times for each crop
24 operation, and we moved it according to what you see in

25 dornbusch - cross - merrill



1 the crop budgets.

2 Q (By Mr. Merrill) In determining the additional variable
3 costs for transportaion, did you use the same costs of the
4 inputs, for example, fuel and so forth, as you did in
5 computing the variable costs in your crop budgets?

6 A Let me check. I think for the most part we did. I think
7 there might have been some exceptions.

8 THE SPECIAL MASTER: Next question, Mr. Merrill.

9 Q (By Mr. Merrill) Do you know what the exceptions are?

10 A Well, when you are hauling the equipment, you are not
11 operating it on a field and you are requiring less fuel
12 consumption, so the concept was the same, but we are using
13 the lower fuel consumption rate according to Doug Agee.

14 Q Did you adjust any other variable costs besides fuel for
15 the transportation costs?

16 A I don't believe so.

17 Q I direct your attention to Table 18 on Page 41 of Exhibit
18 C-278.

19 THE WITNESS: Excuse me, Your Honor. I was wondering
20 if we might take a short break?

21 THE SPECIAL MASTER: Do you want to take a break?
22 It's fifteen to twelve. Let's go to lunch. We will be
23 back at 1:30. I'm sorry about that. We should have taken
24 another break.

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1 THE WITNESS: Are we going to be going tomorrow?

2 THE SPECIAL MASTER: I don't think we are going to go
3 tomorrow.

4 MR. MERRILL: My understanding was that we were not,
5 Your Honor.

6 THE SPECIAL MASTER: We'll be back at 1:30.

7 MR. ECHOHAWK: May I inquire of Mr. Merrill, are we
8 going to finish today?

9 MR. MERRILL: Your Honor, I'm almost done with Table
10 18. What I was about to start on were the last group of
11 questions that I have with respect to Mr. Dornbusch's
12 analysis shown in Exhibit C-278.

13 I have several other areas of questioning, and I pre-
14 sume that we'll come back --

15 THE SPECIAL MASTER: I don't want to order that the
16 cross-examination must stop at 5:00 this afternoon, but I
17 know that if Mr. Merrill can get it done today, that he
18 will.

19 Is that not about right?

20 MR. MERRILL: Absolutely.

21 MR. ROGERS: But if it does not finish at 5:00
22 today, we still will not go tomorrow?

23 THE SPECIAL MASTER: That is the way I want to do it
24 unless I get somebody hitting me over the head to show
25 that I'm doing an unjust act.



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MR. ROGERS: I just wanted to be sure.

(Proceedings recessed until
1:30 p.m.)

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