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File 120
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Case # 4993

File # 120

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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 WYO-)
MING.)

Civil No. 4993

FILED _____

2/25 1981

Margaret V. Hampton CLERK
DEPUTY

VOLUME 13

Afternoon Session

Tuesday, February 10, 1981

ORIGINAL

1 THE SPECIAL MASTER: Are you ready,
2 Sandy?

3 MR. WHITE: I am, sir.

4 THE SPECIAL MASTER: Very well. Okay.
5 Let's come to order.

6 Mr. White.

7 MR. WHITE: Thank you, Your Honor.

8 CROSS-EXAMINATION (RESUMED)

9 BY MR. WHITE:

10 Q Mr. Kersich, you may recall the cross-examination,
11 or do you recall the cross-examination yesterday
12 in which we discussed your definition of arable
13 lands as well as the classes of lands as compared
14 with the Bureau of Reclamation, do you recall
15 that general cross-examination?

16 A Yes, I do.

17 Q I would like you now to turn to the formulation
18 of your land classification standards, are
19 those the standards which are in the United States
20 Exhibit C-36?

21 A Yes.

22 Q Did you formulate those standards in conformity
23 with the practice of the Bureau of Reclamation?

24 A Reasonably close, yes.

25 kersich-cross-white

Q 1 Would you take Exhibit SK-5, the portion of the
2 Bureau of Reclamation manual --
3 A Just a minute, please.
4 Q Okay.
5 A Okay.
6 Q And turn to page 115.3.1.C.
7 A Okay.
8 Q Do you want to hold on just a minute?
9 At the bottom paragraph capital A general --
10 and it carries over to the next page.
11 A Uh-huh.
12 Q Have you found that?
13 A Yes, sir.
14 Q Would you please read that?
15 A "General. The land classification defining
16 the arable area shall be based upon integrating
17 land, agronomic, environmental, social economic
18 relationships, primarily for characterization
19 of the lands and for economic purposes. Although
20 the distinction between land classes will be
21 on physical features, the mapping specifications
22 which express these differences will be developed
23 on the basis of economic factors. The final
24 irrigable area will be affected by additional
25 kersich-cross-white

1 economic, environmental, social and engineering
2 considerations involved in project formulation."

3 Q So when you got to the irrigable determinations
4 there are additional factors to be considered,
5 is that correct?

6 A That's correct.

7 Q In terms of the mapping specifications, those
8 according to the Bureau are included -- or
9 include economic factors?

10 A There are economic considerations included, yes.

11 Q What economic factors did you consider in the
12 development of your standards? Perhaps we
13 just could start -- well if you want to tell
14 me what economic factors you considered, go ahead.

15 A I think that's a good question and I would like
16 to tell you, really.

17 Q Sure.

18 A Because I think it is something we've got to
19 clear up at this point in time.

20 For example --

21 Q Go ahead.

22 A Surface -- I'm sorry, did you say something?

23 Q I said to go ahead. I was just grabbing my paper.

24 A For example, there are some inherent productivity
25 kersich-cross-white

1 and economic factors in any set of land
2 specifications. And if you will look on --
3 under soil, there is a difference of soil
4 depth for each of the three or four classes --
5 excuse me, four classes. Primarily it's been
6 realized by people in the industry that if you
7 have a deeper soil of better quality that you're
8 going to have more productivity with less
9 production costs or, at least, least production
10 costs. Therefore there has been a distinction
11 made between the amount of topsoil and the soil
12 depth, the profile depth. I'm talking now in
13 particular of the 48 inches that we really are
14 concerned about in the potential root cell in
15 each of these classifications.

16 The same thing has to do there. There is
17 an economic factor not directly but inherently
18 in moisture retention. If you have a soil that
19 is -- can retain more moisture within reason and
20 where the plants can take the moisture out of it,
21 you will have a less frequent irrigation cycle
22 required which will reduce your irrigation labor
23 and it will reduce your costs if you happen to
24 be sprinkling for example, you would have less
25 kersich-cross-white

1 power costs, for example, things of this nature.
2 Alkalinity and salinity, the least -- the less
3 of these salts and sodiums that you have that
4 might affect you in plant growth, the better
5 off you are. There is a distinction about the
6 allowable amount in each of the three classes,
7 for -- four classes, excuse me. Surface gravel
8 and cobble -- I'm on page 2 now. Class 1, for
9 example, says relatively free. Again, remember
10 that we are considering the top 12 inches. We
11 talked about surface gravel and cobble. Class 2
12 is moderately free but affecting tilt in some
13 management. And so on it goes. Each one has a
14 little higher deficiency. Topography and gravity,
15 it is zero to two percent for Class 1. Basically
16 that means you're going to have very little
17 leveling, you're going to be allowed little
18 longer runs on some of the laterals on your field
19 systems. Again there is some inherent economic
20 involved.

21 Surface leveling and graveling is not a
22 critical feature with sprinklers on mechanical
23 move systems, especially. Then field size, we
24 tried to break out for mechanical moves on

25 kersich-cross-white

1 sprinklers that for side rolls we looked at a
2 minimum of 40 acres although someone may put
3 a hand move or some other type of system in
4 there. For side roll it looks like about a
5 40 acre minimum was the most practicable or
6 was the least that you would go to. A hundred
7 acres minimum size for center pivot. That would
8 be 1,000 to 1,100 feet centers. Just about the
9 standard 130 acre size you'd get on a section.

10 Cover, in this particular instance was not
11 a big factor simply because cover -- there just
12 isn't any cover in any area we're talking about.
13 We've got some sagebrush and grass and things of
14 that nature. Then, finally, drainage. For any
15 surface drainage problems, they are to be
16 listed; if there weren't, that's fine.

17 With regard to drainage as I spoke yesterday,
18 we were looking at the three factors of drain
19 spacing, hydraulic conductivity and soil depth
20 to barrier.

21 Now, as I said, for our investigation with
22 the Bureau of Reclamation, they feel that in
23 Montana, Wyoming, these areas that you can't
24 space drains closer than 200 feet and develop --

25 kersich-cross-white

1 and not suffer an economic hardship. California,
2 they said it's been their experience they can
3 go down to 100 feet so those were some of the
4 factors that were put into develop productivity
5 and economic viability.

6 Q Did you have an economist up on your team that
7 helped you develop these standards?

8 A No, sir.

9 Q How did you determine in the words of the Bureau
10 then with respect to Class 1 that the standards
11 you used assured "the highest level of suitability
12 for continuous successful irrigation farming
13 measured in terms of the net income generated"?

14 A Well, I guess we'd better talk about this whole
15 program again because it is obvious people are
16 not understanding it. So if I might, just for
17 a second --

18 Q Go ahead.

19 A Good. It also says somewhere in the Bureau that
20 you first have to segregate the lands to give
21 someone a base to work on. I think that's been
22 pretty well accomplished.

23 Q Where does it say that?

24 A I can't remember right now but -- you've got to
25 kersich-cross-white

1 segregate the lands so the economist can begin
2 to do his study. The economist can't go out
3 and give you the answers before you have looked
4 at the lands and just from a practical
5 experience standpoint, you've got to give them
6 something to work on.

7 Now, from what my experience with the Bureau
8 indicated was that we -- and I keep saying Bureau,
9 I'm beginning to wonder here why are we referring
10 to the Bureau here because we are not doing a
11 Bureau study. Nevertheless, let's talk about it
12 for a moment. The particular lands that we
13 are talking about here, these lands that we've
14 got grouped in various classes according to
15 chemical and physical deficiencies, if any, are
16 being further reviewed in depth by an economist
17 and by an agricultural engineer and in many
18 respects they are undergoing quite a strenuous
19 test here because the agricultural engineer
20 is designing site specific systems to service
21 those and developing costs on a site specific
22 system.

23 Q Now, Mr. Kersich, aren't those the additional
24 economic and engineering works that lead up to
25 kersich-cross-white

1 the irrigable determination that the Corp talks
2 about in the language that you read?

3 A Well, how can you apply costs of production and
4 costs and returns and assign these figures if
5 you don't know what it costs you to pay for the
6 water, if you don't know what it costs you to pay
7 for the services putting the systems on the lands?

8 Q The Bureau does that.

9 A I think we are getting afield here. It doesn't --
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kersich-cross-white

1 Q (By Mr. White) (Continued) The Bureau does that,
2 don't they -- doesn't it, rather?

3 A Oh, I think we're doing it too. I'm having
4 trouble understanding the differentiation because
5 we're doing the same thing here.

6 Q I'm understanding -- having difficulty under-
7 standing how you feel that your system or your
8 procedures are the same or identical or similar
9 to the Bureau's when it doesn't meet the standards
10 set out in the Bureau manual. Are you saying this
11 is not a Bureau --

12 MR. SACHSE: I object.

13 THE SPECIAL MASTER: I will sustain the
14 objection.

15 MR. SACHSE: It's not what the --

16 THE SPECIAL MASTER: I'll sustain the
17 objection.

18 Q (By Mr. White) Let's delve into that. Did you
19 use the Bureau procedure or not?

20 A For some things we did, like testing the lands,
21 things of this nature, yes.

22 Q But you didn't use the procedures that we've gone
23 through in SK-4 and 5, did you?

24 A Now --

25 kersich -cross-white

1 THE SPECIAL MASTER: I would like to take
2 my own objection to that because he just read from
3 SK-5, as an economic and physical factor that the
4 land classification defining an arable shall be based
5 upon integrating various factors, one being the
6 economic relationship. He then went to great extent
7 to tell what economic factors he cranked into the
8 arability matter, so he has answered that. He does
9 indeed use the criteria that you specified and had
10 him read from in SK-5, Mr. White.

11 Q (By Mr. White) Mr. Kersich, then let's go to
12 the next question I asked after you gave that
13 answer, what you didn't answer, and that is how
14 did you determine in the economic analysis that
15 you went through for the standards, that these
16 standards for Class 1 would, in the words of the
17 Bureau, insure the "Highest level of suitability
18 for continuous successful irrigation farming,
19 measured in terms of net income generated"?

20 THE SPECIAL MASTER: Good question.

21 THE WITNESS: But the way we define Class 1
22 was not the Bureau's definition of Class 1.

23 Q (By Mr. White) Okay.

24 THE SPECIAL MASTER: That's what he wants to
25 kersich-cross-white

1 hear..

2 Q (By Mr. White) That's what I wanted to know.

3 A Okay.

4 Q So your classification definitions weren't the
5 Bureau's classification definition?

6 A That's correct.

7 Q The same thing true of arable land; is that
8 correct?

9 A Yes, I believe I testified to that yesterday.

10 Q I'm not sure we got --

11 A We defined arable land as land which is capable
12 of sustaining irrigation, and that's why we put
13 the definition in our report so that people would
14 understand what was meant by the way the term
15 was used here. We understood at that time that
16 that land base was to go, further studies which
17 were economic and engineering in nature, and
18 which may result in narrowing then of that land
19 base, and for example, in this study I think that's
20 the way it's going to prove out. I suspect, I
21 can't give you the final answer at this time
22 because that's not my domain, but I suspect that
23 of the 85,000 acres roughly that we are talking
24 about, arable, that the final claim will be based on
25 kersich-cross-white

1 something maybe 60 or 70 percent of that.

2 I can't --

3 Q But your definition of arable land was different
4 than that of the Bureau?

5 A Right.

6 Q Now, let's go back to the question again. What
7 did you do to determine that your standards for
8 Class 1, in the words of the Bureau: To insure
9 the highest level of suitability for continuous
10 and successful irrigation farming, measured in
11 terms of net income generated, or did you? If you
12 didn't, just tell me you didn't do it.

13 A That's what I'm trying to tell you.

14 Q You didn't do it, okay.

15 A That the physical characteristics of the soil
16 had been put together, they've been given to
17 an economist, they've been given to the Ag
18 engineer to determine the total cost of production
19 from our classification. The economist and the
20 engineer realized what deficiencies, if any,
21 may be there and in many instances under Class 1
22 there may be no deficiencies, no reportable
23 deficiencies.

24 Q So it's true then you made no determination with
25 kersich-cross-white

1 respect to net income as associated with your
2 land classification standards?

3 A We personally -- I personally did not. Other team
4 members are.

5 Q Now, the other team members, are those within
6 the team that helped you develop this arable
7 land base or are they persons of other firms that
8 were not involved in that arable land base
9 determination?

10 A I'm referring to Tom Stetson, who is the Ag
11 engineer on the team, and Mr. Dornbusch, who is
12 the economist for the team.

13 Q They were not part of your arable land base team;
14 is that correct?

15 A Other than receiving our input, no.
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END 11

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1 Q (By Mr. White) Would you turn to C-36, please,
2 your standards?

3 A Okay.

4 Q What were the facts and data upon which you based
5 the soil texture standards for Class 1 for --
6 well, Class 1, period?

7 A The texture was a review of the local area, what
8 we thought in our minds from our understanding of
9 irrigation would be acceptable for farming and
10 for water management practices and, finally, in
11 all of these various areas, we compared these
12 with specifications which had been previously
13 developed by the Bureau of Reclamation within this
14 general area.

15 Q Specifically what Bureau of Reclamation specifications
16 did you use?

17 A I don't recall all the standards. I'll try to
18 give you the three or four off the top of my head
19 that I know.

20 I think we had the standards from the 1947-48
21 study. We had the standards from that study in the
22 early sixties.

23 I know that we had the Muddy Ridge standards,
24 and there might have been two or three others that

25 kersich - cross - white

1 were involved in there.

2 I believe there was a reclassification of
3 the Cottonwood Bench area. I'd have to look into
4 that, but I do know that we had several sets of
5 standards that had been put together by the Bureau.

6 Q Did all of those standards have the same soil
7 texture for Class 1 that appears on --

8 A I don't recall. I'd have to go back and look at
9 it now. It's been quite some time since I looked
10 at them all, but they are close to these.

11 Q You don't know whether or not they are the same?

12 A Not without going back and checking the standards
13 specifically.

14 Q Soil texture in Class 2?

15 A The answer would be the same for that also.

16 Q Your texture standard is loamy sand to clay loam
17 and silt loam?

18 A Yes.

19 Q Were you aware of any areas which have, say,
20 a loamy sandy surface texture and where erosion
21 is a problem?

22 A No, I'm not aware where loamy sand textures were
23 found on the surface in any large areas. We did
24 have some loamy sand in the subsurface profile.

25 kersich - cross - which

1 Q So with respect to your surface texture of Class 2
2 lands, you didn't find very many loamy sand lands?

3 A. Not that I recall, no.

4 Q Are you familiar with the Bureau's experimental
5 farm on Cottonwood Bench?

6 A. No, I'm not.

7 Q Who talked to the Bureau people to get the Class 2
8 standard?

9 A. I don't recall at this time. You remember we
10 are going back over two years now roughly. Now
11 I'm sure Chick Smith would have talked to them.
12 I'm sure that -- well, I'm not sure, but I would
13 assume that Ross Waples may have talked to them
14 also.

15 We had numerous meetings on these standards
16 with the Bureau, including having them review them
17 after we put them together.

18 Q Were you present at those meetings?

19 A. I was across the hall, and the results of the meetings
20 were brought in to me directly.

21 Q And there was no report made to you of the failure
22 of the experimental farm?

23 A. The failure of the experimental farm, on what basis
24 did it fail?

25 kersich - cross - white

1 Q I'm asking you. Was any report given to you
2 about the failure of that farm?

3 A I don't know.

4 THE SPECIAL MASTER: Just answer the
5 question.

6 A. (By the Witness) I don't know of any failure of
7 the farm.

8 MR. ECHOHAWK: Objection, Your Honor. There's
9 been no showing of what the experimental farm is about,
10 the reason it failed or anything. I think it's
11 entirely improper for Mr. White to infer such things
12 when the facts aren't in the record yet.

13 THE SPECIAL MASTER: The objection is overruled.
14 He didn't get into the details about it. He only
15 asked if the experimental farm had failed, and the
16 answer can be yes, you knew, or you didn't. I
17 don't think in the record I should exclude the
18 question yet unless he proceeds further.

19 MR. WHITE: I'm through with the area, Your
20 Honor. I would ask more questions if he had known
21 about it.

22 Q (By Mr. White) From what source did you obtain
23 the soil texture standard for Class 3?

24 A Those would have been the same.

25 kersich - cross - white

- 1 Q. The same?
- 2 A. Yes.
- 3 Q. The same with respect to soil texture for Class 4?
- 4 A. That's correct. It all comes down to reviewing
5 what's been done in the area before and using our
6 own judgment and experience.
- 7 Q. I see you have a standard for soil depth to clean
8 sand, gravel or cobbles?
- 9 A. Yes.
- 10 Q. What do you mean by the term "clean"? Is there
11 any quantifiable standard?
- 12 A. Basically that's material classified as sand
13 that is roughly 85 percent sand or higher. I
14 can't remember exactly the percentages, and some
15 of the other finer materials with it.
- 16 Q. Would that 80 percent apply to gravels and cobbles
17 as well?
- 18 A. No, there could be different varying characteristics
19 or conclusions of those materials.
- 20 Q. What did you mean by the term "clean cobble" then?
- 21 A. Clean cobble, basically that's what we are saying
22 there is that we expect or could accept some of the
23 cobbles within that particular area. There was no
24 percentage there. That was part of judgment
25 kersich - cross - white

- 1 whether the cobble would be sufficient in
2 quantity to inhibit root growth or decrease
3 moisture holding capacity.
- 4 Q How did you interrelate your soil depth to clean
5 sands, gravel or cobbles for Class 3 to your other
6 standards for surface leveling for Class 3?
- 7 A To surface leveling for --
- 8 Q Back on the second page. It says surface, leveling,
9 and Class 3 says heavy leveling, maximum average
10 cut 0.88 feet.
- 11 A If you had an awful lot of leveling required and
12 a very thin mantle, you would have probably downgraded
13 those particular areas. If you had sufficient topsoil
14 to maybe be a larger class but it required heavy
15 leveling, then you may have downgraded that
16 particular tract to 3, you understand?
- 17 Q I understand.
- 18 A They work intimately, not separately.
- 19 Q So you did have an interrelationship and where
20 you had had heavy leveling, you went back and
21 checked to see whether or not after the leveling
22 you would still have an adequate soil depth to clean
23 sand, gravel or cobbles; is that correct?
- 24 A I can't say we went back and checked it all the
25 kersich - cross - white

1 time. That was a decision that was made many
2 times in the field and in some instances verified
3 by other land classifiers or even by myself.

4 Q On what occasions did you verify it yourself?

5 A Well, we went out in the field Friday to look at
6 a couple areas where we thought we might have a
7 very thin layer of soil, and as it turned out, we
8 didn't. We had good soil silt matrix below the
9 top 12 inches. There were some small gravels
10 present, but sufficient fines to do the job that
11 was required there with regards to root development
12 and moisture holding capacity.

13 Q Was this Class 3 land with a heavy leveling
14 requirement that you checked?

15 A I don't recall that it had a heavy leveling
16 requirement. It was Class 3 land.

17 Q Do you recall at any time that you went back and
18 checked where you had a heavy leveling requirement
19 in a thin soil?

20 A Not offhand I can't recall, no.

21 Q Under your standards for alkalinity of soils, what
22 do you mean by optimum drainage conditions?

23 A Normally coarse texture soils with few fines where
24 the sodium as it moves through the profile or is
25 kersich - cross - white

1 moved through the profile would not be able to
2 affect the clays and inhibit permeability.

3 Q Did you develop quantifiable standards or
4 quantified standards for that?

5 A These chemical standards relate very closely to
6 what work the Bureau has been doing in the area,
7 and that's why we had confidence in them.

8 Q What chemical standards did you use in that area?

9 A The ones that are listed here.

10 Q On the second page of your standards you have
11 surface gravel and cobble. Class 1 and Class 2 are
12 relatively free and moderately free with respect to --
13 do you have any quantifiable standards with respect
14 to what's meant by relatively free and moderately
15 free?

16 A No, some of this would depend on the field
17 classifier, and that's one of the reasons we try
18 to obtain people with a number of years of
19 experience in doing this.

20 I personally didn't see such cobble on the
21 surface or in my inspections of the areas, and in
22 the holes that I did dig, we did find gravel, but
23 remembering that gravel is defined as up to three
24 inches, that's not very big.

25 kersich - cross - white

1 Q Mr. Kersich, with respect to your slope standards --

2 A Yes.

3 Q -- your sprinklers, what was the source of those
4 percentage standards?

5 A Well, I can't recall the exact source. It may
6 have been the specifications that the Bureau used
7 on Muddy Ridge, but I'd have to go ahead and take
8 another look at that. They are reasonably conservative
9 though they are certainly not alarming to anyone
10 that has done sprinkler irrigation.

11 Q Are you aware of other standards that have
12 percentage of slope as high as 20 percent for
13 sprinkler irrigation?

14 A It would take me a minute to think about this, but
15 as far as under Class 3 lands at the 20 percent,
16 yes, I think I have. I'd have to go back and look
17 at the standards I saw that the Bureau used in the
18 Columbia Basin, but as I recall, those were either
19 approaching 20 percent or at 20 percent. It's
20 obvious from inspection of the Columbia Basin that
21 they are irrigating slopes steeper than 20 percent
22 with success.

23 Q Have you done land classification work in the
24 Columbia Basin on those lands?

25 kersich - cross - white

1 A. No, but we did spend some time out there with
2 the Bureau of Reclamation people at the Ephrata
3 office looking at various sandy areas and
4 sprinkler applications that were being utilized
5 there.

6 Q. Is that an area that's similar to the Wind River
7 Indian Reservation area?

8 A. In what respect do you mean by similar?

9 Q. In any respect.

10 A. Well, it's undeveloped land in many places.

11 THE SPECIAL MASTER: You mean topographically,
12 don't you?

13 THE WITNESS: It's rolling. It certainly has
14 a different climate, of course.

15 THE SPECIAL MASTER: Does your experience lead
16 you to know of areas where there has been irrigation
17 of lands on a 20 percent slope in the Rocky Mountain
18 Arid West?

19 THE WITNESS: Yes.

20 THE SPECIAL MASTER: I'd be interested in
21 seeing some of those.

22 THE WITNESS: I have some pictures that, if I
23 can find those, I could maybe send you sometime.

24 THE SPECIAL MASTER: The only 20 percent
25 kersich - cross - white

1 slopes I'm familiar with are those that have
2 grown wine grapes over the centuries and only
3 that's done with terracing and very serious
4 terracing to catch the moisture and hold it on a
5 slope that's that steep.

6 THE WITNESS: When you get into a slope that
7 steep, you have to be very concerned with the
8 surface texture so that your rate of application
9 of water and the rate of infiltration or the rate
10 that the soil will accept the moisture can be matched
11 up, but it's entirely possible to go ahead and
12 irrigate slopes that steep and --

13 THE SPECIAL MASTER: What percentage --
14 pardon me, Mr. White.

15 MR. WHITE: That's all right.

16 THE SPECIAL MASTER: What percentage of the
17 Class 3 lands you have designated on these exhibits
18 today would you say fall into the category of having
19 that 15 to 20 percent slope? Certainly it can't
20 be very much of it, can it?

21 THE WITNESS: No, there's not very much. I'm
22 not sure that there's any that meets it. That was
23 a parameter that was set up, and I don't recall just
24 offhand any slopes that we finally certified for

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arability that were up to 20 percent.

* * * * *

kersich - cross - white

1 Q (By Mr. White) With respect to surface leveling,
2 did you determine the current costs of leveling
3 or excavation?

4 A No. This one we used almost directly from the
5 Bureau. The Bureau had some costs in the area.
6 We worked with them on it trying to develop
7 their information and these very closely
8 approximate what they had broken out.

9 Q On what date?

10 A I can't remember exactly. I would have to go
11 back and look at the Muddy Ridge and Cottonwood
12 Bench work. This, of course, is, you know,
13 subject to further review. This is the land
14 classifier's best estimate. It is subject to
15 further review by the engineer and the economist
16 later.

17 Q Under your surface standards for sprinklers on
18 the second page of your Exhibit C-36, does not
19 the applicable language that extends through
20 all four classes infer that leveling will not
21 be required under any circumstances for sprinkler
22 irrigation?

23 A Your leveling will not be required for the field
24 size we are talking about here. There may be some

25 kersich-cross-white

1 individual smoothing that may have to take place.

2 THE SPECIAL MASTER: While we're on
3 that exhibit give me the language again of the
4 footnote four, page 3, please, on the actual
5 original exhibit.

6 THE WITNESS: Four says no drainage
7 requirement is necessary for lands and then, sir,
8 that should be --

9 THE SPECIAL MASTER: Yes, I have it too.
10 Okay. Thank you.

11 Okay, Mr. White.

12 Q (By Mr. White) Which portion of the table itself
13 did that footnote apply to, was it the last two?

14 A I have it on the last page, Mr. White, and then
15 under Class 4 I have the footnote 4 on the portion
16 that read "at least .10 inches per hour, at least
17 6 feet."

18 Q Okay. And I can't remember, did you make the
19 change or did you make no change to the footnote 2?

20 THE SPECIAL MASTER: No change.

21 A I changed that one word irrigable to arable and
22 then --

23 THE SPECIAL MASTER: You changed it right
24 back to irrigable.

25 kersich-cross-white

1 THE WITNESS: No, sir, I didn't. I
2 didn't think I did.

3 THE SPECIAL MASTER: I thought you did.

4 MR. WHITE: There are two irrigables
5 there and I believe he changed the first irrigable
6 to arable. Is that correct, Al?

7 THE SPECIAL MASTER: I have a note
8 here. This witness said there is a mistake.
9 Then I had a note later on he corrected himself.
10 So I made the note STEP meaning leave it alone.

11 Q (By Mr. White) Now, on the Court's copy of Exhibit
12 C-36 --

13 A Yes, I show it here as arable, sir.

14 Q The first irrigable becomes arable?

15 A Yes.

16 THE SPECIAL MASTER: The second one
17 is left alone?

18 MR. WHITE: Yes, sir.

19 THE WITNESS: Right.

20 THE SPECIAL MASTER: All right. Thank
21 you.

22 Q (By Mr. White) Now let's go back to the second
23 page, please, under surface leveling for sprinklers.
24 You indicated no leveling would be required for
25 kersich-cross-white

1 these field sizes?

2 A Basically, no leveling would be required for
3 the fields. Over the entire field there may be
4 some small land preparation that might be done,
5 but there was no specific requirement for
6 leveling.

7 Q Does land preparation include filling in gullies
8 or is that part of leveling?

9 A Let's define a gully. I'm not trying to be wise
10 and ask you questions, but I think there is
11 an understanding here that if you have the normal
12 rolling undulating terrain that we are talking
13 about out in that area and sprinklers can go
14 through it and you can get farm equipment over
15 it, you're not going to spend a lot of time
16 changing the character of your topsoil by
17 trying to level that field out completely.

18 Now there may be instances where you have to
19 do some minimal work in some of those gullies.

20 Q How deep would a gully have to be before you
21 would have to start doing that type of work?

22 A What type of equipment are you talking about,
23 Sandy?

24 Q I'm talking about whatever you assumed when you
25 kersich-cross-white

1 developed these standards.

2 A Well, I can't recall seeing many gullies that
3 are going to have to have much work done with
4 them out there. But side rolls or center pivots,
5 and as I recall, there were no center pivots ever
6 put in as the ag engineer designed, but it is
7 awful interesting to see what the manufacturers
8 tell you about the center pivots. For example,
9 they maintain they will go down a thirty percent
10 slope and up a thirty percent slope.

11 Q Okay. So you made no assumptions with respect
12 to the depth of the gullies that would have to
13 be filled or would require leveling, is that
14 correct?

15 A Well, there's one thing that maybe you ought to
16 think about and that is if the gully was so
17 steep and so wide as to create a problem, normally,
18 that would have been classified as Class 6 lands
19 and taken out of the tract. And then how the
20 ag engineer wanted to handle it. Whether he
21 wanted to put a system on each individual tract
22 or whether he wanted to go ahead and fill it in,
23 that would be part of his concept.

24 Q I see. So he might include Class 6 lands in
25 kersich-cross-white

1 a tract and just fill it in so the sprinkler would
2 go right across it?

3 A Well, many times Class 6 lands are included
4 in tracts depending on the field layout, the
5 farm layout and one thing and another. So, yes,
6 he may very well go ahead and either decide to
7 include it and provide some kind of a walkway for
8 his equipment to get across or maybe by looking
9 at it, he knows that his equipment could get
10 across that area, right.

11 Q Let's go to irrigation and pattern and field size,
12 please. I see no standards except for side roll
13 and center pivots, is that correct?

14 A Do you mean for a minimum size for side roll and
15 center pivot?

16 Q Right.

17 A Yes, that's listed there.

18 Q Those are the only ones for which you have a
19 minimum size?

20 A Yes.

21 Q And yet in your report you have indicated that
22 other types of sprinklers might be used?

23 A I believe, yes, I said that a person -- we're
24 talking here about either intermittent moves or

25 kersich-cross-white

1 continuous move and a person could irrigate
2 smaller tracts of lands, irregular shaped land
3 if they used a hand move or a solid set type
4 of sprinkler. To me that's very similar in
5 management still to a gravity system. That's
6 one reason I guess I don't differentiate that
7 and call that a sprinkler system.

8 Q So a hand move sprinkler system is like a
9 rainbird on the end of the hose, is that what
10 you're talking about?

11 A It could be this or it could be an awful lot
12 of aluminum pipe put on a little wagon and
13 trundled out to your field. You assemble it.
14 If you have risers and tie it to a water source,
15 a little pump running out of your ditch, or
16 something like that. Again, going back to my
17 past experience, I have seen many times where you
18 have a lateral on a side of a hill and the hill
19 is rather steep and they just drop pipe out of
20 the ditch and use the natural grade as the
21 pressure. They do a pretty good job of
22 irrigating many times.

23 Q That's generally for pasture land, isn't it?

24 A That's pasture but you can make hay on that.

25 kersich-cross-white

1 I've seen hay fields, again back to the Columbia
2 Basin.

3 Q What do you mean by solid set sprinklers?

4 A That would be a sprinkler that would be tied
5 down -- there is a system that is manufactured
6 for alfalfa where they vary the pipe and have
7 what they call alfalfa risers. I'm not sure
8 there's one in the Big Horn Basin but I know
9 they are manufactured and I know they are used
10 in places. That would, in fact, be a solid
11 set. In other words, you didn't pick it up
12 all the time. Another solid set would be if
13 you had grapes or some type of orchard crop,
14 you know what I mean.

15 Q Uh-huh.

16 A In other words, the facility is buried, it's
17 not moveable.

18 Q Would you refer to Table 8 of your report which
19 was --

20 THE SPECIAL MASTER: May I ask a
21 question before you get through this?

22 MR. WHITE: Yes, sir.

23 THE SPECIAL MASTER: Define for us a
24 point roll.

25 kersich-cross-white

1 THE WITNESS: Sir?

2 THE SPECIAL MASTER: What's a point
3 roll.

4 A It is when the field, the tract that you're
5 working with comes to a sharp point or a series
6 of points which may give you a problem of
7 irrigating there.

8 THE SPECIAL MASTER: Right. Thank you.
9 What did you call for?

10 MR. WHITE: C-43, Your Honor, the
11 report, Table 8.

12 Q (By Mr. White) I see the hand move and solid
13 set sprinklers described in footnote 1 under
14 gravity.

15 (Witness nodding head
16 affirmative.)

17 Q Do those types of sprinklers play any role in
18 the lands which you have described as additional
19 sprinkler lands or are those types of sprinklers
20 limited to gravity?

21 A that type of sprinkler, of course, could be used
22 anywhere so it could be used on additional
23 sprinkler lands, but the lands that we're calling
24 additional sprinkler here are lands which are
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large enough and pass the criteria for either
a side roll or a continuous move.

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- 1 A (continued) But that's not to preclude a person
2 from not using a hand move on that particular
3 tract of land.
- 4 Q In Table 8, I see that there are, for Big Horn
5 Flats, 6,088 acres of Class 2 land gravity, and
6 then 191 additional Class 2 lands under sprinkler,
7 additional sprinkler.
- 8 A Yes.
- 9 Q Do these exhibits, the large area maps that you
10 have been talking about, show the location of
11 those additional sprinkler lands?
- 12 A They show the location of all the sprinkler
13 lands.
- 14 Q How would you find the, let's say off of Exhibit
15 C-49, which is up on the tripod now. Where are
16 the 191 acres of additional sprinkler lands
17 located?
- 18 A That particular 191 acres?
- 19 Q Yeah.
- 20 A I couldn't find that unless we went to the book-
21 keeping procedure I described to you at the
22 depositions.
- 23 Q With the exception of Owl Creek, would your
24 answer be the same for all the other additional
25 kersich-cross-white

1 sprinkler lands that are listed on Table 8?

2 A Yes. On Owl Creek there are no gravity lands,
3 all the lands are sprinkler categories.

4 Q But you couldn't point out those additional
5 sprinkler lands on that map; is that correct?

6 A That's correct.

7 THE SPECIAL MASTER: I'd like to ask a
8 few questions.

9 MR. WHITE: Yes, sir.

10 THE SPECIAL MASTER: Mr. Kersich, if there
11 are 865 acres of Class 1 potentially arable on
12 Big Horn Flats, did you study how many actual
13 acres there are now of Class 1 on Big Horn Flats
14 historically being irrigated or have been over
15 the past decades?

16 THE WITNESS: There are no lands in this
17 particular area of the Big Horn Flats --

18 THE SPECIAL MASTER: None whatever?

19 THE WITNESS: -- that are being irrigated
20 now, sir.

21 THE SPECIAL MASTER: Do you know of any
22 reason why, if there are 865 acres of Class 1
23 arable lands, that they were not put into irrigation
24 in the past, in the decades past?

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1 THE WITNESS: I think --

2 THE SPECIAL MASTER: Or for that matter in
3 the North Crowheart area, South Crowheart or
4 any place else.

5 THE WITNESS: I think those reasons are
6 going to become evident when the agricultural
7 engineer and economic --

8 THE SPECIAL MASTER: All right, somebody
9 else's province, okay.

10 MR. WHITE: With respect to Mr. Kersich's
11 answer, I'd ask you to put a footnote in your notes
12 because that's the area we are going to cross-examine
13 Mr. Billstein about.

14 THE SPECIAL MASTER: All right. It's in
15 my head not my notes.

16 THE WITNESS: I think your note should go
17 in, we're talking about 865 acres of undeveloped lands.

18 THE SPECIAL MASTER: Oh, yes. It's all
19 undeveloped, all four classes?

20 THE WITNESS: As we noted this morning
21 there are some lands in the Big Horn Flats study area
22 along Sage Creek that, as I recall, are presently
23 being irrigated, and someone will be discussing that
24 during the future part of the trial.

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1 THE SPECIAL MASTER: Okay.

2 Q (By Mr. White) I want to make sure the record's
3 clear, Mr. Kersich, in the Big Horn Flats you
4 said that the 865 acres of Class 1 lands, which
5 are shown on Table 8 in Exhibit 43 include no
6 lands that are presently or historically irrigated;
7 is that correct?

8 A Well, that's -- that I've got to check, but the
9 purpose of this study is to only have the acreage
10 in it which is not being irrigated at the present
11 time.

12 Q So it could have been irrigated in the past and
13 still be in your arable land study?

14 A If it were irrigated in the past and irrigation
15 had ceased, there was no permit on it, you know,
16 or any authorization to use water, that may have
17 been included.

18 Now, whether or not there's some of that
19 acreage within the 865, I can't testify to that
20 now.

21 Q On the third page under drainage, your surface
22 standard, --

23 A Yes.

24 Q -- Class 2.

25 kersich-cross-white

1 A Yes.

2 Q What do you mean by "Relatively low cost"?

3 A Again, this is a judgmental thing, something that
4 a farmer would do just by going out with part
5 of his equipment, not putting any elaborate
6 ditches systems in that convey water around his
7 fields, things of this nature.

8 Q Whose judgment?

9 A The judgment of the classifier of the -- land
10 classifier and collective judgment of myself in
11 reviewing the lands.

12 Q Class 3 under surface drainage, you have "Expensive
13 but feasible". What's meant by "Expensive but
14 feasible"?

15 A There again, we're talking about where we have
16 a -- could have an irregular surface or a large
17 amount -- the area may be in a spot where a large
18 amount of water could be delivered to this
19 particular farm or this particular tract, and at
20 this point in time then we would realize that we'd
21 have to do more than just minimal work, we'd
22 bring to the attention of the agricultural
23 engineer to see whether he has to compute any
24 particular engineering structures, etcetera, to

25 kersich-cross-white

1 take care of that drainage around it.

2 Q So your land classifiers used the standards
3 and they decided what was expensive but feasible,
4 or did you, if you had that problem, did you go
5 to the agricultural engineer before you made a
6 determination?

7 A They make an initial determination and they
8 alert the agricultural engineer through the
9 soils characteristics.

10 Q So expensive but feasible again is the standards
11 that are applied, is a judgmental thing?

12 A Yes. I'd like to correct that answer. It's
13 judgmental but subject to further review.

14 Q Did you conduct any further review with respect
15 to that?

16 A We looked at a number of these lands, as I said,
17 out in the field, and in the aerial photographs
18 and we didn't find any particular tract where
19 surface drainage was going to be a particular
20 concern.

21 THE SPECIAL MASTER: Did you find any alkali
22 in that area --

23 THE WITNESS: Yes, we did.

24 THE SPECIAL MASTER: -- along that irrigation?

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1 Did that serve sort of as a caution that
2 maybe there'll be drainage problems again?

3 THE WITNESS: Yes, sir. In many of those
4 areas we discarded -- we have a number of areas
5 that we holes in from a standpoint of depth
6 to barrier, things of this nature that looked
7 okay from the standards, but those were discarded
8 and eliminated because high presence of salts and
9 high presence of sodium.

10 MR. WHITE: Your Honor, I need to get another
11 exhibit, I'm sorry. Were you going to ask another
12 question?

13 THE SPECIAL MASTER: Off the record.

14 (Off-the-record discussion.)

15 MR. WHITE: I didn't mean to interrupt your
16 questioning, Your Honor.

17 THE SPECIAL MASTER: We'll take five minutes.

18 (Thereupon a five minute
19 recess was taken.)

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End 14

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1 THE WITNESS: Could I clarify one answer
2 I gave?

3 THE SPECIAL MASTER: Yes.

4 THE WITNESS: There seems to be some
5 question about this 191 acres on Big Horn Flats, and
6 my answer said I couldn't point to the specific plot
7 today, but if I have to find those 191 acres, it can
8 be done by going back and working with the aerial
9 photographs and the tabulations made of each section
10 up there to locate those.

11 Q (By Mr. White) What kind of tabulations did
12 you make in each section?

13 A They are similar to some I have here for some
14 of those other questions I answered.

15 Q What is shown on those tabulations?

16 A Can I open one of these?

17 Q Oh, sure.

18 A Very good.

19 Q I'm not asking you for the contents. I'm asking
20 you for the type of information that's included
21 in that.

22 A Yes. The first thing that we have normally in
23 each one of these units that we have is the date,
24 the gravity, sprinkler, and the total by class

25 kersich-cross-white

1 for each of them plus totals.

2 Those totals are further broken up into
3 fee and trust, and then there is a column for
4 the Township we are working in here (indicating).

5 Q And then did you break it down by section?

6 A Basically, that's correct, yes. We go down and
7 we took each section and analyzed it for fee
8 and trust lands. Many times fee wasn't involved
9 like out in some of those areas, and we just
10 broke it down by section and plat, and you have
11 to look at the aerial photograph because the
12 actual totals are on the large aerial photographs,
13 and that is the way you would break it down to
14 determine that the 191 acres are there.

15 Q I see that you have tapes there, adding machine
16 tapes?

17 A Those are the check tapes to see that we have
18 included each of the tracts.

19 Q And then you added up all the subtotals under
20 trust for Classes 1 through 4 to get your total
21 arable lands?

22 A That's correct, yes. And that's the way it would
23 have to be done to be found exactly.

24 Q Rather than having you do it, I wonder if it
25 kersich-cross-white

1 would be possible for us to have copies of
2 those tabulations? That way we can do it and
3 save a lot of time in cross-examination.

4 MR. ECHOHAWK: That's fine with us. Do you
5 just want the particular one you looked at?

6 MR. WHITE: No, I would like all of them for
7 the arable land base. That way we don't have to
8 go through parcel by parcel.

9 THE SPECIAL MASTER: Do you want to subpoena
10 them?

11 MR. WHITE: I'm just asking if he would give
12 them to us. We are in trial --

13 MR. ECHOHAWK: We will make them available
14 for copying.

15 MR. WHITE: Sure.

16 THE WITNESS: I have a question. These
17 are originals here, and could I make one request?
18 When you make copies, if you are going to work off
19 of copies, I would like to send someone from my
20 office with you to make dang sure we get them back
21 because there's a lot of work involved in these.

22 MR. WHITE: We will just arrange for Ross to
23 go with them. Is that all right?

24 THE WITNESS: We have got another person back
25 kersich-cross-white

1 at the motel, Bill Johnson.

2 MR. WHITE: Perhaps that would be the thing
3 to do. We could do it within the afternoon.

4 THE SPECIAL MASTER: Why don't you take this,
5 Mr. White, and see if this is adequate?

6 MR. WHITE: If he has them all, we are going
7 to want them all because we have problems with
8 the acreage numbers.

9 MR. ECHOHAWK: Mr. Kersich may need to work
10 on this type of information tonight or --

11 MR. WHITE: That's why I was suggesting we
12 do it this afternoon during the trial since he
13 has someone that is not here and we have people
14 that are not here and we could just get it done
15 and not hold up the trial.

16 THE WITNESS: Either that or, Chick -- excuse
17 me, --

18 MR. WHITE: Let's go off the record.

19 (At this time an off-the-
20 record discussion was held.)

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24 End 15

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1 Q (By Mr. White) Now, are those all the tabulations
2 for your entire --

3 A There's North Crowheart, South Crowheart, Owl
4 Creek, Riverton East, Arapahoe and Big Horn
5 Flats.

6 THE SPECIAL MASTER: Six of them?

7 THE WITNESS: Those are all --

8 THE SPECIAL MASTER: All six of
9 them?

10 THE WITNESS: -- originals; yes, sir.

11 MR. WHITE: Could we take a minute --

12 THE WITNESS: Would it be all right if
13 I left and talked to those guys?

14 THE SPECIAL MASTER: All right. Take
15 five minutes.

16 MR. WHITE: I'm sorry for the interruption,
17 it will save us a lot of time.

18 THE SPECIAL MASTER: That's quite all
19 right.

20 (Brief recess,

21 THE SPECIAL MASTER: Shall we go back
22 on the record?

23 MR. ECHOHAWK: I'm still working --

24 (Off-the-record discussion,

25 kersich-cross-white

1 Q (By Mr. White) Mr. Kersich, footnote 3 on the
2 last page --

3 A Yes.

4 Q -- your standards?

5 A Yes.

6 Q Discusses 200 foot drain spacing?

7 A Yes, it does.

8 Q Do you know who you talked to in the Bureau that
9 approved the 200 foot drain spacing standard?

10 A I could look at my notes. I believe we have
11 a telephone memorandum on that.

12 Q Okay.

13 A Okay, this is a memorandum that Bob Taylor
14 called Jack Criss-- it appears to be Jack
15 Christopherson with the United States Bureau
16 of Reclamation and I'm sure this is in Denver.
17 And in there he discusses the depth of drain
18 and the permeability and a minimum drain spacing.

19 Q Could I see that memo, please?

20 A Certainly.

21 Q Why don't you take it out of your notebook.

22 A I'll take it out. No problem.

23 MR. ECHOHAWK: Could I see that, Sandy?

24 MR. WHITE: Sure.

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1 Q (By Mr. White) Do you know Mr. Christopherson's
2 position with the Bureau?

3 A I would have to check but I believe he is the
4 drainage engineer now in Denver. The fellow that --
5 Mr. Winger, I believe retired and I think he
6 replaced him so he has a relatively high
7 position in that type of work there.

8 Q I see. Your soil depth to barrier is 6 feet in
9 your standards?

10 A That's correct.

11 Q Isn't it true that your memorandum, which you've
12 kindly furnished me a copy with, indicates that
13 the Bureau uses depth to barrier of 8 feet which
14 in some cases was relaxed to 6 feet?

15 A That's correct.

16 MR. WHITE: Here's your memo back.

17 Q (By Mr. White) Why then did you go to 6 feet
18 rather than 8 feet in the next standard soil
19 depth to barrier?

20 A Because the depth of barrier is also a function
21 of hydraulic conductivity and if you have the
22 barrier located close to the surface and have a
23 real high conductivity, like you might have in
24 loamy sand or a texture of this type, it is
25 kersich-cross-white

1 possible to design drains with spaces in excess
2 of 200 feet. Now the initial classification
3 work, you're trying to establish land which
4 you are developing arable base. So you look
5 at this and you say, if it has drainage barriers
6 less than the depth of 6 feet as an average
7 throughout the parcels, you'd throw it out.

8 If it has a hydraulic conductivity of less than
9 a tenth of the weighted average of the material
10 above the barrier, you automatically throw it
11 out. But when you get to the final one, then
12 at this point in time, you go ahead and say okay,
13 I've got a hydraulic conductivity of this, I've
14 got a depth to barrier of that, what would my
15 drain spacing be, and it would come out greater
16 than 200 feet, you would leave it in knowing
17 that the agricultural engineer is getting the
18 same information you have, the hydraulic
19 conductivities, the deep hole logs, the logs
20 of any 10 foot hole, for example, in that area
21 or less and he would actually design the drain.
22 And as a consequence, you talk about economics.
23 Here we've got economics involved again. And
24 you don't know what system he puts on which will

25 kersich-cross-white

1 decide the eventual size of drains anyway
2 around the space because of the deep percolation
3 loss and some of the other things, so you're
4 giving the data to the engineers saying these
5 lands can at least meet this minimum criteria.
6 But you have to look at it and drain it, predicated
7 on the type of system that you put on.

8 Q I think I understand. You used the 6 foot even
9 though the Bureau said 8 but you gave the data --

10 THE WITNESS: Well, wait a minute.

11 THE SPECIAL MASTER: The Bureau said
12 6 to 8.

13 MR. WHITE: Wait, wait.

14 Q (By Mr. White) Would you read what it says there?

15 A I'll read it in the record.

16 Q Okay.

17 A A depth to barrier 8 foot which in some cases is
18 relaxed to 6 feet.

19 Q Okay. And you used the 6 foot depth but you
20 gave enough information to the agricultural
21 engineer so he could determine whether or not
22 the depth to barrier should be greater, is that
23 correct? Was that --

24 A The depth to barrier should be greater or

25 kersich-cross-white

1 what -- the most important thing here is the
2 spacing of the drains.

3 Q Okay.

4 A So this is what you do, is you work with him
5 many times and he eventually comes out with an
6 irrigation schedule which determines about how
7 much water the drains are going to have to
8 function with or which are going to be a function
9 of drains and knowing that he can determine
10 high drain spacing. Determining his drain
11 spacing, he determines the cost of his drainage.
12 Knowing the cost of his drainage, he works that
13 in the cost of his system. At that point in
14 time, if the -- that cost when it is added to
15 the other costs, if it exceeds the economic
16 returns, you don't worry about drains because
17 you don't have a project. You just discard
18 those lands.

19 Q In any event. --

20 A It is an iterative procedure basically.

21 Q In any event, you did not include any land
22 within your arable land base which had a depth
23 to barrier less than 6 feet, is that right?

24 A There are distances in there where you find
25 kersich-cross-white

1 where there's rock with a probe and you hit
2 it at 68 inches or 66 inches, you go over
3 here a few feet and you're down 11 feet to
4 barrier. Yes, you do include those, under-
5 standing that when you design your drains,
6 you'd design them to go through the rock. You
7 develop a gravel envelope around them and the
8 drains function. You might have -- there is no
9 way to assure that every piece is below 6 feet.
10 Many times there is because you go 30 feet and
11 not hit anything.

12 THE WITNESS: Can I put this away now?

13 MR. WHITE: Yeah.

14 Q (By Mr. White) As I recall, you did some soil
15 classification work on the Crow Reservation, is
16 that correct?

17 A Yes, HKM did.

18 Q Let me hand you what has been marked for identifi-
19 cation as SK-7 and ask you if that isn't the
20 soil classification standard which you used for
21 the Crow Reservation?

22 A Again, without going back and checking, I would
23 have to check against my copies.

24 Q You don't know whether these are the standards
25 kersich-cross-white

1 you used in the Crow Reservation?

2 A Well, I see nothing on here that says that they
3 are other than your word and I'm not disputing
4 your word, but I'm very cautious.

5 Q Okay, do you recall whether or not the soil
6 depth to barrier which you used in the Crow
7 Reservation was in fact a 20 foot minimum for
8 Class 1?

9 A That's right. And I've got to explain something
10 if I might, Mr. Counselor.

11 Q Sure.

12 A These are old standards. The work is not done.
13 The drainage that we were working at is much
14 different than what we are talking about now.
15 As a matter of fact, right now within our own
16 office we've been discussing the possibility of
17 going back and redrilling this area and reviewing
18 the internal drainage on the basis of the work
19 that we did with respect to the Wind River.(sic)

20 Q But you did use the 20 foot minimum depth to
21 barrier for Class 1 lands?

22 A At that time.

23 Q At that time?

24 A At that time.

25 kersich-cross-white

1 Q And 15 foot minimum for Class 2 lands?

2 THE SPECIAL MASTER: At what time was
3 that? What time?

4 Q (By Mr. White) What time?

5 A I'm going to have to check back.

6 THE SPECIAL MASTER: What year?

7 THE WITNESS: About '75, '76, I think.

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kersich-cross-white

1 THE SPECIAL MASTER: Are you reasonably
2 sure this was probably the one you used on the Crow
3 Reservation?

4 THE WITNESS: I would still like to look,
5 if I might.

6 THE SPECIAL MASTER: Where is Crow-Reser-
7 vation, Montana?

8 THE WITNESS: Yes, sir.

9 (Brief pause.)

10 Q (By Mr. White) Mr. Kersich, in Exhibit 36, your
11 land classification standards for the Wind River
12 Indian Reservation, do you make any provision
13 for lime?

14 A Well, we have a -- We got a provision for total
15 salts, yes.

16 Q And in what page is that?

17 A Under salinity.

18 Q And that's where lime would be included within
19 your standards?

20 A I'm not sure of that. I'd have to check that
21 over with one of my soils scientists or one of
22 my land classifiers.

23 Q Okay. We'll come back to that then.

24 THE SPECIAL MASTER: Let me ask a question.

25 kersich-cross-white

1 What's 4 MMHOS/CM?

2 THE WITNESS: Millimoves, it's a measurement
3 of electrical current.

4 THE SPECIAL MASTER: MHO, millimoves.

5 THE WITNESS: Millimoves is a reciprocal
6 of ohms, as I remember.

7 THE SPECIAL MASTER: That's right, but
8 what is the OS on the end, or is that whole
9 thing millimoves?

10 THE WITNESS: That's correct, the whole thing.

11 THE SPECIAL MASTER: What's the CM?

12 THE WITNESS: Per centimeter.

13 THE SPECIAL MASTER: I see. EC?

14 THE WITNESS: Electroconductivity.

15 THE SPECIAL MASTER: Okay, thank you.

16 Q (By Mr. White) How did you consider any potential
17 deficiencies, problems associated with erosion
18 in your standards?

19 A Erosion now from surface drainage, are you
20 talking about?

21 Q Yes.

22 A It's considered somewhat in slope, that's built
23 in. On our two percent slope you're going to
24 have minimal erosion problems.

25 kersich-cross-white

1 It's also considered under surface drainage,
2 and if there were any erosion problems, they're
3 pretty much judged by the land classifier in his
4 mind, and they're reported on the log or the
5 tract.

6 Q What part does crop selection play in the type
7 of erosion deficiencies that you may encounter
8 with a particular parcel of land?

9 A I'm not sure I understand that question, Mr.
10 White.

11 Q Well, if you plant a crop every year, aren't you
12 going to have a greater problem with erosion
13 that if you have alfalfa or hay that stays there
14 year round?

15 A Certainly.

16 Q How was that factored into your slope determination
17 or your slope standards?

18 A I don't think it's factored in your slope standards,
19 but in the cultivation pattern and cultural
20 practice that the farmer's going to have within
21 the area, he's going to concern himself with
22 erosion.

23 Also, the on-farm system is going to have
24 an awful lot to do with any erosion from the water

25 kersich-cross-white

1 applied by the farmer, of course.

2 Q I guess I must not have asked the question
3 the way I meant to. How is erosion taken care
4 of in your standards?

5 A The type of erosion that I understand you're
6 discussing about through cultivation is controlled
7 to a large extent by the cultural practices re-
8 quired for the crop, required for the area it
9 is.

10 I don't see it as a big issue here because
11 that's a cultural practice or can be handled by
12 cultural practices rather than pure land class-
13 ification.

14 Q That part is systems design rather than the land
15 classification?

16 A Part of the selection of the cropping pattern,
17 allowing for crops to be grown in areas like that,
18 but as we both know, the most important thing is
19 the management factor that's factored in the
20 handling of those types of areas within the project.

21 Q What do you mean "The management factor"?

22 A Well, we all know that farmers have to exhibit
23 good management to return good yields. That means
24 they have to plant the proper crops at the proper

25 kersich-cross-white

1 times; they have to harvest at the proper time,
2 they have to minimize soil loss, things of this
3 nature.

4 The SCS, as I recall, has been doing an
5 awful lot of work providing that type of manage-
6 ment to minimizing top soil erosion and to
7 maximize returns.

8 Q Did you do any flood plan analysis as part of
9 your land classification work?

10 A No, sir, we did not. Most of the lands that we
11 examined were in a relatively small drainage
12 where the lands we actually declared arable were
13 above, reasonably above any of the major
14 drainages.

15 Q What consideration, if any, did you give to
16 varying patterns of air drainage?

17 A Air drainage?

18 Q Air drainage within the Reservation.

19 A I don't recall that we did much in that respect.

20 Q Okay.

21 (Brief pause.)

22 Q And Mr. Kersich, during your deposition, you
23 indicated that, I believe the facts and data
24 upon which you based your conclusions as to arable

25 kersich-cross-white

1 land were the chemical analyses that you did,
2 the drainage tests that you did, the H.K.M.
3 soil logs and the tentative classifications
4 or observations by your field classifier; is
5 that correct?

6 A Plus my own personal reviews in checking some of
7 the work, yes.

8 Q Four things; chemical analyses, drainage tests,
9 soil logs, H.K.M. soil logs; tentative classi-
10 fications; is that correct?

11 A Aerial maps, the aerial photographs that have been
12 prepared, a review of the information on those
13 photographs and a field review of the information
14 testing some of the land classification judgments.

15 Q Did you bring your volume of township photo-
16 graphs with you?

17 A My workbook?

18 Q Yes, sir.

19 A Can I put these standards away for a minute?

20 Q You might as well leave them out; we may refer
21 to them. You don't need to have them right in
22 front of you.

23 THE SPECIAL MASTER: You're not offering
24 this yet?

25 kersich-cross-white

1 MR. WHITE: No, sir, Your Honor.

2 MR. ECHOHAWK: Your Honor, at this time,
3 if we are going to proceed to another area, if I
4 might, I'd like to inquire on the record where Mr.
5 White received this exhibit that he entitled WRIR SK-7.

6 MR. WHITE: I'm under no obligation to
7 explain that, Your Honor.

8 MR. ECHOHAWK: I understand --

9 THE SPECIAL MASTER: But you don't want to
10 do that at this stage of the hearing. We have been so
11 excellent in divulging the information and complying
12 with the letter in good spirit of counselling. Why do
13 you not wish to let him know where this SK-7 originates
14 from?

15 MR. WHITE: It may not be the set of standards.
16 I think Mr. Kersich ought to be given the opportunity --

17 THE SPECIAL MASTER: Mr. Kersich was asked,
18 were these your criteria used on the Crow Reservation,
19 on the work you did up there, and you said I'm not
20 going to answer that without checking my records up
21 there.

22 MR. WHITE: Once Mr. Kersich is able to
23 respond, if he indicates no, they're not his standards,
24 then I will either pull them or explain where I got them.
25 kersich-cross-white

1 MR. ECHOHAWK: The reason I'm concerned,
2 Your Honor, is Mr. White has represented that these
3 were the standards used on the Crow Indian Reservation
4 by work done by H.K.M., which would be contained
5 within a preliminary report which has not been accepted
6 by the United States and which is of a confidential
7 matter. We're very concerned of the confidential
8 information, that is not yet finalized by the United
9 States, has somehow been violated.

10 MR. WHITE: Your Honor, the point is I made
11 no representation, I asked him if those were the
12 standards.

13 THE SPECIAL MASTER: We'll cross that bridge
14 when we get to it. If you're going to object to its
15 admissibility on the breach of some confidential client/
16 attorney relationship --

17 MR. WHITE: In addition to that particular
18 concern, we do have other concerns which relate --

19 THE SPECIAL MASTER: We'll cross them when
20 the time comes, but we'll wait for the answer from you
21 to that question.

22 MR. WHITE: I was glad that Mr. Echohawk
23 made it on the record, as to the source.

24 THE SPECIAL MASTER: You gentlemen are getting
25 kersich-cross-white

1 tough all of a sudden.

2 Okay, next point on these maps.

3 Q (By Mr. White) Would you turn, please --

4 Would you turn, please to Township 2 North, 1 East.

5 A 2 North, 1 East.

6 Q Right. You might put a finger in another Town-
7 ship, 2 North, 1 West.

8 A Okay, they're both here.

9 THE SPECIAL MASTER: Mr. White, are these
10 touching on earlier specific --

11 MR. WHITE: No, sir, that is a new area of
12 inquiry.

13 THE SPECIAL MASTER: Thank you.

14 Q (By Mr. White) You should have 2 North, 1 West.

15 A Right there.

16 Q Okay. I refer you to that portion of land that
17 has 729 in parenthesis. Is that 729 acres?

18 A Yes.

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1 MR. WHITE: Now we can turn this around so
2 more people can see it.

3 THE SPECIAL MASTER: They can come up. Come
4 up and have a look, whoever has an interest.

5 Q (By Mr. White) Is that land that you classified
6 as Class 3 for sprinkler?

7 A Yes.

8 Q Could you point out where that land is located
9 on one of your area maps?

10 A Two North, 1 West -- what particular portion of
11 that area?

12 Q Well, it's the area that I asked you about,
13 729 acres.

14 A It would be the upper right-hand corner (indicating).

15 Q It's in this area right here (indicating)?

16 A Right here, sir (indicating).

17 Q Would you please explain how you determined the
18 depth to barrier of six feet for that 729 acres?

19 A Deep hole 103 shows 11 feet to sandstone.

20 Q And is that within the acreage outlined?

21 A It's right next to it.

22 Q Well, it's a couple miles away from portions of it,
23 isn't it?

24 A Yeah, yes, it could be.

25 kersich - cross - white

1 Q With respect to the portion of that 729 acres
2 located down here in Section 13, what basis did
3 you have to say that the depth to barrier for this
4 area was six feet?

5 A I don't see another hole on this sheet, but let
6 me take a look at 2 North and 1 East.

7 Here is a Bureau hole just a little distance
8 from that that I believe shows about a 14-foot
9 depth there.

10 Q Is that the depth to barrier, or is that the depth
11 to the bottom of the hole?

12 A Well, at this point in time I'd have to go check
13 the Bureau log.

14 Q Would you, please?

15 A I don't have it here with me.

16 THE WITNESS: Do we have those available?
17 May I ask a question off the record?

18 MR. WHITE: Off the record.

19 (Off-the-record discussion.)

20 THE SPECIAL MASTER: Let's go back on the
21 record.

22 Mr. White -- and Mr. Kersich, Mr. White has
23 asked you is that 14 feet the depth to barrier or
24 is that 14 feet to the bottom of the hole, and

25 kersich - cross - white

1 I asked what difference is it, and Mr. White I
2 think said in our discussion, "Well, it could have
3 gone through the barrier to 14 feet," and I say
4 to you: Is it possible that those 671 holes you
5 drilled that you drilled some holes which went through
6 barrier to bottom without reporting the fact that
7 you hit barrier?

8 THE WITNESS: That's correct. We wouldn't --
9 if we had had a barrier there, we would have
10 reported the barrier.

11 THE SPECIAL MASTER: Okay.

12 THE WITNESS: And normally that's Bureau
13 practice also. If they hit something where they
14 quit drilling, we would have gone to 30 feet if
15 there had been nothing there. So would we, for that
16 matter.

17 THE SPECIAL MASTER: Take it from there,
18 Mr. White.

19 Q (By Mr. White) How close is that hole to the
20 southern portion of that 729 acres? Isn't it
21 approximately a mile away?

22 A It's about a mile, yes. We also have a hole down
23 here, one of our holes, 102, which is ten feet
24 deep -- or 20 feet, excuse me -- no, wait a minute.

25 kersich - cross - white

1 It's 16 feet deep next to a Bureau hole that is
2 20 feet deep.

3 Q How far away is that from the 729-acre parcel?

4 A Well, let's see. That would be Section 7, it
5 appears to me. Would you agree with that? Section
6 7, it would be over in this area right here
7 (indicating). There's another one up in here
8 (indicating). We have another one over in here
9 (indicating).

10 Q That's at least three-quarters of a mile away,
11 isn't it?

12 A Right.

13 Q How did you determine that the depth to barrier
14 for that parcel was over six feet?

15 A Frankly, we found nothing in there that showed
16 the barrier was less than six feet.

17 Q So the presumption is that the barrier is six
18 feet unless you found something to the contrary?

19 THE SPECIAL MASTER: His criteria on all of
20 these is at least six feet, at least six feet in
21 each of all four instances.

22 MR. ECHOHAWK: I would like to inquire
23 whether Mr. White is prepared to prove in his
24 portion of the case whether or not there is a
25 kersich - cross - white

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problem with the barrier in that particular
situation.

MR. WHITE: Well, Mr. Echohawk will find out
when it comes to my portion of the case.

MR. ECHOHAWK: I presume that Mr. White is
prepared to do that.

THE WITNESS: Could I take a five-minute break?

THE SPECIAL MASTER: Let's take a five-
minute break.

(Thereupon a five-minute
recess was taken.)

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kersich - cross - white

1 THE SPECIAL MASTER: All right. Shall we
2 begin, ladies and gentlemen.

3 Mr. White.

4 Q (By Mr. White) Mr. Kersich, let's go back now to
5 the 729-acre parcel classified 3 sprinkler in
6 Section 1, 2, 11, 12, 13 and maybe a little bit
7 of 14 in Township 2 North, 1 West. Do you have
8 your plate in front of you?

9 A. Yes.

10 Q Isn't it true that there is no boring hole of
11 any type within the boundaries of that parcel?

12 A. There is a deep hole located within a few hundred
13 feet, I don't have a scale here, but of that,
14 portions of that parcel.

15 Q How far away is that deep hole from the southernmost
16 portion of that parcel in Section 13?

17 A. About a mile and a half.

18 Q There is no hole whatsoever in that parcel, is that
19 correct?

20 A. There is a Bureau hole that's located within a half
21 mile of that parcel or less, about a quarter of a
22 mile.

23 THE SPECIAL MASTER: You are artfully dodging
24 his question.

25 kersich - cross - white

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(Laughter.)

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THE WITNESS: Well, I'm --

3

MR. WHITE: I figured if I asked it enough --

4

THE SPECIAL MASTER: That's all right. You have to say where it is but then a yes or a no or a but could have been in order too. But that's all right. We understand each other.

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THE WITNESS: Can I finish the answer?

9

THE SPECIAL MASTER: Of course you can.

10

A. The point is that there are other indications that sandstone is less than six foot in depth in that area.

11

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Q (By Mr. White) You wouldn't know that from your Soil Log No. 7, which is the closest hole to the southern portion of that parcel, would you?

14

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A. May I look at my Soil Log No. 7?

17

Q. Sure.

18

THE WITNESS: Let me get it from the back of the room, please.

19

20

THE SPECIAL MASTER: Off the record.

21

(Off-the-record discussion.)

22

Q (By Mr. White) Your soil log, Soil Profile Log No. 7 which is the closest to the southern portion of that 729 acres only goes to 24 inches, doesn't it?

23

24

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kersich - cross - white

1 A That's right.

2 Q So you couldn't tell whether or not the barrier
3 was any closer than six feet from that hole, could
4 you?

5 A Not from that hole but there is one additional
6 bit of information that you're not taking into
7 consideration.

8 Q Okay.

9 A For example, in this Soil Log, look who it was
10 logged by. Mr. Waples, correct?

11 Q I don't know.

12 A It says RW up there, doesn't it, on your copy?

13 Q Is that Ross Waples?

14 A Yes. All right. This particular area was discussed.
15 Also in the Big Horn Flats area I believe it was
16 nine soil pits were dug to try to determine what's
17 happening with regard to gravel and where the
18 sandstone may be. Mr. Waples was on the ground he
19 felt from his own visual observations -- am I
20 bothering you, Mr. White?

21 MR. WHITE: No, I'm very interested in your
22 answer.

23 A Okay. He felt from his visual observations that
24 sandstone would not be within six feet of the surface.
25 kersich - cross - white

1 Q (By Mr. White) And that's how you decided that
2 729 acres that doesn't have a hole in it enjoyed
3 at least six foot to barrier?

4 A. There isn't any indication of barrier being less
5 than what we've got reported on our deep holes
6 where they are located around area. And I think as
7 the practical matter we can't drill a deep hole
8 on every particular tract.

9 Q Well, over in the next Township to the east,
10 that 729-acre parcel continues to another 102-
11 acre parcel, doesn't it?

12 A. Yes.

13 Are you talking -- now let me -- are you
14 talking about 2 North, 1 East, and you're talking
15 about Section 7, sir?

16 Q Let me look over your shoulder. My copy isn't very
17 strong.

18 A. Sure.

19 Q Section --

20 A. Section 13, right here.

21 Q Section 13. There is 102-acre parcel with no holes
22 whatsoever in that parcel, isn't there?

23 A. There's none indicated here, that's correct.

24 Q Why don't you turn to 3 North, 3 West?

25 kersich - cross - white

1 A. Okay.

2 THE SPECIAL MASTER: Give me sections too, if
3 you can, Mr. White.

4 MR. WHITE: I'm trying to figure them out from
5 the photograph, Your Honor.

6 THE SPECIAL MASTER: All right.

7 Q (By Mr. White) In Section 3 dropping into Section 10
8 and going over into Section 2 there's a 242-acre
9 tract, is that correct?

10 A. That's correct.

11 Q There are three holes shown in that tract, is that
12 correct?

13 A. There are probes, yes.

14 Q How deep are those probes?

15 A. One of them stopped at 12 inches -- one of them
16 shows stopping at 12 inches.

17 Q How deep are the other two?

18 A. I can't tell you at this time. But they were made
19 to ascertain the depth of the topsoil at that point
20 and there is a listing of the topsoil, so obviously
21 they were able to get deep enough to enable them
22 to determine the textures.

23 Q How many of your probes go six feet deep?

24 A. That would be very difficult to say but a probe
25 kersich - cross - white

1 is usually put in to make sure there have been
2 no change in the texture or the type of soil or
3 the land form at that particular place. And so
4 a probe is merely used to ascertain that it does
5 meet the classification that the classifier put
6 on it.

7 Q The probe holes are unlogged, aren't they?

8 A. They are not logged.

9 Q Unlogged, yes.

10 So isn't it true that you've classified as
11 for Class 3 sprinkler and Class 2 -- excuse me,
12 Class 3 gravity and Class 2 sprinkler that 242-acre tract
13 with no logged holes within the tract going to six
14 feet?

15 A. It is true that they classified -- the classifier on
16 that particular piece of property classified that
17 using probes to ascertain the soils and put the
18 necessary limitations on that he thought were there
19 for both Class 3 and Class 2.

20 One of the reasons he wouldn't necessarily
21 have not logged the hole is he found no difference
22 from anything around there. It was a uniform piece
23 of soil.

24 Q Do you have a log hole that shows that the depth
25 kersich - cross - white

1 to barrier is at least six feet as required by
2 your standard in that parcel?

3 A. In that particular parcel, no.

4 Q. Yes.

5 A. No. But it appears there may be some cut banks
6 or something in there which might tell them something
7 of that nature so all of these things have got to be
8 taken into consideration.

9 Q. Right.

10 Let's stay in the same Township, please.

11 A. Yes, sir.

12 Q. Go down to a 25-acre tract that appears to be
13 between the -- lying on the border of Section 1 --
14 excuse me, Section 2, Section 1 and Section 11 of
15 that Township, do you see that parcel?

16 A. Yes, uh-huh.

17 Q. Is that classified as 3 gravity?

18 A. It appears to be, yes.

19 Q. But 6 sprinkler?

20 A. Yes.

21 Q. How would it happen that land would be arable for
22 gravity but not for sprinkler?

23 A. It is 25 acres; it wouldn't go into our 40-acre
24 limitation so therefore it would have been Class 6

25 kersich - cross - white

1 for sprinkler. It is very clear to me.

2 Q Okay. I was just curious because of your no
3 minimum size limitation on your other type
4 sprinklers.

5 A All right, but didn't it come in on Class 3 gravity
6 and isn't it therefore being included in our Class
7 3 in your gravity?

8 Q Let's talk about the Class 3. Is there any kind
9 of hole in that parcel?

10 A No.

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kersich - cross - white

1 Q (By Mr. White) (Continued) Down just below it
 2 in Section 12 and overlapping a bit into Section 11
 3 is a 41-acre parcel.

4 A Yes.

5 Q You find that?

6 A Yes.

7 Q That's classified 3 gravity and 3 sprinkler; is
 8 that correct?

9 A That's correct. Um-hum.

10 Q Is there any hole whatsoever in that parcel?

11 A No.

12 Q And continuing on to the southeast in Section 12,
 13 do you find 118-acre parcel?

14 A Yes.

15 Q There is a hole there, isn't there?

16 A There's a probe of 12 inches, yes.

17 Q But there is no hole that goes, six feet deep; is
 18 there?

19 A Is there any need for it there?

20 THE SPECIAL MASTER: That's argumentative.

21 THE WITNESS: I'm sorry.

22 THE SPECIAL MASTER: Just answer his question;
 23 you don't have to argue with him.

24 THE WITNESS: No, but here again this is
 25 kersich - cross - white

1 a problem with the classifiers, and I guess one
2 thing we should do is look to the adjoining
3 Township to see if there might be some more
4 information there.

5 Q (By Mr. White) Go ahead.

6 A Okay. This is 3 North, 3 West.

7 (Brief pause.

8 A There's some holes, there's one hole that he augered
9 to, I believe it says 36 inches, gravel and augered
10 at 36 inches.

11 Q That within the 118-acre tract?

12 A That's in the larger tract at this point.

13 Q The answer's no?

14 A The answer is no. He made -- it appears that the
15 classification line there may be separating two
16 tracts, one which could be worked with sprinkler,
17 one which may not be.

18 Q I'm referring to the 118-acre tract.

19 A Yeah.

20 Q That's Class 3 for both sprinkler and gravity.

21 A No. There's no hole in that particular tract.

22 It just extends in the Township, in the
23 next Township slightly.

24 Q Would you please turn to Township 3 North, 1 West.

25 kersich - cross - white

1 THE SPECIAL MASTER: Section?

2 MR. WHITE: I think it's 32 and 29, Your Honor.

3 Q (By Mr. White) See a parcel comprising 129 acres,
4 Class 3 sprinkler. -- excuse me, Class 3 gravity,
5 2 sprinkler that --

6 A Seventy-seven acres for sprinkler.

7 Q Seventy-seven acres for sprinkler?

8 A That's correct. There's quite a difference in
9 parcel size.

10 Q There's a dotted line in that parcel. What does
11 that dotted line mean?

12 A That dotted line means for class, for the sprinkler
13 classification this particular portion located in
14 the north and extending on into the Section 29 was
15 cut off because it was neither of the size nor shape
16 that would be applicable to sprinklers.

17 Q And so you got 121 acres Class 3 gravity and 77
18 acres Class 2 sprinkler.

19 A Yes.

20 Q Is there a hole of any kind in that parcel?

21 A There's a probe right on the boundary between the
22 two.

23 Q Is that probe logged?

24 A No, but this is the results of the probe. He
25 kersich - cross - white

1 shows a light textured surface soil, a light
2 textured subsoil. He shows there's gravel in the
3 profile, there's a potential gradient and a J
4 factor, which is for size and shape.

5 Q How, from that symbol, based on the probe, how deep
6 did the person making the probe discover it was to
7 barrier?

8 A He didn't discover how deep it was to barrier, but
9 there were no evidences of surface problem. There
10 must have been good vegetation there, the very things
11 you look for as part of your overall classification
12 work.

13 Q Immediately to the southeast there's -- of that
14 parcel I just described again in Section 32, there's
15 the parcel of 24 acres that's Class 2.

16 A That's right.

17 Q Sprinkler.

18 A That's correct. It's Class 6 for gravity also.

19 Q Is there any hole of any description in that
20 parcel?

21 A No, but you know, it's kind of interesting, he does
22 call it, he calls it medium textured soils, medium
23 textured subsoils, gravel in the profile, and a
24 gradient. The gradient must have been sufficient

25 kersich - cross - white

1 to throw it out from a gravity standpoint.

2 THE SPECIAL MASTER: I have a question, if
3 not confusion running in my mind. If a probe is
4 rarely deeper than 12 inches --

5 THE WITNESS: No, no.

6 THE SPECIAL MASTER: Probes can be deeper than
7 12 inches?

8 THE WITNESS: Yes. What happens many times,
9 you hit a piece of gravel -- and I think I even
10 brought a piece of gravel to show you what will stop
11 a soils auger. When we're talking about gravel,
12 we're talking about rocks like this, potentially
13 like this (indicating).

14 So he's got information he needs, he realizes
15 there's enough soils matrix in the gravel, he may
16 not go any further.

17 But probes many times are the same depth of
18 auger holes or maybe deeper.

19 THE SPECIAL MASTER: But the augered holes
20 were 671, those were not probes?

21 THE WITNESS: No, sir.

22 THE SPECIAL MASTER: Those were augered log
23 holes?

24 THE WITNESS: Yes.

25 kersich - cross - white

1 THE SPECIAL MASTER: And probes can either
2 be sometimes shoveled as well as drilled?

3 THE WITNESS: Well, you can use pits. For
4 example, on Big Horn Flats -- can I just take the
5 time to talk about that, sir?

6 THE SPECIAL MASTER: Sure, I'd like you to.

7 THE WITNESS: As long as we've got the map here
8 on Big Horn Flats, you run into a problem on Big
9 Horn Flats with relatively shallow soils, there's
10 gravel within most of the soils and sometimes cobbles.
11 You can't get a hand auger sometimes down through
12 that; you can't get a power auger many times. If you
13 hit a piece of cobble, and you only have to hit one
14 piece at the right spot --

15 THE SPECIAL MASTER: So you use a pick and a
16 shovel.

17 THE WITNESS: That's exactly what I was going
18 to tell you. We put nine pits in there with a
19 back hoe, and I can't remember the exact depth,
20 but I'll guess they're from seven feet to nine feet,
21 somewheres in that vicinity, anywheres in there depending
22 on how we run into something, to ascertain, actually
23 get it down and see what the root growth is, how
24 were the roots of the native grasses, sagebrushes,

25 kersich - cross - white

1 things of this nature were growing, how they were
2 able to sustain life in that particular environment,
3 so that was why -- what we did there because of the
4 fact that we couldn't get the information
5 necessarily from just a soils auger.

6 Now, ordinarily in a soils investigation you
7 try to use the auger as much as possible because
8 it's a time and cost situation, and if you get a
9 situation where you're not getting answers, then
10 you get it from that.

11 Now, it's not unusual also, and I've done this
12 myself on this particular project, to see where they
13 probe to say 12 inches and then be concerned about
14 the soils matrix because there wasn't any in the log,
15 so what we did, we actually took a pick and a shovel
16 out there and actually dug down two and a half feet
17 to see what was going on in that particular area.

18 Q (By Mr. White) You say you back hoed it there --
19 I'm sorry, Your Honor.

20 THE SPECIAL MASTER: Is there a question about
21 the economic feasibility of patches of land, 20, 22
22 34 acres by themselves unless they're contiguous
23 to something else that's being irrigated?

24 THE WITNESS: There is, sir, very much so,
25 kersich - cross - white

1 but not knowing how the agricultural engineer
2 was going to design his system --

3 THE SPECIAL MASTER: You weren't given that.

4 THE WITNESS: We put it on there and let him
5 make the decision.

6 Now, it's not unusual for the agricultural
7 engineer -- many times these small pieces will be
8 separated from a larger piece by a whole piece of
9 Class 6 land, for example. And there are many
10 reasons you can have Class 6 lands, it could be too
11 rough or -- well, many types of things.

12 THE SPECIAL MASTER: Sure, sure.

13 THE WITNESS: So you don't know how the
14 final design is going to come out, so what you got
15 to do is locate that land.

16 THE SPECIAL MASTER: Let him worry about that.

17 THE WITNESS: And allow it to go through the
18 next two or three steps screening process.

19 THE SPECIAL MASTER: Thank you very much, sir.

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1 Q: (By Mr. White) You spoke of these backhoe pits
2 in the Big Horn Flats area?

3 A Yes.

4 Q How many acres were there in the Big Horn Flats
5 study area?

6 A In the Big Horn Flats study area, I couldn't
7 tell you offhand. They are substantial, but --

8 Q Certainly in the neighborhood of 50,000 acres?

9 A I wouldn't give you an estimate. I would have
10 to sit down and count the sections, would be
11 the easiest way. If you want me to do it, I'll
12 do it right now.

13 Q Okay.

14 A Do you want me to do it?

15 Q If that's the way you have to do it, I thought
16 maybe you would know.

17 A I would be very happy to do it. It will take me
18 some time.

19 THE SPECIAL MASTER: How many acres
20 in the study area? I presume it's a total of
21 the sections shown on that Exhibit 49 --

22 THE WITNESS: C-49, you bet.

23 Q (By Mr. White) You don't need to count the
24 sections? Roughly 18,000 acres?

25 kersich-cross-white

1 A No, no. You asked me how many acres in the
2 study area. That was your question.

3 Q That's right, and you told the Master the
4 figure on the lower right-hand corner of
5 Exhibit --

6 A No, I did not tell the Master.

7 THE SPECIAL MASTER: I think I inter-
8 jected it would probably be a total of the
9 sections shown on that exhibit and from its
10 exterior boundaries.

11 THE WITNESS: That's correct.

12 THE SPECIAL MASTER: I suppose we
13 can all prove that by just multiplying 640
14 times an awful lot of sections.

15 Q (By Mr. White) You don't even have a rough idea
16 how many acres are in that study area?

17 A Not without going back through my study notes.

18 Q But the acreage is in excess of 18,000 acres,
19 isn't it?

20 A There are quite a number of more acres that
21 have been declared arable.

22 Q And you dug how many pits in that area?

23 A We dug nine, sir.

24 Q Nine for over 20,000 acres?

25 kersich-cross-white

1 A Nine pits --

2 THE SPECIAL MASTER: Well, Mr. White,
3 that has a tendency of possibly being argu-
4 mentative. The 20,000 acres are reduced to
5 considerably less in the white space which
6 eliminates a large amount of land that you
7 would not want to waste any more pits.

8 Q (By Mr. White) So we are down to 18,000 plus
9 acres that you classified; is that correct?

10 A Yes, we have classified 18,900 and some odd
11 acres as arable.

12 Q And you dug nine pits in that area; is that
13 correct?

14 A I'd have to check, but, yes, as I recall, that's
15 the figure I put in, and that's to the best of
16 my knowledge the number of pits we put in that
17 area.

18 Q How many pits did you dig elsewhere?

19 A Not very many.

20 Q Not very many?

21 A As I recall, I don't think we dug any.

22 Q So the only backhoe pits you constructed were
23 in the Big Horn Flats area; is that correct?

24 A Yes, we dug our pits after we had done our initial
25 kersich-cross-white

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A Okay. That would be Township 1 North, 1 East, Section 7, and I'm pointing to a parcel here that has a soils class designation of 2T1 over HHG, which is heavier soils in the surface, heavier soils in the three feet below, and a gradient problem, or at least a gradient concern.

Q Is that 94 acres classified 2 for gravity and 1 for sprinkler?

A That's correct.

Q Is there any logged hole within the boundaries of that parcel?

A There doesn't appear to be a logged hole there. There is a probe to 72 inches though.

Q Is there any log of that probe?

A No, sir, but the results of that probe are certainly evident in the denominator of the soils classification.

Q Immediately to the south of that 94-acre parcel --

A This would be --

Q Still in Section 7.

A Yes, it will be in the SE 1/4 of Section 7.

Q There's a 25-acre parcel that's, I believe, Class 1 gravity, Class 6 sprinkler. Do you find that?

kersich-cross-white

1 A Yes.

2 Q Is there any hole whatsoever within that parcel?

3 A There's no hole or probe indicated, no. One
4 thing -- can I clarify one thing on that?

5 Q Sure.

6 A Okay. If you'll look, there is a line drawn
7 that has an arrow, half an arrow on each side of
8 the line, which indicates that those two parcels
9 appear to be relatively the same as far as soils
10 classification and so on.

11 There's also a deep hole located about a
12 thousand -- it's about twenty-six -- well, I'm
13 going to say a thousand feet, and you can argue
14 with me on that if you want to.

15 Q I would have said a quarter of a mile.

16 A Well, 1,300 feet, okay. There's a deep hole
17 that we do have a log on that shows 8 feet there,
18 and there's another probe in that area, a logged
19 hole 14, which shows 106 inches to any barrier,
20 so there's been a pretty comprehensive system
21 of holes there for that particular 25 acres.
22 I think there's sufficient information for a
23 qualified person to make an ascertainment there.

24 Q Those holes are either 1000 or closer than 1000 feet
25 kersich-cross-white

1 that parcel though; is that correct?

2 THE SPECIAL MASTER: He said 1,300
3 feet. You said twelve, he said thirteen, and
4 he said okay, something like that.

5 MR. WHITE: I was trying to be
6 accommodating, Your Honor.

7 Q (By Mr. White) The same township down in Sections
8 17 and 20 and 19.

9 A Okay. Section 17.

10 Q 20 and 19.

11 A 20 --

12 Q There's a 29-acre parcel that's classified 6
13 gravity, 1 sprinkler. Do you find that?

14 A Yep.

15 Q Is there any logged hole within that parcel?

16 A There's a probe in there.

17 Q Is this a logged hole?

18 A There's no logged hole. There is a logged hole
19 to the south of that at about 1,200 feet.

20 Q Now, about a mile south of that in Section 29
21 there's a parcel of 40 acres that's classified
22 3 gravity, 6 sprinkler. Do you find that?

23 A Yes.

24 Q Is there any hole whatsoever within that parcel?

25 kersich-cross-white

1 A There's not shown, and I would like to point
2 out one thing, if I may again? Just so
3 everyone understands it.

4 Many times they will put a probe down and
5 ascertain a particular area and it won't show
6 because probes are just probes. That's what
7 they are. I don't have any problem with that
8 in reviewing their work.

9 What makes me wonder about that is there is an
10 alkalinity condition in that particular area.

11 Q But you don't know of your own knowledge that a
12 probe was placed in that 40-acre tract and an
13 indication was made of its location, do you?

14 A I can't recall that I discussed that particular
15 tract as one of the tracts.

16 Q Let's move to the east about a mile and a half
17 over to Section 21 and 22. Do you find a
18 23-acre tract there that is classified 3 gravity
19 and 6 sprinkler?

20 A I'm sorry. I was trying to find myself.

21 Q I'm sorry. 21, 22 --

22 A Okay.

23 Q In the common south corner of those two sections.

24 A Okay. I'm there now.

25 kersich-cross-white

1 Q And there's a 23-acre tract classified 3 gravity,
2 6 sprinkler. Is there any hole whatsoever within
3 that parcel?

4 A Within that 23-acre parcel there does not appear
5 to be any hole, no.

6 It's interesting though that he did classify
7 that as 3 for gravity and 6 for sprinkler. He
8 indicated heavy soils with alkalinity and
9 leveling problems.

10 Q Would you please turn to Township 3 North, 2
11 West?

12 A 3 North, 2 West. Very good.

13 Q Mr. Kersich, I direct your attention to a
14 137-acre tract in the south central portion of
15 that township which is classified 2 gravity,
16 2 sprinkler, and ask you if from your photograph
17 you are able to determine the section or sections
18 in which that tract is located?

19 A Okay. This was 3 North, 2 West?

20 Q Yes.

21 A Are you referring to the section in Section 28 here?

22 Q Well, I can't find 28 on here.

23 A Well, this would be 30 and this would be 29
24 (indicating). 28.

25 kersich-cross-white

1 Q Okay. Yes --

2 A A 137-acre tract is classified as 2 gravity and
3 it indicates a soils deficiency and it's classified
4 as 2 for sprinkler and the denominator says it
5 has a medium textured surface soil, a light
6 textured subsoil, or the next 3 feet, and then
7 it has gravel in the profile.

8 Q Does that 137-acre tract extend into Section 27
9 as well to the east?

10 A A very small portion of it does, yes.

11 Q Does a portion extend to Section 33 to the south?

12 A A very small portion, yes.

13 Q Is there any logged hole in that parcel?

14 A Not in that particular parcel, no.

15 Q To the southeast of that parcel --

16 A There's a probe though. I should get that on
17 the record. We did probe it. There's a probe
18 indicated.

19 Q There's no logged hole?

20 A No, but there is a probe.

21 Q Now, about a half mile to the southeast there's
22 a 71-acre parcel that's primarily in Section 34
23 and maybe in Section 33 to some small part and
24 Section 27 to small part which is classified

25 kersich-cross-white

1 6 gravity and 4 sprinkler. Have you found that
2 71-acre parcel?

3 A Yes, I have.

4 THE SPECIAL MASTER: 6 gravity, 4
5 sprinkler?

6 THE WITNESS: Classified 6 gravity,
7 4 sprinkler.

8 THE SPECIAL MASTER: All right. That's
9 the first 6 gravity I think I have run into.
10 Is that about right?

11 MR. WHITE: I think we have a few others.

12 THE WITNESS: I believe so, sir. We
13 have had some others.

14 Q (By Mr. White) Is there any hole whatsoever in
15 that parcel?

16 A No, that's a long narrow parcel located across
17 the top of the section. There is a logged hole
18 indicated some 400 feet, 500 feet to the north.

19 Q But that logged hole --

20 A Obviously, the classifier in doing his work,
21 there was no gradient on the Class 2 drilling --
22 there is a gradient portion here, and he separated
23 those two parcels and downgraded the parcel you
24 are referring to.

25 kersich-cross-white

1 Q That logged hole you mentioned is about three-
2 quarters of a mile from the western edge of that
3 parcel, isn't it?

4 A I think the most important thing here is the
5 distance north and south because the parcel
6 appeared to be the same as far as characteristics
7 in an east-west direction.

8 Q Isn't it true that the logged hole you referred
9 to is three-quarters of a mile from the western
10 edge of that parcel?

11 A From the western -- no, it's not true.

12 Q How far is it?

13 A I'd say it's a half mile or a half to five-eighths
14 of a mile.

15 Q Okay.

16 A The logged hole is shown to the west side of the
17 center line, it appears to me, on my map and it's
18 five-eighths --

19 Q That's also about a half mile away from the
20 eastern edge of that parcel, isn't that true?

21 A Yes, that parcel does go down to a very small
22 piece.

23 Q To the east and slightly south of the 71-acre
24 parcel do you find a 93-acre parcel that's

25 kersich-cross-white

1 located in Sections 35 and 36 and is classified
2 3 gravity, 2 sprinkler?
3 A Yes, there is a long narrow parcel abutting
4 another arable parcel.
5 Q Is there any hole in that parcel?
6 A In that parcel?
7 Q Yes.
8 A Not right in that parcel, no.
9 Q Would you turn to Township 2 North, 3 West, please?
10 A There are some other holes located south of that
11 though.
12 I'm sorry. I missed your township.
13 Q 2 North, 3 West.
14 A 2 North, 3 West.
15 Q I'm sorry. I have to arrange my papers here.
16 You are much better organized than I am.
17 I'm sorry. I missed a couple parcels
18 I wanted to ask you about in 3 North, 2 West,
19 the one we were on before. Could we go back to
20 that, please?
21 A Yep.
22 Q In Section --
23 A Wait a minute. Let me get it first.
24 Q I'm sorry.
25 kersich-cross-white

1 A 3 North, 2 West.

2 Q Section 25.

3 A Section 25, yes. I'm at Section 25.

4 Q Do you find one parcel of 18 acres that's

5 classified 2 gravity, 6 sprinkler?

6 A 18 acres, yes.

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1 Q (By Mr. White) And another parcel of 30 acres
2 classified 3 gravity 6 sprinkler?

3 A That's correct.

4 Q Is there any hole whatsoever within either of
5 those two parcels?

6 A There are no holes that I can see here, no.

7 Q Now, let's go to 2 North, 3 West.

8 THE SPECIAL MASTER: May I just ask a
9 question before you leave where you are?

10 THE WITNESS: Yes, sir.

11 THE SPECIAL MASTER: Are there any holes in
12 that general irrigated area within a mile --

13 THE WITNESS: There is a Bureau hole 19 feet
14 deep, another Bureau hole 20 foot deep, a Bureau
15 hole 7 foot deep.

16 THE SPECIAL MASTER: What are there distances
17 from the two parcels just described?

18 THE WITNESS: All right, the parcels, 18 and
19 30 acres, are located between 19 foot --

20 THE SPECIAL MASTER: The two holes?

21 THE WITNESS: Yes.

22 THE SPECIAL MASTER: Okay.

23 THE WITNESS: I'm sorry. I didn't get the
24 Township.

25 kersich-cross-white

1 A Okay. Okay.

2 Q Do you find the 16-acre tract there that was
3 classified 3 gravity 6 sprinkler?

4 A 3 gravity, 16-acres, 6 sprinkler. Yes, I've
5 found it.

6 Q Is there any logged hole in that parcel?

7 A Not in the parcel, there is one just to the west
8 of it.

9 It is kind of interesting, the parcel on
10 the west was 20 gravity and 1 sprinkler and this
11 little piece was downgraded to 3 and 6.

12 Q Now, it is interesting there in that 139-acre
13 parcel on the west that you show a 10-foot draw
14 in a Class 1 -- or a 10-foot deep draw in a
15 Class 1 sprinkler area, don't you?

16 A That's right.

17 Q Okay.

18 THE SPECIAL MASTER: Now, was that Class 1
19 sprinkler area or was it a Class 3 sprinkler?

20 THE WITNESS: It is the area just to the
21 east of it.

22 MR. WHITE: The one we were talking about,
23 Your Honor, --

24 THE WITNESS: To me, I think that is interesting
25 kersich-cross-white

1 because it points out that the classifier understood
2 the problems of the agrigultural engineer and pointed
3 that out to him so he could handle it in his design.

4 MR. WHITE: I was pointing, the original
5 question there, where there's no hole is this small
6 16-acre parcel then I went, Your Honor, to --

7 THE SPECIAL MASTER: Immediately west?

8 MR. WHITE: -- to the west to the 139-acre
9 parcel.

10 THE SPECIAL MASTER: Not the 130. I see.

11 Q (by Mr. White) Does that symbol in the 139-acre
12 parcel indicate a 10-foot deep draw?

13 A It appears to be, yes.

14 Q And the land in which that draw is located is
15 classified as Class 1 sprinkler?

16 A Yes.

17 MR. WHITE: That's all for Big Horn Flats
18 right now. It would be a good time to take a short
19 break, Your Honor.

20 THE WITNESS: If we could --

21 THE SPECIAL MASTER: It is ten after four.
22 Do you want to go another hour? If so, we'll take a
23 five minute break, if not, we'll go right on. Do you
24 want a little catch-up time?

25 kersich-cross-white

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MR. WHITE: I could use some catch-up
time.

THE SPECIAL MASTER: Let's take a ten
minute break.

(Recess 4:11 p.m.)

end 22

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1 THE SPECIAL MASTER: All right, shall we go?

2 MR. WHITE: Your Honor, I think there was
3 an agreement among Counsel that we'd go another 20
4 minutes if that would be all right with you, Your
5 Honor.

6 THE SPECIAL MASTER: All right.

7 Q (By Mr. White) Let's turn to the Owl Creek area.

8 A Okay, sir.

9 Q On the Big Horn Flats area. In Township 8 North,
10 2 East, Section 1.

11 A Well, with these photographs I have it's hard to
12 determine townships.

13 Q Look in the lower right-hand corner and see if
14 you can find the photograph that has 44 North and
15 98 West.

16 A I've got it here, yes.

17 Q Okay. And you see the second section to the left
18 on the bottom right-hand corner?

19 A Yes.

20 Q Is that Section 1 in Range 2 East, 8 North?

21 A It's in Range 2 East, and it would -- I'm sorry,
22 could I take time to get the exhibit, cross check
23 myself here?

24 THE SPECIAL MASTER: Sure.

25 kersich-cross-white

1 MR. WHITE: Sure.

2 (Brief pause.)

3 THE WITNESS: I found it.

4 Q (By Mr. White) I got the wrong township.

5 A Its Range -- Well, I don't think that's important

6 because this photograph goes above the --

7 Q That has to be Township 8 North, doesn't it?

8 A I got the parcel, I know its located here.

9 Q That's the parcel that's shown on Exhibit C-52

10 in the Section 1 that's just above the Standard

11 Area Boundary, and just below the Second Standard

12 Parallel North; is that correct?

13 A That's correct.

14 Q Okay. You find a 75-acre tract there that's

15 classified 6 gravity, 2 sprinkler?

16 A That's correct.

17 Q Is there any hole whatsoever within that 75-acre

18 tract?

19 A Not directly. There is a hole three, four

20 hundred feet to the west of that parcel, and the

21 boundary line falls on the east side of the

22 drainage there.

23 MR. ECHOHAWK: Your Honor, I'd like to

24 object at this time. I think it's Mr. White's

25 kersich-cross-white

1 intention to go through, to keep on doing this to
2 point out particular areas where there's no holes and
3 the United States has no problem with Mr. Kersich
4 when he says in certain parcels there are no holes.
5 I think the whole matter can be cleared up just by
6 inquiring whether it's necessary to have a hole in each
7 particular parcel. I think this is a terrible waste
8 of everyone's time.

9 THE SPECIAL MASTER: Well, I think he
10 explained it on the specific nature and identity and
11 characteristics of each particular parcel, and some
12 places it's been almost obvious that there is no need
13 for a hole. On others where there is a couple of
14 hundred acres and no holes anywhere and no probes, it
15 may raise a reasonable doubt to the wisdom of having it
16 classified as it was. So I think it's getting
17 accomplished, and if not too many more inquires this
18 way, we might have a few more because it does serve
19 a purpose of testing the expertise, the professionalism
20 and the quality of accuracy that went into these
21 classifications, and some of them may be embarrassingly
22 left with a little bit of a hole in there, and he
23 says he's not a perfect man like the rest of us. I think
24 we said last week no one has a monopoly on perfection
25 kersich-cross-white

1 or virtue in this world except the publishers of
2 Playboy.

3 But I would say if the questions go on in
4 this way, allowing the most maximum latitude to the
5 witness as to his explanations after the direct answer,
6 a few more I think I'll listen to them.

7 MR. WHITE: Thank you, Your Honor.

8 THE SPECIAL MASTER: Without prejudicing
9 or raising it again, if you think he is going too far.

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1 MR. WHITE: I would like to state for the
2 record that we are not in any way trying to impugn the
3 professionalism of Mr. Kersich. I have got --
4 I would be ashamed to make any suggestion that
5 we would try to impugn his professionalism.

6 I am trying to point out, Your Honor --
7 and the purpose of this line of questioning is
8 that there may be insufficient data upon which to
9 make the classification, and I'm not impugning his
10 professional abilities at all.

11 THE SPECIAL MASTER: Very well, Mr. White.

12 THE WITNESS: Do I have a chance to take that
13 particular statement and xerox it and send it out
14 to my clients?

15 MR. WHITE: Well, that's probably the best --
16 or the worst endorsement you could have.

17 THE WITNESS: No, but I think it proves that
18 we know what we are doing out there.

19 I might point out there was another hole,
20 59 in the tract directly east of that. It's not
21 as if there wasn't any information there.

22 Q (By Mr. White) Was that a probe or a hole?

23 A That was a hole.

24 Q That didn't tell you the depth to barrier?

25 kersich - cross - white

- 1 A. I would have to look at logged hole 60. Do you want
2 me to do that?
- 3 Q. Logged hole 60 is the closest hole to that, isn't it?
4 THE WITNESS: Could we go off the record?
5 THE SPECIAL MASTER: Yes.
6 (Off-the-record discussion.)
- 7 A. (By the Witness) No, I don't see anything in this
8 Township.
- 9 Q. (By Mr. White) Do you want me to give you a copy?
10 A. Sure.
- 11 Q. I don't know if you can read the xerox copy there
12 very well.
- 13 A. This particular hole was logged by Ross Waples
14 again. I might just read it into the record, the
15 log. The way he made his decision, I think it's
16 pretty interesting.
- 17 Q. Let me ask you about the log. The question was, I
18 believe, how you could tell the barrier was at least
19 six foot deep from the log of Hole 60 which was
20 the closest hole to that parcel.
- 21 A. He had two things here. He was able to hand drill
22 this log to 72 inches with no problems. He went
23 through clay loamy textures to clays. He noted at
24 the end of the hole here at the 72 inches that he
25 kersich - cross - white

1 hit shale and there was heavy salts in this profile,
 2 and he declared the land -- and also the color
 3 changed on him, interestingly enough, but he did
 4 put down a boundary that went beyond the hole.

5 In other words, the hole, in his estimation,
 6 denoted Class 6 soils were nonarable soils.

7 Q Is shale not a barrier?

8 A It depends on the type of shale, how hard it
 9 is and what the hydraulic conductivity is.

10 THE SPECIAL MASTER: What was the basis for his
 11 making it 2 sprinkler?

12 THE WITNESS: It's not classified, sir, as
 13 sprinkler. That's all Class 6 lands out here, where
 14 the hole is.

15 THE SPECIAL MASTER: Oh, I beg your pardon.
 16 I thought that was 2 sprinkler.

17 MR. WHITE: The 75 acres that we are referring
 18 to, Your Honor, I believe Mr. Kersich will verify,
 19 is 2 sprinkler.

20 Q (By Mr. White) Isn't that correct?

21 A Yes, but this hole is outside the sprinkler area.
 22 I think we ought to keep the record straight on
 23 that.

24 THE SPECIAL MASTER: All right. Thank you.

25 kersich - cross - white

1 Q (By Mr. White)- That's the closest hole to that
2 parcel?

3 A That's the closest hole to that parcel, and there
4 is a boundary between -- there is a drainage here.
5 Many times there are cut banks and exposed banks
6 where a land classifier can examine the profile
7 from there.

8 THE SPECIAL MASTER: When you say there's
9 a drainage there, does that mean there's a ditch
10 dug to drain the land?

11 THE WITNESS: No.

12 THE SPECIAL MASTER: It's a natural drainage?

13 THE WITNESS: Yes, a natural drainage.

14 Q (By Mr. White) Isn't it true that the log for
15 Hole 60 shows that shale was encountered at the
16 42-inch level?

17 A Normally what a land classifier does in this
18 situation is put the final material. He has
19 classified this as clay, so obviously he wouldn't
20 be in clay at 42 inches, so he hit shales, and he
21 hit these heavy soils in that area, and he
22 classified it as nonarable.

23 Q Owl Creek is an easy one. There wasn't much there.

24 Let's go to Arapahoe.

25 kersich - cross - white

- 1 A. Give me the Township and Range, please.
- 2 THE SPECIAL MASTER: That should be the smallest
- 3 in the bunch.
- 4 MR. WHITE: No, Owl Creek is.
- 5 THE WITNESS: There's less than 4,000 acres
- 6 on Arapahoe.
- 7 THE SPECIAL MASTER: Arapahoe is, yes, 3,814.
- 8 That should be very small, 4,016 on the --
- 9 Q (By Mr. White) Let's go to 1 South, 3 East, Section
- 10 20.
- 11 A. Section 20, yeah.
- 12 Q Over in the west half.
- 13 A. Yes.
- 14 Q There's a parcel of 14 acres that's 3 gravity,
- 15 6 sprinkler?
- 16 A. Yes, it's a parcel that says light texture both
- 17 at subsurface and a shaped factor for the gravity
- 18 and a little gradient.
- 19 Q Is there any logged hole within that parcel?
- 20 A. Not within that hole. There is a Bureau hole, of
- 21 course, located just directly to the west of that.
- 22 Q Let's go about two miles to the east, Section 21.
- 23 Do you find -- I'm not sure whether it's an 82
- 24 or an 80-acre parcel.
- 25 Kersich - cross - white

- 1 A. On my map it appears to be 82 acres.
- 2 Q. And it's classified 6 gravity, 2 sprinkler?
- 3 A. Yes.
- 4 Q. And is there any logged hole within that parcel?
- 5 A. Not within the hole, but here again there's a
- 6 deep hole of ours located just to the east of that
- 7 parcel, and it shows 18 feet to sandstone.
- 8 Q. And that distance from that deep hole to the
- 9 western edge of the 82-acre parcel is approximately
- 10 a half a mile, isn't it, or a little bit more?
- 11 A. I'd say it's a half a mile or eight-tenths --
- 12 yeah, a little bit more. There is a Bureau hole
- 13 down -- well, from the western edge to the Bureau
- 14 hole there would be a quarter of a mile or less.
- 15 Q. Talking about Bureau Hole 10?
- 16 A. Yes, sir.
- 17 Q. Isn't it true that Bureau Hole 10 only goes to five
- 18 feet?
- 19 A. It may well be, but that certainly is enough
- 20 information to assist anyone working on that.
- 21 Q. Do you see just to the northeast of that 82-acre
- 22 parcel in Section 21 Bureau Hole 12 on the other
- 23 side of the 82-acre parcel?
- 24 A. I see a Bureau Hole 1, 2 -- there might be.
- 25 kersich - cross - white

1 There's a Bureau hole that I can't read the number
2 on by the FIP boundary. That's the boundary by
3 the FIP, as I recall.

4 Q Right above the 62 --

5 A Well, it's above the 2 and just slightly to the east.

6 Q You don't read that as a 12?

7 A I can't read it as anything.

8 Q How about the Hole No. 11 just to the south of that
9 82-acre parcel? Can you find that, the Bureau of
10 Reclamation Hole?

11 A Yes, I can find it, but I don't know what the log
12 on it is. There's a hole of ours though that
13 appears to be just slightly to the south and east
14 of that.

15 Q Let me hand you a copy of the logs for those
16 Bureau of Reclamation holes that bracket that 82-~~2072~~
17 parcel on the north and the south and ask you
18 whether or not all of those holes are only five
19 feet in depth.

20 A They appear to be 60 inches in depth, Hole 12 --
21 let's see. Hole 10. Where is that? Yeah, I'd
22 have to look at the hole sheet to make sure that
23 this 60 inches is for this hole also.

24 Q Well, maybe we can get the hole sheets out.

25 kersich - cross - white

1 Do you have a hole sheets with you?

2 A. No. I would like to check on that a minute, but
3 I don't believe we brought them down.

4 MR. ECHOHAWK: I would like to object to that
5 in that he represents that those are Bureau of
6 Reclamation holes and we have no foundation that
7 that is, in fact, what they are.

8 THE SPECIAL MASTER: I will sustain the
9 objection.

10 MR. WHITE: Do you want to get it out,
11 fellows?

12 Q. (By Mr. White) Mr. Kersich, do you know what a
13 Bureau of Reclamation hole log looks like?

14 THE SPECIAL MASTER: You have seen a couple
15 of million.

16 A. (By the Witness) I have seen them.

17 Q. (By Mr. White) These look like Bureau of Reclamation
18 hole logs?

19 THE SPECIAL MASTER: Let's let him find it.
20 It's a close enough matter that factually it isn't
21 going to make that much difference, but you may go
22 ahead. You are showing that it was one foot shorter
23 than what the criteria is supposed to be?

24 MR. WHITE: Yes.

25 kersich - cross - white

1 THE WITNESS: Can I clear that up?

2 THE SPECIAL MASTER: Let's wait a minute until
3 he gets the exhibit. I know that other factors
4 mitigate on what he is doing on that.

5 THE WITNESS: But we have a deep hole in that
6 area.

7 MR. ECHOHAWK: Which page are we talking about?

8 MR. WHITE: It should be Sections 21 and 28,
9 folks, 1 South, 3 East.

10 (Off-the-record discussion.)

11 MR. ECHOHAWK: I'm going to find the thing you
12 are talking about.

13 MS. SLEATER: But we could be here for quite
14 a long time.

15 MR. WHITE: Let's go ahead.

16 THE SPECIAL MASTER: In the interest of time,
17 Mr. Echohawk, would you remove your objections long
18 enough -- I would ask you to consider if you wish to
19 remove the objection -- the objection has been
20 sustained, and they are looking now for something
21 to prove it as a Bureau of Reclamation log.

22 Mr. Kersich has additional information he wants to
23 give regarding those holes, and I want him to give
24 that and it may be that upon your hearing it you

25 kersich - cross - white

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may not care about whether the objection is made
or not because your point having been served as
far as the evidence is concerned.

Will you go ahead with what you had, Mr.
Kersich?

* * * * *

1 A We have a deep hole located right in the center
2 that's a piece of land which has been ~~classified~~
3 as 6 gravity, 2 sprinkler.

4 THE SPECIAL MASTER: 2 sprinkler?

5 A And also it is contiguous or associated with
6 another tract of land which has been ~~classified~~
7 as 3 gravity and 1 sprinkler and located ~~approximately~~
8 almost on the section line between Sections 26
9 and 27. Slightly east of the intersection of
10 Sections 21, 22, 27 and 28 is a hole that ~~has~~
11 drilled and in perusing the logs, I showed the
12 depth of that hole as being 18 feet ~~to sandstone~~
13 in that particular area.

14 Q (By Mr. White) Mr. Kersich, is that hole in
15 the parcel, the 82-acre parcel?

16 A No, it is about 100 feet to the east of the
17 eastern edge of that parcel, sir.

18 Q And isn't it about, at least a half mile ~~from~~ the
19 western edge of that parcel?

20 A Yes, it is.

21 Q And aren't the three Bureau holes, which are
22 shown on your photograph, closer to that ~~parcel~~
23 than your H.K.M. deep hole?

24 A No, I would say hole No. 11 isn't closer to that
25 kersich-cross-white

1 parcel.

2 Q Let me ask you, closer to the center of the
3 parcel?

4 A Center of the parcel? Well, here again I would
5 say that my hole, H.K.M.'s hole is closer than
6 hole No. 11 to the center of the parcel.

7 Q Okay. Now then, in Sections 29 and 30 --

8 A 29 and 30? Okay, sir.

9 Q Excuse me, I missed one up here that I want to
10 ask you about on the common borders between
11 Sections 22 and 27.

12 A 22 and 27? Are we back now to where we were
13 discussing a moment ago, sir?

14 Q Close.

15 A Oh, 22 and 27. Okay, yes.

16 Q You have a large block of fee land in there and
17 to the left of that is, it looks like either a
18 parcel of 50, maybe 59 acres?

19 A I believe it is 50 acres.

20 Q Fifty acres?

21 A Yes.

22 Q Classified gravity 1, sprinkler --

23 A That's correct.

24 Q Is there any hole whatsoever within that parcel?

25 kersich-cross-white

1 A There is no hole in that parcel. We've got to
2 again point out there was sufficient -- the
3 classifier developed sufficient informatin to
4 put light textured soils for the soils in the
5 top four feet, a J factor and a leveling for
6 the surface.

7 MR. WHITE: Your Honor, this would be a
8 good time to take a break.

9 THE SPECIAL MASTER: Do you want to call it
10 a day? Start at 9:15 in the morning.

11 THE WITNESS: Thank you.

12 THE SPECIAL MASTER: All right, we'll stand
13 in recess until 9:15 in the morning. We can leave our
14 material in the room.

15 (Off-the-record discussion.)

16 MR. WHITE: Your Honor, could we go back
17 on the record just so we can --

18 THE SPECIAL MASTER: Do you want to do it
19 tonight or do you want to do it in the morning?

20 MR. WHITE: It will just take a minute, then
21 we won't have to worry about it.

22 THE WITNESS: I would like to work on the
23 whole thing.

24 THE SPECIAL MASTER: Let's wait until the
25 kersich-cross-white

1 morning, if that's all right with you.

2 We'll do it in the morning.

3 (Proceedings recessed,
4 4:46 p.m.)

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END

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REPORTERS' CERTIFICATE

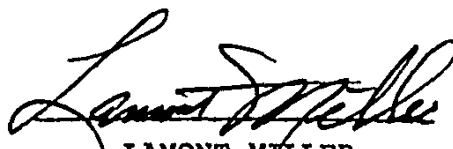
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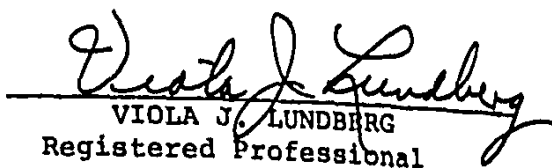
We, Lamont Miller, Merissa Racine, Viola J. Lundberg, Registered Professional Reporters and Notaries Public, hereby certify that the facts as stated in the caption hereof are true; that we did at the time, date and place, as set forth, report the proceedings had before the Honorable Teno Roncalio, Special Master, in stenotype; that the foregoing pages, numbered 1351-1550, inclusive, constitute a true, correct and complete transcript of our stenographic notes as reduced to type-written 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 10th day of February, 1981.


LAMONT MILLER
Registered Professional
Reporter


MERISSA RACINE
Registered Professional
Reporter


VIOLA J. LUNDBERG
Registered Professional
Reporter